A STUDY OF TEACHER EDUCATORS' PERSPECTIVES AND PRACTICES USING DIGITAL TECHNOLOGIES FOR READING METHODS COURSES

by

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(Under the Direction of LINDA D. LABBO)

ABSTRACT

The primary purpose of this study was to investigate new perspectives forming as a result of the teacher education programs that have embraced new literacies grounded in new technologies. This study addressed two paths of examination. The first line of inquiry invited teacher educators, who used digital technologies in their reading methods courses, to explain the influence the CTELL (Case Technologies for Early Literacy Learning) initiative had on their instructional practice and philosophical orientation. The second line of inquiry studied teacher educators' perceptions of their preservice teachers (PSTs) learning and developing perspectives regarding literacy education. McCracken's four-part method of inquiry and analysis was employed to construct a bricolage of the teacher educators' perspectives. Data sources for this project included respondents' answers from a selection survey, sample interview protocols, and corroborating sources, (i.e., student reflections, emails, course comments, instructor training materials and comments, lesson plans, and instructors' syllabi). Results are discussed in terms of the metacognitive, epistemological, and professional growth evidenced in preservice teachers and in terms of the

importance of authentic instruction and context afforded by using digital case technologies. In addition, data analysis indicated that each educator worked in concrete and particular ways as agents of change to improve literacy instruction, align literacy education with the skills learners will need to be globally competitive, and to improve the lives and education of future teachers and their eventual students.

INDEX WORDS: Teacher Education, New Literacies, Teachers as Change Agents, Resolution Literacies, Digital Literacies.

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DEDICATION

This dissertation is dedicated to my family

for their patience and support.

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CHAPTER ONE

INTRODUCTION

In our ever-evolving post typographic world (Reinking, 1998) definitions of literacy are rapidly changing. In fact, Leu describes literacy as a deictic term, its meaning continually changing and "dependent upon the technological context in which it occurs" (1998, online article, accessed August, 2006). Individuals redefine literacy in everyday practice through participation in email, video cam, chat rooms, hypertext, streaming video, presentation software creations, virtual reality experiences, instant messaging, search engine research, and other forms of information and communication technologies (ICTs)(Kinzer, 2003). New literacy practices influence not only our conception of literacy, but have a reciprocal effect on literacy curriculum in the classroom (Hagood, Stevens, & Reinking, 2002; Lewis & Finders, 2002), creating the need to implement curriculum that will enable students to build new literacy skills. That is, skills and strategies that will facilitate access to and critical evaluation of the onslaught of information they will encounter.

Leu, Kinzer, Coiro, and Cammak (2004) also believe that in order to prepare students for literacy futures that have yet to be defined, educators must prepare them for the new literacies that will be essential to knowledge accretion. Thus, teacher education programs must focus their efforts beyond the simple operation of hardware and software, begin to implement technology to enhance the teaching/learning process (Leu, 2000), and develop curriculum aligned with

a new literacies perspective in order to prepare students to be fully literate (Teale, Leu, Labbo, & Kinzer, 2002). This line of thinking includes developing an appreciation of and a respect for the digital literacies students' value. Educators must expand their thinking to affirm students' ways of reading both the word and the world (Gee, 1996) and begin to see students' digital experiences more as a resource and less as a threat (Alvermann, 2003). The increased digitization of everyday life challenges the epistemological base on which our current educational system approaches knowledge accretion (Lankshear & Knobel, 2003). Gee (2006) believes the nature of our global economy demands a similar epistemic change—one from preparing students as future workers in an industrial economy to highly skilled workers capable of doing "knowledge work" (p. vii). U. S. students are majoring in test preparation (i.e., factual knowledge) at a time where being globally competitive requires students to major in "innovation, creativity, and problem solving" (Gee, 2006, p. viii).

To meet this demand, Reinking, Labbo, and McKenna (2000) advocate moving beyond assimilating computers into our classrooms as an extended literacy activity and accommodating definitions of literacy to include digital media and other forms of communication. I agree with Kellner's (2000) and Leu's (1997) assertion that the velocity of technological change demands restructuring educational curricula, pedagogies, literacies, and goals (Gee, 2000).

Leu et al. (2004) suggest a way to begin restructuring. They believe new theoretical perspectives are needed to guide new research and educational agendas and to help us understand the profound changes occurring in this information age. They go on to say that although current perspectives provide

insight, these perspectives have neither emerged from new literacies nor do they place the Internet and other ICTs at the center of their frameworks. Instead, these frameworks were superimposed from other sources (i.e., feminist perspectives, postmodernist interpretations, sociolinguist traditions, critical literacies, media literacy, etc.) and are therefore limited. The implication is that these traditions originated from print-based media and, because the Internet is changing rapidly, these perspectives cannot adequately address the function the Internet and ICTs should carry out in literacy curricula. Our notion of what counts as a *text* is being redefined as new forms of communication emerge (Bolter, 1998). Likewise, what we value as knowledge is also changing (Fieldhouse & Nicholas, 2008). Shaffer (2006) and others (Gee, 2007, 2004; Moss, Pullin, Gee, & Haertel, 2005) believe the focus on teaching and testing American students on formulaic knowledge is an outdated notion that will marginalize these students in a global job market.

As an alternative to traditions of inquiry, Leu et al. (2004) proposed an amalgam of perspectives or realities (Labbo & Reinking, 1999), a New Literacies Perspective, to address the complexities in the teaching and learning of literacy in the classroom. Thus, a New Literacies Perspective would be a theoretical framework both grounded in these new technologies and emerging from them (Leu et al., 2004).

Overview and Purpose of the Study

Because teacher beliefs about literacy education guide teacher planning and instruction, it is critical to examine the theoretical perspectives teacher educators and preservice teachers are forming as they encounter new

technologies and methods for using these technologies in the classroom. In the interest of understanding what a New Literacies Perspective might become, this study addressed two paths of examination. The first invited teacher educators, who were incorporating new technologies into their instructional methodology, to share their theoretical perspectives about literacy education and the resulting changes that may be taking place in the teaching/learning environment. The second line of inquiry studied teacher educators' perceptions of their PSTs learning and developing perspectives regarding literacy education.

One purpose of this study was to investigate new literacy perspectives that may be forming as a result of the teacher education programs that have embraced new literacies grounded in digital technologies. Specifically, this study examined the perceptions of the teacher educators who have implemented digital case technologies into their teacher education curriculum. These forward thinking individuals were searching for new ideas. I believe they are uniquely positioned to explain the effect the CTELL (Case Technologies for Early Literacy Learning) initiative had on their instructional practice and philosophical orientation towards the teaching learning environment in general and literacy education, in particular. These educators worked in concrete and particular ways as agents of change to improve literacy instruction and to improve the lives and education of future teachers and their eventual students. Hines and Johnson (2008) refer to such social practices as important examples of social justice that often go unexamined. Focusing on the micro level every day actions of teachers working as change agents, they make the case that their social practices form a category of literacies of social justice, which they term resolution literacies. Agents of change

enacting resolution literacies, “experience dynamic, multiple and ongoing tensions as they attempt to respond to competing commitments in varying often overlapping contexts” (Hines & Johnson, 2008, p. 2).

What sorts of tensions did these educators experience as they worked to enact change in their teacher education courses? During their search for answers, what micro level practices were employed that might be termed resolution literacies?

My interest in this topic stems from my work on the CTELL project. I have observed multiple CTELL classrooms in several universities, interviewed the professors, instructors, and PSTs in these classes, transcribed interviews, and analyzed data during my three years on this project. During this time I encountered many instances of change and the inevitable tensions that result from such change. One other change I believed important to pursue was the potential influence of digital literacies as a source of transformative learning.

In the interest of gaining insight into a new literacies perspective that is grounded in the literacies emerging from new technologies, this study also asked teacher educators to share their perceptions of their PSTs’ learning and their perception of the theoretical perspectives preservice teachers were forming and how those perspectives might guide their eventual practice.

Understanding educators’ perceptions may clarify instructional theory and provide guidelines for other educators who want to implement digital technologies into their practice (Reinking, McKenna, Labbo, & Kieffer, 1998). Gaining insight into future teachers’ perceptions of both their learning experience and their developing philosophies will better guide programmatic changes

towards restructuring reading methods courses to better meet the needs of preservice teachers and their eventual students (Reinking, 1998; Leu et al., 2004).

In addition, understanding the perceptions of both teacher educators and their PSTs may further clarify developing theoretical perspectives that might influence a new literacies perspective (Anders, Hoffman, &Duffy, 2000; Duffy, & Hoffman, 1999). The pervasive digitization of daily life creates an urgent need to understand these perspectives so that we can begin to develop innovative approaches to curriculum and pedagogy that will address the epistemological shift challenging traditional school approaches toward learning (Lankshear & Knobel, 2003). Lankshear and Knobel argue that digital epistemologies impact not only our literacies but are making obsolete the epistemological base on which traditional approaches were founded. For example, they suggest knowledge may become differently valued, asking such questions as: Will modes of knowing that are more performance- and procedure-based be privileged over traditional ways of knowing (e.g., absorbing content)?

For example, decentralizing the importance of absorbing content would in turn have far-reaching effects--the most immediate being the current focus on standardized testing as a measure of learning or achievement. Redefining knowledge would also necessitate redefining the purposes of assessment and by extension, undermining many of the unintended consequences of traditional assessment. Thus it is important to gain insight into new understandings, definitions, and beliefs about educational methods.

In order to construct new understandings, educator's theories, pedagogies, and curriculum were examined and compared according to their reported use of the cases (i.e., the frequency of use and specifics regarding how the cases were used). Functioning as a bricoleur, I created multidimensional representations from participant artifacts, statements, and experiences.

Qualitative inquiry is said to be in the Seventh Moment (Denzin & Lincoln, 2000), a time of change. This is in contrast to stable times when things are named, have a specific place, and very little leverage can be exerted to institute change. In times of change, when clear vision can be established, "we have extraordinary leverage and influence—individually, professionally, and institutionally—if we can get a clear sense, a clear conception...of the road ahead" (Naisbitt, 1982, as quoted in Lincoln and Denzin 2000, p. 1061). That is what I sought here, a clear vision of the road ahead by cobbling together brick by brick, a bricolage of the perceptions of those educators who were pathfinders.

Research Questions

One principal question guided this study initially. Two subquestions concentrate on particular aspects of the CTELL professors' experiences.

What are the teacher educators' perceptions of using CTELL anchored instruction for undergraduate reading methods courses?

1. Specifically, what are the teacher educators' perceptions of their PSTs learning experience?
2. Did implementing CTELL anchored instruction challenge, enhance, or affect teacher educators' personal philosophies, or pedagogies?

Rationale and Significance of the Study

We have long known that it is important for literacy educators to establish a perspective regarding literacy instruction (Strang, McCullough, & Traxler, 1961) because teacher beliefs about the process of literacy development guide their instructional decisions (Anders, Hoffman, &Duffy, 2000; Duffy, & Hoffman, 1999; Snow, Burns, & Griffin, 1998). For this reason, it is important to learn more about the theoretical perspectives teacher educators and future teachers are constructing as they integrate new literacies into their curriculum.

Brief overview of Case Technologies for Enhanced Literacy Learning (CTELL)

CTELL uses the Internet and other ICTs to enhance teacher education curriculum, affording future teachers the opportunity to learn about literacy instruction via methods grounded in new technologies (http://CTELL.uconn.edu/home.htm, Accessed March, 2008). Using anchored multimedia case-based instruction, multiple theoretical perspectives are integrated into teacher education programs (each of these components will be explained more fully in the following sections). Future teachers are thereby forming perspectives about literacy instruction that are in fact emerging from new technologies. Teacher educators are likewise formulating new theories or redefining previously held theoretical frameworks about literacy instruction as they work with these new technologies. Thus, looking at these classrooms, we gain insight into the perspectives preservice teachers and teacher educators are forming as they learn from and work within new technology environments. Such insight will help us construct theoretical frameworks designed to address the complexities of teaching and learning about new literacies in the classroom.

This study may contribute to the extant literature in the following ways: a.) by clarifying developing instructional theory within a New Literacies Perspective, b.) by further illuminating the impact of a New Literacies Perspective on the teaching learning environment, c.) by clarifying instructional guidelines for teachers who currently engage in digital literacy instructional practice (Teale et al., 2002) and, d.) by offering instructional guidelines for those educators who wish to restructure their literacy education curricula to make it more responsive to the demands of learning in a post-typographic society (Reinking, 1998).

Definition of Key Terms

The following definitions of key terms are provided for the purposes of this study.

Anchored instruction: powerful inquiry-based literacy activities designed to build background knowledge, problem identification, and problem solving skills as students work in collaborative teams (Cena, & Mitchell, 1998). Anchor refers to an informational text that is used to build a common core of knowledge among participants.

Bricolage: an interpretive representation of the theories and assumptions that guided the CTELL professors' praxis.

Case-based instruction: an approach that challenges students to develop and practice the appropriate skills they will need in their careers by experimenting with complex real world problems and consequences but within the safety of a classroom setting (Ertmer, Newby, & MacDougall, 1996; Silverman, Welty, & Lyon, 1992; Sykes & Bird, 1992).

Cognitive apprenticeship: a model wherein preservice teachers function as novices learning from master teachers.

Constructivist learning theory: learners construct knowledge about themselves and the world through meaningful interactions with their environment and with knowledgeable others (i.e., external factors). (Bruner, 1987)

Constructionist learning theory: interpretations are based on conventions of language, (e.g., professional jargon). Conceptual understandings are built within a community of learners based on warranted justifications through exploratory talk (Gavelek & Raphael, 1996). The centrality of language in developing understanding is the factor that distinguishes constructionist perspectives from constructivist perspectives.

Digital case technologies: Computerized case-based anchored instruction.

Knowledge transfer: knowledge that can be applied in novel contexts.

Resolution literacies: social practices that promote social justice, especially the everyday practices educators enact to resolve the competing commitments experienced in their own lives and those PSTs will face as future teachers.

Sociocognitive: a perspective which holds that the social setting and the social interactions of the learners within that learning environment shape what is understood, what is learned, and what is valued.

Social constructivist theory: focuses on individual learning processes that result from collaborative and social dimensions of learning.

Social-cognitive learning theory: approach emphasizes learning by observation of another person's (i.e., model's) behavior (Bandura, 1994, 2002).

Sociohistorical constructivism: associated with Vygotsky's (1978) activity theory, and is concerned with how the influence of factors outside the head shape teaching and learning

Transformative learning: experiences where students change not only their orientation towards learning but are willing to interrogate and confront subjective assumptions (Fecho, 2001; Schultz & Fecho, 2000).

Summary of Chapter One

Chapter One presented the rationale and significance of this study. Using CTELL anchored instruction for undergraduate reading methods courses was introduced as a viable topic for clarifying our understanding of the perspectives preservice teachers and teacher educators are forming as they learn from and work within new technology environments. In addition, research questions were posed and key terms were defined.

Organization of the Dissertation

Chapter Two is a review of the literature. CTELL is introduced as a reconceptualized teacher education program that anchors instruction to digital case technologies. Components of CTELL that are central to this inquiry (i.e., case-based and anchored instruction) are defined, and the theory and research undergirding those components are explained in detail. This section also highlights philosophical perspectives that contextualize learning within anchored digital case technologies curriculum. The theoretical perspective that grounds this study is explained.

Chapter Three describes the recruitment of participants, the procedures and methods used in date collection, and the procedures for analyzing the data.

This study is a bricolage, built through a sociocognitive lens. McCracken's (1988) Long Interview method is introduced and explained as the methodology of choice to investigate the cultural categories and participant's assumptions and beliefs. In addition, arguments from various perspectives regarding the function of the bricoleur are addressed.

Chapter Four explains the results of the data analysis. The teacher educators' perceptions of using CTELL anchored instruction for undergraduate reading methods courses are presented thematically. Similarities and distinctions among and between CTELL professors are explained. The relevance of agency and its function as resolution literacy is also explained.

Chapter Five presents a brief summary of the purpose of this study, lines of inquiry, and method of data collection and analysis. This chapter discusses the specific findings presented in chapter four, the relevance of those findings, and the limitations in this study. In addition, this chapter also offers suggestions and recommendations for research and education.

CHAPTER TWO

REVIEW OF THE LITERATURE

This chapter has two main sections. In the first, I describe Case Technologies to Enhance Literacy Learning (CTELL) as a redesigned mode of teacher education utilizing digital technologies to teach and improve first year teachers understanding and use of best practices to improve reading achievement in children. I review the theory, research, and philosophical perspectives that under gird the components of CTELL. Epistemic features and philosophical perspectives that contextualize learning using case technologies are also discussed. I conclude this section by summarizing each of the six advantages of incorporating CTELL as a model for teacher education programs.

The second section details the theoretical perspective from which this study is conducted.

Case Technologies to Enhance Literacy Learning (CTELL): A Description of the Program.

CTELL is sponsored by a grant from the Interagency Education Research Initiative (IERI) for the purpose of examining the effectiveness of a new model in teacher education programs. This reconceptualized approach to teacher education uses case-based, anchored instruction via high speed, streaming video delivered over the Internet and in CD/DVD-ROM. This mode of instruction is designed to accomplish three central objectives: (a) raise pre-service teachers' understanding of best practices of early literacy education; (b) increase pre-

service teachers' use of best practices in the classroom when they first begin teaching; and (c) significantly raise young children's reading achievement (http://CTELL.uconn.edu/home.htm, Accessed June, 2008).

