

## CHAPTER ONE

### INTRODUCTION

A growing number of researchers have argued that the sites of literacy are shifting (Burnett, 1997; Cuban, 1998; Willis, 1996). These sites are adjusting to emerging technologies. Computers, which are among these technologies, serve not just as tools but as extensions of the learning environment (Self & Hillogoss, 1995). In such an environment, the teaching of literacy addresses at least two issues: (a) it challenges educators to extend their thinking as a way of gaining insight into language, learning, and technology; and (b) it affords a critical view of technology's influence in shaping literacy and society.

Bitters and Pierson (1999) identified the replacing of the Industrial Age with an Information Age as a major shift that contributed to changing sites of literacy. Bitters and Pierson argued that presently, society's economy is built on information rather than goods and services. The value resources, according to Bitters and Pierson, will be "mind and life"(p.2). The mind as a resource of value demands that people not only be literate, but be competent, critical and creative thinkers. People must also become independent, lifelong learners, constantly updating their skills, knowledge, and experiences. Further, Bitter and Pierson argued that "education must share the responsibility of developing technologically literate people, not only to help people maintain a standard of living, but also to help create a balanced lifestyle" (p. 5).

Leu--in Kamil, Mosenthal, Pearson and Barr (2000) posited that the information age has resulted in an increasingly competitive global marketplace and subsequently continuous changes in literacy. He wrote, "Information economies, global competition,

and the changing nature of work are, perhaps, the most powerful forces driving the changing nature of literacy in school classrooms. They prompt very real consequences for literacy education as we seek to prepare our students for the future they deserve" (p. 748).

During the past decade, arguments such as those presented by Bitters and Pearson (1999) and Leu (in Kamil et al. 2000) have engendered conversations about the kinds of educational plans and goals needed to support and reflect current trends in society. As a result, strong statements have been made by both educators and researchers about the place of computers in education. Vockell and Schwartz (1992) claimed, "Computers are an important component of the instructional process. If possible, you should not teach without them. You should use them whenever they can enhance education. In other words, you are doing your students a serious disservice [when computers are not used in instruction]" (p. 141).

Literacy educators like Tompkins (1997) are convinced that new meanings of literacy include the competence to carry out complex tasks using reading and writing related to the world of work and life outside the school. She wrote, "The children of the twenty-first century will face many challenges that will require them to use reading and writing in different forms, and as the millennium approaches, teachers will need to learn new ways to teach reading and writing that will prepare their students for the future" (p.6). Tompkins envisioned a quality literacy program as incorporating a broader definition of literacy than currently used. Such a program should also direct teachers to create technology based classroom communities where students use the processes of reading and writing, mediated by computer technologies, to learn about the world and how to participate more fully in society (Luke, 1996).

Leu (2000) contended that in many countries, policy decisions and discussions are focusing on ways to prepare students for the changing demands of new electronic literacies in a globally competitive world. Education boards are reviewing existing practices of literacy instruction and developing initiatives to facilitate and enhance student literacy standards. In Great Britain, policy initiatives have included free connections to the Internet and subsidized phone rates to all schools, training of teachers in the use of new information technologies, and the goal to connect all schools to the Internet by the year 2000. In 1996, the United States Department of Education issued a report entitled "Getting American Students Ready for the 21<sup>st</sup> Century." This report provided some direction for schools in the use of technology in support of the Technology Literacy Challenge put forth by President Bill Clinton (U.S. Department of Education, 1996). Today, similar reports, such as the "Literacy Strategy for Queensland, Australia" have made recommendations on how students can be assisted in developing their "literate futures." Varghese (2000) concluded that there was clearly a "need to integrate and link [educational] initiatives involving communication and information technologies with the core business of continual improvements in student literacy standards (Literate Futures: Report of the Literacy Review for Queensland Schools, p.4).

Luke and Freebody (2000) indicated that to become literate members of information societies, students must not only master the traditional forms and ways of communication (oral and written) but also new forms that are multi-mediated. They described these new forms as "the blended systems of linguistic and non-linguistic sounds, and visual representations of digital and electronic media. These require so-called multiliteracies that entail the processing, interpretation and critical analysis of online and

on-screen sources of information that blend print information with visual, audio and other forms of expression” (p.9). They concluded, “Mastery requires not only basic skills, but also the capacity to stretch, blend, expand and exchange these skills for others to suit varied and specialized tasks”(p. 10). Also, it is useful to think of literacy in terms of “ a repertoire of practices that, like the skills of a musician or trades person, expands and develops as one faces new technologies, techniques, possibilities, problems and contexts” (Literate Futures: Report of the Literacy Review for Queensland Schools, 2000, p.10).

Perhaps anticipating such reforms, Lanshear (1993) warned educators who might be anxious to get on the bandwagon of promoting new standards of literacy. He cautioned teachers to reflect on how new technological developments might contribute to the ongoing practice of critical literacy. According to Lanshear, although literacy gives individuals “a sure means to attaining an accurate and ‘deep’ understanding of the world and one’s place within it”, at times it [literacy] “may expose individuals and entire groups to forms of domination and control by which their interests are subverted” (p.379). Leu (2000) quoting Self and Self (1996) and Virillo (1996), also suggested that it is possible to view changing literacies and envisionments for literacy as solely for economic gain or political control, since historically, literacy typically serves those in power, not those out of power. However, there are also the emancipatory effects of acquiring literacy and the humanizing development that result, "within the context of new electronic networks, such as the Internet, [one can] expect these new electronic forms of literacy to provide potentially powerful opportunities for developing alternative views to prevailing political or economic forces”(see Leu in Kamil et al.,2000, p. 747). This view is achieved through pedagogical practices that encourage critical reflection of the use and purpose of

computers in literacy education. Such innovative education methods require a vision of the ways in which education can be shaped to encourage and support new ways of “doings” in real settings (Cummins & Sawyers, 1995; Montague, 1990).

However, the emergence of computers into the education system is not without distracters. For example, many educators are still seeking a “comfort zone” as to their adequate use in the classroom. Despite success with innovative education methods, researchers have concluded that there still exists reluctance among educators to incorporate computers in content areas of the curriculum (Cuban, 1996; Pea 1998;).

When computers are incorporated in reading and writing intensive classrooms, educators engaged in that activity claim that computers complicated the teaching of literacy (Self & Hilligoss, 1995). These researchers suggested that this complication exists primarily with the issues that link literacy and technology. They explained that “the more we understand about the social, political and educational implications of technology, the more complicated our vision of computers becomes, at the same time sustaining our expectations and encouraging our caution” (p.6).

Self and Hilligoss (1995) posited that educators who are successful in incorporating computers are likely to be informed practitioners. Informed practitioners are characterized as persons who (a) think critically about technology; (b) use computers to implement productive changes in classrooms; (c) have an awareness of the many cultural, political, and economic forces working against such changes; and (d) continually seek to limit the inequities that computers may influence in the education system.

Whether the arguments and issues are in opposition to or in support of technological developments, the education system is regarded as the force that, when

functioning properly, promotes literacy or, when failing, causes illiteracy regardless of policies and practices (Bitters & Pierson, 1999; p.5). In response to this notion, technological innovations are being given a place in classrooms in increasing numbers. Computers continue to influence different types of learning environments in educational settings today (Logan, 1995; Pelgrum & Plomp, 1993). In many classrooms, traditional approaches are being replaced with innovative educational methods where computers are used as tools in the teaching /learning process. It is reasoned that when used in thoughtful ways by teachers, these tools help students to contrive and examine packages of information and to organize them to create a new understanding in the process of collaborative thinking (Bonk & King 1998).

#### Statement of the Problem

Although distracters exist, the use of computers in classrooms has resulted in educational changes at every level of the education system. Gunn (1990) commented that often computers are assigned to the classroom as an administrative decision, “as if it were a well-understood medium that would immediately be part of each person’s teaching strategies” (p. 28). Teachers are neglected to the extent that they are not given adequate training or the time to explore and review assumptions about the value and role of computers in the classroom. Cuban (1998) supported this view. He commented that often, technology initiatives are top down in education, with decision-makers far removed from the needs or organizational issues teachers face. He argued that “ people who push technology on teachers minimize the impact of workplace conditions and the culture of the classroom” (p.11).

It seems that, although computer use in education has been vigorously encouraged (Hannafin & Freeman, 1995), what is often overlooked is the truth that the teacher is the person who makes the changes in learning. Teachers are the “gatekeepers” to the classroom. They determine what kinds of knowledge and technology enter into the classroom and how and when it is used. The U.S. Office of Technology Assessment (OTA) found that the lack of attention to teachers and technologies ironic. The OTA argued that at the center of effective use of technologies are those who oversee the daily activities of the classroom--the teachers.

Burnett (1997) claimed that a major limitation in the existing literature on computers in education is the undocumented personal process that teachers experience when computers are used in literacy instruction. He argued that the voices of teachers--those responsible for implementing innovative curricular decisions, and students--those responding to these decisions, have been absent in the professional literature leaving a void that requires attention.

Willis (1996) had concluded earlier that the reason for this lack of documentation of experience is that educators who generally are on the forefront of innovative methods, often do not write their findings so that others can learn from their insights. He claimed that there is a need to share the experiences of educators who have identified (a) roles that technologies play in student learning; (b) new roles to which both teachers and students may need to adjust; and (c) ways these two factors are managed in schools. Pea (1998) supported Burnett’s claim that although teachers are the crucial link for successful uses of technology in the classroom, there is an absence of their voices in the professional literature. He argued that their “voices” and roles as partners in educational reform have

been largely marginalized. Seldom have policy discussions or initiatives centered on the relationship between technology and the teachers' role. Focus was usually on hardware and software acquisition, and student access to technology, ignoring and shortchanging teacher issues.

Cuban (1998) explained the necessity of involving teachers in the process of introducing and sustaining computer use at school. “ Initiatives for change that don’t involve teachers as partners in rethinking educational practices and how technology might provide radically better tools are going to be a big problem” (p.7). A conclusion that can be drawn from the arguments is that practicing teachers need to be given opportunities to share their experiences.

Along with these experiences, they need to be empowered to bring about the necessary changes in their own practices and achieve success when using technology in literacy education. This will be difficult to achieve in part because teachers are generally harried by accountability and other demands and their intensified workplace. The diverse jobs teachers are asked to do, roles they are asked to play, along with multiple competing demands in their workplace can affect their ability to take on the challenge of writing and sharing their experiences. Nevertheless, writing their experiences can be a collaborative venture. With the role of teachers as co-researchers, the challenge of finding the time to write and share experiences becomes the task of the researchers. As researchers are prompted to research the problems faced by teachers and the questions they pose within the classroom, they confer with teachers in an attempt to understand the problems or find answers to questions asked and to share their findings (Baumann & Duffy-Hester, 2000).

## Purpose of the Study

The purpose for this study is to learn about the path taken by one educator. To do so, I explored the experiences of a novice computer-using teacher as she planned for and implemented a writing curriculum in which computers played a role. One objective was to see what a novice computer-using teacher thought, did, and faced when planning for literacy instruction in which computers play a role. Another was to share her voice, experiences and challenges. I believed that the sharing of this teacher's experiences could provide information about struggles and possibilities of computer use that could be used by other teachers interested in computers in literacy education. The sharing of this experience could also help teacher educators to consider ways in which to devise strategies and programs that might be useful to beginning teachers and continuing as they face the challenge of the dynamic transformations of literacies being encouraged by the current technological revolution.

Robyler and Edwards (2000) have argued that in order for technology -using teachers to be a force for improved education, they must be informed, knowledgeable shapers of their craft. "Education practice never will improve unless we have clear goals for what teaching and learning should accomplish and we see the path we want to take to achieve them" (p.2). This study is intended to contribute to that knowledge.

## Overview of Research Methodology

The research is based on an ethnographic case study perspective, that is, I examined the teacher's experience teaching writing in her classroom and computer lab. In my quest to answer my research questions I utilized an ethnographic case study

perspective. Warschauer (2000) explained that classroom research, and particularly qualitative research which attempts to understand classroom practices from the perspective of the participants, can help bridge the gap between what was imagined and what existed in reality. In a similar vein, Miller and Olson (in Reinking, McKenna, Labbo & Kieffer, 1998) proposed the method of “intensive case studies of closely watched classrooms”(p.343). They argued that it is “an alternative method of exploring technology's role in learning in general, and literacy learning in particular, acknowledging that the most complete understanding will evolve from multiple sources of inquiry” (p. 343).

In using a case study method, I engaged in an inquiry in the natural setting of the classroom where I observed the daily routines. I worked to make sense of situations as they were presented; understand the complexities with which writing was accomplished when computers played a role; and compose a rich picture of this engagement. My goal was to make the reader feel as if he or she had actually been there. The data included interviews, conversations, classroom artifacts, and field notes [transcribed audio recording] of classroom interactions.

#### Research Objectives and Questions

The primary objectives of this study were (1) to describe one teacher’s use of computers in a literacy program; and (2) to understand and share her perceptions in planning for and implementing a literacy curriculum in which computers played a role. To achieve these objectives, I raised four research questions, namely (a) What was this

teacher's conception of literacy? (b) How did this teacher plan a writing curriculum, in which computers played a role? (c) How did this teacher implement her plan of a writing curriculum in which computers played a role? (d) What were the challenges and support that this teacher experienced as she planned and implemented a plan of a writing curriculum, in which computers played a role?

### Background to the Study

Seidman (1991) stated that like everything else in life, research has “autobiographical roots” in the form of the researcher. Thus, as a researcher, it is necessary to explain one's connection to a research (pp.24 - 25). Using this advice, I share how this study became my research interest.

Two separate concerns I experienced as an elementary school teacher placed the wheels of this study in motion. One was my frustration in teaching writing in ways that allowed my students see writing as “lifework, not deskwork” (Calkins, 1987). The other concern was my unsuccessful attempts to incorporate computers into an already existing curriculum. My fledgling attempts to include this technology in the curriculum resulted at times in small successes, but more often in frustration. My limited skills along with my uncertainty about how to tap the power of the computer as an aid in writing as “lifework” became an ongoing concern. On the one hand, I celebrated the successes; on the other hand, I grappled with the problem of figuring out just where “this thing” fitted into my classroom.

Graduate studies gave me the opportunity to explore new approaches to teaching writing and to observe settings in elementary schools in United States where reluctant writers have been encouraged to write and novice writers have been nurtured to become

engaged writers. Graduate studies also gave me the opportunity to become familiar with the use of the computers through word processing, e-mails and the web, and to observe its use in educational settings. In addition, I was able to read current literature on the issues related to computer use and note its connections and complexities. Yet I wondered how teachers, not privileged enough to attend graduate school, were grappling with these challenges.

I began to observe how my two interests were played out in classrooms in United States. In 1998, I explored the environments of writing workshops in several elementary schools in southwestern United States. The workshop setting creates an environment that is atypical of traditional classrooms, and so allows for different kinds of classroom interaction. It is an activity system in which the process approach to writing is used within a workshop setting (see Atwell 1987; Calkins, 1986). I use the term activity system to describe the way children write as they interact with others involved in the activity field and the materials, objects, and signs that are a functional part of the system. In such a system, learning is situated within the activity and one learns by participating directly or vicariously (Tharp, 1998). In a very broad sense, I observed writing as it occurred in this activity system and the role of the key elements including the teacher, the student and the artifacts that are integral to the activity system.

In one such classroom I visited, I was immediately thrown into a maelstrom of activity, color, coziness and a feeling that I was not going to leave without experiencing something exciting. This classroom was one of three classrooms re-modeled in a trailer placed at the side of the school building. Light filtered through from three windows adorned with curtains made from a patterned print. Around the walls were several activity

centers, colorful, attractive and compelling. A plant adorned a table at the back of the classroom.

Students were engaged in several activities. A few were in the reading center that was built like a loft. One student was reading alone at the top level of the reading center. She had turned on a lamp at her side. Two others were at the bottom level sitting on large beanbags. They were sharing a book together. A few other students were at their tables writing. One boy sat at the computer typing. Another was sitting with the teacher at the back of the classroom. He was reading from a hand written page. A girl stood by the bookshelf thumbing through a dictionary. Three other students sat around one of their peers who sat in a large rocking chair. This chair was gaily painted with letters of the alphabet. She appeared to be reading quietly to them.

As I continued my visits to this classroom, I was also able to observe the relationship between the environment and literacy learning and how each impacts upon the other in significant ways for meaningful learning to occur. A significant observation was that the teacher and students worked collaboratively and purposely. This is a striking quality within these communities, and in many ways it reflects my personal beliefs about literacy. That is, in my view, literacy is understanding about the different cultures that exist in the classroom; it is community based; and, it is the development of language for a wide variety of purposes that can be accomplished both in school and in the broader society.

Another observation I made while observing this workshop approach to literacy learning was how technology, particularly the computer, was used in innovative ways. Students interacted with this equipment with a familiarity and competence that aroused

my curiosity. The interaction I observed in this writing environment brought to my attention the changes to literacy practices that are associated with its use. Whether it is word processing, e-mail, Hypertext or Internet, the computer alters how language, both written and visual is produced, processed and used. Johnson-Eilola, in Illana (1998), argued that it is no longer contemporary to view text as limited to writings on a page, but also text is available in a wide variety of forms including those available through computer use on a screen. This argument motivated me to think about (1) how teachers teach reading and writing, (2) how they describe their literacy practices, and (3) whether there was a link between technology and a vision for transformed literacy pedagogy among teachers.

#### Importance of the Study.

This study has the promise of contributing to knowledge in the area of technology in literacy education. In particular it is about what a teacher may experience as she plans for computer use in her writing instruction. Readers can identify what specific issues might be addressed so that the benefit of technology can be fully experienced. Further, by understanding the classroom context in which computers play a role, teachers, teacher educators, and policy makers may be able to conduct a better informed dialogue about developing curricula, environments, and instruction to enhance children's literacy learning experiences within an increasingly technologically mediated environment. Finally, by reflecting on one teacher's challenges within a classroom context--when computers play a role-- teachers, teacher educators, and policy makers may seek out inspiration for recommended use of technology in education. This critical praxis is

warranted even as they emerge, recognize, and change the use of computers in literacy education.

## CHAPTER TWO

### REVIEW OF THE LITERATURE

In this chapter, I examined the research on six topics on literacy that are central to this study: (a) meaning and usage; (b) changing definitions in the information age; (c) literacy and schooling; (d) writing with computers; (e) benefits of computers in K-5 classrooms; and (f) teachers' use of computers.

The research literature on the combined issues of writing and computers covered a large terrain within the field of education. Lacombe (1997) identified several components. These included: instructional approaches, types of learning, comparisons between traditional writing and computer generated writing, educational software, the importance of in-service instruction for teachers, and students' reaction to writing with computers. Lacombe commented that these issues add to the dialogue that is occurring in schools as computer technology is introduced. However, according to Lacombe none of these issues has been integrated to create a definitive stance on computer use in classrooms or to recommend a curriculum for use in elementary grades.

In summarizing the related research about writing, computers, and word processing, Cochran-Smith, Paris and Khan (1991) organized information around five propositions. These propositions were: (a) in classrooms or computer lab situations using word processing affects the composing process of student writers; (b) when students use word processing in classroom or laboratory situations, the quality and quantity of their written products is affected; (c) student writers respond positively to the use of word processing for writing; (d) student writers are able to master keyboarding and word processing strategies for use in age-appropriate writing activities; (e) the ways that word

processing is used for writing in individual classrooms, the social organization of classroom learning environments, and goals and strategies of individual teachers are interactively related.

### Literacy: Meaning and Usage

There is yet no common agreement on what the word literacy means or implies (Bell, 1993; Olson, 1986; Scribner, 1984). Conventional wisdom defines literacy as the “ability to read and write.” In seeking a broader definition, my ongoing search for the meaning of literacy led me to review the research literature about this human phenomenon and also to become acquainted with some of the influential researchers who dominate the field.

Erickson (1984) took the perspective that literacy is knowledge and skill taught and learned in school. He explained that this notion of literacy dated back to the establishment of European schools by the monastic chapters of the cathedrals in the early Middle Ages. Literacy, then, was described as being lettered and linked with politics and prestige.

Graff (1986) placed the term within historical perspectives. He viewed literacy as being complex and grounded in a past, present and future. He argued that simple notions of literacy (reading and writing) are facile, unless they take into consideration that literacy could be understood only in terms of its historic development.

Moll (1980); Taylor, Dorsey, and Gaines (1984); and Heath (1983) on the other hand, posited literacy as a process of socialization. Each of these researchers looked at ways in which children learned to read, write and speak within their communities such as the home and school. In their individual research they concluded that language and

language learning were the realities of one's community and cultural background. They found that through socialization with adults and their peers, children learned patterns for cognitive and linguistic activity.

Olson (1986) cited literacy as an agent of social and cognitive change. In his view, exposure to literacy provided the basis for the emergence of meta-linguistic awareness and learning to read. It also provided children with important schemas regarding the rhetorical structure of texts, as well as their future roles as readers and writers of texts and members of a literate culture.

Sulsby and Teale (1987) described literacy as predetermined stages of development. In this view, literacy is an emerging process of a child's total life experiences. Learning to read and write was not viewed as simply knowing the letters or accumulating a stock of words, but also as purposefully engaging with print over talk and using strategies that shifted with expanding knowledge.

Shor (1998) and Freire (1973) projected a view of literacy that encompassed more than the skills associated with reading and writing. They argued that literacy should invite students to think critically about subject matter, doctrines, the learning processes, and society. It should empower learners to participate in social change in advancing democracy and equality as they grow in literacy and knowledge. The acquisition of literacy is perceived as political action, involving the use of language in all forms of thinking. In this view, literacy provides individuals with the tools for understanding, critiquing and transforming the world.

Controversies appear to undergird the definition of literacy. Levine (1987) commented on the confusion over terms that reflects the complexity of the phenomenon.

“An endless sense of disagreement and controversies will be encountered which reflect the fact that we are dealing with a complex amalgam of psychological, linguistic and social process layered one on top of another” (p. 22). Educators seeking to define the term literacy will therefore find it a daunting challenge, since contrasting views by individuals in diverse fields have made it a complicated enterprise.

Despite the disagreements and controversies, a significant view of literacy seems to persist. That is, literacy is not only about the ability to read and write, it includes attitudes, behaviors, and skills that allow individuals to engage in other social activities, and to function in their communities, and create a more equitable world.

#### Literacy: Changing Definitions in the Information Age

Another perspective regarding the meaning of literacy is being debated. Hobbes (1997) argued that past notions of literacy is “a legacy of the historical context of the past, when cultural survival depended upon the mastery of the printed word” (p. 7). She contended that even though these skills are important today, the written and spoken forms of language are not the only means by which we express and share meaning. Further, the changes in our communication technologies have created a cultural environment that has extended and reshaped the role of language and the written word.

Reinking, Labbo, and McKenna (1997) posited that the pace at which the literate world is shifting from printed to digital forms of reading and writing has accelerated steadily since the introduction of the microcomputer. According to Reinking (1995) in Reinking, et al. (1997), the question now is not whether computers will have long lasting effect on literacy, but rather how we are to conceptualize literacy in a “digital, post-typographical world”(p.78). Reinking, et al. (1997) argued that it is necessary for literacy

educators and researchers to acknowledge that important changes are occurring in the way we read and write, and to contemplate the implications of these changes.

Leu (in Kamil, Mosenthal and Barr, 2000) suggested that change increasingly defines the nature of literacy in an Information Age. He argued that “literacy is rapidly and continuously changing as new technologies for information and communication repeatedly appear and new envisionment for exploring these technologies are crafted by users” (p. 742). Further it is this “continuous, rapid change [that] regularly redefines the nature of literacy” and as such, “the literacy of yesterday is not the literacy of today, and will not be the literacy of tomorrow” (pp. 743-744).

Underlying the argument that new conceptions of literacy are needed in the age of the computer is the recognition that electronic texts are substantially different from printed texts. Electronic texts are described as interactive and malleable. They make use of audio -visuals. Other differences of electronic text, compared to printed texts, include their expanded boundaries and the alternative textual structures contained in these texts. Several researchers have identified each of these attributes of electronic texts.

Electronic texts are identified as being interactive and malleable because the texts can be programmed to monitor a reader’s actions and evolving knowledge during reading. These texts can also enhance the textual presentation through interactive graphics and searchable text features not possible in printed text (Blohm, 1982, 1997; Mc Gregor, 1988a, 1988b; Reinking & Rickman, 1990; Reinking, 1988; Reinking & Schreiner, 1985, in Reinking, Labbo & McKenna, 1997).

Unlike printed texts, electronic texts make use of audio-visuals. They provide a combination of sound and visual displays. There is the opportunity for the user to

combine a wide range of audiovisual effects with written prose by a single device. The user also has the option of moving written prose away from the center of textual meaning to the use of images and sound ( Bolter, 1991; Lanham, 1993 in Reinking, Labbo & McKenna, 1997; Ong, 1982).

The expanded boundaries of electronic texts refer to the freedom and control a user has in obtaining information from a variety of sources. In comparison, printed texts exist within relatively limited boundaries of freedom. The reader's option for obtaining access to a particular text is limited. Electronic texts allow for more freedom and control in accessing texts and create a new theoretical perspective for looking at how such capabilities might affect literate activities (Bolter, Joyce, Smith & Bernstein, 1993; Daniel & Reinking 1987; Wilkinson 1983 in Reinking, Labbo & McKenna, 1997).

Alternative textual structures are accessed through links that take the reader from one page to another. Alternative textual structures found in electronic text do not demand linear and hierarchical organization as printed texts do. Written text has meant identifying a beginning, middle and end. Electronic texts allow more flexibility and invite a reader to explore the information in multiple sequences across the various menu options. This is a common attribute of hypertexts where each hypertext is separate but related segments of texts connected or linked in associated networks (Jonassen, 1986). Clicking or selecting a hypertext sends the user to other related hypertexts as commonly found on web-sites or web-pages.

Reinking (1995) as well as Reinking and Chanlin (1994) in Reinking, Labbo, and McKenna (1997) argued that these new characteristics and capabilities of electronic texts are not always intuitively clear. This uncertainty arises because we are inclined to

conceptualize electronic text in terms of more familiar printed texts. Leu (in Kamil, et al. 2000) also posited that it is these characteristics and capabilities of electronic text that change the meaning of literacy in each of these contexts.

In considering a new definition of literacy, Hobbs (1997) proposed four processes, which might serve as a framework for considering how people develop skills in using language and other forms of symbolic expression. These processes include the ability to access, analyze, evaluate, and communicate messages. The ability to access messages includes decoding symbols and building broad vocabularies. It also involves those skills related to the locating, organizing and retrieving of information. The ability to analyze messages connected with those interpretive skills such as the ability to make use of categories, concepts or ideas, determine the genre of the work, make inferences about cause and effect and identify the author's point of view.

The ability to evaluate messages includes four dimensions: to use prior knowledge to interpret a work; to predict further outcomes or logical conclusions; to identify value in a message; and to appreciate the aesthetic quality of a work. The ability to communicate is associated with such skills as: (a) understanding the audience with whom one is communicating; (b) using symbols effectively; and (c) organizing a sequence of ideas and capturing and holding the attention and interest of the message receiver.

Edelsky, Altwerger, and Flores (1991) argued that the consequences for expanding the concept of literacy help restore the important connection between the school and the culture. They posited that by expanding the concept of literacy, education becomes more relevant to the communities to which students belong. The new definition

also characterizes the kind of authentic learning that takes place when reading and writing occur in contexts where process, product, and content are all interrelated.

Embedded in this discussion is the idea that literacy should include the recognition of the kind of society in which students are growing up; that their worlds are filled with messages that affect their leisure time and provide them with information about political and consumer decisions. These messages make use of language and other techniques that affect their responses. Therefore concepts of literacy should no longer be limited to the process of acquiring decontextualized decoding, comprehension and production skills alone. It should also consider how language presently exists in relationship to other forms of symbolic expressions, including electronic forms of communication. Concepts of literacy must be connected with the culture and the context in which reading and writing are used (Cook-Gumperz, 1986).

### Literacy and Schooling

Definitions and perspectives of literacy do appear to affect the way in which literacy education is viewed. This leads to different ways of evaluating the problem and also offering different goals for programs to ensure a literate citizenry (Scribner, 1984). For example, the notion of literacy as essentially reading and writing suggests that literacy is reflective of formal schooling. Some researchers have argued that this mainstream definition of literacy helps to produce assumptions and perceptions that underlie the dominant discourse at work in most US schools and educational programs (Shannon 1989; Smith 1986; Walsh 1991). Moreover, literacy becomes synonymous in instructional terms with the commercial basal readers and guides, workbooks, charts and tests.

The notion of literacy as acquiring language within specific social, cultural, institutional, and political practices suggests that literacy is not reflective of formal schooling alone, rather it is an ongoing social practice that occurs in every aspect of human life. This definition of literacy is reflected in instructional approaches and pedagogical practices that are in keeping with current trends in literacy education.

When applied in practice, these instructional approaches and pedagogical practices resemble whole language classrooms or a reading/writing workshop environment. Others include authentic instruction, situated learning where knowledge is taught in context and anchored instruction. In this situation, a context for literacy is provided, where language skills and language learning are conceived of as being an inherently social process (Robinson, McKenna & Wedman, 2000).