One distinctive characteristic of the CTELL model is the incorporation of both case-based and anchored instruction. In brief, twelve cases—4 per grade, Kindergarten through 2cnd grade—focusing on exemplary literacy instruction by master teachers, serve as anchors for preservice teachers to construct knowledge. Each case is a video of a classroom using "rich and innovative uses of technology in conjunction with literacy instruction" (Teale, Leu, Labbo, & Kinzer, 2002, p. 656). The interface allows users to interact with the videos dynamically, by having random access to multiple cases from multiple perspectives (i.e., video clips of multiple master teachers conducting literacy instruction in authentic situations). The desktop (Figures 1-4) includes links to experts discussing the theories that ground the classroom lessons preservice teachers witness; options for internet extension assignments created by their professor; interactive discussion forums; access to parent, student, and teacher interviews; standardized and informal test results of the anchor case children; examples of children's work; and, summaries about the school, classroom, and sociocultural influences.

As I will explain further in this chapter, CTELL bridges sociocognitive and socio constructivist theoretical perspectives. Briefly, preservice teachers benefit from a cognitive apprenticeship model wherein they function as novices learning from master teachers.

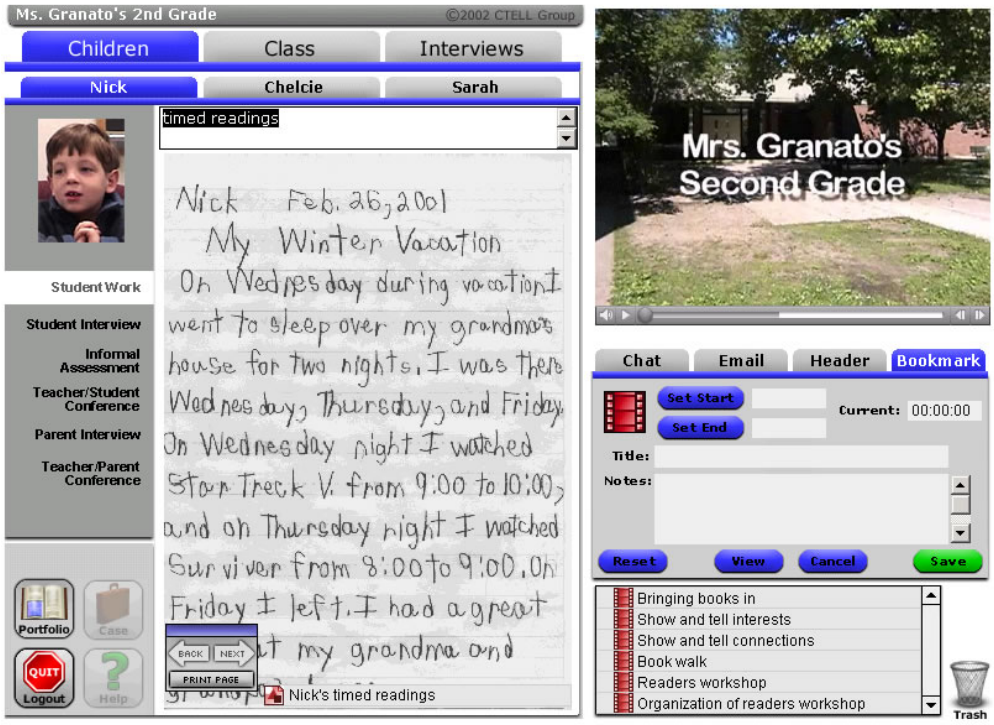

Figure 1: CTELL Desktop Example of Children's Work

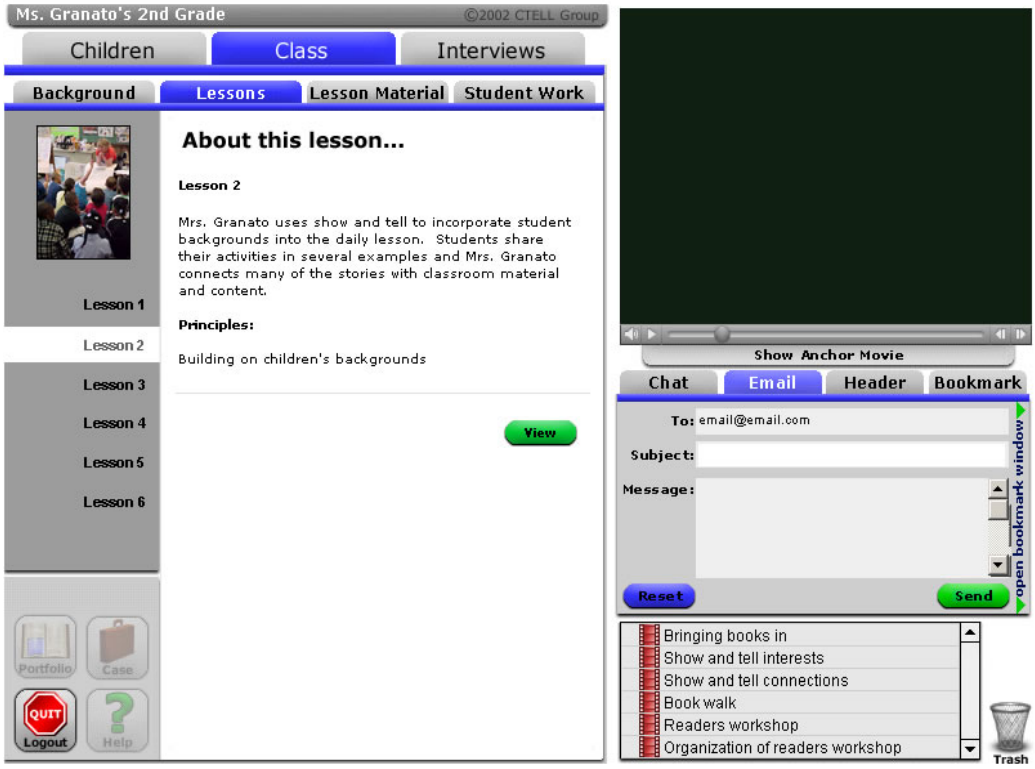

Figure 2: CTELL Desktop Example of Class Lesson

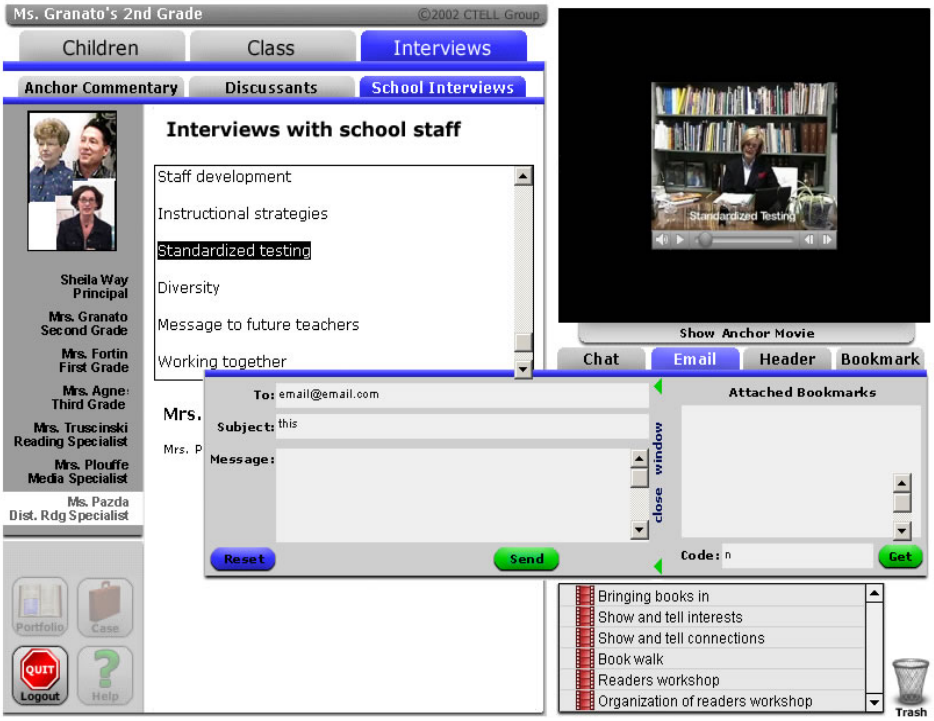

Figure 3: CTELL Desktop Example of Faculty Interview

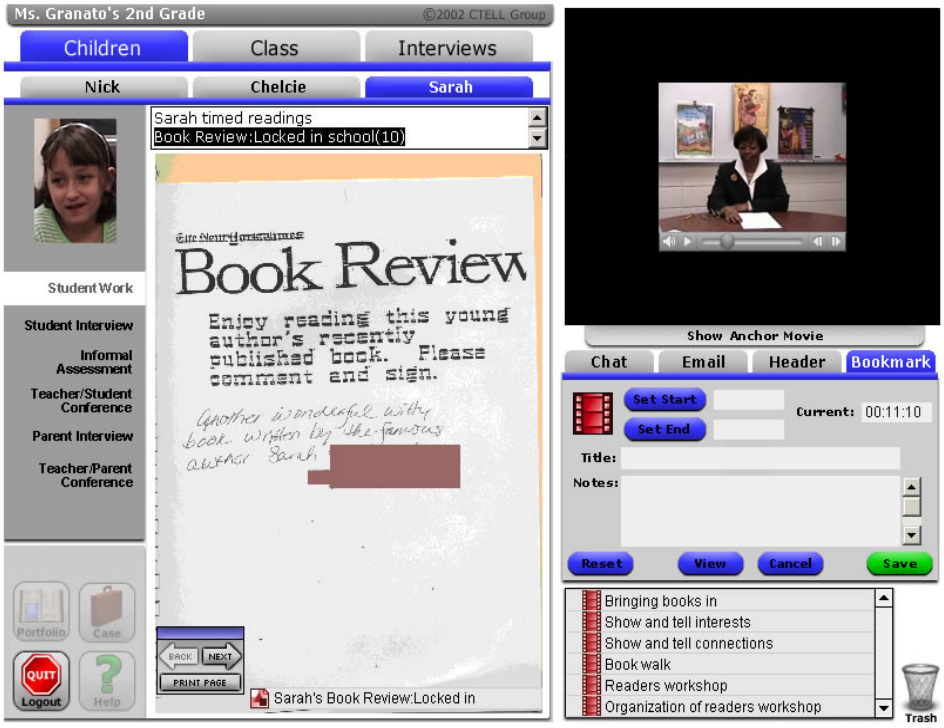

Figure 4: CTELL Desktop Example of Child's Book Review

Precursors to CTELL: Theory, Research, and a Description of the Components

Case-based Teaching and Learning. Case-based instruction is used extensively in law, business, medicine, education, architecture and engineering to engage students in critical thinking and decision making about realistic problems in their discipline. The case approach challenges students to develop and practice the appropriate skills they will need in their careers by experimenting with complex real world problems and consequences but within the safety of a classroom setting (Ertmer, Newby, & MacDougall, 1996; Silverman, Welty, & Lyon, 1992; Sykes & Bird, 1992).

The basis for using cases, according to Wertheim (2005), stems from the principle that greater gains in learning come from teaching oneself, a decidedly social constructivist perspective. Social constructivist theory focuses on individual learning processes that result from collaborative and social dimensions of learning. As I will explain further in the following sections, social constructivism could be seen as an amalgamation of "aspects of the work of Piaget with that of Bruner and Vygotsky" (Wood, 1998, p39). The way the cases are used underscores the theory with which it is most aligned.

Professor Wertheim, College of Business Administration, Northeastern University, believes students will gain greater understanding and judgment when he or she works through problems as opposed to passively attending a lecture on the same matter. He concludes that cases are used primarily for learning how to apply theories to authentic contexts and learning how to solve authentic problems within those contexts. He summarizes the potential benefits of case-based learning as follows:

- Develop the ability to think clearly about ambiguous, unstructured situations
- Develop skills identifying important information and determine what is missing
- Practice developing concise, reasonable, courses of action
- Learn to identify implicit models and assumptions and personal epistemologies
- Provide opportunities for development of oral and written communication skills
- Practice predicting behavioral outcomes--yours and others

(Adapted from Wertheim's guide for graduate Business Administration students. Available at: http://web.cba.neu.edu/~ewertheim/introd/cases.htm.)

Silverman, Welty, and Lyon (1992) believe that case-based instruction is well suited for teacher education programs for the same reasons it is suited for other professional programs. Classroom cases include critical incidents, protocols and simulations of professional knowledge (Sykes & Bird, 1992). Contradictory data is often presented to stimulate cognitive conflict, which in turn stimulates critical reasoning (Kagan, 1993; L. Shulman, 1992). According to Lee Shulman (2000), case-based instruction can stimulate reflection; help preservice teachers learn to become clinical problem solvers, and to reason pedagogically. "Whereas cases themselves are reports of events or sequences of events, the knowledge they represent is what makes them cases" (L. Shulman, 1986, p.11). Shulman (1986; Kagan, 1993) is saying that the invocation of a case is the invocation of one (or more) of three types of principles, (a) *prototypes*, which are research-based

theories usually relating to pedagogy or subject content, (b) *precedents*, which are experientially based on the wisdom of practice and, (c) *parables* that convey morals or values (i.e., typically of the professional community).

This *radical constructivist* (Eisenhart, Finkle, & Marion, 1996) approach allows preservice teachers to gain experience by stepping into the role of the teacher, making pedagogical decisions (prototypes), analyzing and solving typical classroom problems such as orchestration (precedents), and are socialized into the academy by functioning in a manner consistent with district, or departmental ethos (parables). However, these students are functioning somewhat autonomously, constructing knowledge in an individualistic manner, without the benefit of comparison through peer collaboration. Additionally, there is no assumption of objective reality by which to measure individual knowledge; each construct is unique to that individual (von Glasersfeld, 1995).

Yet, there is intrinsic value in presenting archetypal prototypes, precedents, and parables because preservice teachers have the opportunity to grapple with normative classroom dilemmas. Another primary benefit of using case-based instruction is the potential for conflict, which allows future teachers to hone in on those circumstances where precedent and parable collide. In such instances cognitive conflict may result, offering PSTs an opportunity to reflect on best practice and what that would mean in this context. Through comparison and reflective awareness of such situations, perhaps professional judgment will develop earlier in their careers. In other words, because PSTs are asked to communicate the reasons supporting the professional decisions they make, they

are offered the opportunity to reach beyond the realm of positivist thinking and predictability, and into a space of reasoned judgment and reflective practice.

Case based instruction can also be used to construct knowledge collaboratively. As a collective productive activity among members of a discursively mediated community (Hruby, 2001), knowledge production shifts more towards a constructionist activity—wherein interpretations are based on conventions of language (e.g., professional jargon). That is to say that constructing conceptual understanding within a community of learners is a matter of building individual interpretations based on warranted justifications through exploratory talk (Gavelek & Raphael, 1996) rather than a matter of searching for truths or objective realties.

Whereas other professions use case-based instruction for their normative value (e.g., physicians use it to teach diagnostics to interns), cases can be used to highlight the instructive nature of the unique in individual practice (Silverman, Welty, & Lyon, 1992). Again, those instances where precedent and parable collide—where the wisdom of practice chooses an unusual solution, one that contradicts prototype or parable, for example—can be examined and discussed collaboratively. Attention to the unique is a weighty tool for learning. It is an acknowledgement of the context of practice, a systemic view (Salomon, 1991) of what it is like to be in this classroom, with these children, under this particular circumstance, embodying the experience of this particular teacher with his or her individual differences as an influencing factor. Attending to these issues is a prime situation for vicarious learning. PSTs have the opportunity to develop an appreciation for the application of theory. Through reflection and discussion they

encounter multiple attempts to map theory to practice, and by comparison of theoretical stances, may even uncover subjective biases. Implicitly or explicitly PSTs are beginning to hone individual epistemic positions on pedagogy and practice. As mentioned earlier, it is these epistemologies that will frame their instructional practice.

Thus, the pragmatic approach makes use of cases as the basic unit of deliberation and action, "[C]ases become the focus of curriculum and the artful construction and arrangement of cases becomes the central act of curriculum development (Sykes & Bird, 1992, p. 471), unlike the "foundationalist approach that begins with theory then selects cases as...material upon which to practice the application of theory" (Sykes & Bird, 1992, p. 472). To summarize, case-based instruction is both a design for situating knowledge and is in turn situated by the manner in which it is used in the construction of knowledge. The intent of CTELL is most aligned with the pragmatic approach described by Sykes and Bird, and as such, anchors instruction to the cases. An approach, I suspect Bruner (1987) would see as aligned with the tenets of *social constructivism* because preservice teachers are infused into the structure of a classroom and exposed to the inherent socio cultural influences that structure its learning environment.

*Anchored Instruction***.** Anchored instruction is a natural complement to case-based instruction because it functions as a model of curriculum integration that involves students in powerful inquiry-based literacy activities that are designed to build background knowledge, problem identification, and problem solving skills as students work in collaborative teams (Cena, & Mitchell, 1998). A primary goal of anchored instruction is to help students acquire the skills needed

to mobilize what they have learned to novel contexts (Cognition and Technology Group at Vanderbilt, 1990). Anchor refers to an informational text that is used to build a common core of knowledge among participants. Early models (McLarty, Goodman, Risko, Kinzer, Vye, Rowe, & Carson, 1990) suggested seven key decision points to guide the development and implementation of anchored instruction (i.e., choosing an appropriate anchor, developing shared experiences around the anchor, expanding the anchor, using knowledge as problem solving tools, teaching with the anchor, merging anchors and literacy experiences, and allowing student exploration).

The Cognition & Technology Group at Vanderbilt University (CTGV), under the leadership of John Bransford, developed an anchored instruction model for technology-based learning. These anchors were interactive videodisc or multimedia tools depicting realistic situations. They were designed to elicit the active construction of knowledge through student exploration, problem posing, and problem solving. The intent was to facilitate learning and transfer of knowledge to subsequent academic problems and real life situations (CTGV, 1990; 1993). Based on their work, later models (Cena & Mitchell, 1998) revised the seven steps and included a collaborative student project and presentation.

As subsequent studies continued to refine anchored instruction, they discovered increased engagement among previously disengaged students. For example, students began to do a great deal of reading, independent research, engaged in collaborative learning, asked genuine questions using targeted vocabulary and were motivated to find the answers (CTGV, 1990). In addition, CTGV's (1990) data indicated that, compared to students in non-anchored

groups, students in anchor groups wrote stories with more elements and created plots that were connected to characters' actions, goal statements, and goal resolution.

CTGV (1998) pointed out the importance of teachers helping students formulate questions and strategies, instructionally supporting learning where necessary. This is a Vygotskian (1978) activity theory approach (i.e., sociohistorical constructivism, Alvermann & Phelps, 2002) that takes into account, the learner's zone of proximal development (ZPD). A student's ZPD is that distance between a student's independent level of problem solving ability and the level of problem solving that student can accomplish in concert with a more knowledgeable other (Vygotsky, 1978, p.86). Embedding assessment strategies within inquiry activities (Barron, Schwartz, Vye, Moore, Petrosino, Zech, Bransford, & Cognition & Technology Group at Vanderbilt University, 1998; Pellegrino, Baxter, & Glaser, 1999) provided frequent occurrences of formative assessment promoting metacognitive knowledge monitoring.

Accordingly, there is a sociocognitive element imbedded in anchored instruction for two reasons. First, students are intentionally seeking knowledge and monitoring their cognition (*inside the head factors, [Hruby, 2001]*). Second, because, as Judith Langer (1991, 2000) points out below, the knowledge building activity among the students and teachers is also formed by influences *outside the head* such as the social context for learning (Brown, Collins, & Draguid, 1989; Greeno, 1989; 1997; 1998) and the culture of the classroom:

> "[L]earning is influenced by the values, experiences and actions of others within the larger environment, and the ways of thinking as well as the knowledge learned are necessarily affected" (Langer, 2000, p. 2).

From their data, CTGV concluded that students found the problems interesting, were motivated to solve the problems, worked well cooperatively, and that teachers were enthusiastic about the program. One of the most interesting findings is that students, who were not good at problem identification and formulation at the beginning of the series, developed and transferred many of those skills to similar problems in a second series (CTGV, 1990).

This finding also held true for similar studies in math education (Bottge 2001; 2002). The increased engagement and motivation displayed by the students in these studies are consistent with the tenets of both sociohistorical constructivism (Vygotsky, 1978; 1986) and social constructivism (Bruner, 1987) as well. Both frameworks are concerned with students self perception, and performance within the learning situation, "[H]ow students perceive themselves in a particular context mediates their motivation to learn (or not learn) the content of that class" (Alvermann & Phelps, 2002, p. 29).

Previous Research Documenting the Results of Anchored and Case-Based Instruction

Unfortunately, there are not yet enough documented results on the effects of case-based instruction in teacher education, despite its lengthy history (J. Shulman, 1992; L. Shulman, 1992). In addition, the anchored instruction studies that exist are primarily directed towards math education (Bottge, Heinrichs, Shih-Yi, & Serlin, 2001). Two of these studies produced equivocal results

(Langone, Malone, Stecker & Greene, 1998; Bottge, Heinrichs, Mehta, & Hung, 2002). However, others showed promise (Shyu, 2000; Lee, 2002). Shyu (2000) investigated the effects of anchored instruction on attitude and problem solving skills. She concluded anchored instruction created a motivating learning environment that enhanced problem solving skills and promoted positive affective and cognitive responses in 5th grade math students. Another study examined the effects of individual differences and group characteristics in the problem solving process using a multimedia based anchored instruction learning environment (Lee, 2002). The results of the analysis of covariance indicated group composition, cognitive style, and task type significantly exerted differential effects on learning outcomes. Although Lee reported his findings as corroboration for previous studies, he concluded that closer examination of the relationship of students' individual and group characteristics in a situated learning environment is warranted in future studies. Langone, Malone, and Clinton (1999) compared anchored and nonanchored instruction. Results revealed no differences on posttests immediately following instruction but on the 8-week follow up test, anchored groups out performed nonanchored groups, suggesting a higher incidence of transfer.

Moreover there are even fewer studies documenting the combination of case-based anchored instruction in an interactive multimedia learning environment for teacher education programs. Similar programs with narrower scopes are beginning to surface, however. These studies (Khine & Lourdusamy, 2003; Pindiprolu, Peterson, Rule, & Lingnugaris/Kraft, 2003; Chang, 2002; Tracey, Heath, & Truss, 2002; Bauer & Anderson, 2001) have reported minor

problems with group dynamics, but also reported responses ranging from favorable attitudes to enthusiastic and excited responses from teacher candidates and teacher educators on the prospect of implementing anchored instruction technology into curriculum.

Findings from previous CTELL data indicated anchor case-trained PSTs reported feeling significantly more confident in their ability to teach literacy than did their traditionally trained counterparts (Labbo, Hubbard & Park, 2003). Furthermore, interview respondents trained using case technologies reported gaining increased confidence from the combination of field experience and video cases. Results also suggest that the video cases are a means of clarifying effective literacy instruction (Henry, Castek , Roberts, Coiro, & Leu, 2004). Although, these results for case based anchored instruction are promising (Labbo, Hubbard & Park, 2003), there are too few documented studies available to formulate well-grounded theories regarding the personal theories candidate teachers and teacher educators are constructing. In addition there is insufficient documentation detailing how teacher educators implemented the cases to warrant drawing conclusions about individual perspectives.

Epistemic features and philosophical perspectives that contextualize learning using case technologies.

Throughout this essay I have suggested several aspects of constructivist and constructionist learning theories that have been employed using various case technologies. My intent was to point out that case-based anchored instruction embodies another important feature for teacher education, epistemological pluralism—or, instructional versatility.

Another epistemological feature to consider (in addition to the philosophical nature of knowledge and nature of knowing) is the Piagetian theory of *genetic epistemology or Piagetian* constructivism (Brooks & Brooks, 1993; Hruby, 2001*)*. That is, learners acquire knowledge not only through automatic maturation but also through active construction, urged by the need to resolve the contradictions that arise from complex interactions with their environment (Piaget, 1968; Brooks & Brooks, 1993; Cole & Wertsch, 1996). Piagetian constructivism is dialectical conceptual development through assimilation and accommodation. The reformation of conceptual structures, however, is measured against accepted bodies of knowledge in order to be considered valid knowledge. In CTELL case technologies, knowledge is actively constructed by resolving issues that arise interacting with contradicting cases or from social interactions, in much the same way. The resulting tensions instigate reforming previously held knowledge and assumptions but there is no emphasis on comparison to an authoritative knowledge source. Instead PSTs are encouraged to arrive at reasoned solutions.

The *versatility* of case-based anchored instruction assists teacher educators in creating a multidimensional learning environment that is consistent with various PSTs' learning approaches. In so doing, PSTs have the option of arranging learning materials in a way that supports their personal learning styles and preferences.

Consider another example. Turkle and Papert (1990) explain that popular and technical culture regard technology as abstract and formal. Yet an examination of novice programmers uncovered multiple approaches to learning

about technology. Whereas some students approached learning by manipulating abstract symbols (Turkle and Papert, 1990, refer to this way of learning as formal and canonical, or moving hierarchically from axiom to theorem to corollary); others functioned as though they were building a bricolage. Bricoleurs move in concrete incremental steps, understanding each step along the way before moving on to the next. As novice programmers these students would not use prepackaged subprograms. Instead they preferred to write their own or dissect the prepackaged subprograms to gain full understanding of its purpose. These students constructed theories by trial and error, "in the concrete tactile style [described by] Levi-Strauss's bricoleurs" (Turkle & Papert, 1990, p. 130) and "by negotiating and renegotiating with a set of well-known materials" (p. 136). This explanation is not to denigrate that style of learning. Rather, it is to point out that other valid learning styles exist. Ethnographies of many Nobel Laureate scientists revealed their propensity to relate to their materials in exactly the same way (Keller, 1983, as explained in Turkle and Papert, 1990).

Turkle and Papert (1990) contrast these learning methodologies in this way: Whereas the formal canonical way of computer programming would emphasize control through planning (i.e., top-down, divide and conquer), and black-boxing (i.e., writing a program without necessarily knowing the details within subprograms); bricoleurs would program in a more collaborative manner, "more like a conversation than a monologue" (p. 136).

The flexibility inherent to an anchored case-based digital learning environment also allows PSTs to approach learning in a manner that supports their preferred learning styles. For example, teacher candidates might be

assigned a segment depicting decoding instruction. A student would have the option of viewing that segment, listening to experts discuss decoding theory and working backwards from there to fill any gaps at a later date. Yet, another student may prefer a more developmental progression, investigating how emergent readers learn grapho-phoneme relationships before studying phonemic awareness or phonics. The point is, this digital learning environment supports either student's learning preference.

This distinction is essential because the more privileged ways of thinking and learning can only be challenged by gaining insight into equally valid ways of coming to know. Deconstructing the canonical style as Turkle and Papert (1990) have, underscores the epistemological pluralistic nature of technology in general and case technologies in particualr, "and may hold the promise of catalyzing [attitudes about learning] not only within the computer culture but in the culture at large" (p. 133).

There are other ways to look at this, of course. Reinking, Labbo, & McKenna (2000) consider *genetic epistemology* but from a cognitive developmental perspective. They see the implementation of technology in the classroom as an act of assimilation and accommodation and posit that teachers may tend to implement digital technologies in accordance with their point of development along a technological continuum. In other words, the extent pedagogy and curriculum are transformed by technologies, indicates the degree to which technology is conceptualized as an extension of traditional print-based literacy curriculum, i.e., assimilated. Likewise, the degree to which digital literacies have transformed the learning environment from a "teacher-centered

learning focus to a focus on student-initiated inquiry" (Reinking et al., 2000, p.110) suggests accommodation. The difference between the two is the extent to which knowledge is restructured.

Reinking, et al., (2000), like Piaget, seem to consider this phenomenon a natural progression,

> [L]earners at one stage of development may not be developmentally capable of accommodating certain information, having only the capability to assimilate it, which leads to responses that may be puzzling or frustrating to those who have achieved a more mature developmental level (p. 111).

This is an important point because it further attests to the *versatility* of the CTELL initiative. Professors who implement it into teacher education programs can use it to help PSTs move from assimilation to accommodation. A range of student needs can be met synchronously. Teacher educators can also choose the level of implementation corresponding to their personal comfort level with the understanding that it is a potential means of nudging their pedagogical technological development, as well as, that of their PSTs. In the true sense of accommodation then, both pedagogy and literacy curriculum would be transformed as would the orientation towards learning for both teacher educators and preservice teachers.

If we were to look at this purely philosophically, the degree to which case technologies are integrated into the curriculum, suggests the learning environment that results. For instance, curriculum that focuses on the classroom culture and socio cultural issues related to schooling might build conceptual

information from a constructivist perspective, either *sociohistorical* aligned with Vygotsky's (1978) activity theory or *social constructivism* aligned with Bruner's (1990) notion of what students bring to the classroom in terms of cultural toolkits that are domain and culture specific (Spivey, 1997) shape the knowledge structures built. A *sociocognitive context* would situate preservice teachers in a learning environment where teacher candidates function as cognitive apprentices (Brown, Collins, & Duguid, (1989b; Lave, & Wenger, 1991; Teale et al., 2002). Apprentices learn through both digital interactions with master teachers in the video cases and through subsequent interactions with their professors and cohorts. PSTs construct meaning through situated action in the material and social world by storing dynamic images of their apprentice experience. These images are tied to self perceptions, feelings, internal states, and perceptions of the world. According to Gee (2004) these stored images are central to comprehension. By contrast, independent use of the anchor cases (such as for a homework assignment) suggests a more *radical constructivism* (Alvermann & Phelps, 2002; von Glasersfeld, 1995) learning context because PSTs construct knowledge autonomously, with a goal in mind but without collaboration. PSTs build viable conceptual models that are influenced by the context of an experience. As such it is a viable model of experience, not a representation of reality. Staver (1995) tells us that,

> "[K]nowledge is knowledge of the knower, not knowledge of the external world; improving knowledge means improving its viability or fit in, but not match with, an external world" (p. 1126).

Peer group interactions, perhaps, are even more influential in those classes that use anchor cases for inquiry-based learning (Shor, 1996). Because knowledge is constructed collaboratively through discussion within these groups, the argument could be made that "conventions of language" are mediating each members' understanding (Gergen, 1985, 1995; Wertsch, 1991) and, as a result, learning may actually be more aligned with *social constructionist* tenets. Thus, meaning-making is also a result of collective interpretations and group consensus to a variable degree.

Teacher educators could also introduce social justice issues by assigning comparisons across video anchors of the embedded sociocultural factors. Inquiry–based learning may then become critical inquiry pedagogy (Shor, 1996) where students are asked to discuss and analyze power relationships, the clash of D/discourses (Gee, 1996), consider and, hopefully, reconsider the genesis of their subjective beliefs. Interactions and analyses of this nature often result in transformative learning experiences where students change not only their orientation towards learning but are willing to interrogate and confront subjective assumptions (Fecho, 2001; Schultz & Fecho, 2000). Inquiries of this nature will engage teacher candidates in "effective explorations of how their own literacies have immediate consequences for their lives" (Fecho, 2001, p. 627), and I would add, the lives of their future students. Juxtaposing anchor cases unveils the inevitable transaction between the socio-economic status, the sociocultural identities, and the academic identities (Fecho, 2001) of the children that will be in the classrooms of these future teachers. This is a unique opportunity to tap

into the social complexities of the classroom with teacher-mediated guidance and the luxury of time for considering options and the consequences of pedagogy.

Thus, in addition to offering teacher educators multiple options for creating multidimensional learning environments, digital case technologies embody epistemological flexibility. However, whether PSTs learn within a radical constructivist, sociohistorical constructivist, social constructivist, or sociocognitive perspective may depend on the manner in which CTELL is implemented in the classroom, which could have important implications for programmatic changes. For these reasons, it is important to determine how CTELL instructors used the anchor video cases. How these cases were used will also allow a glimpse into the teacher educator's personal epistemic beliefs.

An Overview of CTELL as a Model for Teacher Education Programs.

Combining both case-based and anchored instruction bridges theory and practice (L. Shulman, 1992) offering multiple advantages. First, teacher candidates can rehearse their skills in a non-threatening low risk environment that enables concentration on learning from mistakes without the anxiety of negative consequences (Pindiprolu, Peterson, Rule, & Lingnugaris/Kraft, 2003). Second, as L. Shulman (1992; 2000) pointed out, teacher candidates have the opportunity to experience vicariously the prototypes, precedents, and parables in action as they are applied by experienced teachers (Teale et al., 2002). Thus, they have the benefit of learning their profession in an apprenticeship fashion (CTGV, 1990; Crews. Biswas, Goldman, & Bransford, 1997; Teale et al., 2002; Brown, et al., 1989).

Third, preservice teachers have often commented that they do not feel prepared to teach reading and that they would have benefited from longer and more intense field experiences (Henry, Castek, Roberts, Coiro, & Leu, 2004; personal communications during interviews and data collection with CTELL control groups). Teale et al., (2002) add to this assertion saying that first and second year teachers report needing more opportunities to have in-classroom experiences with skilled literacy teachers and more opportunities to practice the skills they have witnessed. Using case-based anchored instruction offers PSTs expanded in-classroom experiences. Although these experiences may seem somewhat voyeur-like, PSTs have control over the amount of visits they make to each case and/or learning concept(s); they have easy access to research based theoretical knowledge for each case and learning concept; and they have guidance and support from their peer group and professor. This collaborative learning atmosphere promotes communal knowledge building (Lave & Wenger, 1991) and opportunities to scaffold each others' learning (Tracey et al., 2002; Vygotsky, 1978; Fosnot, 1996). In addition, communal knowledge building sets the stage for working in the developing global economy (Shaffer, 2006).

Fourth, the anchored cases are grounded in 12 well-researched principles (Henry et al., 2004), which reinforce the prototypes, precedents, and parables of teaching and guide preservice teachers in the practice of learning to think like and respond as principled teachers (Teale et al., 2002).

Fifth, educators are increasingly aware of the importance of preparing students in digital literacies (Labbo, Reinking, & McKenna, 1998; Reinking et al., 2000; Leu et al., 2004; Lewis & Finders, 2002) and technology proficiency. Yet

rarely does training go beyond hardware and software use (Labbo et al., 1998; Reinking, 2000; Tracey, et al., 2002). CTELL is designed to train teacher educators and preservice teachers in the applications of technology intended to enhance the teaching and learning process (Leu, 2000; Teale et al., 2002). Specifically that means teacher candidates are experiencing the benefits of literacy and technology that have the power to transform how they think about learning and literacy curriculum. They are learning digital literacies that can be implemented into their eventual classes. It is not unreasonable to assume that many of these teacher candidates will define literacy much differently than did their teachers a decade ago. They have experienced first hand, ways to integrate literacy and technology and have seen the effects of that instruction in multiple classrooms.