Hobbes (1997) advocated that such processes require direct engagement and experience tied to meaningful activity. She argued that this view of literacy presents the student as being actively engaged in the process of analyzing and creating messages. She contended that literacy involves some basic principles of school reform, which generally include (a) inquiry based education; (b) student-centered learning; (c) problem solving in cooperative teams; (d) alternatives to standardized testing; and (e) integrated curriculum.

The notion of literacy as making meaning of the world is a popular direction in literacy education today (Willis, 1996). In this perspective, literacy requires students to learn more than the basic reading and writing skills. They must learn to critically read the word and the world (Freire, 1983). The role of literacy is to show students how to promote collaboration, to show multiple perspectives in problem solving situations (Cunningham, 1992). Literacy gives students the tools to critique every idea that

legitimizes social inequality, every idea that teaches them they are incapable of imagining and building a fundamentally equal and just society (Christensen, 1994).

Mosenthal (1999) explored the issues in these alternative positions from two agenda analytic perspectives. The first position was described as the “Unum” agenda. When educators follow the “Unum” agenda their focus is on developing literacy learners as good citizens and effective workers. The other position is the “Pluribus” agenda. Educators subscribing to this agenda focus on promoting appreciation of diversity, empowerment of disadvantaged groups, and enhancement of the literacy learner’s self esteem. Mosenthal posited that these two agendas dictate literacy practices and policies in the United States. Educators subscribe to one of these two agendas depending on their beliefs and philosophies about the goals and aims of education.

### Literacy Practices in Education

Literacy practices in education often reflect much of the literacy debate today. The literacy community is often split in terms of philosophies, theories and practical applications. A major view is that of whole language versus conventional approaches.

Whole language emphasizes language processes and the creation of learning environments in which students experience authentic reading and writing (Goodman, 1990; Weaver 1990). In this approach, skill instruction occurs in the context of meaningful reading and writing as needed by the individual reader or writer.

Conventional approaches to the instruction of literacy advocate phonics instruction, spelling, and basal readers. In contrast to the whole language view, literacy educators argue that learning to break the code is a critical part of primary level reading

and that breaking of the code is most likely when students are provided systematic instruction in decoding (Adam 1990; Chall, 1967; Pressley, 1994).

Many educators adopt a balance instruction approach ( Pressley, Rankin & Yokon, 1996) or a literacy curriculum framework (Au, Carrol, & Scheu, 1997) for effective primary literacy instruction. When the term “balance” is applied in literacy education, Robinson, McKenna and Wedman (2000) explained that the term suggests that the classroom teacher is following an “eclectic or multifaceted approach." In this approach no one method or approach is dominant rather teachers “select those aspects of a variety of literacy approaches that they find effective, using these ideas and ignoring the remaining parts of these programs" (pp. 8-9).

In many schools, literacy practices are time-tabled under the broad heading of Language Arts. The language arts curriculum highlights language as communication through expressive and receptive activities. Teachers engage students in the acts of reading, writing, listening, and speaking. Lemlech (1990) posited that the language arts curriculum involves the skills of communication and is incorporated into other subjects throughout the day. Thus when teachers provide language arts instruction, they use content from subject fields, such as science and social studies. Further, he contended that teachers relied on a number of resources to facilitate the teaching of language arts. They include the following: (a) core literary works identified by a school or district to provide common cultural experience; (b) use of language arts to interrelate curriculum fields; (c) informal use of language in all subject areas; (d) district-developed goals for each language arts component; (e) district or state recommendations for the allocation of time

devoted to language arts instruction; (f) basal reading textbooks for print material; and (g) content field textbooks.

### Literacy as Writing

The same tensions in literacy practices as a whole are evident in the conventions about the teaching of writing. During the last several years, there has been an increased interest in the early development of writing, both in and out of school (McLane & Mc Nambee, 1990). Subsequently, out of school research revealed that “Children want to write before they read. They are more fascinated by their own marks than with the marks of others . . . [leaving] their messages on refrigerators, [and] bathroom walls” (Graves, 1985, p.10). Children bring a “repertoire of genres or familiar ways of constructing symbolic worlds. [They] engage in writing as social work using this knowledge to figure out the kinds of social work that can be accomplished through that medium, thereby, gaining entry into the range of social dialogues it furthers” (Dyson, 1993. p.11). Fraser and Skolnick (1994) explain the developmental task of writing for children as understanding their world.

Most researchers see writing as a constructive and generative process that involves meaning making (Atwell 1987; Graves, 1985). Meaning making is a characteristic of communication, and it is one of the things that make individuals uniquely human (Mills, 1995). Writing is seen as an important mode of human communication that allows others to respond orally, in print, or using other forms. Writing is related to language and thought; thought being both developed and liberated by writing (Smith, 1982).

From childhood unto adult life, communication plays an important role in human development. Sulsby and Teale (1987) proposed that communication begins with signs that transform into speech and then into writing. Graves and Henson (1983) posited that writing is the only form of communication where we do not have an immediate feedback. As such, we rely on delayed feedback from the readers. Britton (1975) stated that different audiences require different types of writing.

Historians agreed that some fundamental changes could be associated with writing. The shift from oracy to writing seemed to correspond with the shift from traditional to modern society or from “primitive” to “advanced cultures”. In describing this shift Kaestle (1991) identified writing as “a technology and as such, it allows new modes of communication, administration, and record keeping as well as innovations in economic, political and cultural activities. Most profoundly it allowed and encouraged new modes of thinking” (p. 7).

### Teaching Writing as a Process

Research on the process approach to teaching writing began in the early 1970s with the efforts of Britton (1975) and Emig (1976), in the United Kingdom and United States respectively. The perspective of the writing process contrasted sharply with the product-oriented approaches of the 1950s and 1960s. The product approach was teacher directed, characterized by students being given a writing topic on which to base their writing, even when they had little knowledge, experience or interest with the topic. So, for example, it was common for children upon their return to school at the end of summer, to write on the topic of summer vacation, regardless of whether they had experienced a vacation.

In this pedagogical plan, teachers regularly collected and evaluated students' written products. The product approach was viewed as a linear, step-by-step process (Squires, 1991). However, researchers such as Atwell (1987), Calkins (1991), and Graves (1985), have since helped educators to construct writing as a recursive process. In the process approach, teachers provide guidance, support and feedback through commentary and conferences with students (Montague, 1990).

The process of writing goes through various stages: prewriting, drafting, revising, editing and publishing. Robinson, McKenna and Wedman (1999) contended that while authorities differ slightly on the nature of the stages, there is general agreement about them. Graves (1985) described these stages as: (a) prewriting-- ideas for writing are brainstormed, talked about, written as journal pieces or note taking; (b) drafting-- ideas are converted into words and the writer begins to create meaning; (c) revising--the writer ensures that all ideas are written and may choose to expand on these ideas or change existing sections or sentences; and (d) editing and publishing: the writer prepares the piece by checking writing conventions and presenting it to peers or teacher.

Dyson and Freedman (1991) argued that there is no one "writing process," but a form of adaptation, which allows the writer to meet various purposes for different audiences and situations" (p. 28). In the same vein, Kirby and Liner (1997) cautioned writers to be aware of any book that gives one the "process." Kirby and Liner suggested that writing does not follow an exact teaching steps. It is not prescriptive.

Technological advances are challenging educators to make use of new technologies in developing literate behavior in students. Word processing [an activity that uses the computer for typing and preparing documents] is a trend that is still in the early

stages, particularly in elementary schools .Yet it has been noted to enhance the writing process Cochran-Smith, Paris & Khan 1991).

### Writing with Computers

Writing with computers involves the manipulation of certain applications. Applications are computer programs written to support tasks that are useful to a computer user (Roblyer & Edwards 2000). One application commonly associated with writing is word processing.

#### Word Processing

Word processing involves using a keyboard to enter the information into a computer. The information is displayed on the computer monitor as it is being entered. Word processing can support nearly any kind of task that was previously done by handwriting or typewriter. The user can correct errors, insert or delete words or sentences, move lines or paragraphs around, and change words or appearance (Roblyn & Edwards, (2000); Morrison, Lowther, and DeMeulle, (1999). These options on the computer provide a means of increasing the speed and efficiency of the editing process (Storeygard, 1993) and facilitating non-judgmental feedback (Montague, 1990). Word processing also contributes by motivating students, affording them control over their learning (Bracey, 1992), and enhancing the legibility of their products (Cochran-Smith, 1991).

A national survey conducted in 1989 cited word processing as the focus for computer- based learning activities in US schools (Beck, 1991). Word processors are especially adaptive to authentic writing contexts because they provide an element of professionalism not possible with pen and paper. Graves and Hansen (1993) explained that as students see their work published in the format of brochures, newspapers,

magazines, books and other print materials, they begin to think of themselves as authors, a role that leads to experimenting with various functions, forms and audiences in the development of writing projects.

Papert (1993) also shared this viewpoint. He observed that when writing instruction is linked with word processing which addresses the various stages noted by Graves (1985), students are facilitated with experiences that mirror those of the mature writer. That is, students engage in a recursive process of planning and revisiting their writing. These experiences enhance both problem solving and cognition (Hawkins & Sheingold, 1986).

There are other applications of computers related to the writing process which are attracting the attention of educators. These include information management, the use of graphics, and the Internet.

### Information Management

Information management refers to the use of the computer for communicating, storing and manipulating ideas and information. This combination of communication, storing and retrieving of information allows students to recognize the worth of the computer as a manager of information. Storage and retrieval is possible through saving documents on file, so they can be accessed for future use (DeMeulle 1999; Morrison, Lowther, & Roblyn & Edwards, 2000). The computer as a manager of information allows learners to create, store and manipulate the information they have written. DeVogd (1995) contended that this application enhances the writing process in that learners can see information from different perspectives and use this information to revise personal knowledge.

## Graphics

Graphics are pictures or images that are available to a computer user from a file on the computer. Graphics can be acquired through computer-mounted video cameras, digital cameras, scanners and graphic libraries. They allow authors to create unique and distinctive work. Graphics contribute to the attractiveness of writing and also provide information and context. Graphics are used to afford contextual meaning to words and to assist recall (Whitmer, 1991). They also allow flexibility to the user and development of creative and critical thinking skills (Bong & King, 1998; Dauite, 1985). Many researchers advocated a multimedia approach for writing. They contend that these applications add a context and purpose for writing, which are both motivating and meaningful.

## The Internet

The Internet is another innovative way of using the computer as a communication tool in educational settings. It is a worldwide network that connects many smaller networks with a common set of procedures for sending and receiving information. Morrison, Lowther, and DeMeulle (1999) identified three educational uses for the Internet. It serves as a source of information, a place for collaboration, and a place to publish. Many schools are linked to the Internet so those students are able to access information and communicate with people in their communities and around the world. Cummins and Saywers (1995) suggested that it is through this medium that there can be widespread educational renewal in our schools. In using the network system of the Internet, educators can promote academic development across the content, including literacy development, critical thinking, and problem solving. It can also stimulate students' research skills and promote sensitivity to other cultural perspective (p. 11).

Learning, therefore, is not limited to the physical space of the classroom and the school. Rather the Internet extends the physical configuration available to both students and teachers in what is now referred to as a “virtual classroom” shared by counterparts around the world.

#### Benefits of Computers and Word-Processors in K-5 Classrooms

Many researchers have documented the extent to which computers and word processors could contribute and facilitate some aspect of the writing in elementary grade classrooms. In early grade levels, Gable (1997) showed how word processors can stimulate young children to talk about the process of writing and to share what they had written more than when they use traditional writing tools. Gable made this assertion after examining seven kindergartners over thirteen weeks.

In another study, Yost (1998) observed the writing activities of a kindergarten community in response to literature and math activities looking at the process, the behaviors, and the final products of these children. Yost compared the behaviors of the kindergarten community when they used traditional writing materials and multimedia. Yost concluded that children used the computers for similar writing activities in content areas. Children also exhibited similar understanding in both computer-generated writing and their traditional writing. However they displayed earlier understanding of spacing at the computer than during their traditional writing.

The benefits of writing with computers were also explored at other elementary grade levels. Mills (1995) examined the effects of computers in the writing process in a second grade classroom when computers were introduced. From a class of 28 second-graders, Mills selected three students whose writing abilities ranged from a student who

had trouble writing most every word to a student who wrote lengthy stories both in and out of school. Mills concluded that computers increased student motivation to write and students' writing production. It also acted as a non-judgmental audience.

Sterling (1997) examined the data on pre-service teachers' perceptions regarding to the utilization of computer technology with writing done by second graders. The pre-service teachers identified several factors that contributed to second-graders ability to write. They identified the computer as being motivational, a means of reinforcing learning, and a tool for the future.

Donovan (1998) utilized a qualitative/quantitative study to determine if fourth and fifth grade students who wrote with computers in their elementary school classroom produced better writing and had more positive attitudes about writing than did similar students who used pencil and paper. Writing samples of 410 fourth-graders were evaluated. Half of the population composed writing using with laptop computers, while the other half composed with pencil and paper. After writing the same narrative over a two-day period in a process-writing approach, the samples were collected and analyzed. Donovan concluded that students who composed with laptops scored significantly higher in tests of both writing competence and in writing convention. Students also exhibited a more positive attitude about writing than those who composed with pencil and paper.

Lacombe (1997) created, implemented, and assessed a computer mediated writing curriculum in a classroom with a single computer and acknowledgment of little time. Her subjects were 24 fifth -graders who had little or no prior knowledge of word processors. La Combe concluded that good writing is a taught skill and a computer facilitates the execution of that skill. She emphasized the use of the computer as a tool for writing and

not a solution to the problems that face students in their writing. She cautioned that as a tool the computer can ease the writing process that is exacerbated by the difficulty of making revisions with pencil and paper; however, it cannot rectify writing problems that are not understood by the student.

### Collaboration and the Use of Computers

In addition to the literacy benefits mentioned in the studies, a number of researchers have considered how the use of computers has facilitated collaboration when computers are used in writing activities. Collaboration, according to DeVogd (1995) is evidenced “ when at least two people contribute information as a team to solve a common problem” (p. 32). Lacombe (1997) explained how collaboration encouraged interaction among students that allowed them to acquire information and develop understanding about their writing. In a non-judgmental forum students, who feel inhibited about voicing their ideas or questions to a teacher find themselves discussing language, style, and grammar with peers. She argued that such collaboration lead to better development of content and fewer errors, and it allowed students to meet their social needs as they work.

Daiute, (1985) ; Polin, (1991); Sandholtz, Ringstaff, and Dwyer (1993) posited that collaboration accommodated the diverse experiences and personal knowledge of students and teachers alike. It facilitated both student and teacher sharing of expertise in the use of computers, while at the same time, enhancing acquisition of language and social skills. They argued that through collaboration-based activities, students are engaged in power sharing, which in itself enables and empowers students.

As a result of this interaction among students, Sandholtz, Ringstaff, and Dwyer (1990) contended that collaboration has the potential of changing the nature of schooling from the lecture-recitation-seatwork that is a common pattern in traditional forms of teaching, to contemporary forms of teaching in which students take ownership of their learning, initiate goals, and pursue them.

Michaels (1990) was among those researchers who contended that computers might contribute to a constructivist model of teaching through the opportunities allowed for collaboration. Willis, Stephens and Matthew (1996) described a constructivist model of teaching as involving the teacher who creates a context for learning in which “students can become engaged in the process of their own discoveries.” Students are “guided by the teacher through problem, adventures, and challenges that could be found in real life situations, that interest them, and have self-satisfying outcomes” (pp. 39-40). Their growth is supported by the teacher, as well as peers and others.

#### Teachers Use Of Computers

According to a 1996, U.S. Department of Education Report, teachers have used computers as learning tools in American schools for over 30 years. A brief historical account of the use of computers in schools revealed that in the early 1960’s computer –assisted instruction provided individualized drill and practice to reinforce basic skills. School use of technology broadened in the early 1980’s to include applications such as word processing, spreadsheet, and distance learning. In the 1990’s, more sophisticated applications, including multimedia educational software and the communication features of the Internet, began to enrich curricula across the range of academic subjects (Shields & Behrman, 2000; Streibel, 1998).

## Teaching with Technology

The U.S. Office of Technology Assessment (OTA, 1995), has identified many examples throughout the nation of how computers and other technologies have been used by teachers or helped teachers with all parts of their jobs. The examples focused on two aspects of the teaching-learning continuum: teachers' perceptions of how computers help them improve their instruction and how they see their classrooms changing as a result. When computers were used in different subject across the curriculum, teachers named a number of ways in which computers and the use of other technologies enhanced their teaching. For example, computers helped students to work as a team, to develop expertise in specific areas, and to become more confident learners.

In a geography class, teachers involved in an international telecommunications project found that their students acquired a new interest in geography and bonded with students across the globe on the other side of town. In a Math class, teachers observed that when students used graphing software, they appeared to develop deeper understandings of mathematical concepts. In special education, teachers observed that special education students, mainstreamed into regular classrooms, work on a more equal basis with their classmates when a computer spoke for them, gave them large print, otherwise accommodated for their difficulties (OTA, 1995).

Although the U.S. Office of Technology Assessment (OTA) concluded that these examples are far from the norm in schools today, they emphasized the likelihood that these kinds of things do occur in classrooms in which appropriately skilled teachers use digital technologies with students.

Teachers who employed the use of computers and other technologies in their teaching explained that their students are doing more than learning generic technology skills or subject -specific technology applications. Rather, they were developing the kinds of skills and competencies that numerous reform panels have encouraged. These include: problem-solving skill, broader scientific literacy and mathematical understanding, strong communication skill, personal responsibilities, integrity, and initiative, and workplace skills. These workplace competencies include working with resources, acquiring and evaluating information, working with other groups or teams, understanding complex relationships and systems, and using a range of changing technologies (Johnston & Packer 2000; Carnevale, 1991).

Accomplished technology-using teachers indicated that using computers has changed their teaching (Sheingold & Hadley, 1990). The following are among the changes reported in teachers (a) higher expectations for students; (b) increase comfort with students working independently; (c) increased ability to present more complex material to their students; (d) increased ability to tailor instruction to individual needs; and (e) less time spent lecturing and more time spent overseeing small groups or working one -on-one with students. Some teachers suggested that using computers and other technologies meant transforming the educational process their curriculum and classroom organization. These teachers reported that, ultimately, they see a change in their roles as they become more coaches, encouraging, guiding, and facilitating student learning, while students assume more initiative and responsibility for their own learning.

In addition to the perceptions of how technology helped to improve their

instruction and how they saw their classrooms changing as a result, teachers also identified technology as assisting them with the daily tasks of teaching (Office of Technology Assessment, 1996). These tasks included the preparation of lesson plans and instructional materials as well as the use of electronic databases for locating current materials relevant to a lesson.

#### Factors Contributing to Teachers' Use of Technology

Teachers' uses of computers have been attributed to both psychological and social issues. When discussed from a psychological viewpoint, researchers identified motivation as an important factor that contributed to teachers' use of computers (Cox, Cox & Preston, 1999). Subsequently, these researchers have identified factors that have motivated teachers to adopt positive behaviors in terms of using computers and other technologies in their teaching. These factors included (a) level of training, (b) the amount of technology resources available, (c) the existence of a supportive network within the school, and (d) the relevance of school policies to the appropriate uses of technology. In an earlier study Selwyn (1997), in Cox et al. (1999), found that a major deterrent to the use of computers by teachers was "computer phobia" caused by: (a) psychological factors such as having little or no control over the activity, thinking they might damage the computer, and feeling that one's self esteem was threatened; (b) sociological factors such as computers and other technologies being regarded as a solitary activity, needing to be clever to use one, and being replaced by the computer; and (d) operational factors such as being beyond one's abilities, having to cope with unfriendly jargon, and the likelihood of the technology going wrong.

In addition to these factors as influencing teachers' use or non - use of computers, a number of other factors have been identified as barriers to teachers use of technology. Shields and Behrman (1999) claimed that although, instances existed in which teachers have embraced computers in their classroom and in their instruction, “technology has not been embraced as a tool to transform how and what children learn in the typical classroom” (p.18). They explained that most students were exposed to a broad range of computer application at some point during the school year but such exposure was generally not linked to curricular in core academic classes, instead for the most part, students used computers primarily in nonacademic courses.

#### Barriers to Teachers Use of Technology.

Many researchers have debated reasons for the slow integration of the use of technology into the curricula in most classrooms is related to several issues which act as barriers to teachers’ use of technology (Bitter & Yohe 1989; Cuban 1996; Dalton, 1989; Hoerup 2001; Pea 1998; Robyler & Edwards, 2000; Rochelle, Pea, Oxon, Hoadley, Gordon & Mean 2000; Shields & Behrman 2000). These issues include accessibility and costs, organizational and structural support, limited research on effective applications, training and development, and emphasis on standardized tests and the emergence of high stakes testing.

#### Accessibility and Costs

Pea (1998) identified accessibility and costs as two related barriers that influence more widespread use of technology by teachers. He explained that many schools have made substantial investments in hardware and software over the years, but in spite of past investments, they still lack the basic technology infrastructure to support the most

promising applications of technology. Further, Robyler and Edwards (2000) also explained that many of the computers available in schools are old machines that cannot support the new databases or network integrated systems available today. The aging inventory found in schools limits the ability of teachers to use the most exciting applications for information gathering such as networked data bases or CD-ROM encyclopedias.

### Organizational and Structural Support

Robyler and Edwards (2000) argued that some schools do not make the most of the equipment they already have, and some do not always locate technology in the most accessible places. Many computers are still in labs rather than in classrooms, and modems may be located on a central computer in the principal's office, making it difficult for teachers to use them during the day. The most common uses of computers are for basic skill practice at the elementary level and for word processing and other computer-specific skills in the middle and high-school. Other uses, such as desktop publishing, developing math or science reasoning with computer simulations, gathering information from databases, or communicating by electronic mail (e-mail) are quite rare.

### Limited Research on Effective Applications

Shields and Behrman (2000) argued that a key factor affecting teachers' use of technology is the degree of their confidence that available software or Internet content can be effective in enhancing the curriculum, consistent with their teaching philosophy. In support of this argument, Rochelle, Pea, Oxon, Hoadley, Gordon and Mean (2000) maintained that positive results from computer use are more likely achieved when the applications reinforce one or more of the four fundamental characteristics of learning that

underpin the constructivist approach. They are active engagement, participation in groups, frequent interaction and feedback, and connections to real-world contexts.

### Training and Development

Dalton (1989) explained that although many teachers see the value of student learning about computers and other technologies, they lack a clear understanding about what resources technology can offer them as they try to meet their instructional goals. For example, many teachers encounter technical and logistical problems that they cannot solve themselves and do not have the outside support to solve. Further, many teachers feel the need for knowledge not just about how to operate the machines but about what software is available for their use, how to integrate it into the curriculum, and how to organize classroom activities using technology. Hoerup (2001) alluded to these concerns when she investigated the extent to which teachers adopted a computer technology innovation. Her analysis revealed that collaborative efforts among teachers can limit problems associated with training and development whenever new technologies are being adopted into existing curriculums.

Bitter and Yohe (1989) observed that in general, teachers have little technology support or training available at their schools, although many teachers may seek training on their own. In addition, the kind of training, not just availability is important. Most of the training available tended to focus on mechanics of operating new machinery. Very little focused on integrating technology into specific subjects, how to choose software, and how to reorganize classes. They argued that perhaps the greatest barrier to technology use is simply the lack of teachers time to attend training or workshops, to experiment

with machines and to explore software, to talk to other teachers about what works and what doesn't, and to plan lessons using new materials or methods.

#### Emphasis on Standardized Tests and Emergence of High Stakes Testing.

Shields and Behrman (2000) identified the current assessment system which relies heavily on standardized tests as another barrier influencing teachers' use of computers. They explained that this could be a barrier to teachers experimenting with new technologies because teachers are not sure whether the results they are seeking will be reflected in improved test scores. These tests are important because their results are often linked to what Shields and Behrman described as “high-stakes” decisions about “student advancement and graduation, teacher pay and promotion and funding and control of individual schools” (p. 19). Because many of these tests focus on basic skills they discourage teachers from supporting higher- order skills such as those associated with computer use.

#### Debate in Education

Underlying these barriers are the decisions made by stakeholders based on the current debate in education. Shields and Behrman (2000) noted that stakeholders are presently placing a heavy emphasis on a return to basics, that is, the fundamentals of reading, writing, and arithmetic. This viewpoint, they explained is embodied in many state and local responses to the call for standards in Goals 2000: Educate America Act and other federal legislation. Supporters of this approach argue that a stronger command of the basics is needed to ensure a competitive workforce in the future. Opponents argue that greater emphasis should be placed on making all students learn the “higher-order” skills of problem solving, communicating effectively, analyzing information, and

designing solutions. Advocates of this approach believe that higher-order skills can be acquired alongside basic skills and will prove as important as the basics in ensuring that our nation does not lose its competitive edge in the market place.

### Summary

The meaning and use of the word/term literacy is inextricably tied to several perspectives: historical, socio/cultural, cognitive development, and socio-political. These perspectives have led to disagreements and controversies. As such defining the term literacy is a complicated and contested enterprise. In our present Information Age, researchers have added to this existing controversy by suggesting that the Information Age has redefined the nature of literacy. They argued that the shift from printed to digital forms of reading and writing requires a new or expanding conceptualization of literacy that should reflect the changes in our communication technologies.

Literacy practices in education reflect the literacy debate which exists today. A major controversy among the literacy community is that of whole language versus the conventional practices that supports the phonics approach. Many educators subscribe to either of these approaches depending on their beliefs and philosophies about the role of literacy and education. Recent research suggested that most educators adopted a balance approach, which involved a variety of literacy approaches from both the whole language and phonics programs.

Writing is one aspect of literacy. The same tensions which exists in literacy practices are also evident in the teaching of writing. Most educators today adopt a process approach to writing as opposed to a product-oriented approach. In the process approach,

students engage in a recursive process of pre-writing, drafting, revising, editing and publishing.

In developing new literate behaviors in writing, many educators have adopted the use of word processors. Word processors were found to allow students with experiences that mirror the mature writer, allowing students to create, store, and manipulate information and create distinctive work through the use of graphics. In addition to word processors, the Internet, has been found to promote the academic development of literacy skills, critical thinking, and problem solving.

Although computers have been used in classrooms as tools or tutors, researchers identified barriers that influenced teachers' use of computers. They include accessibility and costs, organizational and structural support, limited research on effective applications, training and development and emphasis on standardized tests and the emergence of high stakes testing.

## CHAPTER THREE

### RESEARCH DESIGN

This research is an ethnographically informed case study (Merriam, 1998). I explain one second-grade teacher's practice as she planned and implemented a writing curriculum in which computers played a role. In this chapter, I describe my methods for gathering, analyzing and interpreting relevant data. The primary objectives of this study were to describe one teacher's use of computers in a literacy curriculum and to understand and share her perceptions in planning for and implementing this curriculum in which computers play a role. Within the context of her classroom, I saw my role as an observer and data collector with the aim of describing her experiences as a process.

Qualitative research is characterized by a researcher's active role as observer and data collector; the unaltered context of the classroom; the interactive process of data collection perspectives; and appraisal of the material collected (Bogdan & Bilken, 1982; Ely, 1996). It was my aim to understand the meaning this educator has constructed, that is, how she made sense of her world and the experiences she had in the world (Merriam 1998).

Creswell (1998) cautioned researchers against misperceiving qualitative research "as an easy substitute for "statistical" or quantitative study" (p.16). He identified four primary reasons for doing qualitative research. These reasons, which I have reflected upon and have come to terms with, include the following: (a) commitment to extensive field time and data collection; (b) preparedness for a prolonged engagement and a time consuming process of data analysis; (c) a readiness to utilize long quotes to legitimize

claims and demonstrate multiple perspectives; and (d) an absence of firm guidelines and procedures (p.16).

This qualitative study followed the case study tradition which Creswell (1998) identified as an exploration of a bounded system or case over time “through detailed, in-depth data collection involving multiple sources of information, rich in context” (p. 61). Merriam (1998) also identified case study as a bounded system where there is an “intensive holistic description and analysis of a single instance, phenomenon, or social unit” (p.27). Cohen and Manion (1992) described case studies as involving the observation of the characteristics of an individual unit, with the objective to probe “deeply and to analyze intensely the multifarious phenomena that constitute the life cycle of the unit with a view to establishing generalizations about the wider population to which that unit belongs” (p. 125).

These three definitions allowed me to see the case as a unit in which there were boundaries. Merriam (1998) cautioned researchers that if the phenomenon that one is interested in studying is not intrinsically bounded, it is not a case. In assessing the boundedness of the topic, she asked the researcher to consider how finite the data collection would be. For example, is there a limit to the number of people involved that would be interviewed or a finite amount of time for observation? Other considerations were that the case should focus on a particular situation; the end product of the case should be a rich, “thick” description of the phenomenon under study that illuminates a reader’s understanding of the case studied (Geertz, 1988).

It was on reflection of these considerations that I chose a qualitative case study, involving a single individual. The study was bounded primarily by space being based

within and across two classrooms. It was also bounded by time, being set within two semesters, which afforded enough time for completing interviews, document analysis, and participant observation in order to develop trust and gain the perspective on the individual.

### Research Questions

Four questions guided my inquiry. These questions included the following: (a) What was this educator's conception of literacy? (b) How did this educator plan a writing curriculum in which computers played a role? (c) How did this educator implement her design of a writing curriculum? (d) What were this educator's challenges and support as she planned and implemented her plans of a writing curriculum in which computers played a role?

In the subsections of this chapter, I explain how I identified this teacher and what methods and procedures I used for collecting, organizing and interpreting the data. An important aspect of the study involves the change of context, since the teacher moved from one school to another during the course of the inquiry. This move allowed me an opportunity to study her practices across contexts. In both contexts, the data came from four interviews as well as on-going informal conversations and observations of classroom activities, and an examination of the materials and resources used in planning and instruction. Additional data came from numerous informal conversations with the teacher about her experiences using computers in writing instruction.

### Data Collection Cycle

Creswell (1998) referred to a "data collection cycle" which includes seven

activities: locating a site; gaining access and establishing rapport; purposeful sampling; collecting data; recording information; resolving field conflicts; and storing data. I have utilized this approach to describe my data collection procedures.

### Locating the Site, Gaining Access, and Establishing Rapport

#### Locating the Site

As I thought about my objective for this case study, it was important for me to keep in mind the kind of teacher who would make a “good case”. I identified specific criteria that this teacher should possess. For example, she should be familiar with the process approach to writing. Also, she should be teaching writing on a regular basis. Further, she should be using computers in her writing instruction. Important too, she should have some computer skills/knowledge but not necessarily be an expert. Finally, she should be willing to participate in the study. I felt that these criteria were important since I wanted to investigate a situation that reflected an "average" person.

#### Gaining Access to the Participant and Establishing Rapport

Karen<sup>1</sup> and I were both participants at a writers' workshop which was sponsored by the university and funded by the National Writing Project in the summer of 1999. Karen was a part of a cohort of elementary and middle -school teachers from the local city schools in the district, who desired to improve their strategies in the teaching of writing. I was the only graduate student in the group of twelve participants.

At that workshop, I shared my interests in studying the experiences and perceptions of practicing teachers who were experimenting with computers as part of writing instruction. Based on my discussion, four teachers from three different sites

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<sup>1</sup> A pseudonym self-selected by the teacher

indicated their interest in working with me on a research project. They all had access to computers in their classrooms and were using them in writing activities.

At the start of the school year in August 1999, I was assigned as a graduate assistant to the school where one of these teachers worked. My role was to supervise pre-service teachers in their field experience. Two student teachers were assigned in the fall and spring semesters to this teacher's classroom requiring my regular visits. Across time, the teacher and I developed a respectful professional relationship. Thus when I decided to identify a case, this teacher and her classroom became an attractive option for the study insofar as I had access to the school through supervision of student interns, and I had knowledge of this teacher's interest in my research.

Having learned of the teacher's willingness to engage in the study, I sought to ensure confidentiality. Before beginning the research, I submitted the study for review by the Institutional Review Board for Research Involving Human Subjects. I used forms and statements to be sure that the participant understood the central purpose of the study and her right to voluntarily withdraw, at any time. The participant signed an informed consent form to confirm her agreement to serve as focus of this case study (see Appendix A) and the board approved the research.

The study began in an elementary school in a small city in southwestern Virginia. Permission was required and obtained from the school principal, as well as from an official representing the school superintendent.

### The Sites

The study was conducted in two-second grade classrooms over a period of two semesters. The first site was a second grade classroom at an elementary school in an

urban district. The school serves a diverse population comprising students from lower and middle- income families. Seventy five percent of the students were from minority groups and lived in close proximity to the school. Others were bused in from neighboring communities.

The use of technology was encouraged in the school. Each classroom, from kindergarten through fifth grade, was equipped with at least three computers. In addition, a computer lab was established in November of 1999 to which all grade levels had access for one hour per week. This access to technology, both in classrooms and in a computer lab, was another reason for my selection of this site for the study. I believed that here was a place where I could learn about how computers can be included in a writing curriculum.

Also, in continuing my service as a university fellow engaged in the support of teacher interns at this school, I already had access to the site, class, and the participating teacher. I was in a very good position to capitalize on the rapport I had established over the prior semester when this study was not on my agenda. I was also confident that the principal, the participating teacher, other teachers, and the students were comfortable with my presence.

The second site was also a second grade classroom in a school located about a half-hour drive outside the city limits. This site was in a more affluent, less culturally, racially and economically diverse community. The school was a part of the county school district, and it served students from nearby communities. The second site was included during the course of inquiry after my initial identification of Karen and her classroom. I felt that I needed to work with Karen for more than a few weeks at the end of a school year if I wanted to understand her perspectives, plans, and struggles.

Karen informed me--just before the school year ended in June--of her decision to relocate and work at another school in the county. This unplanned move did cause me some concern. However, since Karen expressed a desire to continue the research, I sought to use this opportunity to study her practices across contexts. During the summer break, I received the necessary permission from the county school administrator to have access to Karen and to visit her in her new setting. I also maintained communication with her during the intervening summer.

### The Researcher

As the primary researcher in this qualitative case study, I felt sufficiently prepared in my goal to investigate the issues related to my research. My prior teaching experiences in both regular and special education helped me understand classroom environments, as well as the dynamics of teaching. I had also experienced and used the process approach to the teaching of writing in my academic journey as a graduate student, and my own sober experiences with computers since my arrival at Virginia Tech afforded a segmented lens, which allowed me to see beyond one perspective.

I also assumed a learning role. My ongoing question in Karen's classroom was, "What is happening here?" I wanted to learn about what happens when a teacher plans for writing instruction, which includes computers and, what happens when this plan is carried out. My knowledge of these phenomena was limited. My goal was to use my understanding of writing and my world-view about computers to create an interpretation of Karen's experiences.

The method for this study reflects an ethnographic approach that relies heavily on participant observations, artifact/document collection, and interviews. Ethnographic

method requires the researcher “to engage in extensive work in the field, gathering information with the aim of developing a portrait of a social action (Creswell, 1998). This action is neither subjective nor objective, but interpretive (Agar, 1986). For example, I tried not to allow my personal views and background to cloud or distort the portrait of the teacher or her interactions in the classroom.

### Duration of the Study

The process of data collection occurred in two phases. The first phase began in the first setting, a second-grade classroom in the city school. Data were collected in the spring semester from mid February to early June for a total of nineteen weeks. During those weeks, I visited the setting at the times appointed for writing. Writing times varied during the week depending on the day's schedule but was accomplished on Monday through Friday from around twelve o' clock until one thirty in the afternoon (see Appendix B). Mondays were dedicated to writing in the computer lab, while Tuesdays through Friday, I observed writing in the classroom. The purpose of my weekly visits was to observe Karen as she implemented her plans for writing in the classroom, as well as in the computer lab. Observations were made over an academic school year.

After observing the classroom on a daily basis for six weeks, I staggered my observations from five days to three days then to two days My reason for this was made after I recognized a number of emerging patterns to Karen’s approach to writing in the classroom. For example, in the classroom, Karen's approach to writing consisted of four components: shared reading, construction of a web, shared writing and individual writing. These components were always a part of her writing activities in the classroom. However, in the lab, writing activities varied. Some days, students worked on

keyboarding skills. Other times they composed on the computer. Thus I continued my weekly visits on Mondays to observe the variations in these lab activities.

The second phase of data collection continued in a second grade classroom in the county. Data were collected during the first quarter of the fall semester, from late August to mid October for a total of nine weeks. My goal in observing Karen in her new setting was to identify any significant changes in her planning or implementation of her writing curriculum. I knew for example, that both school systems addressed the State's Standards of Learning. I wanted to confirm whether her plans for writing were implemented in similar ways to what I had observed in the city, or whether there were notable changes to these plans. I wondered, Did writing instruction consist of the four components I observed in the first setting? What was the role of the computer in this setting?

In the second site, writing took place within a Language Arts block throughout the week. The language arts block began at eight o'clock and ended around nine o'clock in the morning. Writing in the computer lab was accomplished on Fridays from twelve to twelve thirty in the afternoon (see Appendix B). In this setting, I visited Karen's classroom three times a week to observe her during writing instruction. These visits occurred on alternate days on Mondays, Tuesdays, Wednesdays or Thursdays. On Fridays, I made weekly visits to observe what took place in the computer lab each week.

Following my approach to observation in the first setting, I also staggered my observations of this teacher in her second setting when a pattern of her writing instruction emerged. The purpose of these visits was also to determine what changed in her practice as she moved to another context.

### Collecting the Data

In conducting a case study, Creswell (1998) recommended drawing on multiple sources of information to obtain extensive data about the case. Following Creswell's recommendation, I used multiple forms of data collection, including participant observation of classroom interactions, in-depth interviews, conversations and classroom artifacts.

### Participant Observation

One of the main sources of data was the behavior of the participating teacher. I observed this teacher during the time scheduled for writing in the classrooms and in the computer labs. Observing gave me the opportunity to see reality from the participant's point of view by spending much time on-site. I employed naturalistic observations defined by Creswell (1998) as what the researcher does. Sometimes I sat at the back of the class and took notes on what I observed. Sometimes I engaged in classroom activities, occasionally conversing with the teacher on my observations. In this way I was able to gather information from different perspectives.

### Field Notes

My observation of this teacher involved the use of field notes where I tried to capture my perceptions both as observer and participant-observer and from outsider and insider perspectives. My observation protocol included descriptive notes about the context, date, general activities happening around, the participant's words and actions, and my own reactions on the session. I also included a section for my reflective notes. After each observation I reviewed my handwritten field notes, elaborating, correcting, and transferring them to word-processed documents before the next visit. This helped me

to pursue specific leads in my next observation or conversation and to build on previous ones (see for example Figure 1 and Figure 2).

Figure Example 1. Example of handwritten fieldnotes

Field Notes		
Site : In the Classroom		
Date : 03/23/00		
Time : 12:15		
Notes		
Time	Observations	Reflection/Comments
12:15	Reading of the book "The Congress" by the teacher. Students are sitting in a semi-circle. What could be heard? Sound of fan and the teacher's voice. Reading is interrupted by Ms E. to do an art project that will be used in the Science lab.	Reason for selecting this book. Note other books on library shelf Activity takes 30 mins. How does this affect her
12:40	Teacher resumes reading. Questions students :- How do we all come together to govern a nation? How old do you have to be in order to vote? How long does the members of the House of Rep. serve	Lesson/Students Ques asked by teacher
12:50	Student and teacher develops web on dryerase board. Students return to desks for writing Teacher says "I need 9 sentences" written on the Congress. One student asks the teacher if she could use the book on "The Congress to create her own sentences"	See overleaf Ques for teacher about drafts and whether students have typed final drafts

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*Figure Example 2.* Example of word-processed field notes

May 10<sup>th</sup>, 2000

In the Classroom

12:30pm.

I arrived in second grade to see the students busy at their revision. The classroom was arranged in a different format. A row of 5 students faced the door. On entering a few of them looked up and waved discreetly to me. One stopped me to say that her sister has a baby boy yesterday. Another across the room asked what I did with my hair (I had recently cut it).

As I took up my usual position at the back of the classroom, one of the boys came by to ask me to read his story. He had revised it completely and there were no errors. Another came up to me and asked if he can use the bathroom. I told him to wait on his teacher. She was engaged in conversation with a visitor. She stopped at that moment to remind them that they should remain on task. Students worked quietly. They kept their seats and exchanged whispered conversations.

12:40

Another student came up to me to spell the word Virginia. Usually I am tempted to spell the word but this time I directed her to the dictionary. Together we found the word and she returned to her seat satisfied. She came back a few minutes later to find out how to spell the word "Tech" for Virginia Tech. This one I spelled for her.

About this time the teacher told everyone in the row closest to her to pull his or her cards. She explained that they did nothing more than disturbed her conversation. Three girls and one boy moved towards their cards. They returned soberly to their seats. A few had their hands up, so I decided to find out what they wanted. Some wanted to get some water or

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Audio-tapes/Video-tapes

Knowing the limitations of field notes, that is, there is not enough time to record everything, I also used video and audio-taping. Videotaping allowed me to capture the nature of the physical setting, the participant in interactions and many aspects of nonverbal communications (Johnson, 1992). I used videotapes to capture Karen's

practice and other classroom events during writing. I videotaped two classroom sessions of Karen as she engaged in writing in the classroom. Videotaping was limited to specific aspects of a writing activity. For example, I videotaped Karen at the beginning of her writing activity when she introduced trade literature. I also videotaped during writing time as she circulated around the classroom and one-to-one sessions while she conference with individual students. I videotaped a total of ten sessions.

I used audio-tapes to record interviews, conversations and classroom interactions with the teacher throughout my time in the field. I recorded the four interviews with Karen and our ongoing conversations. I also audio-taped Karen as she taught her students during writing both in the classroom and in the computer lab. I made a total of fifteen audiotapes of these classroom interactions.

### Interviews

I conducted four interviews with Karen over the period of data collection. The interviews were semi structured and open-ended (see for example Appendix C). My aim was to obtain precise data that could be coded in order to explain this teacher's thoughts, feelings and beliefs. Yet at the same time, I wanted to understand why Karen did what she did without placing limitations on her responses to my questions. With that in mind, I formulated questions which allowed Karen to respond in different ways. These interviews were audio taped and later transcribed (see, for example, Figure 3).

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*Table Example 1. Record of Interviews during Data Collection*

Interviews	Dates	Duration
Interview 1	February 10	45 minutes
Interview 2	March 13	60 minutes
Interview 3	June 6th	30 minutes
Interview 4	October 14th	60 minutes

Right at the start of my observations, I did my first interview with the teacher. I asked general questions about Karen’s experiences as a second grade teacher teaching writing to her students. The second interview occurred a month later. This interview afforded me the opportunity to clarify and further understand my observations through the teacher’s explanations about her practice. I conducted the third interview at the end of the school year. The purpose of this interview was to give Karen an opportunity to offer any information that was not given in my previous interviews with her. I conducted the fourth interview at the end of the data collection period in October. This interview focused on the changes I observed in Karen's practice.

I began my interviews with questions that I believed were relevant to direct my work. In Figure 3, I provide an example of questions asked in my interviews and examples of our verbal exchanges.

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*Figure Example 3. Example of Interview Questions and Responses.*

Interviewer: Do you feel comfortable teaching writing?

Interviewee: Yes, I do feel confident in teaching writing because of my experiences over the years and my involvement with workshops.(confidently)

Interviewer: How do you organize your class for writing? What are some of the things that you do when you think about writing? What are some of the things that come to mind when you think about organizing your class?

Interviewee: Well, one thing that I do make highly visible for the children is a poster that I keep in the front of the room and it is called “Things to ask yourself when you write”, and one of the questions for instance is, Did I put capital letters at the beginning of the sentence? And they’ll go through the things that I look for in the Rubric when I go through their writing. I make sure that before I read the book that I selected for that writing piece that they are going to do for the day, it is something they are learning about in another subject area so that it makes the information that they are hearing about more relevant and appear important what they are doing in the other subject area. I also make sure that if a word is unfamiliar, they know the word, so after we read, or actually before we read, I make sure we brainstorm you know, think of things that had to do with things that they are hearing about. After we read the book we do like a “what I learn or what I want to learn at the beginning, what do I want to find out. Or I do a Venn Diagram or a web of ideas of things that the children call out to me and share what they learned from the book. I make sure that students have enough space in the classroom to write comfortably, and I make sure that I have all of my materials readily available for my use and theirs as well.

Interviewer: Is there anything else you would like to mention?

Interviewee: I have the children sitting in co-operative groups and they sit like that throughout the day. However, when they go to do their writing, their writing it is an individual responsibility. If a child needs help or extra assistance and they would get help from up here; I am here to help. So the children use each other, they use me, they use the information that they learn from the books. They also are allowed to use words from a vocabulary book. It is called words I use when I write and it is in alphabetical order and they have words in there that they have learned throughout the year. Spelling words, and vocabulary words and things like that, so they are able to use that to correct their spelling. I also have peer editing. I have children work together in pairs, especially if we are in a crunch for time.

## Documents and Records

I gathered relevant documents and records to supplement my observations of classroom interactions, interviews and conversations with the teacher. My choice in the selection of documents and records was based on obtaining any material I knew would assist me in obtaining a clearer understanding of what Karen's planning and my I observation of how these plans were implemented in her classroom. I also felt that providing some of this information when presenting my data, would give clearer understanding and meaning to the reader about what I observed and how these documents were used in Karen's plans and implementation of those plans.

Among the documents I collected and studied were the teacher's lesson plans and other classroom artifacts both from the teacher as well as the students. Student artifacts include copies of work done during the research period. Records included institutional materials such as lists of standards, curriculum guides, and class schedules (see Table 2).

*Table Example 2. Documents Collected*

Documents	Purpose/Reason	Collection Schedule
Class schedules	Assisted me in planning observations at sites.	1 <sup>st</sup> week at both sites.
Lesson Plans	Supporting evidence teacher's objectives in lesson taught.	On-going collection at both sites.
Sol's ( Standards of learning) booklet	Assist in identifying Sol's for grade level in writing and technology and academic content for lesson plans.	After interview when mentioned of by teacher.
States' curriculum guide	Supporting evidence for goals in the teaching of writing.	After interview when mentioned of by teacher.
Students' work (computer generated)	Supporting evidence.	On-going collection at both sites.
Students' work (classroom generated)	Supporting evidence to illustrate end product.	On-going collection at both sites.
Rubric used for grading students' writing	Supporting evidence to illustrate assessment procedure.	After interview with teacher.
Copy of students' vocabulary book	Supporting evidence to aid description of resource and support for students' writing.	After observation of students' use.

Throughout my data collection I kept my research focus constantly in mind. It was to understand the experience of a teacher as she planned for and implemented a writing curriculum that included computers. This helped me to maintain a direction while collecting data. I also knew that this would help me in making judgements about my data analysis in the months to come. In addition, by reminding myself about my focus, the task of collecting data, whether through observations, interviews or document collection, appeared manageable. Yet despite these reminders, I knew that my initial data collection was both broad and deep. For example, I felt that at the start of my data collection, I needed to explore both the physical and social environment to truly understand this experience of a teacher as she planned for and implemented a writing curriculum that included computers.

In reviewing my earlier field notes, I found repetition in describing the setting when I observed writing in the classroom or in the lab setting. There seemed to be less field notes about the interactions that were taking place in the classroom, which was what I needed to focus on in order to discover what was happening in this teacher's practice. I began to record specific interactions. For example, I observed the teacher closely when she introduced the topic for writing. I noted the questions she asked during her lesson as well as the materials she used and how they were used. These closely observed interactions helped me to further understand this teacher's behavior and to focus the many other conversations I had with the teacher.

#### Recording and Storing the Data

Davidson (1996) explained the importance of backing up data and monitoring and recording changes made to the database. His advice is also relevant to researchers in

deciding whether to make backup copies of their diskettes. Creswell (1998) recommended developing a list of the types of information collected and masking names of participants to facilitate their anonymity.

### Data Analysis

Tesch, in Creswell (1994), stated that “the process of data analysis is eclectic, there is no right way” (p.140). What is important is that the researcher be comfortable with developing categories and making comparisons and contrasts. One must also be open to possibilities and see contrary or alternative explanations for the findings (Creswell, 1994, p. 153). Wolcott (1998) reminded novice qualitative researchers that the greater problem is not how to get data but how to figure out what to do with the data they get, and even with experience, the transformation of “unruly experience into an authoritative written account never totally disappears” (p.10). Wolcott suggested ten strategies for approaching the process of data analysis. I found three of these to be useful to me. These strategies include highlight your findings; display your findings; identify patterned regularities in the data. I found that by following Wolcott’s suggestions, I was able to engage in the process of discovery and to make sense of data collected (see Figures 4 & 5).

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Figure Example 4. Example of visual representation of possible components of notebook sketches.

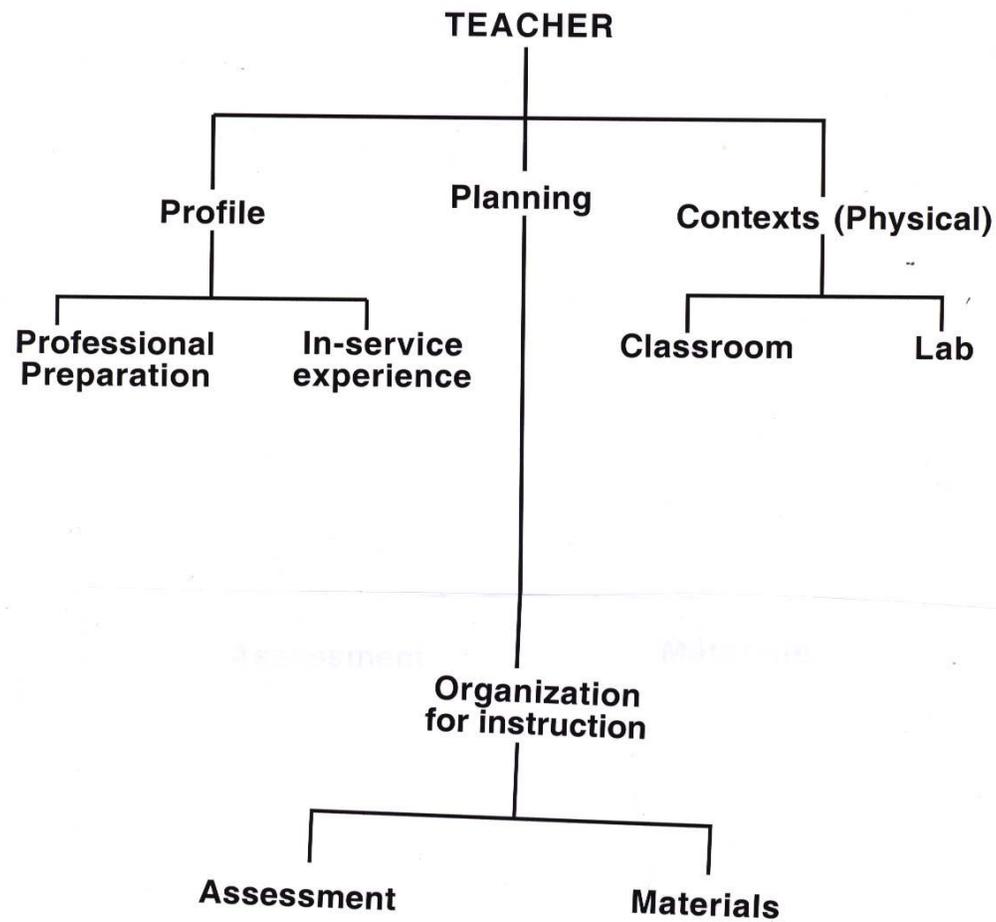
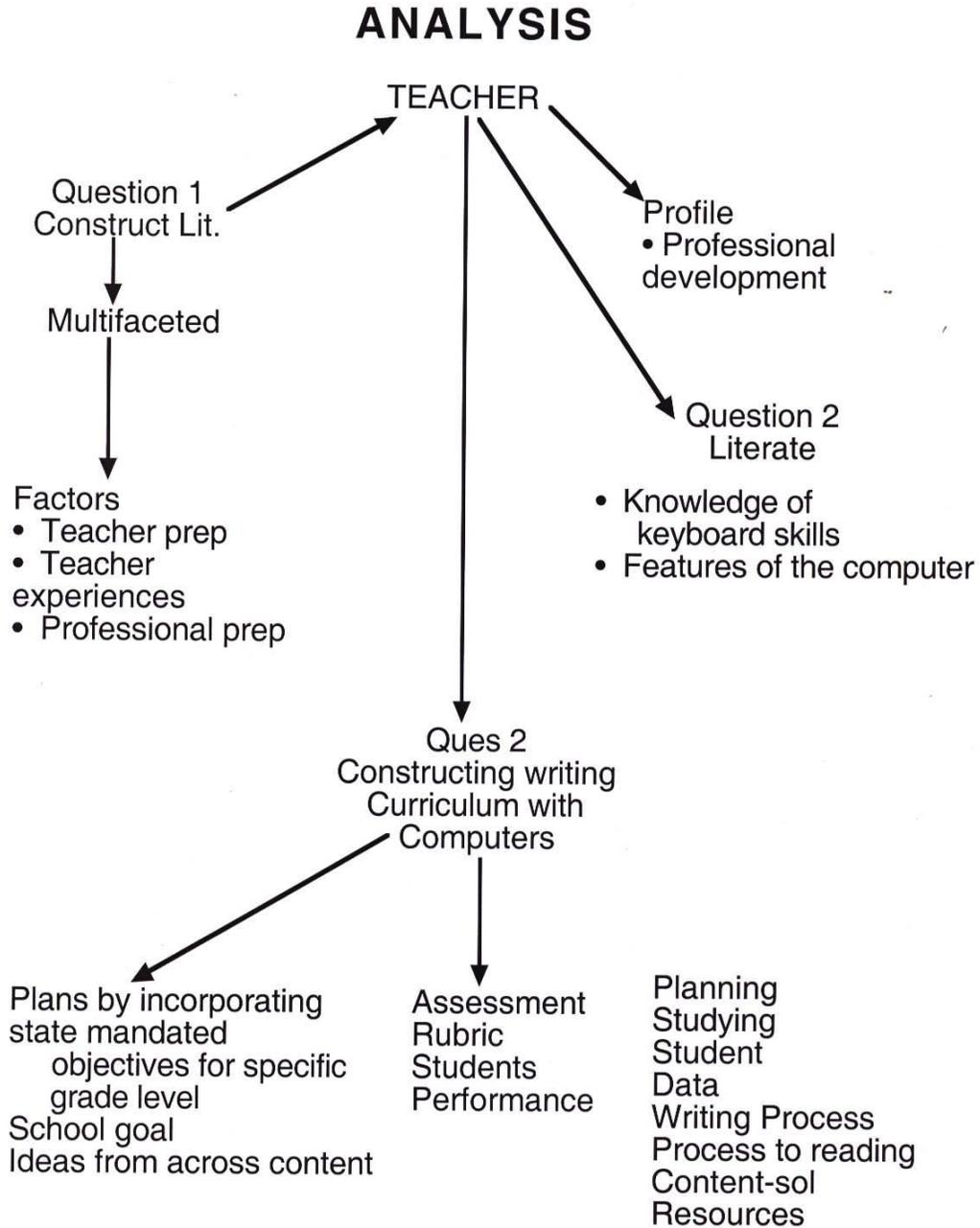


Figure Example 5. Example of visual representation of emerging themes from notebook sketches.



Data analysis began from the commencement of the study. Throughout the period of data collection, I organized and filed audio-tapes and documents for analysis in order as they were completed and collected. I also filed my transcribed interviews and field-notes in a binder along with the reflective notes I made from interviews and observations. I reviewed these for possible emerging issues and coded and labeled them for easy retrieval.

My initial step in the process of analysis was deciding what data would be useful to the study. I selected data that (a) related to the focus of the study, (b) conveyed the participant's practice, (b) was complete and interesting enough to include in the study, and (c) contributed to existing theory on the area of the research.

I developed categories from the data in what Glaser and Straus (1964) and Maykut and Morehouse (1994) called a Constant Comparative Model. I continued this process over the entire data collection period. The main idea behind the constant comparative method is coding all data while continually comparing each piece of information with previously categorized data. I developed my categories by searching through my data for patterns as well as for topics my data covered. I reviewed transcripts, field notes, and documents separately. I wrote down words and phrases to represent these topics and patterns. For example, after I transcribed my interviews I found it helpful to draw visual representations of possible components of my study (see, Figure 4).

When one or more categories emerged that reflected some commonality from the data, I identified them as a theme by noting them on a visual representation(see, Figure 4). As I collected my data, I continually reassessed and refined the concepts that

emerged. As the analysis proceeded, I began to develop working models that explained the behavior under study. Working models consisted of a set of narratives based on the research questions. By narratives, I mean a description of the participant in relation to issues that emerged that were relevant to my research questions. These include meaningful chunks of the data (see, Figure 6). The significance of the various elements in the working model was verified by checking through field-notes, interview scripts and documents. As suggested by Rubin and Rubin (1995), my goal was to integrate the themes and concepts into a theory that offers “an accurate, detailed, yet subtle interpretation of that area researched” (p. 227).

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Figure Example 6. Working model consisting of chunks of narratives

116 taken and all the courses I have done with writing that has properly been  
117 the most useful.

118 **Teacher experiences.**

119 ... including my college experiences? ... Well, I took several English  
120 classes and things like that, but as far as teaching writing, I took this  
121 reading class that we had a section of a unit that the professor taught about  
122 children's writing and children's literature. So that helped. But I will  
123 properly say that I learned more recently and really through the  
124 experiences I have had just teaching.