Finally, CTELL training also addresses the problem recounted by Kamil, Intrator, and Kim (2000) that college and university faculties are often under prepared to instruct their own students in technology. Therefore, many teacher educators trained to use case-based anchored instruction will become digitally literate and fluent through experience. That is, "[instructors will] ...possess the metacognitive and strategic competencies that reflect an understanding of the underlying assumptions of technology use related to accessing and managing digital information in multiple symbolic formats (Labbo, et al., 1998, p. 279). Many of these educators are now positioned to construct new theories, pedagogy, and curriculum around digital technologies (Labbo, 2000).

Theoretical Perspective

This study is a qualitative research inquiry into the experience and theoretical perspectives of teacher educators who have implemented digital literacies into their reading methods undergraduate courses.

To clarify my orientation on the foregoing issues, I would first like to borrow from Hruby's (2001) well-researched metanarrative regarding social constructionism and literary research. He distinguishes constructionism from constructivism by saying that constructionism is a sociological description of knowledge while the latter is a psychological description of knowledge. He brings out the importance of intentionality in the process of knowledge accretion (for a further discussion on these issues refer to Hruby, 2001), saying one important tenet of social constructionism refers to the manner in which,

> "[C]ollectives generate meaning often without an explicit intention to do so. Socially constructed meaning is often taken at face value by members of a community as fact, reality, common sense, or otherwise inarguably foundational" (p.51).

This then becomes a central point in this study because preservice teachers in CTELL classes are intentional actors constructing knowledge—necessarily influenced by both cohorts and their instructors—within a discursively similar community. It is, in fact, the intention of the CTELL initiative to indoctrinate PSTs into the teaching community, to assist their appropriation of the prototypes, precedents and parables of best practice.

Although some theorists (Gavelek & Raphael, 1996; Gergen, 1985; 1995; as quoted in Spivey, 1997, p. 19) seem to disagree with this distinction, using the

terms interchangeably; Hruby contends, these are forms of macroconstructivism (i.e., social processes influencing psychological meaning construction) and an oversimplified distinction. I tend to agree with his assertions and wish to avoid this controversy. The embedded arguments are beyond the scope of this study and beside the point to some degree (i.e., the categories--or suffixes that denote the categories--are primarily social constructions in themselves that seem to defy resolution).

Side-stepping this argument suggests choosing one of the aforementioned frameworks to create an interpretive account of the participant's perspectives and perceptions. Yet, I feel a visceral resistance to creating prior limitations and am inclined towards building a bricolage or montage to represent the fluid and dynamic complexities inherent to classrooms in flux--classrooms where both teacher educators and their PSTs are forging new beliefs, pedagogies, and perhaps identities—classrooms where changing ideologies must necessarily embody inevitable conflict and competing commitments.

My resistance stems from personal ideologies that resonate with critical theory and emancipatory issues. Yet I recognize that all studies are political and my proclivity may surface anyway. This study departs from that persuasion in that it suggests "grounded theory". However, I also recognize it may be premature to expect that a grounded theory can be realized or constructed at this point in the evolution of New Literacies. Unveiling the early stages is best accomplished by creating a bricolage from a sociocognitive perspective. Denzin and Lincoln (2000) characterize a bricolage as an emergent construction formed and reformed, "as tools, methods, and techniques of representation and

interpretation are added to the puzzle" (p.4). Bricoleurs must attend to multiple perspectives and means of analysis, which may or may not include critical theory. I am also encouraged by Lincoln and Guba's (2000) belief that no social scientist must adhere to a single paradigm, "This is an age of emancipation; we have been freed from the confines of a single regime of truth and from the habit of seeing the world in one color" (p. 162). Denzin and Lincoln (2000) refer to the "researcher-as-bricoleur-theorist [as one who] works between and within competing and overlapping perspectives and paradigms" (p. 6). That is my intent here to create a mosaic of the participants' perspectives from their stories, observations, document analysis, and my interpretations informed by the multiple dimensions of a sociocognitive perspective.

A sociocognitive perspective holds that the social setting and the social interactions of the learners within that learning environment shape what is understood, what is learned, and what is valued. Drawing from constructivist theories of Vygotsky (1978, 1986), Piaget (1968), Piaget and Inhelder (1969), and Bruner (1977, 1987, 1990; 1996), and from situative theorists (Brown, Collins, & Draguid, 1989; Gee, 2004; Greeno, 1997, 1998; Lave & Wenger, 1991), this perspective reaches beyond the constructivists-tionists theories of learning to include multiple theoretical frameworks relative to educational contexts, including digital learning environments, and to the influences of culture. As an example, Leu and Kinzer (2003) provide convincing evidence that social learning theories (Bandura, 1986; 1997) are important in a sociocognitive perspective because the social learning strategies used by internet project participants equipped those PSTs with decision making frameworks (i.e., strategies they

learned from a more knowledgeable other). In other words, the multidimensional nature of a sociocognitive bricolage supports examination and re-presentation of the dynamic among the instructional contexts (i.e., traditional and digital), the CTELL instructors, and the preservice teachers.

The next section discusses these frameworks that under gird a sociocognitive perspective. This section also highlights Gee's (2004) distinction between natural and instructed learning processes and cultural learning processes. This distinction is important because there is an element to the CTELL initiative that incorporates cultural learning in an expert/novice context and through peer and professional collaboration.

Theoretical Underpinnings of a Sociocognitive Perspective

This section is presented in two parts—each part explains the aspects of learning that inform a sociocognitive perspective. The first part discusses how three views of constructivism function in an instructional context. The second part discusses social aspects of learning from a situated learning framework.

Constructivist learning theory in context. Constructivism informs a sociocognitive perspective by proposing theories of learning. Piaget, Vygotsky, and Bruner each posit learning theories aligned with constructivism (i.e., learners construct knowledge about themselves and the world through meaningful interactions with their environment and with knowledgeable others). Moshman (1982) further classifies constructivism into three competing forms: exogenous, endogenous, and dialectical. Exogenous subscribers would be influenced by Vygotsky's (1978) notion that learners adapt knowledge structures that were previously formed by social and cultural artifacts. In this study the preservice

teachers who were educated during the whole language era, would need to expand their instructional repertoire to include a more balanced approach to literacy instruction. A balanced approach congruent with a sociocognitive perspective offers children a range of instructional activities offered at developmentally appropriate stages.

Endogenous subscribers would be more influenced by Piaget's (Piaget & Inhelder, 1969) theory that knowledge structures precede and guide a learner's interaction with the environment. To continue with the previous example, preservice teachers who had assimilated concepts of whole language as students would accommodate those structures to include the theories about balanced literacy instruction. The impetus to make these accommodations arises from the state of disequilibrium preservice teachers experience as they encounter competing instructional practices and theories (e.g., phonics, word analysis, and word recognition). According to Brooks and Brooks (1993), new knowledge comes from neither the preservice teacher nor the new instructional information but from her interaction with the new theories and her subsequent reflections upon that interaction.

Dialectical subscribers, on the other hand, would resonate with aspects of both of the above constructivism forms. They believe that knowledge structures and cognitive capabilities benefit from reciprocal interactions between the individual and the environment, but would not privilege one over the other. For example, Bruner's (1987, 1990) constructivist theory is interactional in that he was concerned with the role of culture on cognitive development and incorporated the Piagetian notion that cognitive development occurs in

progressive stages as mental structures and representations become more elaborate through experience. Concerned also with the sequence of representation, Bruner (1987, 1990) advocated a spiraling curriculum wherein students are engaged in new learning, first in a simplified manner, and subsequently in exceedingly more complex ways. Thus, our same preservice teachers would be introduced to "curriculum [that] is presented whole-to-part with the emphasis on big concepts" (Brooks & Brooks, 1993, p.17). That is, these preservice teachers would be introduced to segments of master teachers conducting a balanced approach literacy lesson in an anchor video. Such demonstrations of children successfully engaged in phonemic awareness instruction or phonics instructions would at the very least, create curiosity and interest in preservice teachers who were from a culture or educational environment that emphasized only whole language instruction. These students are now primed and in a state of readiness (Bruner, 1990) to learn new concepts and build more complex mental structures regarding the many aspects of a balanced literacy curriculum.

Cultural learning in context. Situated learning theory is relative to a sociocognitive perspective because it is concerned with the interrelationships among culture, communication, and cognition in a variety of settings. Meaning making from a situated cognitive perspective is actually a simulation of an experience within a particular time and space. According to James Gee (2004), we build model simulations that are applicable to a context in order to make sense of that context and understand the affordances that context might allow. Deeper and more complex experiences allow us to build more exacting models,

which in turn, prepare us for the affordances of appropriate communication and action in the real world:

> "So meaning is not about general definitions in the head. It is about building specific game-like models (wherein we can act or role-play other people's actions) for specific contexts. Even words that seem so clearly to have clear definitions...do not." (Gee, 2004, p. 51).

He goes on to further explain:

> "Language is not about conveying neutral or objective information; rather it is about communicating perspectives on experience and action in the world, often in contrast to alternative and competing perspectives[.]" (p. 53).

Likewise, in case-based anchored instruction preservice teachers engage in similar role-play "trying on" perspectives of particular teachers with embedded problems that contextualize a particular classroom. In this context, novices learn to function as an expert might in a similar situation but with the guidance of a more knowledgeable other (Vygotsky, 1978). The context is an integral part of what is learned, interpreted, and what can be used in future contexts. The point is to mobilize knowledge from this learning context to a novel situation. Collins, Brown, and Newman (1989) describe this objective in a similar cognitive apprenticeship:

> "A critical element in fostering learning is to have students carry out tasks and solve problems in an environment that reflects the multiple uses to which their knowledge will be put in the future" (p. 487).

Jean Lave (1988) and others, (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991) reject models of knowledge transfer that isolate knowledge from practice (i.e., transmission models based on abstractions) and endorse those models that situate learning in authentic contexts. Lave and Wenger (1991) describe legitimate peripheral participation (LPP) as a tool for understanding what takes place when novices are infused into communities of learning. Essentially, LPP allows an individual to become an insider with the objective of learning to function within that community. Over time they acquire that community's viewpoint, manner of speaking and behaving; they are, in short, enculturated (Brown et al., 1989) as engagement increases in participation and complexity (Wenger, 1998). CTELL has similar goals for preservice teachers in cognitive apprenticeships. That is, to experience communities of practice so that over time they too, can become professional members capable of practicing the prototypes, precedents and parables (Shulman, 1986; Kagan, 1993) of the teaching community.

Juxtaposing anchor cases, identifying and solving problems helps preservice teachers build professional identities through experience—working in a professional environment using the tools and technologies of the profession, creating artifacts of experience, storing knowledge and skills they can call into play as educators (Gee, 2004). This is a cultural process; Gee would call it cultural learning.

In his critique of traditional schooling, Situated Language and Learning, James Gee identifies three learning processes: natural, instructed, and cultural learning processes. While all three are relevant, *cultural learning* is the one I

want to focus on in relation to CTELL's collaborative learning approach from a sociocognitive perspective.

Using his example of learning (or not learning) physics, I will briefly explain natural and instructed learning processes in order to highlight the benefits of cultural learning.

Natural learning processes are biologically inherited (i.e., walking, talking, etc.). All cultures perform these actions successfully. *Instructed learning processes* are not biologically supported and overt instruction does not ensure success (i.e., learning geometry or physics). Consider any profession as a cultural group, whether it is physicists, physicians, or educators. Gee believes becoming a member of a professional group requires deep learning through a cultural learning process. He says:

> "physicists (masters of physics) long ago realized that if you want someone really to learn physics deeply in the sense of becoming a physicist then, you need to turn learning physics into a cultural process and not an instructed process
>
> (or not just an instructed process). (Gee, 2004, p.13).

He continues to describe learning as a *cultural process* in much the same way as situated learning theorists describe cognitive apprenticeships—giving information "just in time" when it is developmentally appropriate, when it can be understood and put to use; offering extended information after learners have had relevant experiences they can relate to the information. The cultural learning becomes a matter of building an identity as a physicist.

Cultural learning processes for our purposes bolster the effect of using case-based anchored instruction for teacher education, enhancing the instruction process and helping them making sense of their field experiences. In short, the cultural process as Gee conceptualizes it facilitates identity formation as a professional.

Why is this important? We so often hear from teacher educators that preservice teachers have difficulty transitioning from the identity of student to an identity as a teacher. Thus spending more time working within a cultural learning framework may help first year teachers implement best practices sooner in their professional lives. A sociocognitive perspective supports examination of the continuous reciprocal interaction among behavioral, cognitive, and cultural influences at work in a situated learning environment and may help us better understand the need for programmatic changes when warranted.

Summary of Chapter Two

In this chapter I introduced CTELL as a reconceptualized teacher education program that anchors instruction to digital case technologies. Components of CTELL that are central to this inquiry (i.e., case-based and anchored instruction) were defined, and the theory and research undergirding those components were explained in detail. This section also highlighted philosophical perspectives that contextualize learning within anchored digital case technologies curriculum. In addition, I offered an account of the theoretical perspective from which I conducted this study and the frameworks that support that perspective.

In the next chapter, I provide an overview of the Long Interview methodology, describe the participants, and explain the procedures for collecting data and methods of analysis.

CHAPTER THREE

METHOD

The purpose of this study was to investigate the teacher educators' perceptions of using CTELL anchored instruction for undergraduate reading methods courses.

In this chapter, I explain the stages of McCracken's Four-Part Method of Inquiry:

1. The review of analytic categories and interview design
2. Review of cultural categories and interview design
3. Interview procedure and the discovery of cultural categories
4. Interview analysis and the discovery of analytic categories

In addition, I explain how this methodology is used to build a bricolage. I also offer a description of the research setting, a description of the participants, and explain the data collection and analysis procedures.

An Overview of McCracken's Four-Part Method of Inquiry

This study is a qualitative research inquiry into the experience and theoretical perspectives of teacher educators who have implemented digital literacies into their reading methods courses. McCracken (1988) explains qualitative inquiry as a tradition designed to offer "explanations that take us 'back stage' in the culture in question, to let us glimpse assumptions and categories that are other wise hidden from view" (1988, p. 49). According to Miller, Van Maanen, and Manning, (editors of the Sage publications Qualitative

Research Methods Series as quoted in McCracken, 1988), McCracken's methodology is the method of choice when the objects of investigation are cultural categories, and participants' assumptions and beliefs—and when total immersion in the studied context is not possible or desirable. Although literacy educators incorporating new technologies into their curriculum are not a culture in the classic anthropological sense, these educators can certainly be viewed as a subculture of existing literacy educators in the extended use of the word (Gee, 2004). McCracken's (1988) methodology (i.e., the Long Interview), is designed to accomplish ethnographic objectives without expending repeated and prolonged involvement within the target culture. I have adapted his methods of data collection and structured analysis to construct a bricolage of the participant's perceptions.

McCracken's Long Interview is designed to draw the researcher into the participant's mental world, to glimpse the logic that makes up his or her world view, and to see the content and pattern of their classroom experiences. By using prompts and a questionnaire designed from an extensive literature review, McCracken's four-part method of inquiry (see Figure 5) imposes structure and order on the collection of data without imposing leading responses from the participant (i.e., by employing McCracken's law of non-direction). Although the Long Interview can add up to several hours, data collection is done with regard for the participants' time investment and with respect for their privacy.

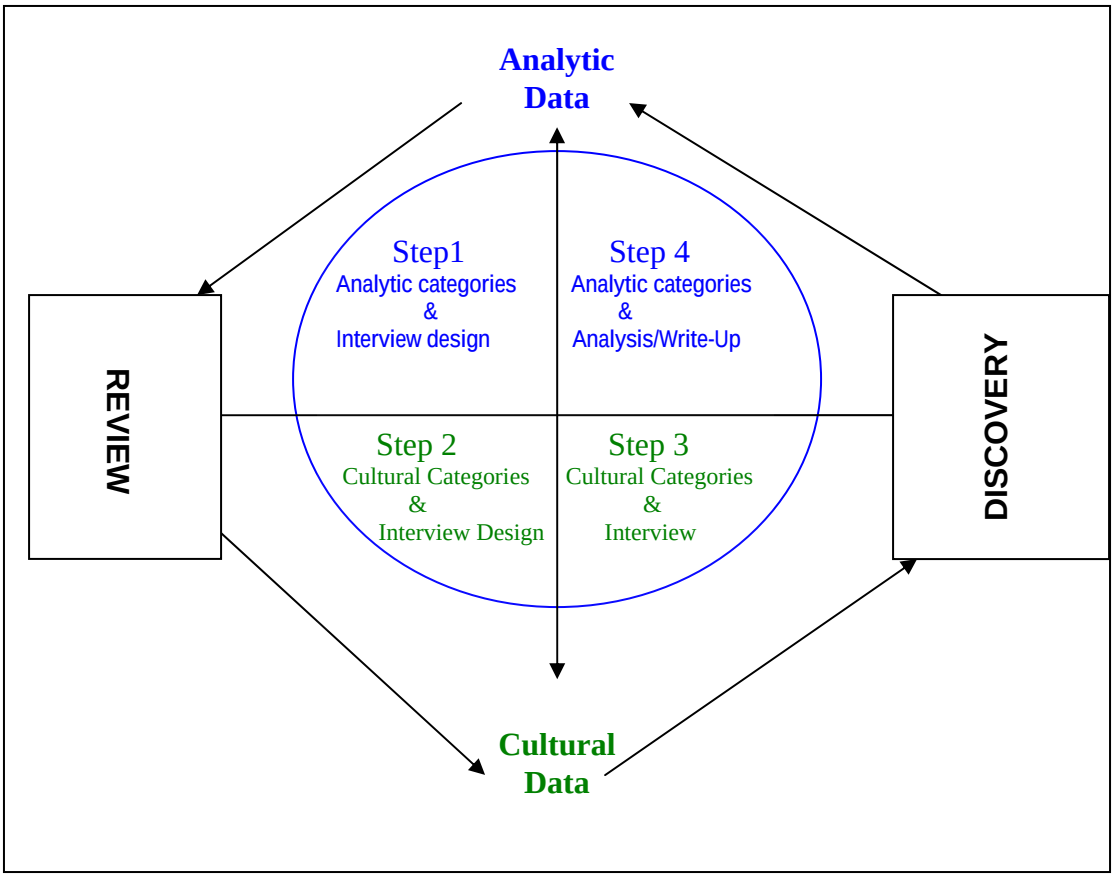

Figure 5: McCracken's Four-Part Method of Qualitative Inquiry

In the above figure, there is a counter clockwise progression of data collection and analysis. This circle of inquiry is divided into two domains as follows:

(a) the east-west axis separates the analytic and cultural domains

(b) the north-south axis separates the review and discovery domains.

The axes further subdivide the research circle into four quadrants, each of which represent separate and progressive steps in the research process. I explain each of these quadrants (and the stages within each quadrant) in turn.

Step One: Review of Analytic categories

McCracken reminds us that literature reviews are more than idea collection. They are, in fact, a critical undertaking, "a kind of qualitative analysis" (p. 31) that summons the conscious and unconscious assumptions of scholarly work. The literature review allowed me to identify the concepts that give rise to percepts –impressions of those concepts that will take shape in this study. Consequently, as expectations formed, I realized that any counterexpectational data that might surface during interviews or document analysis could be, as McCracken says, "highly provocative" (p. 31). In other words, we should strive to do more with less data by "working in the problem spaces" (personal communication, Bettie St. Pierre, April, 2004). As McCracken directs, the domain the interview questionnaire explores is determined by the extant literature. By the end of the literature review I had a list of categories and relationships that might initially organize my data (refer to Table 1). Hence, the first step in this process was designed to identify the categories and relationships to investigate.

Table 1: Review of Analytic Categories

Step 1: Analytic categories
Agency
Use of cases
Changes in instruction
Metacognitive engagements
Challenges as teacher educator
Effective traditional preservice education
PSTs adopting resisting forming new literacy theories

Step Two: Review of the Cultural Categories

It is at this point that the researcher becomes an instrument of inquiry. It is also at this point that McCracken warns the investigator of the hazards of familiarity. Working within one's culture can have the effect of dulling the researcher's observational and analytic capacity. The tendency is to overlook the familiar. In spite of that, McCracken believes the advantages out weigh the disadvantages. He states,

> "But it also has the advantage of giving the investigator a fineness of touch and delicacy of insight that few ethnographers working in other cultures can hope to develop. This is an exceptional advantage[.]" (p. 33).

Consequently the cultural review has three purposes. The first is to identify the categories and relationships that will initiate interview questions and formulate a questioning strategy.

The second purpose is preparation for data analysis. The intent is to clarify the interrelationships among the cultural categories so that the interviewer can locate the matches in the interview data. The researcher is supposed to listen to the self in order to hear what the respondent is saying.

In order to accomplish this step McCracken suggests examining subjective experience to recall an incident that was at variance with either previous experience or social convention. I found this idea problematic. Which experience, and how could it be relevant to my task at hand? Despite this reservation, I selected entries from my data journal:

Why this topic interests me.

> *I saw the same thing in my own students. They don't seem to understand the difference in getting a grade and learning—creating who they want to become....I have struggled with the same sorts of issues Dr. Vann (pseudonym) recounts. PSTs just don't "get it". How will they become effective teachers if they aren't thinking like teachers? Observing her classes, I saw the consternation in her face. We've discussed it on numerous occasions. PSTs's (preservice teachers that I interviewed) commented that they weren't getting what they wanted. What did they want? Activities to keep their students busy? A grade for their work? Why don't they understand she (Dr. Vann) was trying to give them both—theory, experience, an opportunity to become a thinking individual with a repertoire of methods and an understanding of materials so that they might have what they need to diagnose and deliver instruction for a class of students. How to help them develop a purpose for learning—will giving them more classroom experience help an awareness surface? Is CTELL a way to do that?*

These were intense issues for me—and still are. It is both frustrating and what makes teaching interesting. Thus I realized my interests have an emancipatory bent. My passion for education was aligned with Grant Wiggins' (1989) notion that education is about freeing students from their unexamined thoughts and emotions. I want students to engage in the process of education more than the product which, in this case, was the grade they earned as students. I realized too that this issue is tied to identity formation. With this realization, I began to identify the cultural categories below (refer to Table 2).

Table 2: Review of Cultural Categories

Step 2: Cultural categories
Agency
Identity issues
Epistemological shifts
Role as teacher educator
Role as preservice teacher
Challenges as teacher educator
Preservice teachers developing a purpose for learning

The third purpose of step two was to provide a strategy for creating distance. Knowing the cultural categories that influence my view of teaching and learning helped me gain a clearer understanding and, as a result, permitted a critical distance from it (McCracken, 1988). In summary then, step two is a process of familiarization and defamiliarization that facilitates understanding and explication.

Step Three: Discovery of Cultural Categories.

Step three intends to provide careful construction of the questionnaire by including question types that are designed to identify key terms, minimize respondent distortion, facilitate productive avenues of inquiry, and aid the interviewer in listening for concepts the respondent merely indexes but does not explain. The Interview Protocol (Appendix A) depicts those categories in their final form. The potential prompts and extensions offered possibilities for further probing on cultural and other potential issues from the respondents' perspectives.

The interview is the third information source. The literature review and cultural review initiated my search for the categories and relationships to

anticipate. And, as such, those anticipations made the unexpected categories and relationships that surfaced during the interview more visible.

I made three adaptations to McCracken's methodology at this point. I will explain each as I proceed.

First adaptation: data sources. I used more resources for data than one interview. Data gathering began once the Institutional Review Board of the University of Georgia initialed approval and the appropriate consent forms had been signed. Multiple data sources were triangulated in order to aid the identification of educators' perceptions. Data sources for this project included respondent's answers from the aforementioned selection survey (Appendix B), and the sample interview protocol (Appendix A). Student reflections, emails, course comments, instructor training materials and comments, lesson plans, and instructor syllabi were consulted as corroborating evidence.

In addition, I asked instructors for syllabi constructed before CTELL training, syllabi used for their CTELL classes, and syllabi created for subsequent courses after implementing digital literacies. Follow-up email interviews were also used for clarification of first responses. Subsequent interviews and telephone follow-up conversations were also used for some respondents. Archive data collected during the course of the project was examined as well.

During the course of data collection and analysis I kept an account of my reactions, reflections, and developing perceptions. This researcher's journal served as both an audit trail and an additional means of data. As such, this journal was an additional source to inform and guide recursive data collection

and analysis. Member checks were used to clarify and refine my analytic interpretations (Lincoln & Guba, 1985).

Second adaptation: participant selection. The second adaptation related to the participants chosen. McCracken believes respondents should be complete strangers, few in number, unknown to each other, and should represent a contrast within the respondent pool. Although I understand the efficacy of these stipulations in other circumstances, such stipulations would have undermined the purpose of this study. The purpose of this study was to examine the perspectives of three volunteer teacher educators from a large southeastern university, who used the CTELL materials in different ways, with varying frequency, and according to varying descriptions and rationales for use. Purposive sampling (Creswell, 1998) was used to select participants based on their answers to a brief survey about the frequency and the manner in which they used the video cases (Appendix B).

Participants were two professors and one doctoral candidate with extensive CTELL training and experience who regarded CTELL as a positive experience. Participants were told that the purpose of the study was to examine the ways incorporating digital literacies may have challenged or enhanced their pedagogy.

As I will explain later in this section, these participants were known to me. I had observed their classes, interviewed their PSTs, and participated in CTELL training with them. I had taken a class with Dr. Brooks as doctoral cohorts, participated in research, and studied with two of the other professors, Drs. Vann and Grant. Each was chosen because they had extensive classroom and teacher

education experience. In addition, each of them seriously embraced the CTELL initiative. There was, however, one contrast in the participant pool as McCracken suggested. Dr. Brooks was a doctoral candidate at the time (and likely to have a different perspective than tenured professors) with seventeen years teaching and mentoring experience (and has since earned her doctorate).

Initially Dr. Brooks and I were graduate students in the same graduate program. She had seventeen years experience in an elementary classroom, half of which was in a lab school. During her years in a traditional elementary school, she mentored new teachers. Dr. Brooks lived and breathed teaching; she was very passionate about her profession, constantly thinking about ways to improve literacy instruction. As she progressed through her doctoral program, her focus shifted towards improving teacher education as it related to literacy instruction in the elementary grades. She was particularly interested in including digital literacy. As a result she wholeheartedly embraced the CTELL project. She believed her philosophical approach to teaching was congruent with the sociocognitive tenets of CTELL, "by challenging PSTs to construct knowledge collaboratively, scaffolding them where necessary. I would provoke them or ask some type of question to entice them to respond through collaboration, so we could all work together." She functioned as the expert guiding her PSTs while using the anchor cases as stimuli.

She shared her ideas about teacher education with me on many occasions, stating it succinctly in our interview.

> *Students [preservice teachers] need theory and application, hands on. They need to see it tied together. They also need an experienced mediator*

> *who can provide classroom connections. Students need to understand that effective teaching pulls all instructional concepts together in an integrated way. It is not fragmented–as it is presented in methods texts--just because one chapter is decoding and your second chapter is vocabulary and your next chapter is comprehension. It is a balancing act, the teacher needs to gain that sense to be intuitive--be real strong in methods--so you know that that child needs more skill and drill or explicit instruction or needs problem solving. An effective preservice methods course will help them see that. That is a big package. That is were CTELL helped.*

Dr. Brooks believed preservice teachers needed to see authentic instruction in an authentic context. She explained," that is how CTELL helped and that [seeing authentic instruction] is difficult to do in traditional courses. But is the ideal."

Dr Grant described herself, "I am a little more teacher education than researcher." Dr. Grant's career interests evolved from an early focus on special education towards reading instruction and supervision. She has been a university professor of reading instruction for nine years. It was my impression, as a student in one of Dr. Grant's seminars that she was very focused on the potential of New Literacies and the implications for teacher education. It was during our weekly sessions on Multiliteracies that I first began to sense the tensions and competing commitments she experienced as a teacher educator. I also observed her teacher education classes and interviewed her PSTs. Our collective opinion was that she had a very student-centered approach and a genuine interest preparing educators for their careers. She held similar views to Dr. Brooks. Having been a School District Supervisor, she observed many classes over the years. Dr. Grant believed preservice teacher education courses should:

> *Offer a knowledge base and allow PSTs to see what it looks like in the classroom and how that translates for kids. PSTs need a knowledge base about learning to read and what best practices are. They need to know why you make certain instructional decisions. Be reflective to understand what kids need. PSTs need practice in the classroom so they can be instructionally strong. They also need a good mentor. Nearly every district I've been in has some requirements; Teachers need to be able to integrate and balance instruction that surrounds district requirements. To make change you have to look at instruction. I was actually very excited to see the anchor cases because I have felt one thing really lacking with undergrads is experience in the classroom.*

My interview with Dr. Vann was the most complex, probably because I felt that I knew her quite well. Over the years as a graduate and doctoral student I had taken many of her classes. I knew her to be a very caring sensitive individual with her students' best interest at heart. Her classes were collaborative, egalitarian, and incorporated social justice issues. She functioned as an agent of change, enacting the principles she promoted both globally (e.g., working with women's issues in Africa) and in the microcosm of her classroom (Hines & Jobson, 2008).

Dr. Vann understood the workings of oppression and constructed her classroom environment in ways that undermined the potential power relationships. She was able to offer her PSTs the appropriate challenges and supports that would maximize their growth as professionals. Undergraduates did not always understand this. Many of the undergraduates I interviewed from her methods class seemed more concerned with either their grade in her class or collecting a repertoire of activities to keep their future students busy. Their primary concern should have been learning instructional concepts and

foundational knowledge. She had shared her frustration and concern about this on several occasions. This was not an isolated concern. Other professors had shared similar worries during interviews and CTELL training sessions. PSTs were not thinking like professional teachers; they were struggling to be on that side of the desk. Instead, many were still thinking as students primarily concerned with earning a grade. These issues, I suspect, colored her responses about her philosophy of teaching reading methods.

> *Theoretically yes [aligned with the CTELL]. Although I think I probably would operate more narrowly from a cognitivist view of reading, sort of a strategic. Well, focusing on what goes on in the head of the child learning to read. And not addressing as much the social issues or cultural issues as much as I would like to. I am hoping that someone is doing more of that. I find that it is enough for me to just try to establish some basic knowledge about cognitivist schema...theoretical cognitivist view of reading.*

Observing her classes I knew that she incorporated constructivist delivery methods, encouraging PSTs to build knowledge collaboratively though activities and discussion. I also sensed a bit of tension between what she was doing in the classroom and what she felt she would like to do given time and opportunity. Dr. Vann outlined what effective preservice methods courses should offer PSTs:

> *A sufficient experiential component. I do believe that they need to learn sort of, what I consider foundational concepts and ideas. So I have [been] influenced, I am afraid, that I have to say is by National Reading Panels identifying five dimensions of reading. I better make sure that they know what phonemic awareness, phonics, [etc.] are And that they have an idea of what the instruction might look like. For example, what consonants are. When they see CBC in the teachers manual that they know what that stands for and that they know what a consonant blend is verses consonant diagraph. That they know*

some of the terms that they are going to encounter in the materials they were given. In addition it is my responsibility to make them aware that materials are a big part of teaching reading and that in this day and age they are most likely to be given materials to use. They are not going to be just finding children's literature and teaching reading. So I feel I need to prepare them for all possibilities as far as some foundational knowledge... If they are just given [State] Performance Learning Objectives, they would have an idea about what those are and how to teach to them. I have given them teachers manuals and asked them to figure out which methods of instruction are designed to try to meet those standards

Adaptation three: interview transcription. The third change was in transcribing the interviews. McCracken suggest having a verbatim transcript prepared by a typist to avoid frustration and familiarity with the data. I did actually hire two typists; the first found it too difficult and quit after several weeks. The second typist made significant mistakes—mistakes that resulted from being an outsider in the profession. As a result I found retyping the interviews gave me an intimate perspective on the data that I might not have realized had I not listened to the tapes and transcribed each of them again.

To summarize step three: the purposes were to construct an interview protocol that reflected the categories and relationships from steps one and two; choose appropriate participants; and, select other data sources that might corroborate interview testimony. During the interview phase, respondents were asked to give retrospective accounts of their experiences using digital literacy technologies in their reading methods classes. For example, how they used the video cases, to what extent they used the video cases, including the nature of the assignments given PSTs and subsequent use of digital literacies in their current

reading methods classes. I was specifically looking for instances of transformative learning, examples of how teacher educators may have refined their teaching, and their perceptions of what a New Literacy Perspective might become.

Step Four: Discovery of Analytic Categories

The fourth step is a process of analysis. The object of this step is to determine the categories, relationships and assumptions that inform the participants' views of the topic of interest. This step offers a five-stage structure to aid in identifying and coding themes, patterns, and relationships (these stages are summarized in Figure 6 below taken from McCracken's diagram, 1988, p.43).

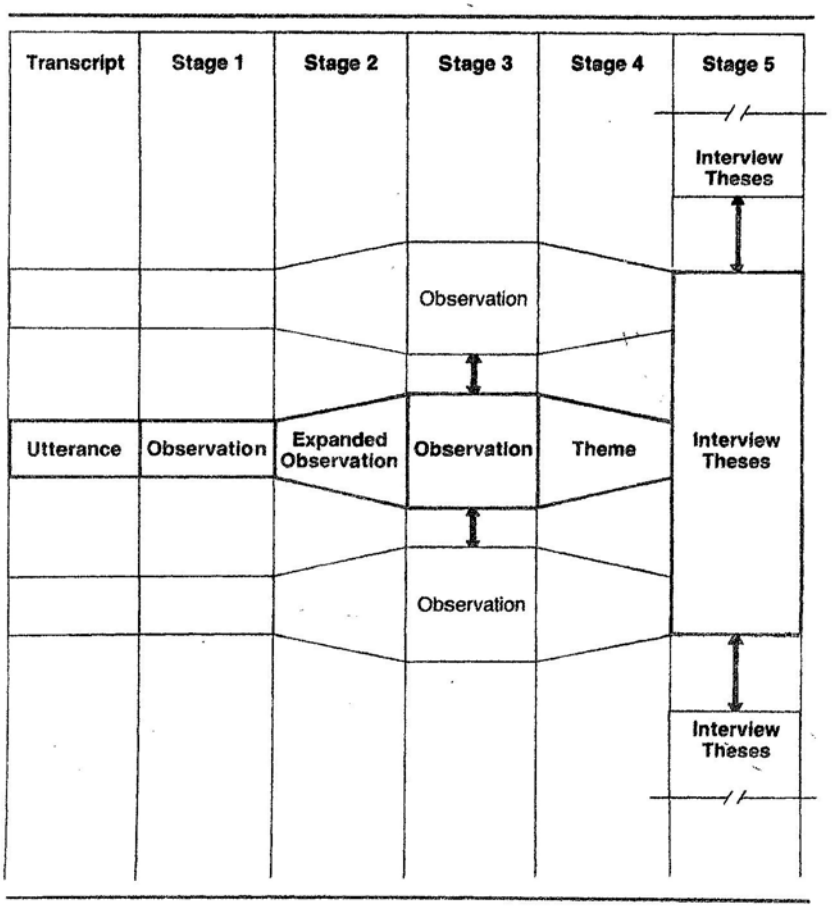

Figure 6: McCracken's Stages of Analysis

Stage one identifies useful utterances (participants' statements) without concern for its relationship to other aspects of relevance. Each utterance creates an observation. Observations are useful utterances that can be used as potential entranceways into the assumptions and beliefs of the participants (Geertz, 1976). Usefulness is determined from the literature and cultural reviews from previous steps. I highlighted each useful utterance in the transcript for each participant in order to prepare for stage two. The self is used as an instrument at this stage. Imaginative capacity allows grasping the potential of meanings that might suggest relation to the academic literature or cultural review. McCracken warns the investigator to beware of premature closure. At this early stage one analysis, generalities should be postponed (Glaser & Strauss, 1967) until stage four. Within the text of each interview I made notations of possible categories or relationships. These notations had to be later culled and refined using evidence from participants' statements.