125 **Professional preparation**

126 ... the city requires a certain amount of in-service credits and so you  
127 attend different things like that. Now as far as this school year I haven't  
128 attended any that had to do with writing in particular, but I did give a  
129 workshop myself' ... from the information I learned from the South West  
130 Virginia writing project.

131 I asked her to tell me some more about that workshop that she did and the last  
132 time she attended a workshop.

133 Now that workshop was given in January. It was given to our teaching  
134 staff pre kindergarten through the fifth grade and all the teachers attended  
135 that. Now M James and V. Meadows along with myself all gave this  
136 workshop at the same time. There were rotating stations, working stations  
137 where the teachers moved from each station and learned different things

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### Interpreting the Data and Writing up the Case

Interpretation of data started from the very beginning of the research process. (Janesick, 1995; Manning, 1992; Peshkin, 2000). As researchers (novice or experienced)

in order to have a starting point we begin with an idea of what our inquiry will be. This is what guides us in selecting what will affect our conceptions. Peshkin (2000) described interpretation as an “act of imagination and logic. It entails perceiving importance, order, and form in what one is learning that relates to the argument, story, narrative that is continually undergoing creation” (p.9).

For me, interpreting the data meant that I would tell the story of this teacher as an informed observer and reader. I needed to find the most effective way to tell this story so that it leads the reader to an understanding of the meaning of the experience. Using the metaphor of a dance, Janesick (cited in Denzin & Lincoln , 1995) reminded qualitative researchers that “like the choreographer, the researcher must find the most effective way to tell the story, to convince the audience. Staying close to the data is the most powerful means of telling the story; just as in a dance the story is told through the body itself” (p. 215).

Following Janesick’s advice, I stayed close to my data often reflecting on the reason for this case, the audience it would address, and what I wanted to convey. I sought to explain my observations by providing ‘thick description’ of these observations to give the reader a feeling of what it was to be there (Geertz, 1988). I tried to be insightful in making assertions, which I supported, by direct quotations from interviews and notes. I also provided some interpretative commentary that was based on the literature and theories in the field that I used to frame the major findings of the study.

As with all qualitative studies, but with specific reference to the case study approach to this inquiry, I expected some challenges pertaining to standards of quality and verification. In noting that issues of quality and verification differ across qualitative

traditions, I am guided by Creswell (1998). Creswell supported the contention of Stake (1995) that adequate verification for case studies hinges on triangulation (the use of a variety of data sources in a study), and member checking (obtaining the participant's interpretation of the finding).

I addressed triangulation by providing detailed descriptions of the context rather than vague assertions and using multiple sources of data collection. I also engaged Karen in the process of member checking where she was able to read and comment on initial drafts of the narratives. This collaboration ensured the accuracy of descriptions and transcripts.

### Presentation of the Data

In presenting my data, my aim is to share what I perceived as the experiences of one second-grade teacher as she planned and implemented a writing curriculum in which computers were included. In explaining her experiences, this teacher used narratives and anecdotes. Taken together, these narratives and anecdotes gave me a better understanding of this teacher's experiences as she organized, planned and implemented this curriculum in which computers were included. Consequently, in the following chapters, I have used a narrative approach—that is extensive use of the narratives from my data collection—to share my perceptions and interpretation of this teacher's experiences. Not only does this approach facilitate giving voice to the participant, but it also allows me to share as a “situated speaker”. Richardson, in Lincoln and Denzin (1998), argued that our (researchers') work becomes boring when “our sense of self is diminished because we are homogenized through professional socialization.” Homogenization, Richardson contended, occurs through the “suppression of individual voices” (p. 517). Through the

sharing of voices (Karen, the literature, and my own) I hoped to limit homogenization and to present a document that could reach a diverse audience.

## CHAPTER FOUR

### DESCRIPTIONS

#### THE TEACHER AND HER CONCEPTUALIZATIONS OF LITERACY

Through this study I investigated how one second grade teacher planned and implemented a writing curriculum, across two classrooms, in which computers played a role. Specifically, I focused on one teacher's plans and implementations for teaching writing across two school settings -- a city school and a county school. The study addressed four concerns. These were (a) What was this educator's conception of literacy? (b) How did this educator plan a writing curriculum in which computers played a role? (c) How did this educator implement her plan of a writing curriculum? and (d) What were the challenges and support that this educator experienced as she implemented her plans for a writing curriculum, in which computers played a role?

In search for answers to these concerns, I developed several assertions, based on my ongoing data collection, as I studied this teacher across contexts. I share these assertions as well as illustrative supporting data in this chapter and the four that follow. In this chapter I begin with a profile of this teacher, placing her in the context of my first meeting place with her, the city school and her classroom. Next I share my observations of her conceptions of literacy through her narratives. Finally, I concluded this chapter with a summary of my interpretations.

#### Who is This Teacher?

Her name is Karen. She lived all her life in this southeastern state. At five-foot, three and a half inches, Karen has a warm, inviting personality. She has been teaching for four years at the same school-- her first job placement after college. Teaching had always

been her professional ideal. Over the four years she has gained experience from teaching fifth, fourth, and second grades. The last is the grade that she preferred. When asked why, she shared

I think that with the second graders you get a good mix. They are still young and caring, and they love to do all the fun stuff. They are also more independent at that age, too. So you kind of get a good mix there.

In her four years of teaching, Karen identified her most memorable experience as being in 1999. Her students were required to complete a written test that was based on the mandated state exams. They were also required to complete an accelerated reader test (a computer based activity) for this level. Karen explained this memorable experience:

All of my fifth graders passed the writing portion of the state test.

I taught a four/ five combination class last year. This class wrote the most and passed the most advanced accelerated reader test in the school.

Similarly, Karen identified her most challenging teaching experience as her realization of the socioeconomic conditions of some of her students.

Knowing what they come from. Knowing that they have not too many good experiences at home and that's why they struggle in school. I think if [only] the home network was intact, the children would feel a lot more successful if the parents were more supportive.

Karen described herself as a "caring and fun loving person." She saw herself as not being overly strict but a disciplinarian in a sense: "I don't like them to just be able to

run wild during the day. I like things in order. I like order . . . an orderly environment, a safe environment. It is conducive to learning.”

For Karen, part of maintaining an orderly environment sometimes involved using the knowledge gained from course work in college or in school sponsored programs. This was the case with the classroom management process she used.

I had a classroom management course in college [that] student teachers before they student-taught had to take. You learn different methods and things like that which I have used, but when I got hired in the city and started teaching, I did different things, but this year it is school wide. Preschool, kindergarten, first grade and second grade all do the card system and then third, fourth and fifth all do a point system. Anyway with the cards, each color means different things. If they are on the purple card with the smiley face, at the end of the day they can select a treat out of my super star jar. And then, if they are just on the plain purple with no smiley face that's a warning.

Karen explained how she actually implemented this behavior management system.

I usually give them a verbal warning, before I actually make them flip their card because the kids are “real” into having to flip their cards. They do not like to have to do that. The next one is the blue card. That means silent lunch or loss of a privilege. And then the next one is a yellow card which means I contact their parents either by phone or by letter and the pink one mean that they are in the hot seat. This one means that they go to

the principal's office. They also lose some classroom privileges. Among the privileges that might be lost is access to puzzles or games.

Karen felt that she had positive results with the behavior management strategy she used with her students.

It's been good for this group. I think sometimes with behavior management you have to change and do what works and motivates the kids to learn and behave because if they are not behaving they can't be learning. At least that's my theory. But it has worked well. I used it when I taught my fourth and fifth graders, and it worked for them too. I may be teaching second grade next year, it may not work for them. Sometimes you have to think about the social dynamics that come into play. If it will work with the personalities that you've got.

Although Karen implemented a school-based approach to management, she sought to create a balance by blending warmth and caring with "realistic limits." I observed these qualities after observing her management of a problem with a student who was often out of his seat and disturbing other students. His behavior also seemed to affect Karen's ability to teach effectively, since she often had to ask him repeatedly to behave appropriately. One day after his usual non-compliance, Karen called him to her desk and talked with him about how his behavior affected her. Both Karen and the student talked about how reasonable obedience can be accomplished and what rewards might be received for the efforts. In the following weeks as I observed in the classroom, I saw a gradual improvement in his behavior as he sought to be more attentive and participatory in classroom activities.

## A Day in Second Grade with Karen

### The Learning Community

At the city school. Riverdale Elementary<sup>2</sup> is located just outside the city limits. A wide street separated the school from rows of single unit family homes. It is a quiet street, the silence broken occasionally by motorists and school buses pulling away from the curb or neighborhood residents heading to or from the city. The school served two groups of students: children who live in the neighborhood and others who are bused in from surrounding areas. The school's population is around 400 students. The teaching staff numbered about twenty-two. A row of maple trees enclosed the two-story brick building, their carefully spaced intervals broken to give way to the paved entrance to the school doors.

It was 8:30 in the morning as I made my way toward the school, passing two yellow school buses parked at the side of the curb. I walked toward the dark brown double doors and pulled the heavy metal doors open. Inside, I made my way to the principal's office to sign the visitor's book and exchange greetings with the secretary. Once in the hallway, I encountered two lines of first graders standing in single-file alongside the wall. Both teachers cautioned their groups to be quiet as they proceeded toward their classrooms. One little girl reached out to touch me in passing. She smiled and I returned the greeting. They had just left the cafeteria from their morning breakfast. Behind them I heard the usual chorus of voices coming from the cafeteria.

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<sup>2</sup> Pseudonym for the first site in the study

I walked on down toward the stairwell at the end of the hallway passing the showcase of prizes for the accelerated reading test and the display of first graders projects outside each classroom. Some first graders were already at work. I heard them reading their morning message and occasionally caught a glimpse of them seating in a circle on a mat in front of their teacher. My destination was a second grade classroom on the second floor.

### The Classroom Community

This classroom was one of three second-grade classrooms in the school. On reaching the classroom, I stopped to read what was new on the bulletin board posted to the right of the doorway. I quickly glanced at the articles above the sign, “Red Hot News,” before opening the door. As I reached for the doorknob, my hand brushed against a brightly colored poster with the word “Teamwork” splashed across a picture of children of various ethnic groups who are working on a mural of the world.

I turned the brass doorknob and entered the classroom quietly, aware that students were already at work for the morning. Nevertheless, my entrance into the classroom caused fourteen heads to turn in my direction. I was greeted with smiles and a familiarity that were a result of my frequent visits as a supervisor of student teachers in classroom. As I moved toward my usual position at the back of the classroom, thirteen of those heads returned to their tasks. The fourteenth head belonged to the teacher, who held my gaze and continued to smile. As I drew closer, Karen got up from her chair and moved to clear a semi-circular worktable from various trade literature books, papers, and binders.

“Good morning. How are you? Please have a seat,” she whispered, not waiting for me to reply. She was again extending that warm hospitality I received each time I entered

her domain. Today Karen was wearing hair away from her face. Her light brown shoulder length hair was held up with a blue elastic band, exposing the silver earrings in the shape of moons dangling from her ears.

“They are working on their morning activity,” she said, as I glanced back at the students toiling quietly at their desks. I smiled and nodded, acknowledging what she’d said while I sat down on the chair she had offered. We exchanged a few words, then Karen moved toward the front of the classroom carrying a “Big Book” with the story, The Hare and the Turtle, and manipulatives for the day’s math activity.

I looked around me. Karen’s table was filled with the usual paraphernalia. There were books, paper, worksheets, a stapler, paperclips, pen and pencils and a jar filled with bubble gum labeled “Super Stars”. Next to Karen’s table was a small desk with a computer. Along the walls close by were a filing cabinet and a row of lockers for the students. I glanced at the trade books stacked up on one side of the table. One title read The Mystery of the Dark House on the Hill by Evelyn Coleman. Another stack of trade literature books was standing by the television. I caught the title, Life Story: Butterfly, by Michael Chinery.

“We need to move on to our next activity.” Karen’s voice broke into my reflections, as she sought to shift her students’ attention to a new task. There was a shuffling of paper and creaking of chairs as the students passed up worksheets, cleared their desks, and placed their heads down, an indicator Karen used as a non-verbal form of communication by the students to show that they were ready for the next activity.

With my focus directed now to the front of the classroom, I noticed that the objectives for each class activity for the day had been written in bold letters on the

dry/erase board. For example, today the words “TSW [The Students Will] identify ways Americans honor their country (state standard 2.8)” were written there. A few books on the United States Congress lined the edge of the board. At the far end of the board a poster displayed Karen’s behavior management strategy for the semester. Aspects of this behavior management had already been applied for the morning. One or two of the students appeared “to have made poor choices” and had to flip their cards from a purple color with a smiley face to one without, signaling a warning.

Karen held the Big Book in front of her. I had learned in previous visits that her plan was to use a story to integrate literature into her math activity. The huge book hid the colorful bib that Karen has attached to her long loose fitting denim overalls. Her small frame hovered over the heads of the second graders as she waited for their attention. Satisfied of the students’ attention, she opened the book, showing the illustrations, and began reading “A Hare decided to invite a turtle to a race. ”

After the story, the children completed worksheets in co-operative groups first, then individually. When the math period was completed, the students left the classroom around twenty minutes past ten. They attended their “special classes.” Today it was science and music. Karen shared with me that specialists taught these classes. At the end of the music class, Karen explained that she would meet her students to take them to the cafeteria for their luncheon break.

While the students were away, I noticed that Karen took the opportunity to organize materials for later class activities. Around half past eleven, she told me that she was going down to meet her students to take them to lunch. I stayed on in the classroom.

The students did not return to the classroom until sometime around 12:15 in the afternoon. In the classroom, the remainder of the day was devoted to literacy based instruction: reading and writing activities. When her students had settled down in their seats, Karen told them to continue working on the drafts they had begun the day before. Just then, another second grade teacher came in. It was time for the reading groups to meet for the reading of trade literature and word study. Karen instructed her students to put away their editing materials for the moment and to go to their reading groups. Some of the students went to the front of the class to meet with the other second grade teacher, while others moved to the back of the class to form a small group of six. Karen took this group.

Both groups were reading the same trade literature in their reading groups, The Mystery of the Dark Old House. I noticed that the students took turns reading the book aloud. After completing a chapter, Karen began a word study activity. In her group, students were asked to unscramble words that contain a focal feature. Today the focus was on words ending with edg, dge, ige, ge. This seemed to be a fun activity for the students. Karen then organized a competition in which the students tried to match pairs of words in a given time. The winner went to the teacher's table and selected a candy from the jar there. Karen repeated the activity allowing for several winners.

After the game and a few very happy students, Karen demonstrated to students how to determine matching pairs quickly. She selected a few words for the demonstration lesson. When this was done a couple of times, Karen told students to return to their seats to write each word twice. Shortly afterwards, the other reading group completed their

activities and also returned to their seats. The other second grade teacher reminded her group about the feature test at the end of the week before leaving the classroom.

Karen followed this activity with a review of the vocabulary that students had been working on in both writing and social studies. These words were related to the topic of Congress. Karen gave students worksheets and worked collaboratively with them to complete the sheets. Karen typically read the questions and the students identified the answers. They raised their hands to give the answers. Sometimes Karen would have individual students read the sentences. The class worked in this way on three worksheets.

They spent ten minutes on this task before Karen asked that they turn in their worksheets and prepare for PE (Physical Education). The students were excited about this activity, but Karen warned them that unnecessary noise would mean losing time from P.E. When they were quietly lined up, she took the students down to the gym. Karen returned to complete some planning for the rest of the week, using one of the two computers in the classroom to review and add to her plans. At ten minutes to three, she left the room to bring her students back to their classroom. Students came into the classroom quietly and took their seats awaiting the sound of the school bell to indicate the end of another school day.

When the bell rang, Karen told the walkers and those travelling by car that they could leave. Those travelling by buses were dismissed from the office as the secretary announced the bus numbers over the public address system. While students waited on their bus, one of the students went to the daily calendar corner and changed the date for the next day. She returned to her seat and admired her efforts. Another asked the teacher if he could clean the board, while another asked if her card could be replaced since she

behaved well in the afternoon. By half past three the last student had left the classroom. Karen sat quietly for awhile at her desk before packing away the materials and books used during the day. At four o'clock, there was a staff meeting that she needed to attend. We talked briefly about some aspects of her day and her plan for the following day. Bidding her goodbye, I walked passed the neatly arranged tables and chairs and passed the library shelves stacked with an assortment of books and materials.

#### At the county school

Karen's classroom and the computer lab in the inner city school would not be the only setting in which I observed Karen's class management or instructional practices with second-graders. I would have that opportunity three months later in another school and another classroom; this time with twenty-three second grades. In the second setting, I would have the chance to observe Karen in the computer lab demonstrating to her students, while using the liquid crystal display (LCD) hookup, how to access information on the Internet to learn and write about Egypt.

Except for Karen's hair in the fall--a golden brown from the summer sun and a two-week vacation in Cancun--and her hand that now carried an engagement ring, I recognized her as the same person with whom I had spent four months in the spring. She had taken with her to the suburban school much which was uniquely hers: a love for teaching; her behavior management approach; her books and pictures; the jar of candies labeled "Super Stars"; and her strategies for instructing her students. I recalled the poster titled, "Which hand do you write with?" posted by the entrance to her classroom in the second setting. In Karen's view this was an apparent reminder that all students were

welcomed , regardless of individual differences, and that writing was a significant activity in this classroom.

Inside Karen's classroom in this second grade, I would noticed that the physical environment organization continued to focus on the development of literacy (see Appendix D). At the back of the classroom, there was a corner for reading. A large rocking chair stood beside a bookshelf with children's literature. A rug sectioned off this area from four computers arranged in a circle. Computers were also located at the back of the classroom, and as Karen would later explain to me, used for the Accelerated Reader exams (1995). Overhead, there was line of gaily painted pictures done by students strung across the classroom. The student tables were arranged in a quadrangle. On each side, there were learning centers with accompanying charts and books, clearly identified. In the Science center, there were jars and measuring equipment. Students also had a place for their bags and coats, which were hidden behind blue, red and yellow curtains. Above the chalkboard, the letters of the alphabet was displayed. Instead of thirteen students as was the case in the first setting, Karen now interacted and worked with twenty-two students teaching them ways to develop literacy, much the same way as she did previously---such as using Trade literature to introduce and extend on her students' previous knowledge. Karen also incorporated these trade literature books into other subject areas thus giving her students opportunities to gain new information through reading and writing.

#### The Teacher's Conceptions of Literacy

Walsh (1991) wrote that conceptions of literacy are “shaped by theoretical and ideological concerns which extend beyond the classroom walls.” He explained that these concerns are related to “beliefs and assumptions about the nature of knowledge, of people (that is, teachers and students), of experiences, and to the relations of power and social and cultural control which these beliefs and assumptions both construct and incorporate” (p.9). As individuals, we are informed by personal and theoretical positions. Alvermann (1999) shared that “forgotten or suppressed memories are the autobiographical antecedents of our professional lives”(p.123). Through the act of storytelling, individuals understand how their lived experiences affect and influence their pedagogy.

In describing Karen’s conception of literacy, I share her narratives of her past experiences as a reader and writer, and later, as a pre-service teacher. I explain what I believe strongly influenced her conceptions, and I report my observations of her approach to literacy in the classroom. I also provide some interpretative commentary by drawing on the literature and theories in the field.

#### On Evaluating Conceptions of Literacy

Researchers revealed that there is a connectedness between personal literacy and schooling (Short, Harste & Burke, 1996). Both seem inseparable. In sharing their growth into literacy, individuals usually reflect on their early childhood and school experiences. Karen was no exception to this pattern. She fondly remembered some of her favorite books as a child, many of which she now included in her instruction. Karen explained that she had always been a reader and a writer. She could not remember vividly when she began reading or writing.

I like Shel Silverstein poems. I like books by Jan Brett. I like the Magic School Bus books. My kids especially enjoy these books. I use it often because it teaches much of the science curriculum, while at the same time it allows my students to make connections with the science content through reading.

Karen recalled writing reports and term papers in high school and college. She readily admitted that changes have occurred in the way writing is taught.

The way I learned how to write has changed. It seems that when I was growing up, the focus was more on the grammar part of it, rather than on the content. We were also not given much choice in the topics we wrote about. I think, too, that the grading of writing has changed. Now teachers are using rubrics. What is different today is the use of the writing process and writer's workshop.

Robinson, McKenna, and Wedman (1996) were among the researchers who agreed that changes in theoretical conceptions of literacy have resulted in differing teaching traditions and methods. The nature of writing instruction has changed over the years from a product approach to a process approach. Many classrooms have become "writing workshops" where students share their work with one another and where the teacher intervenes regularly as writing is developed through several drafts (Hollingsworth & Eastman, 1988; Petraglia, 1995).

Karen's conceptions of literacy were also framed from her teacher preparation program. Thomas and Barksdale-Ladd (1999) contended that, in addition to past personal memories, perceptions of literacy might be influenced by teacher education and

teacher knowledge. They characterized teacher education as being professional preparation and teacher knowledge as practical action. Karen explained that her early preparation in teaching as well as her in-service education influenced her approach to literacy learning and teaching.

I took several classes at college. I took a fundamental class in reading. I took several English classes and things like that. During my years in college, one of the big things they stressed was writing across the curriculum. They said that using trade literature to teach content is a good way to get children to write. My professors also talked about different ways to implement word study and spelling. We were taught about the writing process and how to use the writing process to teach writing. Another big thing when I was in college was the issue of whole language. From what I understood, it is hard to implement the things that we are supposed to do to get the ideal things done. At least that's what we learned in college.

Based on her early preparation in teaching, Karen explained that her approach to literacy included some whole language views. She also suggested that different learning experiences broadened this perspective.

I do implement some whole language views in the classroom. As regards teaching literacy, I will probably say what I learned more recently and really through the experiences I have had just teaching.

Curious about her recent learning experiences, I asked Karen to share with me what was the “new knowledge” she recently gained that she used to teach literacy. She

talked about her involvement in the National Writing Project Workshop, which was sponsored by a university in her area.

I took a writing project workshop. I think that probably, out of all the classes I have taken and all the courses I have done with writing, this has probably been the most useful.

The Writing Project Workshop Karen referred to is offered each summer to in-service teachers to allow them to experience the writing process approach with the hope that they will use this approach in their classrooms. Karen explained how her knowledge of this new approach to the teaching of writing became an important turning point for her writing instruction.

When I teach writing now, I use the process approach. My first objective is getting them to write that first draft and move on from there. I think it is important for students to know the writing process. I used to concentrate on the grammar and the spelling, and although I think grammar and spelling is still important, I think they should be writing about things they are interested in and enjoy writing about. Because if they are not interested, then more than likely they are not going to be interested in whatever they are writing about.

Karen extended her knowledge of the writing process to second grade students. She explained why she thinks the writing process is crucial to learning especially in the early years:

I think the earlier you start the writing process in children the better writers they become, especially the revision stage of the writing. I think

this stage is probably one of the most important in making a piece of writing wonderful.

Karen's words support Kirby and Liner (1988) who reported that teachers are often afraid of teaching writing because they do not know enough about how writing is done to teach it effectively. They argued that the better one understands the process, the better one can teach writing.

Karen reflected on the primary insights she gained by attending the writing workshop:

I think one of the main things that I learned is that a piece [of writing] is never finished. You can always return to it and make different adjustments and different changes to improve your writing. I think that was the main thing that stayed with me. I know that I actively use that during my prose piece because I know that my writing constantly changes.

Writing workshops as sponsored by the National Writing Project have translated and transformed the skills-based and skills-driven model of instruction in many schools today (Calkins & Harwayne, 1999). Testimonies of the success of these workshops are apparent in state curricula that were rewritten to reflect the process approach to writing during the middle and late 1980's (Gray, 1988). Karen's experience is consistent with this trend.

#### Literacy as Being School Based

Karen's personal experiences, teacher education and teacher knowledge seemed to result in Karen's conception of literacy as a multifaceted phenomenon. Her responses and my observations suggested that a school -based view of literacy also influenced

Karen's conception of literacy. A school-based view of literacy implies that reading and writing are taught skills that can be learned and then transferred to many different environments.. Instruction focuses on teaching the basic components of reading and writing, including, for example, grapho-phonics, vocabulary, and the structure of text.

In sharing her definition of literacy, Karen explained that literacy is “composed of a lot of things” which contribute to students becoming literate.

Being able to read. Being able to write. Being able to spell. Being able to write things that make sense-- stories that make sense. Being able to decode words. I think literacy is comprised of all of that . . . to read and write and to spell and understand what they are doing. Not just being able to read and write.

In taking this position on literacy, Karen viewed literacy in terms of reading and writing competencies, with comprehension being the goal of reading instruction. She shared an experience to explain this dimension of literacy:

Just two years ago I had a child in my class. She was the “best” reader in the class. You know, she was a great reader. She was one of my fluent readers. But if you were to ask her what she read, she could not understand a thing. If you were to hear her read, you would think she was a very literate child, but she didn't comprehend what she was reading. So a lot of times what you hear or what you see the kids doing, doesn't always encompass what they really understand.

For Karen, reading and writing seemed to be important competencies she expected her students to master. It is with little surprise that she identified her most memorable experience as being in 1999, when her students experienced success on the Accelerated Reading Test, a technology-based literacy activity. She said:

All of my fifth graders passed the writing portion of the SOL (Standards of Learning) test. I taught a four/ five combination class last year. This class wrote the most and passed the most Accelerated Reader tests in the school.

In spite of her enthusiasm for success on tests, Karen wanted much more for her students.

I want them to love to read and write. I want them to be life-long learners. Not just learn for a test or be test takers. I want them to discover and learn and want to keep on learning.

By having the goal of developing life-long learners, Karen sought to foster positive attitudes towards reading and writing even after school years. Her view is consistent with that of other educators, for whom the ultimate goal of learning is to prepare students to meet personal needs in life-long learning. Researchers, like Eanes (1997), state that literacy skills are not fully developed upon successful completion of the elementary school curriculum. In fact, these skills continue to develop throughout life to meet individual demands and desires for knowledge.

Karen also believed literacy to be an interaction of social activities as highlighted in the following lesson scenario from her teaching.

Karen: Did any of you ever have a bad day?

Students: Yes.

Karen: How did you feel?

Several students: Scared, Angry, Tired, Lonely.

This interaction took place during the reading of the book Alexander The Terrible, Horrible No Good, Very Bad Day (Judith Viorst, 1972). Karen and her students were sitting together in the reading corner as she read, pointing frequently to the illustrations. Before reading the book, she asked these thought-provoking questions in an effort to relate students' experiences and feelings to those of the character in the book. Sometimes she also explained some of the new words in the story, each time checking for the students' understanding by asking them to use the words in the context of the story and in their own lives.

Karen: What do you think the word scolded means? Let me read it in the sentence again. "My mother came back to the car and scolded me."

Student: Yelled at me?

Karen: That's close to the meaning. Do we have another?

Student: Quarreled with me.

Karen: Yes, we can use that meaning.

Towards the end of the reading, Karen went to the dry/erase board and wrote the following: "Think about a time you had a bad day. When was it? What happened to make it a bad day? What didn't happen to make it a bad day? Who else was involved?"

After reading the sentences written on the dry/erase board, Karen instructed the students by saying, " Think about each sentence, since you will be using these as guides to write about your own experiences. I want you to write at least six sentences."

This lesson was typical of Karen's classroom teaching. She used a variety of interesting activities to encourage involvement in reading, speaking, listening, speculating, and visualizing other times and places. Her approach is supported by Mayers and Mayers (1990) who explained that when students are encouraged to engage in a variety of learning activities, they are more than likely to stay involved. They are also more likely to integrate their learning into useful intellectual patterns.

Literacy as the use of technology. For Karen, the computers were a salient tool for teaching literacy. She also extended her conception of literacy to include use of computers.

I think by using the computer my students are becoming literate with the technology. They are extending what they have learned in the classroom when using paper and pencils to computers.

Karen described computers as useful tools to enhance literacy. In her view, they require the integration of a variety of literacy skills, such as research and critical thinking.

I think the computer can enhance your literacy and it can teach you as well. There are a lot of things that a computer can do . . . as a tool . . . [for example] you can open an interactive CD that would help the children. When we use the computer in the classroom—I've got an encyclopedia disc on the computer that I use. We are able to learn and comprehend things that we talk about in class. I would pull the CD up and they can

look and do research on their own. So I think in that way they become literate, too.

Karen's view is consistent with Eanes (1997), who stated that the concept of literacy relates directly to the use of computers. Technological literacy involves the skills necessary to employ technology as a tool for purposes such as research and critical thinking. It is not a replacement for literacy, but rather an enhancement of it. As a tool in schools, the computer is also a natural extension of the real life skills that students bring to the classroom.

### Summary

Karen is a second grade teacher who has been teaching for four years. Her placement was at a city school before moving to a county school during this period of study. Karen implemented a writing curriculum, in which computers played a role in both these settings. She also focused on a school-based management system that she identified as maintaining an orderly environment in her classrooms. Karen organized literacy events through the use of trade literature. These events were reflected throughout the day in Karen's classroom activities.

Karen's conception of literacy was shaped through her personal experiences from childhood when she had been exposed to children's literature. Her conceptions of literacy were also influenced through her early preparation as a teacher and later through her teaching experience and in-service work. At college she was exposed to whole language views, which she implemented in her classroom. One approach to whole language was the use of the writing process. Karen adopted this approach when teaching writing to her

second graders having experienced it herself at an in-service program sponsored through the National Writing Project. Karen believed that meaning and life-long learning were important aspects of literacy. Finally she saw the computer as an extension of literacy and a tool for research and critical thinking.

## CHAPTER FIVE

### DESCRIPTIONS

#### PLANNING A WRITING CURRICULUM

In this chapter I develop a description of Karen's process of setting goals and designing an instructional plan for teaching writing and organizing the classroom experience. I look at the decisions Karen made concerning what students had to learn in the classroom. I also look at her considerations about how to present what was to be taught, including her plans for assessment. First, I describe Karen's approach to planning her writing curriculum in the context of her city school. Next, I highlight what significant changes occurred in her plans as she moved across contexts to the county school. I also provide some interpretative commentary using relevant literature. Finally, I conclude this chapter with a summary of my findings.

##### Planning for Writing

In the city school experience, Karen's schedule indicated that writing was done Monday through Friday. One of those days was scheduled for writing in the computer lab for forty-five minutes (see Appendix B). In sharing how she planned a writing curriculum in which computers were used, Karen first talked about what was involved in her writing instruction in the classroom. The first phase of her planning involved her reviewing the state's Standards of Learning to determine her content for teaching writing at the second grade level (see Figure 7).

I look through what the children are required to know at the second grade about writing. I also look to see what they are doing before they come to me. In other words I consider both the first grade Sol's, [Standards of Learning] and those in the third grade for writing. So I look across grade levels to see what the kids are expected to know and in addition, what they are supposed to know for second grade.

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*Figure Example 7. Standards of Learning (SOL) for writing at grade two*

**Writing**

2.9 The student will write stories, letters, and simple explanations.

2. Generate ideas before writing
3. Organize writing to include a beginning, middle, and end.
4. Revise writing for clarity.
5. Use available technology.

2.10 The student will edit final copies for grammar, capitalization, punctuation, and spelling.

2. Use declarative, interrogative, and exclamatory sentences.
3. Capitalize all proper nouns and words at the beginning of sentences.
4. Use correct spelling for frequently used words.

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From "Standards Of Learning for Virginia Public schools: English Standards of Learning" p. 63. Copyright 1995 by the Board of Education Commonwealth of Virginia.

Karen's initial plan for a writing curriculum was drawn from a syllabus that formalized elementary grade levels. This syllabus, known as the Standards of Learning, is a comprehensive set of academic requirements for what “teachers need to teach and students need to learn” (Board of Education Commonwealth of Virginia, 1995). The Standards of Learning identify the academic content for four subject areas of the curriculum from kindergarten through grade eight. These subject areas comprise

mathematics, science, English, and history and social science. Included in each of these subject areas are the computer technology standards expected to be achieved by the end of grade five and grade eight (see Figure 8).

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*Figure Example 8. Standards of Learning for Computer/Technology*

**Computer/Technology Standards by the End of Grade Five**

**Computer/Technology** skills are essential components of every student's education. In order to maximize opportunities for students to acquire necessary skills for academic success, the teaching of these skills should be the shared responsibility of teachers of all disciplines.

**Minimum** skills that students should acquire by the end of **Grade 5** include the following:

C/T5.1 The student will demonstrate a basic understanding of computer theory, including bits, bytes, and binary logic.

C/T5.2 The student will develop basic technology skills.

(4) Develop a basic technology vocabulary that includes cursor, software, memory, disk drive, hard drive, and CD-ROM.

(5) Select and use technology appropriate to tasks.

(6) Develop basic keyboarding skills.

(7) Operate peripheral devices.

(8) Apply technologies to strategies for problem solving and critical thinking.

(9)

C/T5.3 The student will process, store, retrieve, and transmit electronic information.

2. Use search strategies to retrieve electronic information using databases, CD-ROMs, videodiscs, and telecommunications.

3. Use electronic encyclopedias, almanacs, indexes, and catalogs.

4. Use local and wide-area networks and modem-delivered services to access information from databases.

5. Describe advantages and disadvantages of various computer processing, storage, retrieval, and techniques.

C/T5.4 The student will communicate through application software.

2. Create a 102 page document using word-processing skills, writing process steps, and publishing programs.

3. Use simple computer graphics into word-processed documents.

4. Create simple databases and spreadsheets to manage information and create reports.

Use local and worldwide network communication systems.

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From "Standards of Learning for Virginia Public Schools: English Standards of Learning" p. 63. Copyright 1995 by the Board of Education Commonwealth of Virginia.

Using these standards as a framework, Karen then wrote plans for specific and selected outcomes, which included content, materials and activities that often guided her teaching procedures (see Figure 9).



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*Figure Example 9. Teacher's plan for Writing*

Read Aloud/Writing Plans

Week of May 1, 2000

**Objective:** TSW demonstrate knowledge of the read aloud book through the writing of individual stories.  
TSW demonstrate knowledge of the keyboard by word-processing these stories during lab period.

**Focus Activity:** Students will make predictions about the book, based on previous experiences with the material and the pictures and content of the book.

**Guided Practice:** The teacher will read the book and then ask the students to recall information from the book. The teacher will construct a list, outline, web, Venn diagram, or KWL chart on the board, using their responses. The teacher will model the writing, using student's dictations on the board or chart paper.

**Independent Practice:** The students will use the web/list/map on the board to construct 7 sentences on experience paper. Students will revise their writing and after all corrections have been made, they will illustrate their writing. (See rubric for grading scale)

**Summary:** The students will share their writing with the class.

**Materials:** book, chart paper, experience paper, crayons, pencil

**SOL's:** 2.2, 2.3, 2.8-2.10  
C/T 5.2

(Books used will be ones that directly correlate with the science and social studies

---

Note: SOL's for both writing and technology standards.

Karen explained that her plans are verified by the principal to ensure a sense of curriculum accountability.

I plan and execute lessons and units that go along with the SOL's for the state and the curriculum guide for our school system. These plans are then turned in and filed in the principal's office every Monday morning of that week. The principal periodically checks to see if they are there.

Selecting Content

Karen's selection of her content for writing instruction was based on an integration of separate curriculum areas. As an elementary school teacher, she was responsible for teaching all elementary school subjects, including science, social studies, math, reading, word study and English. Karen selected relevant themes from across the disciplines to include in her plans for writing instruction for her second graders. She explained how such topic ideas, once selected, are coordinated, integrated or otherwise combined across the curriculum.

I usually start by reading them a trade book. Right now, we are learning about life cycles in science, and we are learning about Congress in social studies. So I try to tie these in along with other things they are learning in other subject areas, and then they get their writing from the trade literature that I read to them. So while they are practicing their writing skills, it also lets me know if they comprehend the story that I read to them and how to use the information that they are learning.

Trade literature is literature published for children as hard cover and paperback trade books which teachers sometimes chose as an alternative to published reading programs in their reading instruction. Trade literature includes stories, poems, and informational books or articles (Tompkins, 1997). As with other aspects of her planning, Karen selected trade books with an eye toward the state mandated curriculum:

I try to get high interest, low vocabulary literature that goes along with the SOL's and I teach writing across the curriculum. However, the grade level actually determines what I select.

Karen's use of literature in writing has support in the professional literature. For example, Teale and Martinez, in Mason (1998), suggested that the use of literature as a link to writing is a powerful and useful tool for curriculum developers because it links writing to the content areas in classrooms.

### Optimizing Resources and Providing Support

A curriculum should draw strength, excitement, relevance, and dynamism from the human, cultural and environmental resources available (Lemlech, 1990; Marsh & Willis, 1999). Karen shared how she made use of her colleagues through collaborative efforts aimed at optimizing available resources:

I use the resources that I have within the school...the ideas of the teachers that I work with. There are two other second grade classes. The teachers of those classes and me exchange ideas about what we are doing in our classrooms. We usually share books or materials that can be used in similar lessons.

Karen identified one way in which working together with the other teachers has provided support for spelling and vocabulary.

We [second-grade teachers] used "Cathy Gale's Keys" on spelling inventory. We do the spelling inventory for each child to see where they are. From the inventory that we do for each of the children we are able to see what stage they are at. There's a score sheet that identifies a score if they have spelled the word according to the feature. From that, we give them their feature test, and then from that test then we can see where they are developmentally. This helps us in selecting reading materials and also

what to look for in their writing as far as words that they can spell correctly.

In terms of texts, Karen used a basal English text to teach grammar, along with a recommended text from the writing workshop she had attended.

Each second grader has an English basal text where I get and teach the grammar from. I use a book that I got from a writing project workshop that is called After The End. I also used other kinds of teacher books that you can get from teacher resource stores and others recommended by colleagues.

Pressley, Yokoi and Rankin (1996) identified the basal reader as an instructional aid used by educators in literacy instruction. Karen's approach to texts reflected Robinson, McKenna and Wedman's (2000) assertion that although educators may subscribe to a particular philosophy in literacy education, they often use aspects from a variety of literacy approaches.

### Assessment

In planning for writing, Karen also identified how students will be assessed. In the city school, she realized instructional assessment through the use of a rubric (see Figure 10). She explained:

I use a rubric to grade them. In a way the rubric also guides my planning in what structures I need to emphasize and teach, since there are certain things I am looking for [in students' writing]... and they have a certain point value... and that's pretty much how I assess their work.

I look for capital letters at the beginning of sentences. I look for correct endings, punctuation. I look to make sure that their sentences make sense. I look and make sure that their sentences flow, that it is not choppy. I look at the work after they have done their writing. They also illustrate their writing. I look to make sure that their picture matches their writing. If their writing is about butterflies and they draw a picture of a dragon, then I know that does not suffice . . . and I also teach the grammar as they revise their writing.

---

*Figure Example 10.* Sample of Rubric for writing

**Rubric for Writing (Per Sentence)**

Each category is 3 points each:

**Capital letters  
Punctuation  
Content**

**Spelling of high frequency words  
Sentence structure (makes sense)  
Picture matches writing**

**Point/Grade:**  
18 pts=100/A  
17 pts= 94/-A  
16 pts= 89/B  
15 pts= 85/B-  
14 pts= 80/C  
13 pts= 75/C-  
12 pts= 71/D  
11 pts= 66/D  
10 pts and below= F

Kirby and Liner (1988) argued that assessing students' writing was one of the toughest jobs in teaching, especially in writing, and they recommend that teachers use rubrics. They explained that rubrics allow students to address future problems in their writing and thus improve their learning. They also ensure a measure of fairness to all students by providing them with necessary information about what will be evaluated. Karen's faith in rubrics reflected a similar view.

### Classroom Considerations

#### Providing Support for Writing

Karen believed it was important that students have various sources of help available to them. She saw herself as one source though she viewed others as equally important.

I have the children sitting in co-operative groups and they sit like that throughout the day. However, when they go to do their writing, their writing is individual both in the classroom and in the lab. If a child needs help or extra assistance and they would like help from up here, I am here to help. The children also use each other... They use the information that they learn from the books placed up on the dry/erase board. They also are allowed to use words from a book that contains vocabulary words at this level. It is called Words I Use When I Write and it is in alphabetical order. They have words in there that they have learned throughout the year; spelling words and vocabulary words and things like that, so they are able to use that to correct their spelling.

To provide help, Karen had prepared a poster that she made available to the children. (see Figure 11).

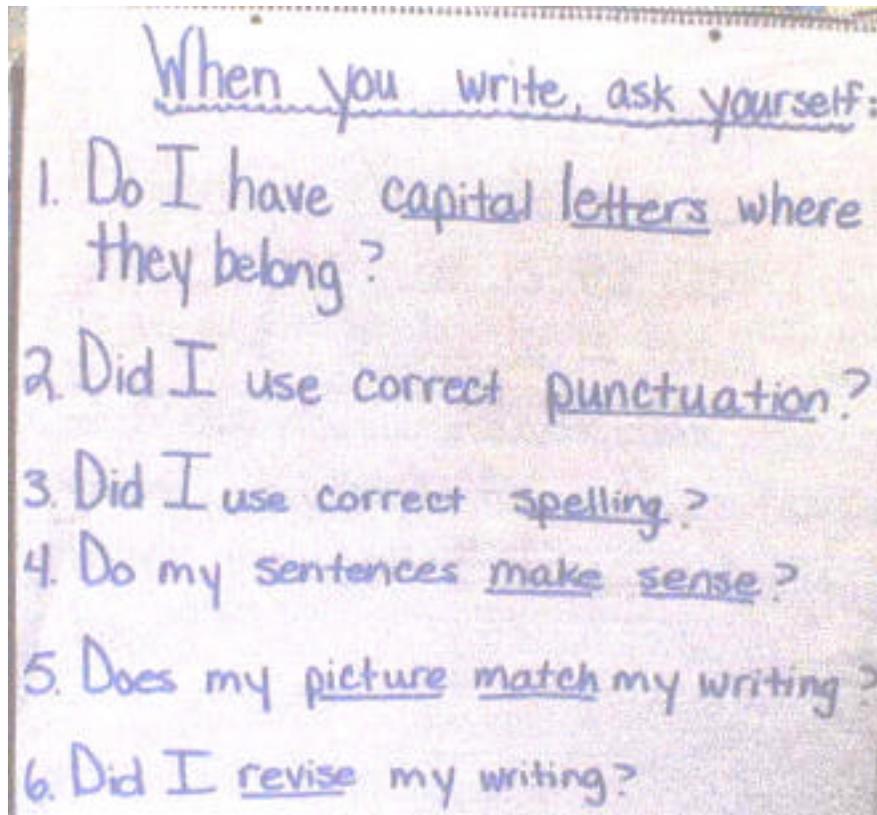
One thing that I do make highly visible for the children is a poster that I keep in the front of the room and it is called "Things to ask yourself when you write." One of the questions for instance is "Did I put capital letters at the beginning of the sentence?" And they'll go through the things that I look for in the rubric when I go through their writing.

Karen supported writing by drawing upon children's literature relevant to a topic her students were studying in a different content area. Karen explained:

I make sure that after I read the book that I have selected for that writing piece that they are going to do for the day, I make sure that it is something they are learning about in another subject area. That it makes the information that they are hearing about more relevant and appear important to what they are doing in the other subject area.

---

*Figure Example 11.* Teacher- made poster for writing



---

Karen also taught reading in ways she hoped would support writing:

I also make sure they know unfamiliar words before we actually read.

So then after we read--or actually before we read--I make sure we brainstorm. We think of things that had to do with what they are getting to hear about. Then after we read the book we discuss like "What did I learn?" or at the beginning, "What did I want to learn?" or "What do I want to find out?" Otherwise I do a Venn diagram or a web of ideas of things that the children call out to me and say that they learned from the book.

Seating and Materials

Karen considered the physical arrangement when planning for her students. She explained her approach and identified ways in which such considerations assisted her students to work collaboratively and contribute to each other's learning.

I organize the classroom so that the students can sit in co-operative learning groups. I believe they can learn from each other that way and also support each other. Sometimes I may re-arrange the classroom furniture depending on the activity that I am doing that week. I also try to make materials and books visible for students to use or remind them of what we are learning about.

### Management of Students

For Karen, a primary goal in teaching was to establish clear lines of authority and discipline in her classrooms. For her, guidelines for learning activities as well as expectations for behavior should be explained, monitored and enforced. She did not see herself as being overly strict but accepted her role as a disciplinarian, explaining "I don't like them to just be able to run wild during the day."

Karen was very pleased with the type of behavior management strategy she used with her students in her city school setting and which she continued to use in the county school. Kauffman, Mostert, Trent and Hallahan (2002) posited although an effective system of classroom management may not ensure that students will learn, the ability to manage student behavior effectively is the initial step toward the more important goals that relates to cognitive and affective learning. Kauffman, et al. argument that "if students know what is expected of them and if the teacher provides fair, clear and consistent

guidelines for meeting those expectations, students will likely develop the skills and attitudes to make responsible choices” (p. 15) is consistent with Karen's.

#### Including Computers in her Planning for Writing Instruction

The role of computers in Karen’s writing instruction was evidenced when, at the city school, a computer lab was set up after a donation of computers to the school (see Appendix E). In addition to sharing this information, Karen surmised that the computer lab came into being as a result of prior poor test scores in computer technology:

We opened a computer lab in November of last year. The computers were donated to us through business partners. So that was a plus that the resources were provided. Another thing that helped the opening of the computer lab was the fact that our technology scores on the SOL test were so low and the children at the school, at the fifth grade level, needed the teaching and the learning of the use of the computer.

Karen utilized the new computer lab for writing instruction. She articulated what she believed were her goals for students when she included computers in her writing curriculum.

My goal is to help students in getting to know the keyboard, the basics: being able to capitalize a letter, things like that. I just wanted them to know the basics before I got into anything big. So now we are concentrating more on that [keyboarding skills] than anything else because they need to get back to the keyboard before they can really master everything about the computer.

Karen's goals were in keeping with two of the computer technology standards that students need to acquire by the end of grade five (see Figure 7). The standards include: (a) the student will develop basic technology skills, and, (b) the student will communicate through application software.

Contribution of Professional and Personal Preparation when Planning for  
Computer Use in Writing

Karen explained how prior professional and personal knowledge about computers helped to prepare her when planning to use computers in her writing instruction:

I had one course in college that taught us computer technology. It was a course that focused on computers in education. We had to learn how to do spread sheets, databases, how we could integrate it into the classroom. We learned how to do Hyper Studio, like slide shows, and things like that.

Karen also identified a number of available courses for teachers including those conducted at neighboring universities and community colleges, in addition to those planned by Central School Board specifically targeting teachers in the elementary schools.

We [the teachers] just recently had an in-service in computer technology. The in-service focused on teaching children keyboarding skills. So what we learned was how to teach our children to use the keyboard effectively.

Karen shared that prior to the start of the use of the computer lab in the city school, there was also an initial training session with the students. In this session students were formally introduced to the keys they should use to backspace, to capitalize, and to

get into the word program. This session was an effort of the technology department from Central Office. Karen contended, however, that students "also learn these things as they go along", emphasizing that "practice makes perfect."

Although Karen readily admitted that the development of her computer skills should be an on-going exercise, she was confident about her knowledge of computers and their use in writing instruction:

There are certain technology skills that I think I can develop more. I know that one goal that I want to work for next year is being able to use that Hyper Studio in the classroom, but as far as teaching the children writing with the computers, I feel that I am knowledgeable.

#### Time Management in Planning

Karen did most of her planning by staying after school. Sometimes she had to resort either to planning during breaks or when students were in physical education, music, science lab or art. There were many occasions on which she completed her planning at home.

Karen's planning activities were influenced in her view, more by teaching than by formal preparation. At college Karen had chosen and utilized methods courses in all of the subject areas. Asked how her formal preparation at college actually prepared her for teaching and planning, she explained:

They have helped, but I think more of what I do now was what I learned just through teaching, especially as far as the Standards of Learning and all the requirements that we have to teach now.

#### Planning for Writing in the County School

In the county school, writing was incorporated into a block schedule for Language Arts. Computer writing was done once a week on Fridays. Having the same grade level to work in, Karen explained that her planning in the county school was similar to what she did in the city school with the exception of assessment techniques.

I am using the same ideas that I implemented in the city school, especially, those that I found useful, such as using trade literature when planning for writing. Since I have the same grade level, there were not many changes to my planning. Both the county school as well as the city school use the Standards of learning, so I was quite familiar with what standards were necessary for second graders to have when they exit this grade. I did, however make some additions to the way in which I assess writing.

Karen explained what these changes were and how they were included in her plans for writing.

At the start of the semester, we were asked to attend a workshop in which we learned how to evaluate students' writing. As a result of this workshop I now include other rubrics to assess my students in writing, in addition to what I used previously in the city.

I asked Karen to share how these rubrics were used in her writing instruction (see Figure 12 and Figure 13). She explained:

I make the checklist available to the students, so they can self-evaluate their writing before I see it. In that way they become responsible for their writing. I use the writing assessment rubric to guide me in my planning.

When I see that students do not give me the correct punctuation, then I know that I need to teach that skill to them, or when their writing does not contain complete sentences, I know I have to focus on that before they move on.

*Figure Example 12.* Rubric for writing included in the county school

Writing Assessment

Grades 1 and 2

Student \_\_\_\_\_

For each writing sample mark only those characteristics demonstrated.

SOL Criteria			
Generate ideas – 1.12.1 & 2.9.1			
Focus on one topic – 1.12.2			
Organize into beginning, middle, & end – 2.9.2			
Use descriptive words – 1.12.3			
Write in complete sentences – 1.12.3			
Use declarative, interrogative, exclamatory – 2.10.1			
Revise for clarity – 2.9.3			
Edit for:			
Capitalization – 1.12.5 & 2.10.2			
Punctuation – 1.12.5 & 2.10.1			
Spelling – 1.12.6 & 2.10.3			
Form letters legibly – 1.13			
Space words in sentences – 1.13			
Share writing – 1.12.7			
Use technology – 1.12.8. & 2.9.4			
Teacher comments			
_____			
_____			
_____			

*Figure Example 13.* Writing Checklist

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Writing Grade 2

**WRITING CHECKLIST**  
Reproduce as needed.

Prompt \_\_\_\_\_

Reader \_\_\_\_\_

Purpose \_\_\_\_\_

- Does your writing do the job you want it to do?
- Will your reader(s) understand?
- Does your writing have a central idea?
- Did you use:
  - specific examples?
  - specific words?
  - specific facts?
- Is your writing organized?
- Did you stay on topic?
- Do you have a beginning, middle, and end?
- Do your sentences make sense?
- Did you spell words correctly?
- Did you use capital letters in the right places?
- Did you use correct punctuation?

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Planning for writing also required Karen to utilize available technology in the county school setting. In this setting there were on-line computers in the computer lab. The school had a web page that displayed supportive materials for teachers' use based on the Standards of Learning. Karen explained how she used the on-line computers in the county school in her writing instruction.

What has changed in my planning for writing when I use computers is the opportunity my students now have to search the internet for information to include in their writing. Right now we are exploring the topic of Egypt for social studies, so my students in addition to reading books can explore another medium to obtain information.

### Summary

What, when, how, and where her students wrote were important issues that Karen considered when planning a writing curriculum in which computers played a role. Karen, like many teachers, was frequently faced with state mandates or guidelines. These guidelines took students through a prescribed scope and sequence of skills, all for the purpose of having them continue to develop and refine their emergent literacy skills in

the primary grades. In planning for instruction at the city school, Karen used the grade level objectives as stated in the state's Standards of Learning for both writing and computer technology to guide her when writing her weekly lesson plans for instruction. She also included ideas from trade book literature that supported learning in the other subject areas such as science and social studies. Karen also emphasized assessment in her writing instruction.

In developing her curriculum, Karen utilized whatever resources that were available to her. These included library resources, ideas from colleagues, as well as classroom texts and instructional aids recommended during in-service workshops or found in teachers' resource stores. Karen also included other classroom considerations in her planning, room arrangement and management of students.

Computers were included in Karen plans for writing instruction when a computer lab was opened in the city school. She believed that her goal for her students, when computers were included in her plans was to develop keyboarding skills. She also believed that her prior professional and personal knowledge helped to prepare her when planning to use computers in her writing instruction.

In planning for writing at the county school, Karen continued to utilize the state's standards as a guideline to her weekly plans. She continued to use trade literature based on other areas of the curriculum, especially social studies. Karen also focused on assessment. In addition to the rubric she used in the city school, she incorporated other rubrics and checklists. Computers were also included in her plans at the county school.

## CHAPTER SIX

### DESCRIPTIONS

#### KAREN: IMPLEMENTING A WRITING CURRICULUM

Karen's writing curriculum was implemented in two distinct learning contexts-- the classroom and the computer lab. In the both classrooms, students used a process approach to write with paper and pencil. In the computer lab, computers were used both as a tool and a tutor. That is, students used the word processor to develop keyboarding skills through keyboarding practice and to publish written pieces done in the classroom and compose first drafts. They also explored other options available on the word processor and used on-line computers to research topics for writing. In this chapter, I describe scenarios in which Karen implemented her writing curriculum. I describe what took place in both classrooms and computer labs, first in the context of the city school and then in the county school. I conclude this chapter with a summary of these interpretations.

#### The City School: Structuring Writing in the Classroom

"I want you to keep your heads on the tables until we are ready to begin our writing," Karen said to her second graders. They had just returned from their luncheon break and were restless from their walk from the cafeteria. The second graders did as she asked. I noticed that they sat in groups of four. Idle for this brief moment, some of them played with bits of paper, pencils and strings they pulled from below their tables. One girl twirled her braids as she looked at the word wall across the classroom. A boy sat alone at the back of the classroom close to the teacher's table. His forehead was on the table, while his hands dangled in front of him. He moved his body to a slow almost inaudible rhythm

that he hummed. In another part of the room, a hand went up and the student was sent outside for a water-break. Another hand went up as he returned and I caught the word bathroom as another student asked to be excused from the classroom. The teacher nodded and the student moved to the door. He sent a sly smile to his peers nearby as their eyes followed his to the door.

In the meanwhile, Karen prepared her materials for the upcoming activity. I caught the title of the book as she moved towards the front of the classroom. It is Mr.Lincoln: A Photobiography (Freedman , 1987). Karen looked over the group, perhaps to make sure that all the students were in their seats as the student returned from the bathroom. She moved her eyes to both sides of the classroom as she motioned students to come forward. They immediately got up and sat on the floor facing the chalkboard. They sat in a semi circle maintaining their silence as Karen sat on a chair facing the group. She reminded them of what she expected. "I need you to sit quietly and be attentive."

For the focus activity, Karen introduced the book, "This is the story of Mr. Lincoln." Next she asked a few questions apparently related to a previous discussion of this president. " Who was Abraham Lincoln?" "Where did he live?"

Then Karen proceeded to read from the book, while showing the illustrations. Occasionally, she asked more questions about what she was reading, giving students time to answer. "What was the name of the war that was going on at that time?"

Two students were restlessly moving about and trying to attract the attention of other students close by. They whispered in each other ears and motioned to other students. Karen quietly rested her hand on their shoulders. They continued to squirm. She leaned forward and whispered something to them. They got up and moved to the side of

the dry/erase board and pulled their behavior management cards, exchanging them for others of a different color. They returned to their positions and sat quietly as Karen continued reading.

The reading of the story ended twenty minutes later. Karen then told the students, “Please return quietly to your seats. We will now try to develop a web of ideas based on the story you just listened to.” Students moved back to their groups and sat watching while Karen prepared the board. In a circle, she wrote the name “Abraham Lincoln” on the dry erase board. She waited until she had the students’ attention. Then she asked students, “Think about what you have just heard and share anything you remembered from the story.” Immediately four hands went up. As these students shared, other hands went up simultaneously. The students volunteered answers such as:

“He was tall.”

“He almost touched the ground when he rode his horse.”

“His speech was about slavery.”

“His speech was famous.”

“He had the whole bed for himself.”

“Mr. Everett took hours to speak, and the people were hungry, thirsty and tired.”

“A lot of men died in the Civil War.”

“Everyone liked his speech.”

“When he made his speech, he sounded like he was talking to George Washington and the soldiers.”

“The men held the children on their heads to see Abraham Lincoln.”

“Abraham Lincoln thought that nobody would remember his speech.”

“He had only one sheet of paper with 271 words on it.”

“Everyone read it in the newspaper.”

“They gave him a bigger horse.”

Throughout the brainstorming activity, Karen questioned students encouraging them to expand on their responses. For example, when one of the students said, “He had only one sheet of paper with words on it,” Karen asked, “How many words did the story mention?” When a student said 271 words, Karen further inquired. “Is 271 words a lot of words or a little?”

Ten minutes later, the dry/erase board displayed a web based on students’ input. Using a sheet of chart paper, Karen selected volunteers to create a story from the ideas created from the web. She wrote the word “Abraham Lincoln” to indicate the title of the story, and she continued to write as the volunteers dictated a paragraph. The paragraph read:

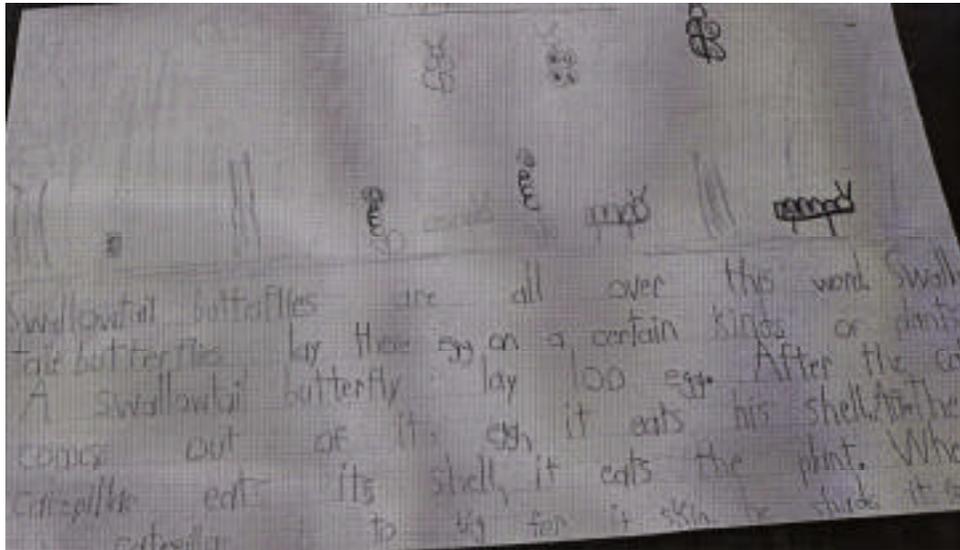
Abraham Lincoln had his own bedroom in the hotel. He was tall; he almost touched the ground when he rode a horse. He had one sheet of paper with 271 words on it. He had 10 sentences on his paper. A lot of men died in the Civil War.