Stage two develops these observations according to the evidence in the interview transcript and the previous literature and cultural reviews. I used each observation as a lens to scan the data for a potential relationship within each set of interviews. I created a matrix from the categories and themes identified. I was looking for all "logical relationships, not only those of identity and similarity, but those of opposition and contradiction" (McCracken, 1988, p. 45). For example, one professor said she did not think she used the video cases as an anchor for instruction. However, in her testimony she describes the manner of use in a way that suggests she was actually anchoring instruction to the video cases. She was not being dishonest, rather it was a simple contradiction caused by either

miscommunication or different understandings of “anchored instruction.” Thus approaching the data in this way provided a great deal of insight.

Stage three examines the interconnections among observations, again with the previous literature and cultural reviews in mind. Observations are extended further in this stage. My matrix now included all three participants with categories and relationships in the far left column. Statements from each respondent were inserted to right of each category under the individual participants. An example follows:

Table 3: Matrix Example

Category	Dr. Brooks	Dr. Grant	Dr. Vann
Philosophy of preservice teacher education	Statement of philosophy	Statement of philosophy	Statement of philosophy

Observations were now developed in relation to other observations within but primarily across participants. The primary text for analysis is now the matrix with embedded quotes from each participant. The original transcript and tapes are used only for corroboration or clarity of understanding context at this point. Earlier patterns and themes that gave rise to new understandings and categories were refined during this stage. As the major points of the interview became more apparent I inserted notes within columns among the statements of each participant that suggested themes or corroborated earlier identified categories and relationships.

Stage four subjects the observations to collective scrutiny creating patterns and themes of consistency and contradiction. This stage is a time of judgment, according to McCracken. New categories were sometimes identified and added;

others were collapsed or eliminated if they seemed of lesser importance. At this point I was looking for interrelationships among themes. Redundant themes and categories (from Tables 1 and 2) were subsumed under more informative themes. I arranged the remaining themes hierarchically under the division of cultural and analytic headings. Themes are hierarchical in that only topics are shown in the below example. A complete listing of themes is shown in the interpretive matrix that follows.

Table: 4: Analytic and Cultural categories

Analytic / Cultural categories
Agency (instructors) - Identity formation (preservice teachers)
Instructors' CTELL Experience
Effective traditional preservice education—Perception of Instruction precedents
Use of digital case technologies – Changes in instruction-prototypes
Role as teacher educator--Challenges as teacher educator-parables
Perception of Preservice teachers' CTELL Experience
Metacognitive engagements-Epistemological shifts – Adopting resisting forming new literacy theories—Understanding of literacy education Student Learning

The fifth stage subjects these patterns and themes to a final analysis. Cultural categories are transformed into analytic categories. That is, the general properties of thought and action of the teacher educators in this study create a collective perspective of the CTELL initiative. My analysis shifted in this stage from a focus on their individual perceptions to my perception of their experience as I see it from a social science perspective (McCracken, 1988).

Thus, this five stage process moves from the particular to the general. That is, the researcher moves from the finest details of the interview transcript

proceeding towards more general observations. This process also creates a record of the path of reflection and analysis.

One reason I chose McCracken's four part method of inquiry is because it offers structure and process to construct a bricolage of teacher educator's perceptions. This is so because I was functioning as the instrument of data collection and analysis, and the bricolage I constructed was a reinterpretation of the data stories collected.

An Overview of a Bricolage

A bricoleur is said to be one who creates from the tools at hand (Levi-Strauss, 1966), one who produces an emergent construction that shapes and reforms as "different tools, methods, and techniques of representation and interpretation are added to the puzzle" (Denzin & Lincoln, 2000). The bricoleur researcher blends together understandings to form new meanings and perspectives based on interpretations that build on one another. Denzin and Lincoln describe this researcher as a quilter who:

"[S]titches, edits, and puts slices of reality together. This process creates and brings psychological and emotional unity to an interpretive experience." (2000, p. 5)

They go on to say that "The researcher-as-*bricoleur*-theorist works between and within competing and overlapping perspectives and paradigms." (p. 6).

A bricolage is grounded in the epistemic notion of complexity and incorporates multiple dimensions of the history that shapes both the researcher-bricoleur and the objects of research. Working within this network of overlapping discourses, I integrated multimethodological, multitheoretical, and

multidisciplinary modes of research as Kincheloe (2001; 2005) suggests. That is, I focused on webs of relationships, and interconnections among phenomena in order to grasp the influences of social structures and contextual contingencies. Given that any social structure functions differently in relation to context (i.e., time and space), I believe a bricolage best brings out the motivations I identified in the data. For instance, CTELL professors sometimes taught in ways they were not aligned with philosophically because they knew what inexperienced teachers may face in certain schools. Professors were really trying to supply these teachers with an armamentarium of methods, materials, and theory to handle difficult situations. That is because certain powers or authorities might exercise controls that the CTELL professors understood to be more aligned with an authority's agenda (perhaps test scores) instead of having a more student centered agenda. I saw the professors' efforts to empower the new teachers as a means to transcend those restrictions by encouraging them to be strong in theory and practice. Yet, I also recognize that has always been partly my agenda, as well.

Divergent view of a bricoleur. Although Crotty (1998) and Denzin and Lincoln (1994) disagree on the manner in which the bricolage is constructed, I found it instructive to consider their arguments. While each author draws from Levi Strauss' explanation of bricoleur, they hold different interpretations of how the bricoleur functions.

Crotty's objection seems to target Denzin and Lincolns' notion of a bricoleur as one who employs "inventiveness, resourcefulness, and imaginativeness" (Denzin & Lincoln, 1994, p.2, as cited in Crotty). His main objection is their reference of a bricolage as "self reflexive" (p. 49). Instead,

Crotty says that the researcher-as-bricoleur must attend to the properties of the objects of research. He admits, however, that the bricoleur, "in [the] constructivist vein, requires that we not remain straighjacketed by conventional meanings we have been taught to associate with an object" (p. 51). On the contrary, he says we are to approach the objects of research with a "radical spirit of openness to its potential for new or richer meaning. It is an invitation to reinterpretation" (p.51). Crotty's argument seems to be that although the bricoleur must be aware of the historical properties that "pre-constrain" the objects of research; the bricoleur should not be stymied by functional fixedness (i.e., inflexible problem solving where objects being used in one way are not perceived as useful in other ways). The bricoleur must, instead, see beyond those properties and have the ability to "re-vision" for new purposes. Yet, the fact that the objects of research had a former function also means that limitations exist insofar as future use or meaning. According to Crotty, then, imaginativeness and creativity can only be exercised within those limitations and self-reflexivity is not relevant. Thus, "imaginativeness and creativity [are] exercised in relation to these objects, these materials" (p. 50).

I found this argument important because McCracken offers a way to bridge the self-reflexive issue. In brief, McCracken explains that because the researcher is working within his or her own culture, the researcher has a unique understanding of the context and can supplement and interpret the data. Addressing Crotty's concerns, as a researcher working within my own culture, I have an advantage because the properties of the objects of research and their

function are familiar to me. As such, the limitations are understood and the re-visions or re-presentations I created were interpreted with those limitations in mind.

To create this bricolage I first constructed a response matrix (Stage one and two of Step four) from interview responses. From that matrix I created the interpretive matrix (Tables 5 – 8) of descriptive summaries of responses to further organize the data (Stages 3-5 of Step four). Each section of this final matrix addressed specific themes relevant to each research question.

To recap, I used the Long Interview process as the primary resource for building a bricolage--a qualitative understanding of the ways culture mediates human action in this context. This source was triangulated with my experience on the CTELL project, participant selection surveys, and corroborating data from student interviews and reflections, emails, course comments, instructor training materials and comments, lesson plans, and syllabi.

Summary of Chapter Three

In this chapter, I explained the stages of McCracken's Four-Part Method of Inquiry and explained how I used this methodology to build a bricolage. I also offered a description of the research setting, a description of the participants, and explained the data collection and analysis procedures. The next chapter details the results of my analysis.

Table 5: Professors' Perception of Student Learning Using Digital Case Technologies

Category Description	Dr. Brooks	Dr. Grant	Dr. Vann
Use of digital case technologies for teacher ed.	• PSTs see variety of teaching styles and instruction • Contextualized learning • Stimulated questions on instruction not shown • Used as anchor for assessment	• PSTs see variety of teaching styles and instruction • Contextualized learning • See developmentally across age levels • S & T Interactions stimulated new ideas for Inservice teachers	• PSTs see variety of teaching styles and instruction • Contextualized learning
Impact on understanding of teaching literacy	• See that instruction is threaded not fragmented	• metacognitive exp for IST • management of kids and classroom • see multiple uses of in classroom • transitions fr activity to activity	• PSTs explore independently for autonomous learning
metacognitive engagements & Impact on desk perspective (PSTs began thinking like teachers instead of thinking like PSTs)	• Experience dependent • Designed activities to facilitate metacognition (but did not mention intentionality—used case as anchor—i.e., running records & conferencing) • Began thinking professionally (asked precedent and prototype questions)	• Depended on background knowledge and experience • Designed to facilitate metacognition • says she needs to be more metacognitive see diversity Q • Began to think professionally (promotes independent reflective thinking)	• metacognitive exp for PSTs • management of kids and classroom
epistemic shifts or insights	• epistemic shifts regarding how knowledge functions but ltd to context	• epistemic shifts regarding how knowledge functions but ltd to context	• division of epistemic notions—some analyze materials others adopt gratefully w/o critical review. • Designed to facilitate metacognition x connections to instruction • Anchor use helped bc had to diagnose individual children's instructional needs • Began to think professionally (promotes independent reflective thinking)

Table 5: Professors' Perception of Student Learning Using Digital Case Technologies (continued)

Category Description	Dr. Brooks	Dr. Grant	Dr. Vann
Impact on diversity or cultural education issues	• diverse learners no ethnic diversity • Sees potential for diversity or cultural education issues	• diverse learners • Sees potential for diversity or cultural education issues	• Sees potential for cultural education issues
Impact on understanding of teacher orchestration	• Pointed out for clarity of understanding	• Pointed out for clarity of understanding	• Pointed out for clarity of understanding
Grad/undergrads adopting, resisting, forming new literacies theories	• Gives examples of new theories PSTs are forming • Understands PSTs perspective and technological background	• Gives examples of new theories PSTs are forming • Uses as anchor to focus on digital literacies	• Gives examples of new theories PSTs are forming • Concern about PSTs not connecting to schooling • Believes PSTs need assistance and training to incorporate technology in classroom • Sees need for redefining a new literacies & New kinds of knowledge and valuing knowledge differently

Table 6: Professors' Perception of CTELL Initiative on Pedagogies

Category Description	Dr. Brooks	Dr. Grant	Dr. Vann
Use of anchor cases-prototypes			
Classes used	• PSTs Methods and assessment classes.	• PSTs methods, assessment classes; ECCO (elementary education certification), SLP (speech, lang. pathology) PSTs, online grad classes and inservice teachers.	• PSTs methods, assessment classes, Graduate classes, Reading Clinic, and training Reading First researchers.
Description of use; structure of activities & Components of cases most supportive of instruction	• As anchor • instruction examples • assessment (practice scoring) • conferencing with parents • examples of various teaching styles	• As anchor • instruction examples • assessment (practice scorin • kids response • Experts opinions for theory	• As anchor • instruction examples • assessment (practice scoring) • Examples of hearing dissfluent readers • miscue analysis, and making text connections

Table 7: Professors' Self Perception of Instruction

Category Description	Dr. Brooks	Dr. Grant	Dr. Vann
precedents			
Challenges preparing PSTs to be effective first year reading teachers	Frustration with PSTs fragmented view and rigid lesson plans	Balance prototypes, precedents and parables of literacy education	Providing authentic instruction and situations
Changes in instruction as result of using cases	Have only used CTELL for PSTs ed	Incorporating technology	Would be interesting if used cases as center of instruction
Still using cases or something similar	Most definitely	Yes to help PSTs think instructionally	assessment training to be knowledgeable observer
Potential of anchors for professional development	Currently in use at school where she mentored	Perfect fit	Experienced teachers would see much more

Table 8: Professors' Perception of CTELL Initiative on Their Philosophies

Category Description	Dr. Brooks	Dr. Grant	Dr. Vann
Professor Philosophy-parables			
Personal philosophy (detailed in methods section)	• Sociocognitive, collaborative approach; functioned as expert guiding novice PSTs.	• Characterized self as more teacher educator than researcher; very student centered, sociocognitive	• Theoretically aligned with CTELL sociocognitive base
Instructional approach; Beliefs regarding traditional teacher education (detailed in methods section)	• Strong Proponent of digital literacy instruction • PSTs need to experience authentic instruction in an authentic context. • Effective teaching, integrates instruction (big 5) "know skills, theory, methods and fit w/ PSTs' style.	• cognitive apprentice style, created situated learning environment p27 • PSTs needs knowledge base & knowledge of best practices to integrate & balance instruction. Be good diagnosticians. Need more field practice to be instructionally strong	• Collaborative, egalitarian; operates from cognitivist view of reading (strategic) • offer theoretical base and knowledge of child learning to read-diagnostician. Knowledge of materials and NRP's 5 dimensions of reading.
Perceptions using CTELL digital case technologies for teacher education & recommended changes	• Clarified abstract concepts and instruction • tape lesson beginning to end	• common ground for discussions	• Trains PSTs to be informed observers • share ideas among CTELL profs
Conception of new literacies perspective	• Explains in terms of all new and old forms of communication • Understands PSTs perspective and technological background	• Explains in terms of all new and old forms of communication • Adds other forms of information intake and knowledge production • educational system problems Teachers have too little time to keep up with new ideas	• Explains in terms of all new and old forms of communication • *Sees need for redefining a new literacies perspective* *New kinds of knowledge and valuing knowledge differently*

Table 9: Professors' Role as Agents of Change

Category Description	Dr. Brooks	Dr. Grant	Dr. Vann
Agency			
Micro practices employed to enact resolution literacies &	• Opportunities to recode experience	• Adds other forms of information intake and knowledge production	• Transformative learning experiences
Tensions experienced & Beliefs regarding changes needed	• Transformative learning experiences	• Recounts educational system problems: Teachers have too little time to keep up with new ideas & technologies	• Taught parables

CHAPTER FOUR

FINDINGS

The purpose of this study was to investigate the teacher educators' perceptions of using CTELL anchored instruction for undergraduate reading methods courses.

In this chapter, I explain the teacher educators' perceptions of using CTELL anchored instruction for undergraduate reading methods courses by answering each of the research questions. Questions are subdivided thematically. For each theme, I first address the collective similarities among professors when relevant, and follow that with the particularities of each CTELL professor's perceptions when disparate, or when they shared expanded views. Finally, I explain the relevance of agency and its function as resolution literacy. The questions and themes are as follows:

Question 1. What are the teacher educators' perceptions of their PSTs' learning experience?

Themes: The impact of digital case technologies for teacher education on PSTs's

1. Understanding of teaching literacy
2. Metacognitive engagements
3. Epistemic shifts or insights
4. Understanding of diversity or cultural education issues
5. Understanding of teacher orchestration and insight
6. Adopting, resisting, forming new literacies theories

Question 2. Did implementing CTELL anchored instruction challenge, enhance, or affect teacher educators' personal philosophies, or pedagogies?

Themes:

1. Prototypes- how professors used digital case technologies
2. Precedents- professors self perception of instruction
3. Parables- professors' philosophies, cultural conceptions of teaching, and role as agents of change.

Teacher Educators' Perceptions of PSTs Learning Experience

Using Digital Case Technologies for Teacher Education and the Impact on Preservice Teachers Understanding of Literacy Education

Each of the anchor videos show exemplary teachers teaching literacy lessons that depict concepts about teaching reading in grades Kindergarten through third grade. PSTs viewed a variety of teaching styles, various modes of instruction delivery, and various teaching philosophies. All three professors agreed that using digital case technologies for teacher education offered PSTs unique opportunities for learning in general and the affordances of the anchor videos helped develop an understanding of literacy teaching in the elementary grades, in particular. CTELL instructors were enthusiastic about the video cases because PSTs were able to compare modes of instruction in the anchor videos and analyze relationships across sources of learning. CTELL instructors believed the anchor cases offered PSTs visual experiences that contextualized what PSTs were learning in their reading methods classes. As a result, PSTs had instructional models they could draw upon for their field experiences and for their future careers.