With these four sentences on the chart, Karen next invited students to write their own stories. She told students, “Now, I want you to write your own story about Mr.



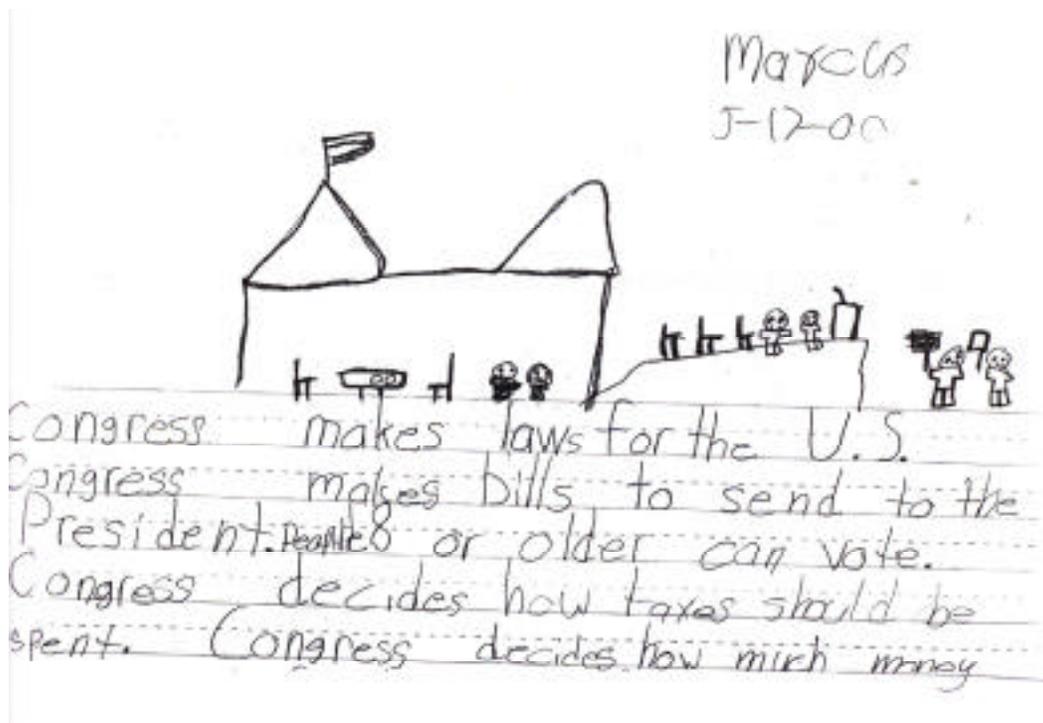
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Figure Example 15. Story developed from web based on Science theme



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Figure Example 16. Story developed from web based on social studies theme.

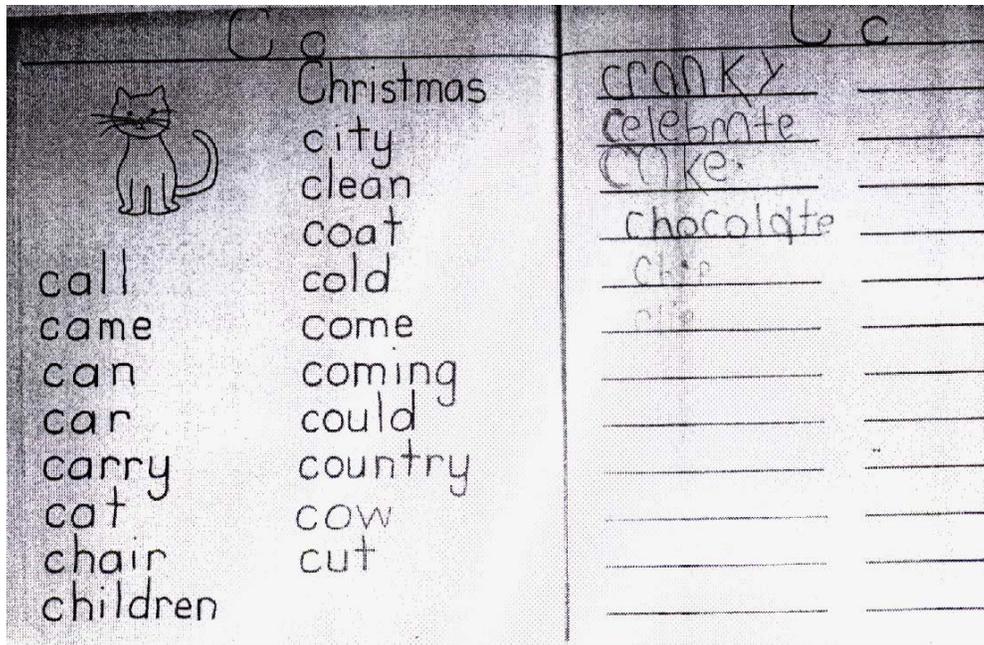


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Students also used Words I Use, When I Write (Trisler & Cardiel, 1997) to include words that were not on the dry/erase board. This is a book in which new words are added alphabetically throughout the school year (see for example Figure 17).

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*Figure Example 17.* Sample page of Words I Use, When I Write



Karen described her approach:

They write every day. We usually do writing right after lunch from about 12:05 to 12:45. We may begin the first draft on Tuesdays and complete the final draft on Friday so that we can do a bit of publishing when we go to the lab on Mondays. Again that depends on how many sentences they are required to write and how quickly I can get through with the editing of their writing. Right after our writing we have our reading group. So if the children need extra time after they are finished with their reading groups, they can return to their seats to finish their writing.

Karen explained how writing in her classroom was an incremental exercise. She reported that her students gradually increased the amount of sentences they wrote each week. She also explained that using this approach was important to student mastery of skills.

Each nine-week period, we add a sentence or so. The last nine weeks we

added six, then it was five and then four. So we started off the year by just writing at least four sentences that first nine weeks. Now we've built up to seven. They can write more if they like, but I need to have at least that.

When Karen moved to another second grade classroom in a county school, she used a similar approach to teaching writing in the classroom. In the section that follows, I describe a writing period in her county classroom. During this session, Karen built on previous information from a read-aloud activity.

### The County School: Structuring Writing in the Classroom

I entered the classroom just as Karen got up from her desk to move to the front of the class. Students' tables were arranged in a U-shaped fashion facing the dry/erase board. Karen's table and work station were on the left side of the class giving her full view of her students. Not wanting to cause a distraction, I sat at the back near to the reading corner. The rocking chair swayed slightly as my bag brushed one of the armrests. I steadied the rocking motion before settling down on a chair I had taken from around the computer station, also located at the back of the classroom. A side door to the right of the classroom opened and a second grader from another class tiptoed by. Twenty-two pairs of eyes followed that student out of sight and returned to look at their teacher standing at the front of the class. As the door shut noiselessly, I glanced at the clock above the door. It read five minutes past nine.

With their heads still on their tables, the children listened as Karen reminded them of what was expected as they prepared for writing. She told them, "Please pay attention. Try to think about what we will be talking about today." With the class supposedly refocused for the activity, Karen revealed the topic for the day. They would be talking and

writing about "An imaginary friend." Karen wrote the topic on the dry erase board and asked her students, "Who can tell me what do we mean by an imaginary friend ?" Some of their replies were:

"We can't see them."

"We can't touch them."

"We make them up in our heads."

"We give them a special name."

Karen acknowledged these responses by praising her students. She told them, "Those were very smart responses." Then she asked, "Do you remember the story about 'Jimmy Lee Did It'" (referring to a book by the author Pat Cummings, 1995). Several hands went up. Karen selected one of the students to share with the class. The student said, "It was a story about a boy who pretended that he had an imaginary friend." "That's correct," Karen said. She continued, "Well, today you have the opportunity to write about an imaginary friend." Karen then showed them the format they would use for writing their story. She displayed a colorful poster that was in the shape of a large hamburger. It depicted the model she wanted them to use in their writing. She placed the poster on the dry/erase board in view of her students. It read:

Topic Sentence

Detail

Detail

Detail

Conclusion

Karen reminded her students that their story should contain the elements in the order they were depicted. She illustrated how this can be accomplished by writing a few key sentences on the dry/erase board:

What is my imaginary friend's name?

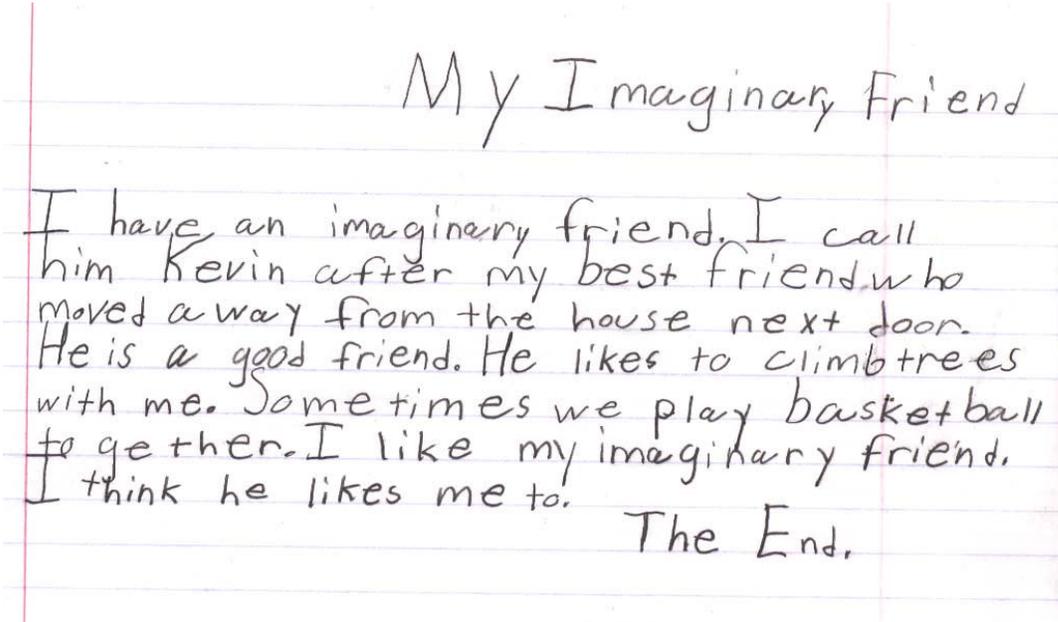
What is he or she like?

The students appeared eager to begin this activity. They smiled and began looking for pencils to begin their task. Some of them also took out their Words I Use When I Write (Trisler & Cardiel, 1997) books and classroom dictionaries. A few of them turned to peers and began whispering and giggling. Karen asked one student to distribute the sheets of paper to all members of the class. When all students had paper in front of them, Karen praised those who remembered to take out their Words I Use When I Write books or the second-grade picture dictionary to find words that they wished to include in their writing.

Karen began her writing instruction by engaging her students through prompting and questioning. She supported them in writing by providing a model for their writing. Eventually they were given the opportunity to write their own product (see Figure 18).

---

Figure Example 18. Copy of story on My Imaginary Friend



Karen explained that writing in the county context was not a daily occurrence. Rather it was woven in with a language arts block. Karen accomplished the task of her writing instruction by introducing a trade book at the start of the week based on a theme the class might be working on in another subject area. Karen then set a specific time in her language arts block for independent writing activities.

Writing is not done everyday as it was done in my previous school. It is integrated into the language arts block, which makes it a little difficult to do everyday, even though I try. Sometimes you get caught up with one aspect of language arts and before you know it . . . the time is gone.

However, I have specific times in the week that I have the students write personal stories based on a trade literature. I start the week reading a book that may carry a similar theme to what we are doing in social studies,

science, or some topic of interest in the student's life. I have them do independent writing on the theme or topic at least once a week.

### The Role of Computers in Karen's Writing Curriculum

Karen implemented her writing curriculum in the computer labs in both the city and the suburban schools. In both settings, literacy practices differed from the classroom to the computer lab. The tools and expectations for what students would produce in the computer labs were different from what was expected in the classrooms. Karen explained what went on in the computer lab in the city school:

Basically all they do in the computer lab is practice keyboarding and type up compositions. The purpose of the computer lab for me, as far as being the second grade teacher, is basically to enhance their keyboarding skills and publishing their drafts that they worked on in the classroom. Occasionally, I would allow them to compose sentences on a given topic on the computer as first drafts for later revision.

In Karen's writing curriculum, computers were used both as tutors and tools. As tutors, computers were used by the students to develop keyboarding skills; through the use of a commercial software program. This role of the computers as tutors was only evident in Karen's classroom in the city. Once more, I use a vignette to describe the actions of Karen and her students during a writing period when computers were used as tutors.

## The City School: Structuring the Lab Experiences

### Playing Computer Games

The students were already in the computer lab working. I slipped in and sat at the back of the class between two students Michael and Timmy who were following the typing instructions on the computer screen.

I asked Karen about the typing program that the kids were using. She told me it was called “Kid’s Keys.” She had seen it demonstrated at an in-service meeting by personnel from central office. It was a program that took students through different levels in keyboarding practice exercises. I began to look closely at what her students were doing on the screen. The objective was to practice typing using the home row. The home row were the letters a, s, d, f, j, k, and l on the keyboard. As an incentive for the activity, students had to free a monster, and at the end of the activity, successful students were rewarded with a certificate of congratulations.

About twenty minutes into the activity, at least five of the students <sup>3</sup>had printed out their certificates and begun working on the second level of the program. I decided to investigate what some of them were doing. I walked over to Cher and asked her what she thought about the exercise. She responded, “It is hard, but I like to try to free the monsters.” I asked her for a copy of her certificate, which she printed and gave to me. (see Figure 18). She continued to work on another level.

I returned to the back of the class where another student, Michael, was working on Level Two of Kid’s Keys. The program requested him to type in his name before proceeding. He typed his name twice, first omitting the “a” in Michael then the “d” in

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<sup>3</sup> pseudonym for students' real names

Ronaldo, his last name. At the third try, he had to restart the program and begin again. Finally, he typed his name correctly and moved on to typing the different keys as they were illustrated on the screen. When he had succeeded in freeing one of the monsters, he moved on to another level. Timmy, who was sitting next to Michael, became excited to see him move to this level. After about three minutes, Michael received yet another certificate. He turned to me saying at the same time, "Look, I got another certificate." I asked him, "How did you do that?"

He replied, "I just type the correct keys quickly", adding, "Can I print it?" I told him that I thought he could, but he must first check with the teacher.

Meanwhile Timmy was not satisfied that he had not gotten a certificate, while Michael had been rewarded with two. He got out of his seat and asked Michael excitedly, "How did you do that?" He also wanted to show the rest of the class the new certificate that Michael got at this level, but Michael objected. Instead Michael tried to show Timmy how to get a certificate on his computer.

To the right of them a girl, Nell, showed excitement about each correct key she got. She jumped up and down in her seat. With the distraction created by Michael and Timmy, she looked on for a while, then returned her attention to her work.

Fifteen minutes before the class ended, Timmy traded his seat with Michael who attempted to show Timmy how to get a certificate. He explained, "You've got to do this as fast as you can" (showing Timmy how to type the letters). Timmy began to model what Michael had shown him. They continued to work together.

Five minutes before the class ended, Karen instructed the students, "Please exit

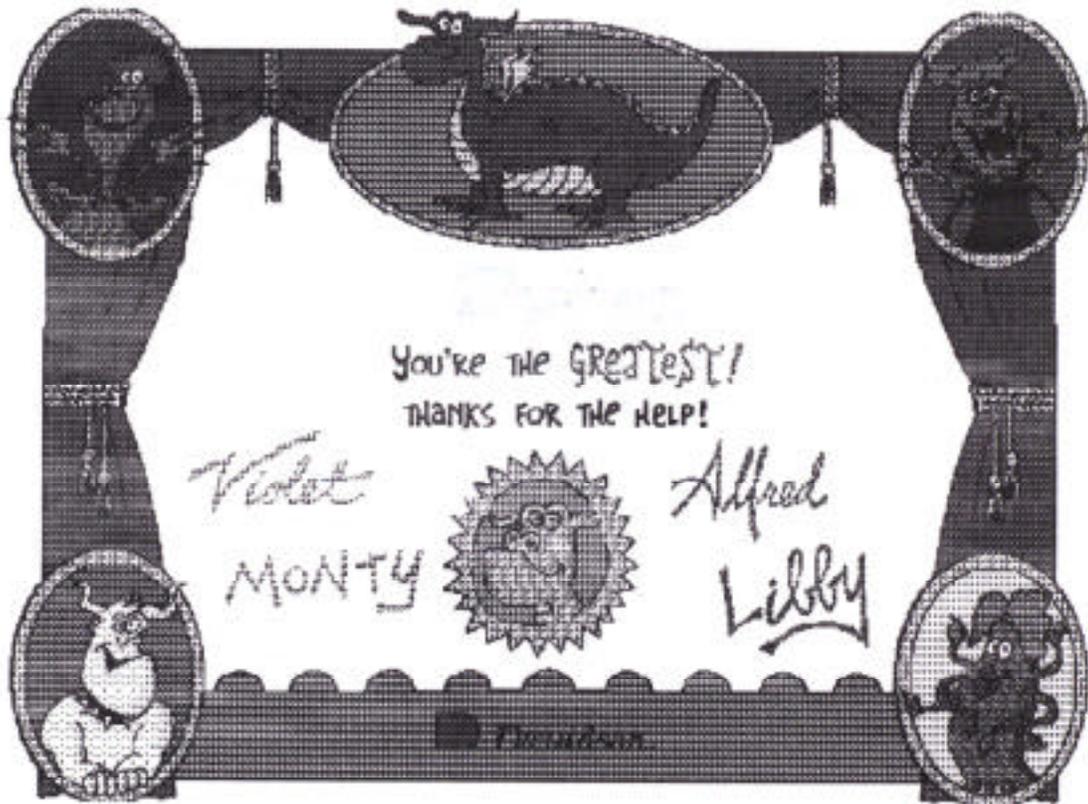
from Kid's Keys." Several of the students who were at the end of their typing hurried to make a printed copy of their certificates.

The sound of printers could be heard everywhere in the lab. Karen urged the students, "Please hurry and close off the program. We have got to leave now. There is another class expected in shortly." Michael and Timothy were in a race to complete the skill level for the certificate. They completed it just in time. Timothy quickly started the printer and waited for the print out, but it was stuck. I tried to help him but the problem with the printer required more than a few minutes. Regrettably, he turned off the program saying, "That's Okay."

In the meanwhile, other students were closing off their computers and moving to the door in line formation. Karen reassured them, "You will get another chance to work on your typing." One student, Kelvin, was visibly upset. Long after the kids left the room and walked down the hall, he remained next to the door pouting. Karen reassured him by putting her arms around his shoulder and saying at the same time, "You will get to work on the program again, but we need to go to our class now. If the lab is available this week again, we will see if we can come in and use the program." Reluctantly Kelvin joined his classmates.

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Figure Example 19. Certificate from Kid's Keys



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Other Lab Experiences

Computers as a Tutor

In the city school, students in Karen's second grade classroom were given opportunities to develop their keyboarding skills in the computer lab by learning the keyboard through practice exercises (see Figure 20). Karen explained how resources were provided to teachers:

In the in-service program, the teachers were given copies of the keyboard and exercises that they [Central Board personnel] hope will help the kids

to practice using their hands on the home keys and be able to touch the letters while they keep the rest of their fingers on the home keys.

Figure Example 20. Key boarding practice sheet

Lesson 1 Home Row	Lesson 2
aaa sss ddd fff jjj kkk ll lll ::; aa ss dd ff jj kk ll ::; asdf jkl; asdf jkl; ;lkj fdsa ;lkj fdsa ff ff jj jj ff dd dd kk kk dd kk ss ss ll ll ss ll aa aa :: :: aa :: j j f f k d k d l s l s ; a ; a f j d k s l a ;	aaa bbb ccc ddd eee fff ggg aaa bbb ccc ddd eee fff ggg a ab abc abcd abode abcdef abcdefg abcdefg abcdefg abcdefg abcdefg  ad ad add add dad dad ed ed fed fed fee fee feed feed deed deed gee gee  be be bed bed beef beef age age cage cage dab dab cab cab gab gab bag bag
Lesson 3	Lesson 4
a ab abc abcd abode abcdef abcdefg abcdefg abcdefg abcdefg  hhh iii jjj kkk ll lll mmm nnn ooo ppp hijklmnop hijklmnop hijklmnop hijklmnop  aid aid bid bid did did hid hid kid kid lid lid  big big did dig fig fig jig jig mig mig pig pig  bog bog dog dog fog fog hog hog jog jog log log  bill bill fill fill hill hill jill jill mill mill pill pill  bike bike nike nike hike hike like like mike mike pike pike  cope cope pope pope hope hope lope lope mope mope nope nope	abcdefg abcdefg abcdefg hijklmnop hijklmnop hijklmnop abcdefghijklmnop abcdefghijklmnop  qqq rrr sss ttt uuu qrstv qrstu qrstu qrstu  bat bat bat sat sat sat hat hat hat cat cat cat  rest rest rest test test test best best best nest nest nest  tee tee tee tea tea tea tear tear tear team team team tar tar tar tarp tarp tarp ore ore ore tore tore tore  store store store stop stop stop stare stare stare star star star  quit quit quit quite quite quite quip quip quip quiet quiet quiet

### Computers as Tools

Another opportunity that students had for developing keyboard skills was through word processing. Karen explained how students used pieces that they wrote during their writing period in the classroom in the lab (see Figure 21).

We don't do writing right before we go into the lab. So we take a piece that they have worked on in the past and their primary goal is, when they go into the lab, is to work on their keyboarding skills and type up the piece that they wrote. When we do this, the students are actually publishing their work, while at the same time developing their keyboarding skills

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*Figure Example 21.* Writing piece from classroom used for keyboard practice in lab

The White House floors are made of marble. Abraham Lincoln got shot. The White House has 137 rooms. The statues were put up to remember those who fought in wars. The White House is named after our first president, George Washington. The symbol of freedom is on top of the White House.



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Occasionally the students were also given opportunities to compose based on a writing prompt or on a current issue (see, Figure 22).

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*Figure Example 22. Writing composed on computer*

I like to travel in the spring.  
I like to read in the spring.  
I love to do work in the spring.  
The best thing I love to do is I ride my bike.  
But I love my dad in the spring!



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Before they began word-processing their first drafts, Karen would give them some questions to think about while they write. Karen also told them how many sentences she wanted them to write. I describe one of these infrequent uses of the computer in the following vignette.

On one occasion, the students arrived in the computer lab, where they selected individual computers. They opened a word file. Karen said, “Please be quiet, so you know what you have to do today. If you have not opened up the word file, please do so now.” She then shared the topic with them. “I want you to write about Spring. I want you to think about what you like to do in the Spring. Where do you go? You can write about anything that you can remember about spring and that you enjoy doing. You will need to write five sentences about this topic.”

Some students went to work immediately. Generally, the students were working quietly. Some were talking with their peers, peeking at each other's monitor or raising their hands to signal their wish for assistance. After ten minutes, I decided to walk around to see what some of these student were writing.

Anna had typed two sentences.

"In Spring I like to play with my dog. in the spring, I like to run in my grandad file"

She went back to reading her sentences and began typing again.

"I like to s..."

She paused to think about the word. I asked her what she wanted to say." Swing," she said. I told her to try spelling the word the way it sounds. She kept on thinking. I then sounded out the consonant blend "sw" stressing on the sound. Eventually I told her the letters, /s/ and /w/. She wrote these letters on the page. I sounded out the word ending "-ing" which she happily typed without waiting for me to give her the letters. By the time I left she had written two more sentences and was on to a third.

"I like to swing. I sing on the swing. I fish in the pond."

Jill, another student had typed 5 words. "I like to paly outside."

She used the backspace key to remove the last three words and then retype them. She also used the shift key to capitalize beginning words. At this point, I heard the printer and went towards the direction of the sound.

Michael had completed his writing and used the graphic option to download a

picture of a red car. He had typed, "I like to travel in the spring. I like to read in the spring. I love to work in the spring. The best thing I love to do is ride my bike. But I love my dad in the spring."

After printing, he saved his work to a disc and began using the mouse to explore other options on the computer. He placed his cursor on font and looked at the options available for displaying his writing.

Anthony sat on the edge of his chair. His right hand propped his chin up as looked around at his peers. He seemed to be distracted by sounds around him. He had typed one sentence. As I approached him, he typed another. "I like to go to the bech and go swimming. I lkie to kollied sea shells."

After typing the second sentence, he raised his hand. I inquired about what he wanted. He told me he wanted the teacher. When I told him, maybe I could help, he remained silent. When I asked him if he wanted to write some more, he replied, "No."

Cherry had completed her writing and printed it. She wanted to write some more and kept asking the teacher if she could write again. Her sentences were: "I like to go out. I lkie to go to the Mall. I played house. I played tag. I lkie play tag."

She spent the rest of the time, looking at the Clip Art gallery and inserting different pictures, sometimes reducing them in size or changing their positions on the page.

Kevin had written four sentences. "I lkie to paly in the leaves in the Spring. Me and my Freide play tag. I eat icecream. I look at the cloke. I play on my paly station."

When the time for the writing period was almost up, Karen told the class,

“Please save your work onto a disc and line up to return to your classroom. I will need to look at those diskettes with your work.”

In summary, students in the city school went into the computer lab and used the time allotted to accomplish three activities. They practiced keyboarding skills. They typed final drafts of writing they had begun in their classrooms. They occasionally composed a first draft of a writing piece.

### The County School: Structuring the Lab Experiences

Using the Internet. As tools, computers were used by the students to access information from the internet for future writing activities. This use of the computer was evident in Karen’s classroom in the county. It was one way in which her writing curriculum was enhanced as she moved from one context to another. I provide an illustrative vignette below.

The hallway that was a little distance from the main door to the school appeared to be congested this afternoon. Two lines of students moved in opposite directions, their teachers glancing back to make sure that they were following orders to stay in line. One or two students waved to friends they knew from the different classes.

I recognized the class approaching the computer lab door. They were the second graders on their way to the computer lab. Karen stood at the front of the door insuring that her twenty-three charges were all in line. She opened the door and motioned her students to file in.

The students each sat in front of a monitor in the computer lab. After each child was seated, Karen moved to the dry/erase board and began the lesson for this lab period. She asked her students “Can anyone tell me what we are talking about in social

studies?” Several hands went up. Karen called on one student who gave the response, “The continents.”

Karen then asked several students to name the continents. As individual students gave a name for each continent, Karen wrote their responses on the dry/erase board.

“South America, North America, Africa, Asia, Australia, Europe, Antarctica.”

Karen explained to the students, “Today you will be visiting one of the continent where Egypt can be found. Later, we will use the information we gather today to write your research paper.” She wrote the SOL objective for the lesson on the dry/erase board “Egypt 2.1.” Next she proceeded to the LCD hookup so that her students had full view of the television screen that was connected to the computer monitor.

Karen explained that students would first access their school’s web page to get the information that they would write about later in the classroom. She asked students to follow her direction step by step to get to the school’s web page. For example, Karen directed her students by saying, “ Go to Netscape Navigator. It looks like an anchor.”

Karen moved around to make sure that students were all on the same page. I noticed that one or two students were moving ahead of others. (Later Karen would share that these students had computers at home and were familiar with the process of going on-line.) The students worked at this activity eagerly. They followed Karen’s direction closely, although a few would ask her to repeat the information or glance on their friend’s monitor to check whether they were on track.

One of the students sitting close to me was continually getting the wrong page. She would look at her friend’s monitor, then at hers and attempt to use the back arrow to correct her mistake. I sensed her frustration and reached out to help her. She had

connected to the local web page but was selecting the middle school, instead of the elementary school. By a process of elimination, I directed her to make the correct selection. Satisfied, she continued following her teacher's direction to the web page that brought the class to "A study of Egypt." The students appeared excited to see the graphics on the web page. Karen encouraged them to explore the various options available for awhile. For example, they used their cursor to the different graphics illustrating Egyptian artifacts that were displayed on the website. These graphics, when clicked on, would take the students to connecting web pages that gave different information about Egypt. The students spent about five minutes on this activity before Karen informed them that it was time to leave the computer lab. Reluctantly most students prepared to leave the lab, although some lingered, further investigating the pictures on the screen.