Dr. Brooks. After observing her PSTs teaching a literacy lesson, Dr. Brooks refers them to the anchor cases for debriefing (e. g., to compare their instruction to the anchor teachers' instruction). The anchor cases stimulated PSTs' questions regarding parts of lessons not shown on the videos, offering them subsequent opportunities for reflection and analysis of their own instruction that might not have happened otherwise. Brooks outlined additional benefits for her PSTs, "They did see that instruction is threaded; it is integrated. It is not isolated. It is not fragmented."

Thus, PSTs achieved an objective targeted by Dr. Brooks. They were beginning to understand balanced literacy instruction.

In addition to the anchor videos, Dr. Brooks thought the parent and teacher conferencing engaged PSTs in class discussions about what the teacher could have done differently. The assessment segments also gave PSTs authentic practice. Using the assessment segments as an anchor, Dr. Brooks printed the running records so PSTs could code the children's miscues.

Dr. Grant also anchored instruction to the video cases, touting additional opportunities unique to the video cases,

> "Being able to see developmentally across age levels at kids, seeing what they are and are not doing; what's added at first grade that they were not doing in kindergarten."

She saw this as, "a really positive piece that I was not able to offer before the

> anchor cases. Also being able to look at individual kids [and see] who they interact with, how the teacher does instructionally with them. You get panoramas of the classroom and the activities in it."

There were other benefits as well, “Even inservice teachers viewing the anchors say ‘I am going to try that in my classroom, I’ve never thought of doing it that way’.”

Dr. Grant was especially eager about using the anchors to bolster PSTs understanding of literacy teaching,

> “I do think a lot [impacting PSTs’s understanding], being able to see...even not just instructional things but looking at how teachers manage the classroom; how they manage kids, how they go from activity to activity. And I think particularly for preservice teachers that was really important. But for inservice teachers, too. That gives you a look at other classrooms and other teachers. It does help you be reflective.”

Dr. Vann recounted instances of analysis afforded by the anchor cases,

> “I find they don’t seem shy about critiquing the instruction that they are seeing in some of those cases. After they have been learning something [a literacy concept] they will say that they don’t think a teacher has been doing a very good job in some of the cases.”

She voiced concerns about her PSTs understanding the more subtle aspects of classroom management in the anchors.

> “Well I use [the anchors] to point it out to them...you have to know a lot to be able to tell how complex what she [the anchor teacher] is doing really is.”

Dr. Vann also anchored instruction to the video cases,

> “That is one of the useful things to just show a little bit and then talk about what all is really happening there....that is why I like to use it because I

want them to learn to be more insightful observers and teachers of instruction...really understand what the teacher is doing."

Dr. Vann also expressed potential for autonomous learning. She thought PSTs exploring on their own could be an interesting assignment, "Where you ask them to figure something out accessing multiple features [of the video cases]." She used this approach with one student who needed a project for another class. The student had been very enthusiastic, presented it to the class and felt it had been a good use of her time.

Thus, each of the above examples explicates how meaning making was constructed. We can relate each of these examples to Moshman's classifications of constructivism: Dr. Brooks created an exogenous experience by asking her PSTs to compare their instruction to the anchor teacher's instruction. By asking them to analyze their instruction, PSTs were in effect expanding their instructional repertoire by adapting knowledge structures previously formed by cultural and social artifacts to new learning. Dr. Grant introduced cognitive conflict (i.e., disequilibrium) by confronting inservice teachers with unfamiliar instructional modalities in the anchor videos. Her approach is congruent with an endogenous constructivism experience because new knowledge emerged from the interaction with unfamiliar modalities and PSTs' subsequent reflection upon it (Moshman, 1982). Dr. Vann described the dialectical constructivism approach. Knowledge structures and cognitive capabilities benefited from the reciprocal interaction of the individual (i.e., becoming insightful observers of instruction) and the environment (i.e., using anchor cases to stimulate connections across sources of learning).

Use of Digital Case Technologies and Metacognitive Engagements

The CTELL professors thought using digital case technologies afforded metacognitive engagements but with stipulations. Dr. Brooks, attributed metacognitive engagements to experience and time.

> "Metacognitively, [PSTs were] stronger the second semester...after they grasped all these new things and had time to think about the concepts. They reflected so much more because they had more to pull from...discussions were so much richer, they had more experiences in the field to tie it all together."

Although Grant and Vann did not disagree with Brooks's notion, they seemed to think metacognition was also elicited by assigning activities that forced PSTs to make explicit connections.

> "It does with grad students but more so if it's contrived in the sense that I designed it that you go back to the readings, think about what you know...move from the readings to the practical, the anchor cases, and the viewing chart—[which] probably forces that connection" (Grant).

Dr. Vann made similar references, "Yes, because of me saying you better find a connection." After PSTs' field experiences, she shows an anchor case again and asks PSTs to find connections between that case and either their field experiences or assigned readings.

Dr. Brooks. Although Brooks did not describe her assignments being designed to elicit metacognitive awareness, pairing them with the videos had that effect. As previously mentioned, printing the running records and asking her PSTs to record miscues along with the assessment videos offered an authentic

learning experience that necessarily connected PSTs to consider what they knew and what they were learning.

However, she did say how impressed she was with her PSTs' "transition to the other side of the desk" when they viewed CTELL anchors during their second semester. Because she had the same cohort group both semesters, Brooks was able to compare PSTs' growth by their questions and in-depth discussions the second semester. "It was interesting to see their thinking change in two semesters, [they could] now see how she [the anchor teacher] embedded skills." She went on to say,

> "The visual was strong, a huge strong point for CTELL. No, I doubt that they would have had the same growth without the video cases. They saw the relevancy immediately. CTELL gave another perspective of what it looked like in context."

Dr. Brooks' PSTs now had sufficient relevant experiences to identify instruction that had previously escaped their attention.

Dr. Brooks also made an interesting observation. Lamenting the benefits she could have received as a preservice teacher from a program similar to CTELL, she contrasted her own experience. "My only instructional model was what I learned in college and applied to my [professors'] role modeling--what it was supposed to look like."

So, for Dr. Brooks' PSTs, it was the affordances of pairing the videos and experiences over time that stimulated metacognitive interactions during discussions.

Dr. Grant believes the "anchor cases are helping people be reflective independently and really thinking through what they're learning and what they know." She thought she might have a better sense of her PSTs' metacognitive responses in her online classes. She suggests it may be an artifact of the nature of distance learning classes because PSTs are required to post reflections online.

> "It is really important for preservice teachers. But inservice too, that gives you a look at other classrooms and teachers...helps you be reflective and think about what the anchor teacher is doing that I could do differently".

She noted too that viewing other classrooms helped inservice teachers broaden their notions of technology use in the classroom.

Like Brooks, Grant was also reflective about her own metacognition, saying that she needed to be more introspective about her instruction to "keep it fresh and stimulating".

Dr. Vann. Although I knew Vann to be metacognitive about her teaching from our previous conversations, for this interview she did not address her metacognition, but concentrated on the activities she assigned to stimulate metacognition in her PSTs.

> "So I have used not just reflections about what they have seen but about how they relate to other things that we have been learning. I am into connections. I have them making connections between what we have done in class and what they read in the text. And to find connections that way. So it is like case to text connections or case to experience connections. And more recently the coding...I have had them make notes on what is going on and then code what kind of instruction they are seeing. I [also] have them

reflect on when they teach a lesson in the field, after they teach it, they reflect on what went well--and what didn't go so well and then rewrite the lesson as it would now be new and improved."

As Dr. Vann's PSTs gained experience they were able to critique and analyze the instruction they viewed in the anchor videos.

> "When I show them [anchor teacher's name] and she was asking a lot of questions as [the children] were reading and they wanted to know '*is that a good idea to stop so much and ask questions. Isn't that interrupting the reading*?'.

The PSTs Dr. Vann describes above were beginning to think professionally, analyzing the instruction they viewed. This was an important observation because CTELL professors have often voiced the concern that preservice teachers too often continue to think like students rather than thinking more professionally as teachers. The PSTs above were not only analyzing instruction but also diagnosing the instructional needs of the children who were reading.

It is important to note that Drs. Brooks and Grant made similar observations. Dr. Brooks related seeing her PSTs "make the transition to the other side of the desk" during their second semester. She remarked that PSTs "viewed CTELL differently. The conversations were more in-depth and their questions were deeper."

Dr. Grant's PSTs were experiencing a parallel transition, "I am also a little surprised with the preservice teachers. I am kind of amazed what they pick up on with the [kids on the videos] than with the teachers." By that she meant her PSTs

were employing diagnostics to determine what the children needed instructionally. She went on to explain that PSTs's insight was supported by asking them to look for certain things. "So being able to look at kids and pick up on what they were struggling with, who was a better reader, and what kinds of things they were struggling with?" She also added that for inservice teachers or graduate students the transition to thinking professionally was more developmental. That is, undergraduates asked prototype questions and graduate students and inservice teachers asked questions related to precedent.

Hence, all three professors thought pairing the videos with relevant experiences in the field increased PSTs' insight regarding instruction and the ability to be better diagnosticians as evidenced during post-viewing discussions. In addition assignments designed to help PSTs make connections across sources of learning stimulated metacognitive engagements. Of significance is the benefit PSTs derived from the use of the CTELL approach. That is, they began to think professionally, an advantage that was not often realized in traditional approaches.

Use of Digital Case Technologies and Epistemological Insights

Dr. Brooks believed PSTs experienced an epistemological shift, "on the continuum of instruction."

> "They came in thinking that discreet skills and very directive lessons were effective instruction. Because they grew up in whole language, they regarded it as ineffective...I saw that shift. I had my reservations whether that would have shifted without CTELL."

Her PSTs were acknowledging a difference in how knowledge functions from previously held beliefs regarding modes of instruction. As one PSTs remarked, "look she's doing skills and a phonemic segmentation type activity. They [children] are singing chanting, engaged and having fun." PSTs saw how they can integrate instruction and embed skills. This recognition signified a shift in the awareness of the nature of knowledge (i.e., how knowledge functions) and the nature of knowing (Hofer, & Pintrich, 1997) insofar as how the children were learning. Although it is unclear whether the PSTs are metacognitive regarding their learning in this instance, Dr. Brooks believed there was growth in PSTs' epistemological insight but it was limited to this specific context.

Dr. Grant, on the other hand, was more cautious about PSTs' epistemological insights.

> "I think that's a little bit hard to know...I might expect that kind of shift from inservice teachers who have something to attach it to and have had their own experiences or have tried things that have not meshed."

While she recognized the role of experience in epistemological development, she also believed that undergraduate PSTs, inexperienced graduate PSTs, and inservice teachers were developing epistemological beliefs about using technology for early literacy. Previously, these PSTs assumed computer activities were more geared towards older elementary children. With the advent of the anchor videos, such notions were changing. She recounted the following:

> "You know if they are thinking about other ways of using technology in their classroom I suppose that's the same thing [as an epistemological shift]. There are always a lot of comments about how that second grade

> teacher uses technology in her classroom and how they never thought about that. And they were surprised little kindergartners could be doing XYZ on the computer."

Dr. Grant seemed to think epistemic growth was within a limited context. That is, seeing the expanded potential of technology for early literacy education.

Dr. Vann had the most pragmatic approach. Dividing her current class of PSTs into two groups she described their epistemic stances in this way:

> "Interestingly, there are some PSTs really against these teachers' manuals that I brought in from [publishers' names]. They are Basal teacher's manuals and all the activities are not very interesting—it is the same activity over and over and so confusing—they have so much stuff in there for the teacher to do. You have two groups; one group is relieved that they don't have to make it up themselves. The other group says, 'These are terrible. Do we really have to use those things?'"

She explains whether or not they will be required to use the manuals will depend on the school where they teach. And, almost as an afterthought remembers, "But I guess in the video cases I don't think they got to see teaching from the manual." Although she did not relate PSTs's analyses to the anchor cases, she does differentiate their current epistemic stance. The former seems most concerned with their teaching, lesson preparation, and perhaps class management. The latter realizes the need to enhance the reading curriculum beyond the required materials for the students' benefit. Thus, some adopt curriculum gratefully without critical review while others analyze the given material.

Thus, Dr. Brooks' PSTs realized an epistemological shift regarding the function of knowledge within an instructional context. Dr. Grant, while cautious about her PSTs' epistemological growth, decided most of her PSTs experienced epistemic nudging insofar as integrating digital literacies into early literacy instruction. Dr. Vann divided her PSTs into two groups: one that focused on the prototypes of instruction and another who seemed more advanced on the epistemological continuum. This second group focused on the precedents of instruction (i.e., they understood the need to enhance curriculum beyond scripted lessons and required materials).

Impact on PSTs' Understanding of Diversity and Cultural Education

None of the CTELL instructors drew attention to diversity or cultural education issues in their reading methods or assessment classes. Although, each did see the potential for using the anchor cases and other resources on the CTELL desktop for that purpose. The information is subtle but available. The socio economic status of the students, school, and general population is available as is the percentage of students on a free lunch program.

> *Dr. Vann's* explanation best summarizes all responses on this matter, "They certainly can be used that way because there are ways of pointing things like that out...I probably haven't done a very good job of doing that. Whether they are absorbing it anyway, I don't know. They seem tuned in to issues of diversity anyway. They [their other classes] are spending a lot of time focusing on that."

It may well be, as Dr. Vann recounts, that PSTs portray this awareness in reading methods classes to the extent that the professors did not see the need to specifically focus on issues of diversity and cultural education.

However, Drs. Brooks and Grant did relay their thoughts on the diversity of learners.

Dr. Brooks highlighted the diverse ability levels of learners within the anchor cases by pointing out instruction across individual levels, "This is instruction or the assessment of a higher achieving student to a child who is struggling or at risk."

Dr. Grant does not recall any of her PSTs reflecting or mentioning diversity in many of the discussions but decides it is an area she needs to think about for future classes.

> "I hadn't, that's a whole new thing for me to think about! We actually do read some pieces [related to this issue], so that makes perfect sense. But I have not made that connection, so there you go! But I might now, I will have to think about that!"

As she is thinking about this she adds that the videos "have been a really positive piece" I was not able to offer before" because you can look at individual children, see them on the assessment piece talking about themselves, watch them in the classroom, and see how they function with other children and the teacher. "You can see how the teacher does instructionally with particular kids. I like that; I have never been able to do that very well before."

Impact on Psts' Understanding of Teacher Orchestration

Johnson (2008) believes that some discrete skills requiring complex cognitive processing require formal learning environments in order to achieve functional internet literacy. In this case where PSTs were learning in a digital environment, CTELL professors also found it necessary to engage a directed learning approach to explicate particular precedents displayed by the anchor teachers. Each CTELL professor relayed the concern that PSTs were not seeing the orchestration and insight of the anchor teachers and believed it was necessary to point it out.

Dr. Brooks was the most articulate, saying she believed "PSTs most definitely needed to see the orchestration of anchor teachers." She recounted how she would stop the videos and draw her PSTs' attention to the children sitting around the outside, not paying attention. Brooks emphasized that teachers do not have enough time to repeat things. Lessons needed to be effectively planned and executed the first time while paying attention to the questions children ask in order to determine the effectiveness of that instruction. Adding that,

> "CTELL would help them see that, the first semester....I stopped the video to show them—that's the whole class. What do you think the rest of the kids are doing? What is she [anchor teacher] doing? How is she handling the behaviors? How is she staying focused on those five but she has twenty other kids?"

There is a lot going on in the videos, which sometimes diverts the attention of viewers. One professor called the videos an entertaining little movie, sort of like watching television. As a result inexperienced PSTs were often caught up in the

action and needed guidance identifying some of the more subtle aspects of classroom management. As Dr. Brooks noted, her PSTs needed direction assessing the multilevel practices or precedents master teachers exhibited in the videos.

Dr. Grant described the anchor teacher's orchestration as "Impressive, a good example. You don't get to see the full class orchestration often." She explained the importance for both PSTs and inservice teachers to see classroom management, transitions from activities, and how children were managed beyond instruction. Clarity of understanding, does help [PSTs and inservice teachers] be reflective...and see other ways of doing things."

Dr. Vann agreed with both accounts,

> "Well I use it to point [orchestration] out. I don't think they would have gotten it otherwise....Because you have to know a lot to understand the complexity of what she is doing. That is one of the useful things—to show a little bit then talk about what is really happening because it its so easy to be entertained like watching TV."

She explained further that you have to 'unpack it', to help PSTs become insightful observers and teachers of instruction rather than being distracted by the kid wiggling his foot and misbehaving.

All CTELL professors agreed that preservice teachers are so focused on instruction that each professor stopped the video cases to reveal the subtexts of experience modeled by the anchor teachers. Insofar as seeing the bigger picture (i.e., the precedents that develop with the wisdom of practice) it seems there is a

measure of experience that must exist before PSTs can independently accommodate all the available information.

Graduate and Undergraduate PSTs Adopting, Resisting, or Forming New Literacy Theories

Although opinions were related regarding the new theories PSTs may be forming, there was a broad array within that agreement.

> *Dr. Brooks* thought her PSTs had already adopted new literacies and that it had just been enhanced. Assuming they arrived with a lot of technology, she explained, "Certainly not resisting, cause then they wouldn't be texting. Adopting, yes, in a broader sense. But not resisting. On days that we had hardware failures; there was a sense of loss...we had become accustomed to the way our classroom operated. They definitely formed new theories with the Smart Board. So we were not removed from the use of New Literacies."