### Summary

When Karen implemented her writing curriculum in both the city and county school, writing occurred in both the classroom and the lab. In each context, expectations for writing differed. In the classroom context, writing was scaffolded using two approaches. The entry point into writing was reading of trade literature. This was followed by an open discussion about the content of the reading with the students. Karen expanded on these comments through questioning. After the discussion, and with the aid of her students, Karen created a web depicting the students' ideas. Later students developed their own sentences from this web creating individual stories on the focal topic. Karen expected students to extend the number of sentences on a weekly basis.

At other times, Karen would provide her students with a model of the parts of a

good story. This model was usually displayed on a poster in a form that was appealing to the students. For example, she used a giant poster of a hamburger to highlight significant aspects of a piece of writing. Karen also placed examples of what these sentences might look like on the dry/erase board for students to model.

In the computer lab, computers were used as a tutor and as a tool. As a tutor, writing involved the development of skills of key boarding. As tools, the students used computers for several purposes. Previously classroom generated stories were taken into the computer lab to be published. Another activity involved composing first drafts using writing prompts given by the teacher. Occasionally, Karen gave students the opportunity to compose their individual stories on the computer. Finally, Karen also used the computers to gain access to information from the Internet for use in future writing activities. The latter use of the computer was evident in Karen's classroom in the county. It was one way in which the implementation of her writing curriculum changed as she moved from one context to another.

## CHAPTER SEVEN

### DESCRIPTIONS

#### CHALLENGES AND SUPPORT

This chapter addresses the challenges that Karen experienced as she implemented her plans for a writing curriculum in which computers played a role. In the following paragraphs, I describe what Karen explained were challenges she encountered as she implemented her writing curriculum in the classroom as well as in the computer lab. These descriptions were mainly based on her city school experiences. I also discussed whether Karen believed these challenges were present as she moved across context to the county school. Finally, I conclude this chapter with a summary of my interpretations.

#### Time as a Challenge in the Classroom

In reflecting on her plans and the implementation of her writing curriculum, Karen first spoke about her classroom practices. She explained that she was unable to find adequate writing conference time for each student. Karen clarified:

If there is a free moment in the day, I may go over their drafts with them.

Sometimes, there is just not enough time in the day to give them the individual attention that they need, but then sometimes you do have a moment when you can spend a small amount of time with each student.

Karen explained that she dealt with this challenge by taking students' writing home to read and grade. Conferencing with students was generally time consuming and overlapped into other classroom activities.

During one of my visits, Karen began the writing period saying, "I am returning a

piece of writing that you worked on earlier in the week. Today we will spend the time peer editing. You will work with a partner and look at those things that make your writing easy to read: capital letters, punctuation, spelling and so on.” Following this introduction, she wrote her verbal instructions on the dry/erase board as follows:

#### Peer Editing

Correct your partners writing.

Spelling.

Punctuation.

Make sure it makes sense.

Make sure the picture matches the writing.

No words are left out.

Use details.

Karen then organized students into pairs within their co-operative groups. Partners then worked with each other, apparently writing following the checklist on the board. Karen reminded students that they were to spend time reading, then correcting their partner's work. Karen told the class, “ You need to first read your partner's work thoroughly. Look for errors in spelling and punctuation. Follow the checklist on the dry/erase board.”

I noticed that students worked in collaboration with their partners. I heard individual students reading their partner's work aloud and stopping to correct grammatical errors. Since this piece of writing was one based on an interview with me held earlier in the week, one of the students came to find out the correct spelling of the term, sign language. I had used the term when explaining my previous teaching to the students

during the interview. Later in the partner work, the youngster asked about spelling of another word. Having heard Karen remind students to find words that they could not spell in their Words We Use When We Write book or in dictionaries located at the front of the classroom, I directed her to both. She explained that she could not find the word so together we searched for it. I gave her cues to follow until she found it. Pleased with her efforts, she returned to her desk to continue her editing.

After ten minutes, students moved toward the teacher's table. Karen interrupted the flow to remind them that conferencing with her would involve each pair coming to her with the writing that they both edited. Some of the students returned to their seats to wait for their partners before returning to Karen's table. A few pairs continued working on their editing.

At quarter to one, another second grade teacher came into the room. It was time for the reading groups to meet for trade book and word study activities. Karen told students to put away their editing and go to their reading groups. One group assembled at the front of the room, another met at the back of the room. This activity lasted for about forty-five minutes. When the other second grade teacher left and the students were sitting at their desks, Karen spoke. "Okay you can continue with your editing." She also reminded them about what was expected as they came to her table for conferencing. "Before coming to my table, please raise your hands and wait for me to call you."

Conferencing lasted for about 3-5 minutes with each student. Karen read each piece, remarking on a student's correction and making additional comments. She also checked for spelling, punctuation, and sentence structure.

After conferencing in this way for about twenty minutes, Karen ended the conferencing. A few pairs had been unable to meet with her. She later explained to me that she would continue to conference in the morning while students worked on something else. She explained that conferencing was done throughout the day whenever possible in order to get through with each piece of writing.

### Challenges in the Computer Lab

Karen also identified a number of challenges that she faced in the computer lab. Among these challenges were the management of students in the lab and providing immediate assistance. Karen explained how these issues were a challenge to her:

I think one thing that is a bit of a limitation is when I am working with one child, a few others will have their hands up and I feel like, you know, because I'm only one person and they have so many questions at once. It is hard to get to all them, and it's hard for them to get their writing done and done correctly because they do have those questions. But what I do, try to do, is when a child has a question that I think might benefit another, I try to stop the class and say, " Okay, here's the problem, here's what we could do about it." And I try to let all the children know at once.

Karen also identified other challenges in the computer lab. These challenges included low maintenance of the equipment in the lab which affected the follow-up instructions that students needed from their printed work, and the limited time that was available for students to spend in the lab.

During one of my visits to the lab, students sat in front of the computer stations awaiting the teacher's instruction. Whispers were coming from the back row where three

students were sitting peeking at each other's monitor. Karen waited for the voices to cease reminding students of her use of the classroom behavior management system. "If I have to stop at any time for any of you to be attentive, you will have to pull a card when you return to the classroom."

Karen's comments brought a hush to the room. Students looked in her direction and waited for the activity to begin. Karen continued, "Now you will open a word file since today you will continue to work on the sentences you wrote in class last week."

As students began the assignment, Karen went around handing out individual diskettes to the students. She kept these in ziplock bags labeled with a student's name. Ten minutes later, most of the students appeared engrossed in their writing. Karen moved around to the lab observing students at work on their writing. Occasionally she would sit alongside a student to assist with some problem she observed. One student moved to another computer close by. I heard him complaining to the teacher, "My monitor screen is not clear, and I cannot see my writing." Karen remained next to his chair until he was settled and working. A few students raised hands to signal their need for support or help. Karen moved to the student closest to her and chatted with her for a few minutes, pointing to the keyboard and showing her how to work the shift key. The student smiled, and resumed working on the text that appeared on the monitor. Karen then moved on to another student who had his hand raised.

While waiting for Karen's help, several students engaged in conversation. Others moved from their monitors to take a quick look at a friend's work. They made quick moves and conducted hurried brief conversations, perhaps aware of the consequences for such talk and movements. One student sat casually on his chair looking around at his peers

and smiling at those students who furtively talked or moved around the lab. He quickly returned to his work as Karen turned around to identify the talkers and walkers saying, "Please remember the rules that we talked about when in the lab."

Ten minutes later, I heard the sound of work being printed. One of the girls had completed her writing and began printing her first draft. She stood next to the printer in an effort to monitor and guide the paper flow. She appeared absorbed in her task. At the other end of the classroom, another printer started. The paper became stuck, and the student raised her hand for assistance. Karen assisted two students who had held their hands up for awhile and then moved to assist the student with the printer problem. She stopped the class saying to them, "You are to finish your writing and printing of the first draft. Please save your work on your diskettes."

Although Karen explained how management was a challenge in the lab, she also shared that it is not always negative. Karen readily admitted that there were times, when positive student interaction occurred.

If I know first hand, that a child is having trouble indenting, and I know that another child knows how to do it, I will encourage that student to help that student...because I think that the children learn from me and they learn from each other. They also learn through discovery, so I do encourage that. I don't like having the children to be able to get up at any time because that could mean too much confusion at once. But if I know that another can help though, then I will let them.

Having observed the malfunctioning of printers, I asked Karen how this impacted on her teaching. She explained that she experienced printers failing to work when they were most needed by the students.

Well, there are times when students need to print their work so I can review them. There are times when the printers for one reason or the other do not function properly. Sometimes the ink is low, so that the final print of student's work is poor, or the paper ran out or the printer is stuck. I want to believe that the numbers of classes that may use the lab before us contribute to this. There is no one here in the lab to check to see what is required or in need of fixing before another class comes in.

Karen explained how she was challenged to provide appropriate help for students.

If I see that most children are having a problem with one thing then I will teach them about that one thing that most of them are having problem with. Otherwise I will make notes on their papers and tell them what to do. Or one week in the lab, I go to that child who is having trouble with that specific skill, and I'll help them there.

### School Policy as a Challenge

School policy was a significant aspect of Karen's writing curriculum. It influenced and also contributed to some of the challenges she experienced in her practice. Karen saw the design of the state-testing program as one of the challenges of school policy.

The SOL mandates that students are supposed to know how to do certain things by the time they finish fifth grade. If I was a fifth grade teacher, I wouldn't want to have that whole burden on me, you know, or feel like

that burden was on me. If they [the policy makers] could just divide all [the requirements] up. If the State would just divide up what requirements they would like the teachers to have in each grade level, I think that would be more helpful. [As it is now] when they [students] come to me I don't really know what they've done and what they need to know.

Coupled with this, another challenge from Karen's view was learning more about computers and their educational uses. She also reflected on the challenge of having comparable equipment available for use throughout the school to explore the educational uses of computers.

Even though I feel that I am computer literate, I don't feel like I am up to date with everything that's going on, you know. There are so many things happening and see we have Macintoshes in the classroom, but in the computer lab, there are no Macintoshes. So what we teach them in the lab is far from what we teach them in the classroom. And so, if it was more uniform, then you know that way I could extend what we learn in the lab and what we learn in classroom.

#### Possible Challenges Across Context

In her county school, Karen described similar concerns regarding the availability of time for conferencing with her students in the classroom. She explained how she grappled with this challenge:

I have a larger group now, and it is even more of a challenge conferring with students. However, I am getting better at making my conferences short but effective. I have the students do peer conferencing, and I also

have them work with the checklist so that I do not have to spend time on what they should know already.

Regarding challenges in the computer lab in the county school, Karen identified that management of students and providing assistance as continuing challenges that she was faced with. She explained:

Here the lab is more efficiently run. The principal makes routine visits to the lab, so those equipment problems are dealt with quickly, although we still have printers that occasionally will not work. I think the problem is going on-line as not all the computers get connected quickly enough, so that we spend some time waiting for all students to be at the same place. I still struggle; getting to each one to help them when there is a technical difficulty. What is helpful is that I have students work in pairs and many of them have computers at home which makes it easier, but there are still some things I have to teach them or be there to help with. Again, time is limited. We get to use the computer once a week, so sometimes we get very little done in one week.

### Support Needed

With these challenges in mind, I asked Karen what her perspectives were on the main things needed to support computer usage in literacy development. After reflecting on her practice in the city, Karen stressed the need for additional human resources.

One thing a lot of teachers and I have discussed is being able to adequately man the lab . . . There are several [students] that need help at the same time. Students are working and none of them can help those [other] children that need that help. I

think just being able to have extra people to stay in the lab and help all the children that need the help would be a great asset.

To assist her and others in learning, Karen recommended that more computer literacy courses be available to teachers. She felt that courses could help teachers keep abreast with current changes.

### Summary

When Karen implemented her writing curriculum in which computers played a role, challenges existed both in the classroom as well as in the computer lab. In the classroom experiences in the city school, Karen explained that time was limited for conferencing students after writing activities. Often, conferencing time overlapped with other subject areas. In order to provide the needed feedback to students, Karen took her students drafts at home and found small spaces of time during school to conference.

In the lab experience in the city, Karen identified the challenges of providing immediate assistance to her students. This challenge appeared to influence her management of students as they worked in the computer lab. Karen also identified how poor conditions of computer equipment namely, the printers, sometimes hampered her in providing follow-up instruction based on students' printed work. Karen identified the need for additional human support for students in the computer lab as well as the availability of working equipment.

Based on her city school experiences, Karen expressed the view that school policy regarding the attainment of computer skills based on the states' standards needed to be reviewed. This she believed would assist teachers at elementary levels to identify specific requirements to be met at each grade level. Karen explained that as it presently existed, it

was a challenge for her to make connections with what might have been previously learned. Karen also felt that more technology courses should be available to teachers to support them in becoming more computer literate.

. As Karen moved across contexts, she identified similar challenges in the classroom. Organizing time for writing conferences remained her concern. In the computer lab, Karen recognized that management of students continued to be a challenge.

## CHAPTER EIGHT

### DISCUSSION AND REFLECTIONS

In this chapter I attempt three goals. First, I reflect on what I learned through the process of this study, and share my interpretations of the data. I also highlight some supportive elements that might be considered by teachers who are interested in using computers in writing. Next I share some directions for future research. Finally I conclude this chapter with a reflection on my own growth as a teacher and learner.

#### Learning From This Study

Being able to observe Karen as she planned and implemented her curriculum allowed me a glimpse into some of the challenges that novice teachers might face as they strive to use computers effectively to teach the writing process. Four specific foci frame my discussion: the teacher's conceptions of literacy, efficient planning, effective implementation, and classroom management. Given Karen's conception of literacy, planning, implementation and management each posed a significant challenge to Karen's efforts. Her struggles underscore the importance of reflective practice --the constant deliberate attention given to one's action--when developing writing curricula that include the use of computers.

#### The Teacher's Conception of Literacy

Karen implemented her writing curriculum based on conceptions of literacy that seemed to be influenced by several factors: her personal experiences, teaching preparation, and in-service education. In many ways Karen's conception of literacy which she described to me as "being able to read, write, spell, decode words, make sense of

stories read" affected the way in which she planned for and implemented her writing curriculum.

As I observed Karen's implementation of her writing curriculum strands of the research based on current conversations about literacy became evident. For example, her comments suggested conversations about how sites of literacy learning are shifting and adjusting literacy to technology; the potential uses of the computers; the fundamental changes taking place in the nature of literacy learning within classroom; and, the need for a re-defining the concept of literacy (Cuban 1998; Goldberg & Sherwood 1983; Lue & Kinzer, 1999).

In Karen's classroom, the sites of literacy learning included text- based as well as technology- based activities. Mastery of the written word was accomplished through paper and pencil tasks and through the use computers. Although minimally explored, the potential benefits of computers were also evident in Karen's writing curriculum. Her students benefited by learning from computers (used software that stimulated and motivated learning) and learning about thinking with computers (selected and used options that influenced their thinking skills). Both these observations highlighted the changes to literacy practices that are now evident in many classrooms (Cuban 1998; Goldberg & Sherwood 1983; Lue & Kinzer, 1999).

As regards changing conceptions of literacy, it appears that the system did not allow for personal re-defining of literacy in Karen's practice. Emphasis on the SOL's appeared to have influenced what Karen believed to be important in meeting the state's standards. As a result of this belief, her conceptions of literacy seemed restricted to the school-based view she had encountered in her pre-service and in-service education course

work. Instruction in writing focused on teaching the basic components of writing (vocabulary, grammar, and the structure of text) through direct and systematic instruction. The use of the computer was seen as an "add on" to writing instruction that enhanced the "skills" she had already "taught".

A restricted conception of literacy like Karen's is recognized in the current research literature. For example, Cook-Gumperz (1986) states that conceptions of literacy should not be limited to the acquisition of decoding, comprehension, and production skills, alone. Rather, a fuller view of literacy should consider the processes used to develop skills in using language and other forms of symbolic expression. Leu (2000) further argues that the very nature of literacy should itself be re-defined as the sites of literacy shift and adjust. Literacy researchers are now encouraging teachers to acknowledge that important changes are occurring in the way we read and write, and to contemplate the implications of these changes (Hobbs, 1997; Reinking, Labbo & McKenna, 1997).

Freebody and Luke (1990) and Luke and Freebody (1998) suggested a possible useful model to encourage and help teachers extend their conception of literacy. These researchers argue for a resource framework that educators may consider "to map and chart" practices in literacy learning as created by existing and emerging communication technologies. Freebody and Luke (1990) and Luke and Freebody (1998) also describe the roles that students need to assume in order to master new multiliteracies. These roles are code breaker, meaning maker, text user and text analyst (see for example, Figure 23)

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Example Figure 23. Description of Literacy Practices

Roles of the Literate	Media of Communication		
	Oral	Print	Multimedia
<b>Code breaker</b>			
<b>Meaning maker</b>			
<b>Text User</b>			
<b>Text Analyst</b>			

From "Literate Futures" p. 12. Report of the Literacy Review for Queensland Schools, Copyright 2000 by the Board of Education, Australia

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This model is useful in that it does not reject the argument presented by teachers who subscribe to different philosophies, theories and practical applications about how children develop literacy through writing. That is, students need to "break the code" as language uses in order develop the ability to communicate, which involves the ability to read, write, speak, listen and view. In "breaking the code" individuals go through various approximations as they strive to be literate. In seeking to develop literacy, individuals also engage in construction of meaning. Therefore, the student roles needed to master multiliteracies as described by Freebody and Luke (1990) and Luke and Freebody (1998) are both in keeping with traditional approaches to teaching literacy at school and supportive of transformative practice.

### Planning

My observations of Karen's planning revealed that much of her effort

revolved around state-mandated objectives and goals. In addition to including these objectives and goals, Karen's plans also included a consideration about materials, student learning activities and time allocation.

Clark and Yinger (1987) and Posner (1995) are among those researchers who contend that the success of computers in writing instruction depends on the kinds of plans and decisions that are made beforehand. This includes how materials, activities, and methods can be used to help students effectively develop literacy, and planning classroom instruction from an active learning perspective. Such a perspective requires the teacher to consider the multidimensional processes involved when planning for computer use. As curricula are initiated, teachers visualize what might occur in their classrooms, and tentatively answer their own questions about content, materials, student learning activities, time allocation, and other aspects of a framework to guide future action. Further, as teachers engage in planning, they need to "listen to the voices of opportunity" that come from internal and external sources, and include the "teacher's voice, a colleague's voice, and students' voices" (Frieberg & Driscoll, 1996; McNeil, 1999).

Karen shared that her resources came from the schools' library, from other second grade teachers, and from information gained from attending in-service workshops and teacher resource stores. While some "voices of opportunities" seemed to be considered in Karen's plans as reflected in her content, materials, student learning activities, an important aspect of planning seemed to be excluded from her plans. This important aspect was the voices of her students. Students were not given opportunities to share their interests or questions, so these could not be considered in Karen's computer writing curriculum. As such, activities planned for student engagement in writing did not involve

the students in actual or authentic problem solving situation activities. Rather, student engagement focused on the learning of discrete skills.

The research literature addresses considerations about what curricular adaptations might be necessary when computers play a role in writing activities. Gunn (1990) encourages educators to reflect on what computers can do, and also what the computer's potential role in a writing program might be. Gunn shares that having this frame of reference might help educators in making informed decisions that might result in more constructive roles for computers in writing activities. In other words, educators must plan how computers should be used for writing. Part of the planning should include how much time and effort should be devoted to the development of skill in operating the word processor, and other kinds of guidance children may need. Planning should also provide a purpose for literacy learning, and an authentic audience for student reading and writing. Peer interaction and teamwork should be encouraged. Not only can students benefit from each other's ideas and suggestions when writing, but they can also assist each other with technical aspects of using the computer. Planning should be a reflective process that includes these and many other considerations.

### Implementing a Literacy Curriculum

Karen's approach to implementation of her writing curriculum was based on a rather directive approach to instruction as she sought to meet state mandated objectives and goals. Her approach corroborates the research of Shields and Burham (2000), who claimed that emphasis on standardized tests--that focus on basic skills--limit teachers from experimenting with new technology. This, Shields and Burham contended, is because teachers are not sure whether the results they are seeking will be reflected in

improved test scores. In addition, often teachers lack a clear understanding about what resources technology can offer as they try to meet instructional goals (Dalton. 1989).

While teachers cannot ignore the decisions made by administrative bodies in the education system, they should not allow standards- based curricula to hamper their own resourcefulness and commitment to student-centered outcomes. One strategy is to use curriculum negotiation. Curriculum negotiation has been identified as a necessary step for focusing on student centered outcomes when computers play a role in learning (Cook, 1992, in Morrison, Lowther, & DeMeulle, 1999). In curriculum negotiation, teachers provide students with ownership of the curriculum, while at the same time meet state mandated objectives and goals. When negotiation is part of the planning process of a curriculum, the teacher's role is that of a facilitator. The teacher guides students through the learning process by being both directive (using explanations and questions) and non-directive (engaging in active listening and reflection) at the same time. The objective is to "provide the necessary resources to push students forward in meaningful inquiry" (Morrison, Lowther & DeMeulle 1999, p. 61). These researchers also argue that the extent and manner in which a teacher negotiated her curriculum directly influences the facilitation process.

Cook (1992) provided a useful model involving a four-step process towards what a negotiated curriculum would look like. The process involves the teacher and student seeking answers to the questions: (1) What do we know already? (2) What do we want, and need to find out? (3) How will we go about finding out? (4) How will we know, and show, what we found out when we are finished?

Cook explained that the first two steps go hand in hand and are the starting point

in negotiating the curriculum. The teacher engages the student in initial questioning to pique their interest and curiosity and have them develop some initial ownership in the learning, gets a sense of direction, and explores initial hypotheses. A visual and written record of the class discussion is posted in the classroom until the lesson or unit is completed. The teacher also let students know at the start of the lesson or unit what the requirements are based on the mandated curricular framework and allow students to develop additional objectives they wish to achieve as part of the lesson or unit.

The last two steps involve both the teacher and students discussing strategies for how best to answer what they want or need to know and showing and sharing their learning. This included discussing the format their result presentation will take. Cook encourages teachers new to negotiation to begin by choosing one part to the four-step process and show students how their planning took their interests into consideration.

### Classroom Management

Karen expressed concern about the management of students and resources when computers were used in her writing curriculum. Her concerns were primarily about the need for additional support in the lab and when using equipment. As I observed and listened to Karen's challenges, I recognized that these were similar to the experiences of other teachers as new technology is introduced into their classrooms. For example, Falls (2001) identified management issues as one of three primary instructional concerns in the implementation of a technological innovation. In her study, she described her participant's action in the initial stages of the implementation process. She wrote, "[The participant] continued to wrestle with the management, technology and the reflection issues as this phase continued...She spent her time calling students to order, either going

over thing one more time, or introducing new material. [She] spent most of her time shifting her priorities constantly throughout the day." (p. 58).

Authors of the *Apple Classrooms of Tomorrow*, Research Report No. 10 (1998) claimed that new technology could be overwhelming to teachers. Managing a classroom environment that includes the use of technology can be demanding because it involves more than just having students sitting attentively at their seats or quietly working on a task. The educator must now manage a multidimensional environment where students move to and from different activities, and also manage the resources that may be available for these activities (Morrison, Lowther & DeMeulle, 1999).

In addition, Hall and Louch (1979) claim that educators evolve through three stages while learning to manage the classroom environment as transformed by innovations such as computers. These stages began with survival stage, in which teachers depend on their own knowledge and skills. With time and experience, teachers move on to the mastery stage, where teachers learn that possible problems can be circumvented through planning. The impact stage occurs when teachers establish a comfortable routine and focus on how the computers might be used to foster students' learning.

Casson, Bauman, Fisher, Sumpter, and Tornatzky (1997) argue that these prerequisites for successful management in computer classrooms were not easily achieved. . Indeed, movement through these stages could be perceived as anarchy to traditionalist educators who view learning as: (a) knowledge to be transmitted through seatwork and (b) based on control of the learning environment. These traditionalist views contrast with those that hold learning to be explorative and child-centered, where learners share responsibilities in the learning environment. In addition, Hunt (1987) reminds educators

that in order to achieve meaningful success with management issue; they needed to rethink the strategies they used to develop, implement, monitor and manage their classrooms. Hunt also argues that educators need to review and question their own theories that take the form of personal perspectives, beliefs, attitudes and the predisposition that they have for teaching.

### Directions For Future Research

This study provides several findings that might be of value to teachers, teacher educators and administrators. First, it provides a profile of a prototypical teacher who is a novice user of an educational innovation. Second, it corroborates some research findings regarding the use of computers in writing instruction. Finally, it provides some considerations for planning and implementing a writing curriculum in which computers play a role.

This explorative study was designed to address and answer questions about how a novice second grade teacher planned for and implemented a writing curriculum in which computers played a role. The interpretations of the data represent only one set of answers. These interpretations may not be the only ones possible. It is hoped that other researchers will propose further interpretations and questions to investigate.

In this study, I identified four emerging foci based on the observation of Karen's plans, use of instructional materials and the two contexts in which she implemented her plans. My intention was not to make generalizations or comparisons about any broader population. The study was limited to one teacher's plans and the

implementations of those plans at a second grade level. Further research can address these limitations by observing several teachers from a larger sample of school districts (county and city), over a longer period of time.

The four foci that emerged from considering the issues in this study -- teacher conceptions of literacy, planning, implementation, and classroom management -- were unique to this teacher and classroom. Several new research questions might be generated from this study. One that appeals to me is: Are there other foci that are present when teachers plan for writing instruction in which computers play a role? If so, what might they be? Further research is needed in diverse classrooms to address these and other questions. Educators might then be better informed about how to plan and implement literacy activities with computers.

#### Researcher's Reflection

I came to this teacher's classroom with knowledge from the literature on writing and computers and my own past experiences as a classroom teacher. Karen's narratives tell a story about Karen's experiences as she attempted to plan and implement a writing curriculum in which computers played a role. The study captured a moment in time of an average teacher and a novice researcher, who do not lay claims to exceptionality. The study portrayed only part of this educator's belief system and way of life as a teacher and human being. Nevertheless, it allows us [as readers] to infer what may occur in some classrooms and studies. Gunn (1990) explained that studies are only "partial and somewhat incomplete views of a micro culture which allow us make inferences about the culture observed" (p. 15).

In my own conclusions I infer that Karen's planning and implementation of a writing curriculum in which computers played a role was impeded by external forces: state mandated requirements, limited school resources, and her limited experiences with planning for and the use of computers, and perhaps her status as novice. The issues and challenges described in her practice were evidence of these forces. Karen's story as recounted by a novice researcher, is therefore incomplete. Nevertheless her story leads me to a consideration of my own future roles and responsibilities as a teacher educator.

In the introduction to this research, I shared the autobiographic roots of this study. In this introduction I shared my frustration in seeking to effectively teach writing in ways that allowed my students to see writing as lifelong tool. I wrote of my fledgling attempts to include computers into an already existing curriculum. Many times throughout my journey with Karen I would experience a sense of dejavu as I observed her routines and listened to her converse about her practice. There were events that appeared all too familiar to me. When this happens in everyday life, it causes us to pay attention. Like a rap at the door, it alerts us to something about which we need to discover and learn more.

I came away from this study with recognition of my responsibilities to consider ways in which I could improve in my practice as a teacher educator. I am duty bound to reflect on how I prepare pre-service teachers to face the concerns identified in this study. In my reflections, I am also confronted with some important questions to consider such as: How are teachers like Karen given the opportunities to reflect on changing conceptions of literacy? How can teachers meet existing standards of learning and still plan and implement a writing curriculum in which computers play a role that considers a broader

concept of literacy? What new roles are required in negotiated curriculum, and how can teachers adjust to these new roles in reading and writing activities?

In reflecting on these questions and concerns, this study has motivated me to identify the dimensions of the teaching/ learning process that can help to address these questions and concerns. One implication for me as a teacher educator is to re-visit the goals and objectives of the courses I teach in an attempt to provide pre-service teachers with the skills, knowledge and attitudes that they would need to address emerging concerns and tensions in literacy education.

I am reminded by Kinzer and Leu (1999), that teaching literacy is a decision making process. In order to provide effective literacy instruction reflective of the changes evident in literacy learning, pre-service and in-service educators need to know how to "insightfully orchestrate effective literacy learning opportunities" (p.4). They need to consider how the decisions they make are supportive of children's individual needs and can contribute to their future success.

Lemke (1998) reminds educators, that we cannot afford to continue teaching our students only the literacies of the mid 20<sup>th</sup> century. We need to help them learn to use these literacies wisely, and hope they will succeed better than the past generation:

We want people of whatever age, who can guide their own learning, who know enough to know how to learn more, including where and to whom they should turn for useful advice and relevant information. We want people who know things that they should want to know, and people who know things that are useful in human enterprises outside schools. We

want people who are at least a little critical and skeptical about information and points of views and have some idea how to judge their reliability (p.16).

Another implication for me as a teacher educator is to seek to provide the link between theory and practice. Pre-service teachers need the opportunity to learn from their own teaching, through writing and inquiring and reflecting about their own practices as they engage in field experiences. Through repeated cycles of observation and sharing, they can learn how to build cultures of teaching that support ongoing professional growth and improvement. Owston, Murphy and Wideman (1992) posited that this kind of model is particularly appropriate for providing the information that teachers need when learning to teach writing with computers because of the lack of a substantive body of literature in the area. As more schools incorporate the use of computers in their curriculum, pre-service and in-service teachers should not be left on their own to attempt to understand the interactions between technology and writing.

Framing these two implications is the need to teach from a reflective framework. In teaching pre-service teachers, I invite them to consider these alternative conceptions of literacy, modes, and methods of teaching, I need to support them in becoming reflective practitioners. Reflective teaching, according to Eby (1997) leads to "professional artistry" a special type of competence some teachers display when they find themselves in situations full of surprise, ambiguity or conflict. Teachers engaged in this type of reflection also respond to the unexpected by asking themselves "What are my students

experiencing?" What can I do to improve this situation? How do my students' performances relate to the way I am teaching this material?"

Indeed, this kind of reflection is important when computers are involved in literacy instruction. As Blanchard (1997) explained, "When teachers engage in critical reflection it enables them to make and express informed judgments about what aspects of the human condition known as literacy will be improved by using technology" (p. 317).

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## APPENDIX A

### HUMAN SUBJECTS INFORMED CONSENT FORM

TITLE OF PROJECT: The Teacher, the writing curriculum and computers: Planning and Practice in Pedagogy across two second-grade classrooms.

INVESTIGATORS: Deborah J. Conrad and Dr. Rosary Lalik (Advising professor).

#### PURPOSE

Computers are being promoted as an emerging panacea for educational development, yet what is considered as reform often excludes typically the voices of teachers and students as participants in the change process. This study aims to describe, through the observations of and conversations with one teacher about how she plans and implements a writing curriculum in which computers play a role.

#### PROCEDURES

I propose to conduct four open -ended interviews with you. Each should be about 30-45 minutes in length. Open-ended means that our interviews will be guided by a set of written questions, but that I may ask questions that allow for clarification and/or follow up of any issues raised or not covered by the guiding questions. The interviews will be audio-taped and transcribed, after which you will be invited to review the transcripts and make any corrections or additions. I will also be observing and recording my observations of your interactions during these learning contexts and may require copying and analyzing any related documents used in your teaching.

You may withdraw from the study, refuse to answer specific questions, or seek clarification on any issue--at any time.

#### BENEFITS AND RISKS

I can identify no risks associated with this inquiry. The benefits may not be immediate, but I am confident that apart from the pleasure of sharing your perspectives, your voice will be heard and will serve to guide those who are planning to help the literacy development of you and other students.

#### EXTENT OF ANONYMITY

I acknowledge that it will be difficult to guarantee your anonymity, since there will be details given of the school, the classroom context and your activities. However in order to limit the chances of anyone actually recognizing you, I will ask if that you select a pseudonym instead of your real name. I will alter or delete any information that might lead to your identification. Further, the audio-tapes will be destroyed upon completion of the transcriptions.

FREEDOM TO WITHDRAW

You can refuse at any time to answer any or all questions and withdraw from the study, by telling or contacting me at 540 961 2118 (E-mail: dconrad@vt.edu); my advisor-Dr. Rosary Lalik at 540 231 8343 (rlalik@vt.edu); or Tom Hurd, , Chair of Institutional Review Board at 540 231 5281. Agreeing to participate in one mode of data collection does not commit you to participation in any other session or mode. There are absolutely no consequences for withdrawing from the study.

Your signature below means that you have read this form and agreed to its conditions. You will be afforded a copy of this form.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

[I wish to participate]

APPEMNDIX B

CLASSROOM SCHEDULES

City school class schedule

**2<sup>nd</sup> Grade**  
**1999-2000 Master Schedule**

<b>Monday</b>	9:00-9:15 Early Bird- Daily Language Review 9:15-10:00 Math 10:00-10:10 Prepare for Science Lab 10:10-10:15 Prepare for Science Lab	10:15-11:00 Science Lab 11:00-11:25 S.S. 11:25 Prep. for lunch 11:30-11:55 Lunch	12:00-12:05 Silent Time 12:05-12:15 Silent Reading 12:15-1:00 Computer Lab 1:00-1:25 Basal Reading 1:25-2:05 Guided Reading Groups	2:05-2:25 Reading Aloud/Writing 2:25-2:55 P.E. 2:55-3:05 Finish Writing
<b>Tuesday</b>	9:00-9:10 Early Bird- Daily Language Review 9:10-9:15 Prep for Library 9:15-10:00 Library 10:00-10:45 Math 10:50-11:25 Science	11:30-11:55 Lunch 12:00-12:05 Silent Time 12:05-12:45 Guided Reading Groups 12:45-1:30 Read Aloud/Writing	1:30-2:00 Basal Reading 2:00-2:15 Silent Reading 2:15-2:50 S.S. 2:50-3:05 Journals	3:05-3:15 Prep for dismissal 3:15 Dismissal
<b>Wednesday</b>	9:00-9:15 Early Bird- Daily Language Review 9:15-10:00 Math 10:00-10:35 Science 10:35 Prep for Music 10:40-11:10 Music	11:10-11:25 Silent Reading 11:25 Prep for lunch 11:30-11:55 Lunch 12:00-12:05 Silent Time	12:05-12:45 Reading Groups 12:45-2:10 See Tuesday 2:00-2:40 S.S. 2:40-3:00 Journals	3:05-3:15 Prep for dismissal 3:15 Dismissal
<b>Thursday</b>	9:00-9:15 Early Bird- Daily Language Review 9:15-10:00 Math 10:00-10:45 S.S. 10:45-10:50 Bathroom Break	10:55-11:25 PE 11:25-11:55 Lunch 12:00-12:05 Silent Time 12:05-12:45 Reading Groups	12:45-1:15 Basal Reading 1:15-2:00 Read Aloud/Writing 2:00-2:15 Silent Reading 2:15-2:55 Science 2:55-3:05 Journals	3:05-3:15 Prep for dismissal 3:15 Dismissal
<b>Friday</b>	9:00-9:15 Early Bird- Daily Language Review 9:15-9:55 Math 9:55-10:35 Art 10:35-10:45 Finish Math	10:45-11:20 S.S. 11:20-11:25 Silent Time/Prep for lunch 11:30-11:55 Lunch 12:00-12:05 Silent	12:05-12:45 Reading Groups 12:45-1:15 Basal Reading 1:15-2:00 Reading Aloud/Writing	2:00-2:15 Silent Reading 2:15-2:30 Journal 2:30-3:05 Fun Fr

		Time		
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County classroom schedule

## 2<sup>nd</sup> Grade 2000-2001 Master Schedule

<b>Monday</b>	7:50-8:05 Morning Work, Attendance, Lunch Count, Ice Cream Money & Count (Send with helper of the day)	8:05-9:30 Language Arts	9:30-10:30 Math  10:30-10:35 Silent Time	10:35 Prep. for lun 10:40-11:10 Lunch 11:10-11:15 Silent 11:15-11:25 Reces 11:30-12:00 PE 12:00-12:30 Music
<b>Tuesday</b>	7:50-8:05 See Mon.  8:05-9:30 Language Arts	9:30-10:30 Math	10:30-10:35 Silent Time 10:40-11:10 Lunch 11:10-11:15 Silent Time 11:15-11:45 PEX	11:45-12:30 Art 12:30-12:45 Spelli 12:45-1:00 Snack 1:00-1:15 Recess 1:15-1:50 i-Mac La
<b>Wednesday</b>	7:50-8:05 See Mon.  8:05-9:30 Language Arts	9:30-10:30 Math	10:30-10:35 Silent Time 10:40-11:10 Lunch 11:10-11:15 Silent Time 11:15-11:30 Recess 11:30-12:00 PE	12:00-12:30 Guida 12:30-12:45 Spelli 12:45-1:00 Snack 1:00-1:45 Sci./S.S.
<b>Thursday</b>	7:50-8:05 See Mon.  8:05-9:30 Language Arts  9:00-9:45 i-Mac Lab	9:30-10:30 Math	10:30-10:35 Silent Time 10:40-11:10 Lunch 11:10-11:15 Silent Time 11:15-12:00 Music	12:00-12:30 PEX 12:30-12:46 Spelli 12:45-1:00 Snack 1:00-1:45 Sci./S.S.
<b>Friday</b>	7:50-8:05 See Mon.  8:05-9:30 Language Arts	9:30-10:30 Math	10:30-10:35 Silent 10:40-11:10 Lunch 11:10-11:30 Snack/Recess 11:30-12:00 Library 12:00-12:30 Computer Lab	12:30-1:00 PEX 1:00-1:45 Sci./S.S.



## APPENDIX C

### INTERVIEW QUESTIONS

#### Interview # 1

- 1.How long have you been teaching at this school?
- 2.Tell me how did you become a teacher?
- 3.What were the grades you taught?
- 4.Do you have a preference in terms of the grade levels?
- 5.If you can think back to one of the most wonderful experience in your teaching career, what would it be?
- 6.What are your earliest memories as being a reader and a writer?
- 7.Do you recall any of your favorite books you enjoy reading as a child?
8. When you think of your childhood, what books have stayed with you?
9. How has writing changed?
- 10.What do you think children need to know in order to write?
- 11.What does it mean to be literate?
- 12.How would you describe a child who is literate?
- 13.How did your teacher preparation program prepare you for teaching writing?
- 14.Do you use all those methods in the classroom today?
- 15.Tell me about the way that you teach writing to students.
- 16.How did your early teaching experiences influence your teaching?
- 17.How often do you engage your students in writing?
- 18.Do you feel comfortable in teaching writing?

#### Interview # 2

- 1.How did you determine your writing curriculum?
- 2.What are some of the goals you have for your children in writing?
- 3.How important-- considering your other responsibilities, is teaching students to write in your role as classroom teacher?
4. What resources do you use to help you determine the content to be taught?
- 5.Are there any specific texts that you use?
- 6.I have noticed that you have selected certain Trade books to use in writing. Why did you select those books?
- 7.Do you attend workshops so that you can improve the strategies you use in your writing
- 8..How important do you see the writing process at second grade level?
- 9.How long does it takes your students, say, from start to finish to write a piece, for you to go through it and for it to come to completion in terms of days or so?
- 10.How do you organize your class for writing? What are some of the things that you do when you think about writing? What are some of the things that come to mind when you think about organizing your class?
- 11.Do you have enough time to conference with each student? How often do you get to do conferences with them?
- 12.When did you start using computers in your instruction for writing?
- 13.How do you use the computer in your instruction for writing?

14. Was there an initial or training session with the students as to the keys they should use to backspace, to capitalize, to get into the word document etc? Who taught them those skills?
15. Were there any physical changes you had to make in the lab to accommodate their writing style or the writing setting for your students?
16. How long does your students get to use the computer during the week?
17. What kinds of computer interaction do you encourage among your students?
18. How do you monitor students' progress when using computers for writing?
19. Do you allow the students any kind of first draft on the computer in their writing?
20. Do you follow curriculum guidelines for computer use in writing instruction or have you developed your own?
21. Do you give assignments in which students reflect on their computer work to gain understanding of their experiences?

### Interview # 3

1. When did you find time to plan for your class?
2. How did you plan for the lessons this semester in particular?
3. Who dictates the kind of planning that you do, or what dictates the kind of planning that you do?
4. Does the principal at any time look at these guides or look at your planning at all
5. Is there a specific time that you hand in your units or your topics or your lesson plans to him on a weekly basis?
6. What were some of the first things you did at the beginning of the semester in preparation for your students say in using the lab.
7. What do you think are some of the challenges you faced when using computers in writing instruction?
8. Do you feel that you have adequate training for using the computer in the classroom or lab?
9. What more, in your opinion could be provided for training generally what more could be provided so that you feel that there are other avenues you could explore when using the technology?
10. Are there any person or any other teacher in the school that have some sort of computer expertise and you can go to for additional support.
11. Do you feel that have adequate computer resources in your classroom and in the school?
12. Were there in-service programs that provided you with strategies as to how to teach your students?
13. Do you think your students have developed some skills in the computer lab this semester? If so, what are some of the skills you have identified
14. Based on your experience with the second graders, what would you say should be part of the program for teaching second graders to use the computers for writing?
15. Was computer technology part of your training at college?
16. Are there any course offered during the summer for teachers in computers?
17. I have noticed that you used a behavior modification approach that seem to work very well, could you tell me more about it .How successful do you think this strategy or approach is?

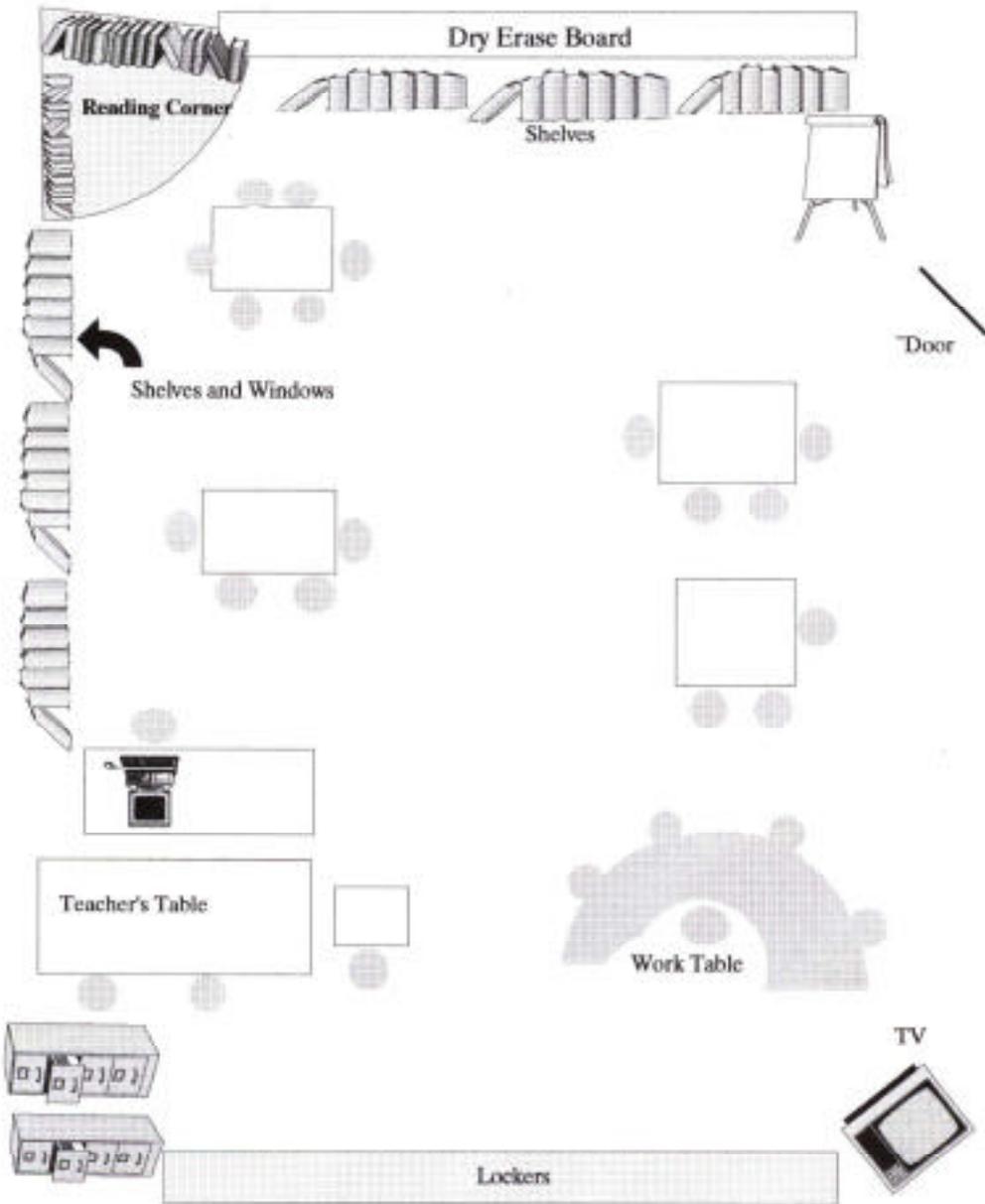
#### Interview # 4

1. Tell me about your experiences teaching writing in this school.
2. How do you plan for writing in the classroom
3. How do you plan for writing in the computer lab?
4. What resources do you use in planning for writing
5. What additional resources do you have now that you did not have in your last school?
6. What has changed in your plans for writing in the classroom and computer lab
7. Are you able to conference with your students?
8. What are the challenges you experience in the classroom and computer lab when implementing your plans for writing?
9. How is students' writing assessed?
10. Did you include their suggestions when planning?

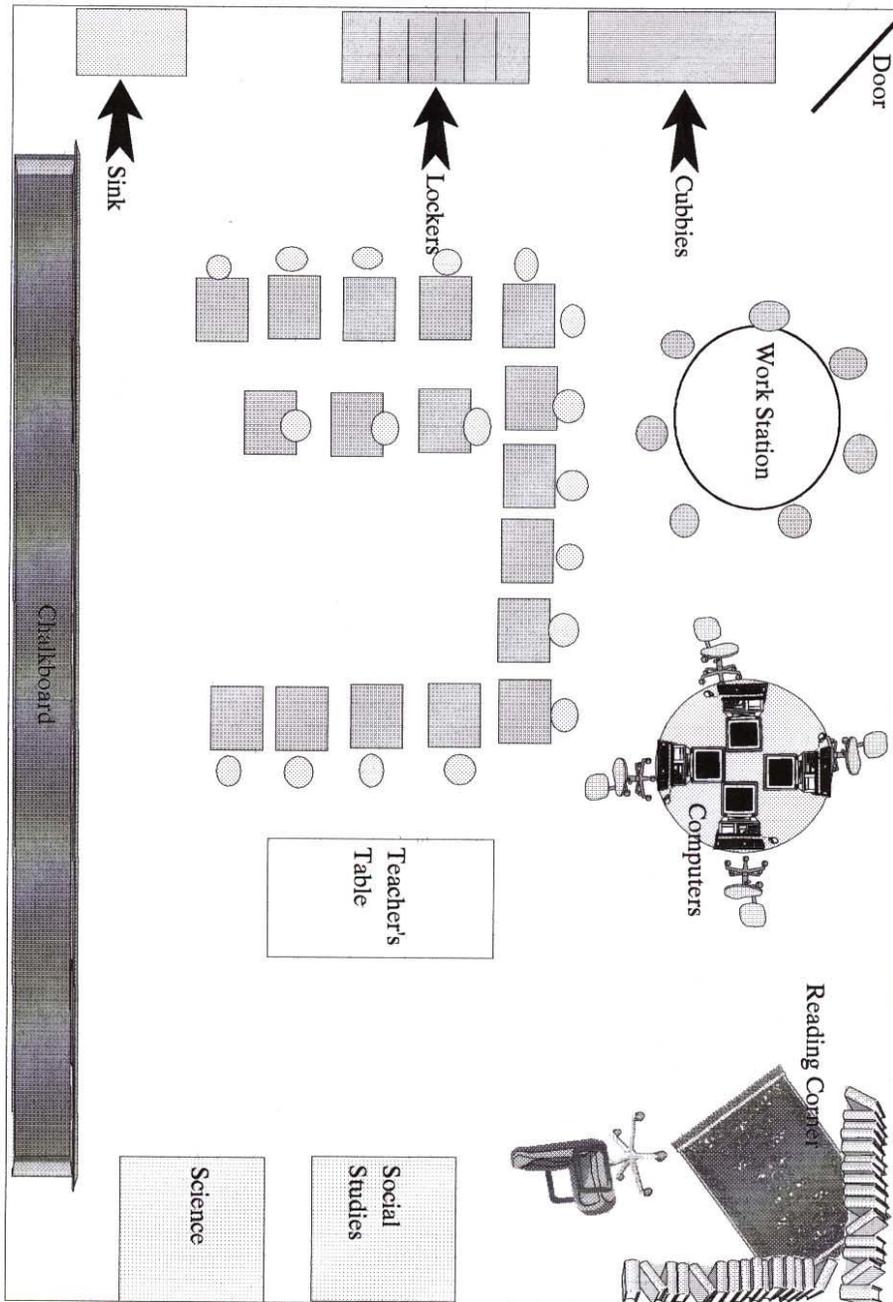
APPENDIX C

PLAN OF CLASSROOMS

City school classroom plan



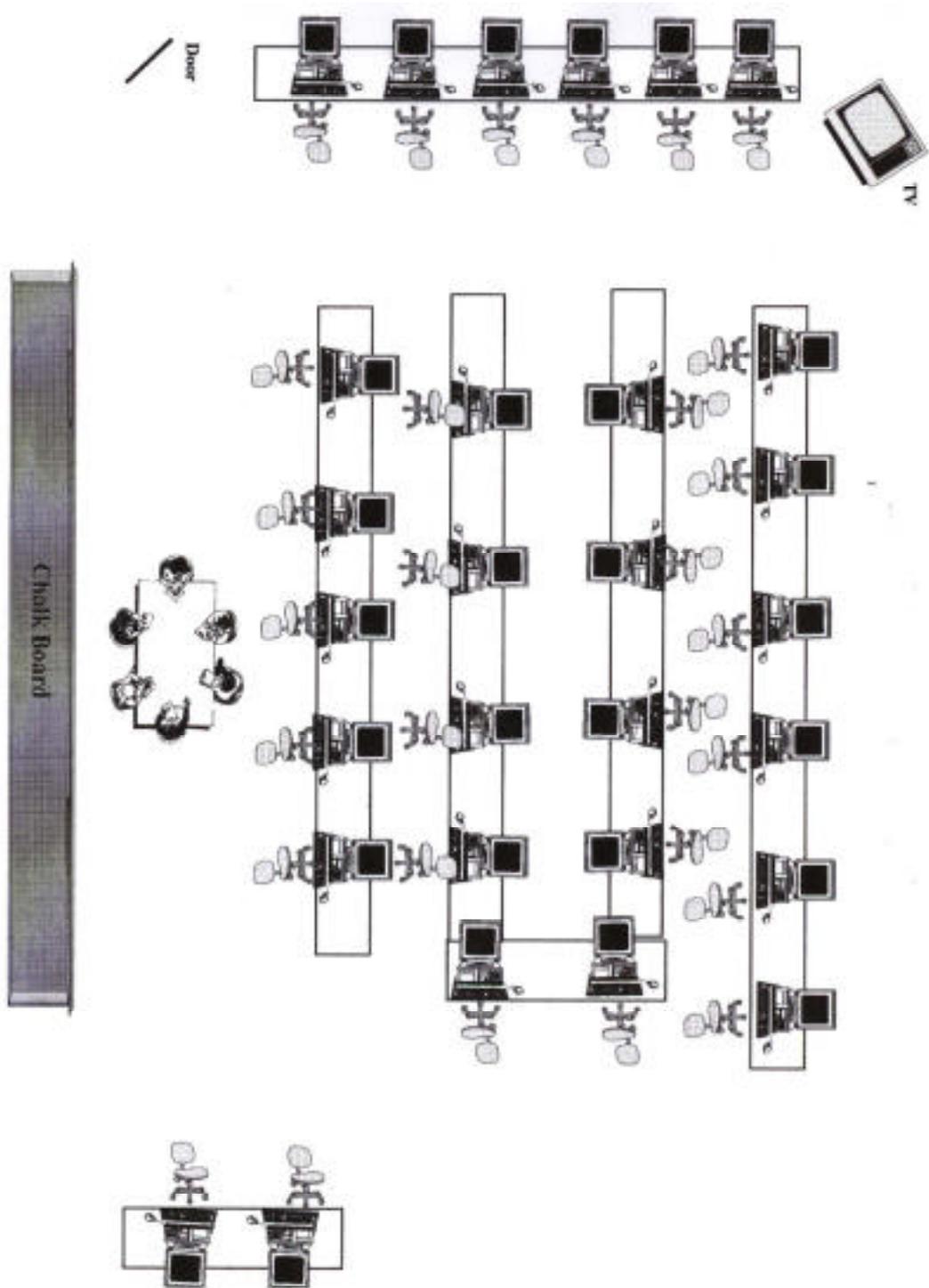
County School Classroom Plan



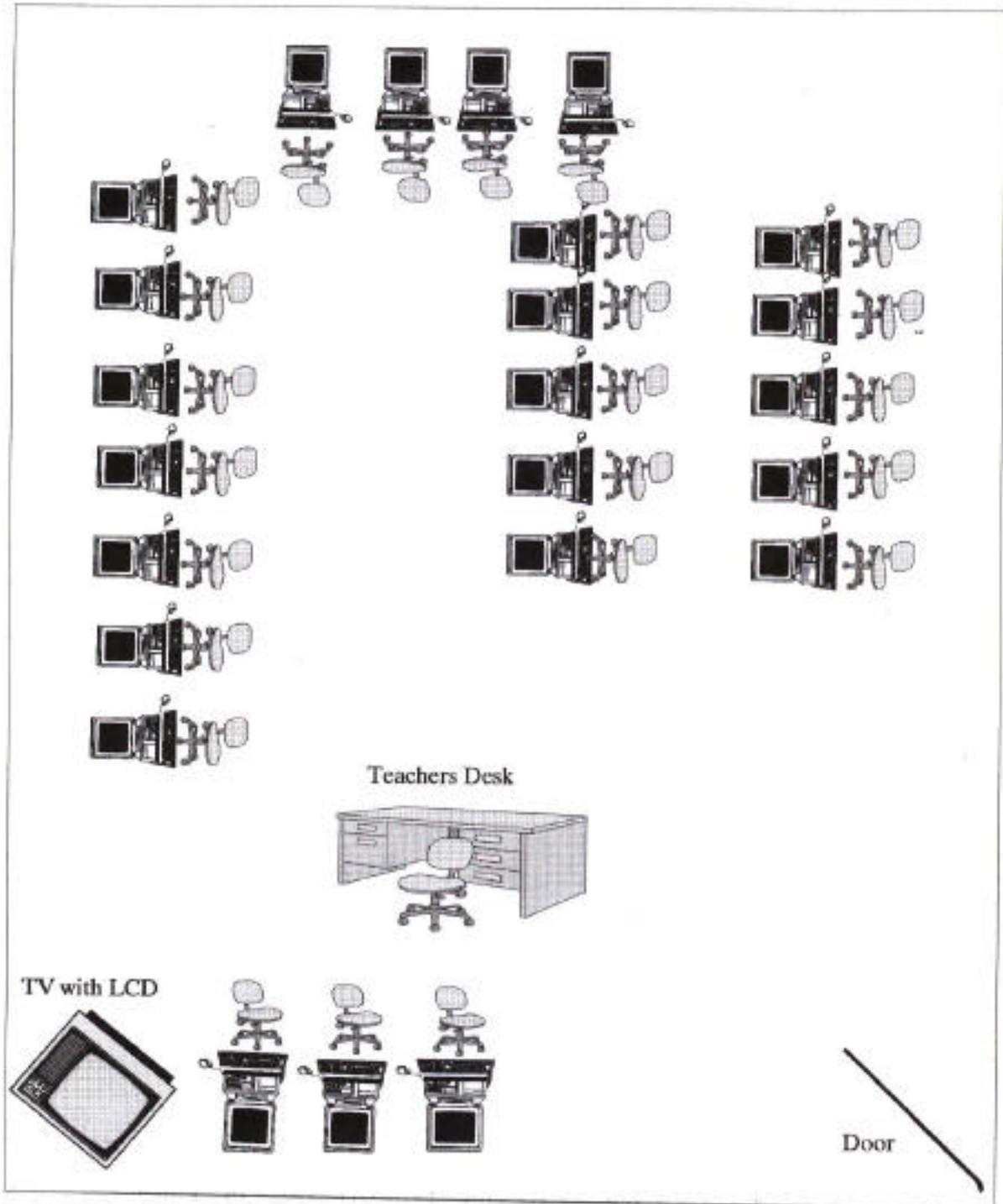
APPENDIX D

PLAN OF COMPUTER LABS

City school-plan of computer lab



County school- Plan of computer lab.



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**Educational Preparation**

Virginia Polytechnic Institute and State University (Virginia Tech)	Ph.D. Teaching and Learning	March 2002
University of Sheffield, UK.	M.Ed. Special Education	1995
University of Sheffield, UK.	Diploma in Special Education	1992
University of the West Indies at St. Augustine, Trinidad	Certificate in Education – Hearing Impairment	1991
Corinth Teachers College, Trinidad and Tobago	Certificate in Education – Elementary Education	1984

**Professional Experience**

Instructor (Tenure track)	SUNY – Potsdam	Present – Fall 2001
(10) Foundations of Classroom Behavior		
(11) Reading and Study Skills in the Content Area		
(12) Reading and Language Arts – Literacy Methods I		
(13) Reading and Language Arts – Literacy Methods II		
(14) Reading and Language Arts – Advanced Methods II		
Instructor (Adjunct)	SUNY – Potsdam	Summer 2001
6. Innovative Reading Practices		
7. Content Area Reading		
Teaching Assistant	Virginia Tech.	2000-1997