Dr. Brooks' instruction included Power Point lectures, emailed assignments and online discussions. Midterms and finals were also online and literacy instruction materials included the interactive whiteboard. As a result, she concluded that her PSTs' literacy theories were expanding through personal experience with new technologies and by their growing awareness through seeing digital examples of technology use across the curriculum.

Dr. Grant recalled discussions regarding how her graduate students [inservice teachers] use technology as process writing and for Accelerated Reader but had not thought about it instructionally. She also recalled discussions about the Kindergarten anchor teacher who used technology instructionally and the

surprised reaction of these inservice teachers and graduate PSTs [taking her course online].

> "No I don't think they are resisting it. Actually, I think they are thinking about it. I guess the answer is yes, they are forming new theories and I think part of it is because they are taking the online courses. I think their own technology use helps them think about using technology more in the classroom."

The use of digital literacy explicitly incorporates new literacies through anchors, activities, and discussion. PSTs compare instruction using technologies, analyze, evaluate, and compare instruction across grades and across teachers who do not use technology. Thus Dr. Grant's assessment of her PSTs' motivation makes sense. As does Dr. Brooks notion that her PSTs forming new theories about new literacies is an artifact of their use of technology in their reading methods and assessment classes.

Dr. Vann compared her graduate and undergraduate PSTs.

> "My graduate students, who have been teaching for awhile, are not as involved as undergraduates who are personally involved in some of these things. I get glimpses of it. But I don't know if they are making the connection to schooling....Even the graduate students, I find that some of the things I am beginning to think of have not occurred to them before. That means that maybe we shouldn't be teaching reading, writing, speaking, and listening the way they were taught."

She believes both new and existing teachers are open to forming new theories and will incorporate digital literacies into their classrooms "if they receive guidance showing them how to use a Smart board and [other ICTs] for instruction."

Dr. Vann agreed with Brooks's idea that undergraduates are more aligned with technology use but is in contrast with Grant's notion that graduate students are seeing the connection between technology and instruction. Perhaps it is as Dr. Grant suggests--an artifact of her PSTs taking online courses and using technology for instruction. If so, then perhaps professional development courses should be taught using digital technologies to clarify the importance of digital literacy in education. As Dr. Vann said, "maybe we shouldn't be teaching reading, writing, speaking, and listening the way they were taught."

CTELL Anchored Instruction as a Challenge or Enhancement to Teacher Educators' Personal Philosophies and Pedagogies

As you may remember, case-based instruction helps preservice teachers learn to become clinical problem solvers, and to reason pedagogically (Kagan, 1993; Schulman, 2000). Classroom cases include critical incidents, protocols, and simulations of professional knowledge (Sykes & Bird, 1992). Cases are sequences of events that represent certain types of knowledge and principles. Typically, employing a particular anchor case summons particular knowledge based on one or more of three types of principles: (a) *prototypes*, which are research-based theories usually relating to pedagogy or subject content, (b) *precedents*, which are experientially based on the wisdom of practice and, (c) *parables* that convey morals or values (i.e., typically of the professional

community). Langone et al., (1998) found anchored instruction to be an important factor facilitating knowledge transfer to novel contexts. CTELL meshes case-based and anchored instruction to further enhance knowledge transfer.

To answer this second question about CTELL case-based anchored instruction (above), I distributed the themes among the principles they represented. In other words, the themes are listed under the prototypes, precedents, and parables that describe the CTELL professors' experiences and perceptions. The first section details the *prototypes* i.e., how each professor utilized digital case technologies for research-based best practices. The second section explains the *precedents* i.e., those practices employed by experienced professionals and their perceptions of their CTELL experience. The third section outlines the *parables* i.e., the professors' philosophies, and professional beliefs that supported their instructional approaches.

Prototypes: Professor's Perceptions of Anchor Case Use and the Structure of Activities

Ctell Materials: Description of Classes, the Structure of Activities, and the Most Supportive Components of Cases

Dr. Brooks used CTELL materials in her reading methods and assessment classes. The components of the cases she thought most supportive of her instruction were the examples of integrated instruction. That is, those that embedded skills in thematic instruction so her PSTs could see balanced literacy instruction in action. For assessment practice she reported that the anchor cases with the running records offered PSTs an authentic experience. She also praised the examples of various teaching styles, classroom layouts, and the conferencing

with parents as having the greatest impact on PSTs. “It added the visual; it was the link that put it all into a context.”

Before PSTs field experiences, she anchored instruction to the video cases,

> “So as we were watching the examples of instruction, I would stop the case(s), pause it, and throw out a question or pinpoint something.”

She employed a collaborative approach to enlist PSTs in discussions and as a way to measure their learning,

> “I would draw from the students with every chance that I had to get them to collaborate...but I felt that I was the one that streamlined a lot of that and prompted the questions and generated some discussion...sometimes provoke discussions just to see where they were going.”

After PSTs’ field experiences, Dr. Brooks took them back to the anchor videos to either answer questions that arose from working with their mentor teacher or with the children. PSTs were encouraged to direct their learning and resolve authentic problems. Dr. Brooks guided their explorations in a manner that forced them to think as professionals.

As PSTs gained experience, activities were structured “to show another instructional perspective on a current topic”. For instance, for each topic (e.g., fluency) PSTs read a chapter in the methods text and wrote reflections that were due before class. Brooks used anchor cases to clarify concepts, answer student questions from reflections and discussions. She also used the cases to introduce and clarify topics and to show various philosophies and methods of instruction related to the topic of interest. In her words,

> "When I was aware of the case that would clarify something, I let them see it from another perspective...see hands on with another teacher actually demonstrating with kids sitting there."

In addition, cases were used during many PSTs' hands on demonstrations to the class. Cases were also used after class for further exploration. Whether PSTs were learning instructional concepts, class management, or about diagnostics in assessment classes, it is clear that Dr. Brooks anchored instruction to CTELL materials in ways that stimulated learning, clarified concepts, and as provocation for metacognitive development. And as I explain more fully under the agency theme, she also used the cases as an anchor to help PSTs reframe their early learning experiences.

Dr. Grant used CTELL in her reading methods, assessment classes, ECCO (teacher certification classes), SLP (speech and language pathology) classes, and online graduate preservice and graduate inservice teacher classes. She reported using the experts opinions about theory that under girds practice and concepts, the variety of instructional examples, and assessment practice along with the children reading (i.e., running records) to be most supportive of her instruction. In particular she spoke most favorably of the cases ability to help PSTs see across children's ages and ability levels, "[CTELL materials] offer that developmental look that I could not offer before".

Grant functioned as the expert guiding novice PSTs.

> "If they don't analyze instruction in the videos in a way I think is important, it's my job to figure out a way to do it, by questioning, pointing something out, etc."

Her use of the cases grew as she gained experience using them and became aware of their potential.

> "I think the amount of use and how I used them has certainly sort of exponentially grown. I think the first time I used them it was a small piece. But I think now it certainly is a primary piece of the courses. I am much more dependent on them as a primary resource."

She began using them more as an anchor, for first semester reading methods classes by discussing classrooms and teachers. Second semester she,

> "Focused more on assessment and kids by returning to the videos and analyzing how the anchor teachers were dealing with kids instructionally."

Dr. Grant asked her PSTs to analyze what they would change. Her purpose was to "help them think about teaching kids rather than teaching content." She was challenging them metacognitively by asking PSTs to consider what they knew and make instructional decisions. She used the cases to give PSTs classroom experience not available in the field because they do not have the opportunity to be in all the grades. They typically have only one primary and one intermediate placement.

> "It gives you an opportunity for discussion that you would not have just based on field experiences. Especially if you are looking developmentally. They miss some levels. With the cases they see what kinds of things are available at different grade levels. You have common ground for talking—you are all seeing the same teacher working with kids. You can see what matches your personality."

Dr. Grant structures activities that offer authenticity. PSTs view nine kids in second and third grades. She asks them to group the children for guided reading based on assessments and hearing them read. They have to justify their groupings. They must then choose one child, be reflective diagnostically, design instruction for that child, and evaluate their instruction. Her concern is that even inservice teachers are not being reflective diagnostically, "They do a lot of assessments but I am not sure it informs them instructionally."

Thus, Dr. Grant uses the cases to situate instruction within an authentic context. Her use of the anchor cases has grown over time; instruction is anchored to the cases within a sociocognitive learning environment. PSTs construct knowledge collaboratively within a problem-based context.

Dr. Vann used CTELL in her reading methods, assessment classes, graduate classes, reading clinic classes (teaching children with reading problems), and for training Reading First researchers. She was the most enthusiastic about the various instructional examples, which offered her PSTs opportunities to make text to instruction connections, being able to hear dissfluent readers, and the assessment segments for training PSTs to be insightful observers of instruction. She felt these CTELL materials were most supportive of her instruction.

Dr. Vann anchored her instruction to the video cases in several ways. For example, cases were used to help PSTs learn about differentiating instruction; assessment segments were used to help PSTs think about what children need instructionally by helping them become better diagnosticians. PSTs also watched a video and analyzed the instruction using a coding scheme that was developed

for Reading First. The purpose was to develop observational and diagnostic skills. Dr. Vann asked PSTs to

> "make connections between field experience, readings, class discussions, and what was viewed in anchor cases so they can see relationships across sources of learning."

Discussions were structured to help PSTs develop further understanding by, "previewing instruction, viewing instruction, and then post viewing instruction."

Similar to Drs. Brooks and Grant, Dr. Vann anchored instruction to the CTELL cases in ways that required PSTs to function as teachers solving authentic problems and analyzing methods of instruction. In addition, her PSTs were required to synthesize sources of learning to construct a coherent interpretation of what it means to be a teacher of reading.

Precedents: Professor's Perception of Instruction Based on the Wisdom of Practice

Anchor's potential for professional development, continued use & changes in pedagogy. This section details the precedents, those practices employed by experienced professionals and their perceptions of their CTELL experience. Each of the professors agreed that the CTELL initiative embodies excellent potential for continuing education for inservice teachers. Each professor also continues to use CTELL materials for preservice teacher education. Their opinions differed regarding the changes they made in their instruction and the challenges they faced preparing preservice teachers to be effective first year reading teachers.

Dr. Brooks has only taught PSTs with CTELL materials and will continue to do so. As a result, she felt her mode of instruction did change very little. Dr. Grant said CTELL materials changes her approach, "it is a great tool for being able to talk about kids reading, seeing and hearing instruction, and offering an authentic experience while learning assessment." Dr. Vann agreed her instruction changes but said it is hard to know what's leading you to make whatever changes. She attributed those changes to the interaction among pedagogical tools. However, she offered some sagacious advice,

> "Well it would be really interesting if there were yet another resource that shows how other educators are using CTELL as a central text in their instruction. If I see examples, that's when the neurons fire and I get my own ideas."

She also suggested that a forum for discussing that would support her use of the CTELL materials as a primary resource.

Challenges Professors Face Preparing Psts to Be Effective First-Year Reading Teachers

Dr. Brooks named two challenges. "My biggest challenge is not getting frustrated with them—they just see instruction too fragmented." She attributed their fragmented perception to four things. First, methods texts have a fragmented presentation, "one chapter is decoding and your second chapter is vocabulary and your next chapter is comprehension." Second, her initial approach to viewing some of the anchors, "Although I did just show them little pieces or snippets of some of the lessons, which contributed to that fragmented perception of teaching. Third,

> "The editing of some of the anchors, it would have been more helpful had they seen the anchor teachers' lessons beginning to end, especially for preservice teachers, they need all of it. They don't need gaps, they have enough."

And fourth, she attributed that perception to their educational experience, "Because that [fragmented approach] is what they received for twelve years."

The other challenge was related to the first; PSTs lessons plans were executed too rigidly. PSTs "were too focused on their lesson plan--it would unfold exactly as they had written it without using their intuitive sense." Brooks believed her PSTs were struggling because,

> "They were impacted with so much information, with the concepts and how those unfold, what they mean and what it looks like instructionally. I would see it in the field when I supervised them—what their attentions focused on. They just can't grasp it all. They need time and experience."

Apparently first semester PSTs were so focused on their lesson plans that they were oblivious to class management issues. Dr. Brooks commented that second semester PSTs in the field were able to attend more to the "children sitting in the periphery of the group that were not paying attention. They could see now that they needed to engage those children."

Dr. Grant's biggest challenge was getting PSTs to understand the precedents encountered during their tenure as PSTs and to then utilize them in the field and adopt those precedents philosophically.

> "My biggest challenge is helping them see how it fits...see that you use what you learn in school based on working with kids, based on your

> reading and see what you think works for kids because there is no '*if you just do this sort of thing.*' You have to give them best practices and hope they continue learning and figure out what works for them and for the kids they are dealing with. I don't think they see that they have options."

She also outlined her PSTs' biggest challenge as the inability to "remember what they know." She is addressing two issues here. The first is PSTs's inability to think as teachers. I think this inability to transition to the other side of the desk is related to the second issue i.e., PSTs' initial difficulty applying what they have studied. This concern relates to Dr. Brooks's observations and her conclusion that PSTs need experience and time to make that transition. Grant's description of graduate PSTs' growing insight corroborates Brooks' notions about time and experience,

> "If we were talking about the same topic, sometimes grads, who were in my undergrad classes, come back saying, 'now I understand what you were talking about'."

Given the onslaught of information PSTs encounter, they need time to work with the theories and methods—to see what works in different circumstances and with different children. They also need to "try various methods on" to see which fits and which is incompatible with their individual personalities. "Typical undergrads do not have anything to attach it to, haven't seen it in action...it doesn't make much sense to them." The 'it' Dr. Grant refers to is any given reading theory or method. She is saying that PSTs without experience and background knowledge are the ones who most struggle in their early teaching career trying to apply what they have learned.

> "I don't see much evidence of applying what they've learned—certainly not initially. Maybe it is difficult when you start teaching and you are tying to manage everything to remember good literacy practices and so it takes a while to come back to it."

This phenomenon is also evident prior to PSTs field experience. Dr. Grant recounts instances watching anchor videos when PSTs did not recognize the phonics instruction. They could not see what was embedded because they were looking for program phonics. Perhaps understanding the intricacies of integrated instruction requires a fluidity of knowledge inexperienced PSTs have yet to acquire.

Dr. Vann's challenge was being able to offer PSTs opportunities for authentic instruction and experiences. Perhaps her solution to her biggest challenge suggests a way to bridge the time and experience issues raised by Drs. Brooks and Grant. She explained,

> "My preference would be that PSTs work in the classroom maybe half a day, then they have the other half to take classes and do assignments. Assignments would be directly linked to what they are doing in their classrooms with their students...What we teach would be directly linked to actual children and classroom situations."

Dr. Vann, quoting one of her PSTs, argues that authenticity requires actual children, "It is really hard to make a lesson when you don't know the students that you are going to deliver it to." Differentiated instruction,

> "where you really figure out what particular children really need based on their abilities and needs-–is hard to teach when there are no children in the equation."

In other words she feels the approach described by her PSTs is just teaching methods without thinking about which children need which methods.

Dr. Vann reports a second challenge, getting to know the cases well enough, "to know which case is good for doing what. I sort of know what to go to them for but I haven't a good knowledge about all of the cases and how I might use them for different things." And yet, she did know which case was good for digital literacy in kindergarten and which third grade case had examples of comprehension and vocabulary instruction, and so on. She also used the assessment segments to teach her PSTs how to do miscue analysis, calculate word accuracy, look at text instructional levels, and listen to dissfluent readers. So at some level she was utilizing the CTELL materials in ways that offered authentic learning contexts. And the multiple ways she employed the cases also suggests she understood the potential the anchor cases had for the purposes she was looking for.

To recap, Dr. Brooks's major challenge was helping PSTs understand best practices in reading education as a balanced approach. To undermine her PSTs' perception of fragmented instruction, she used the CTELL materials in ways that presented a balanced literacy approach to teaching reading. Dr. Grant also uses the CTELL cases to offer PSTs ways to practice "what they know." Because PSTs in their first semester reading methods classes encounter so much new information, Dr. Grant utilizes the anchors to help PSTs build fluidity and

crystallize knowledge—the ability to apply theory in novel contexts. Dr. Vann uses the CTELL materials to address her biggest challenge, i.e., offering PSTs an authentic learning experience. To address this problem, she uses the children in the anchor cases to afford PSTs opportunities to diagnose and plan instruction for real children.

Parables: Professors' Instructional Approaches, Philosophies and Professional Beliefs

Parables are the third principle invoked with the use of cases. Parables convey morals or values, typically of the professional community. This section deals with the values and philosophies that informed the CTELL professors' instruction.

Philosophical and instructional approach. As previously explained in chapter three, each of the professors agreed that they were aligned with the sociocognitive tenets of CTELL. They also described individual collaborative instructional practices and had formed cognitive apprenticeships with their PSTs using case-based anchored instruction. Although Dr. Vann described herself as operating "more narrowly from a cognitivists view for reading" her use of the video cases created a situated learning environment. Drs. Brooks and Grant use of the anchor cases also created situated learning environments. That is, PSTs were afforded learning opportunities where they could build cognitive models across instructional contexts. Gee (2004) might say that the PSTs were able to build "game-like models through role-play" patterned by the anchor teacher's instruction viewed in the anchor video cases.

General Beliefs about Teacher Education and Case-Based Anchored Instruction

All professors believed PSTs need to experience authentic instruction in authentic contexts. Dr. Grant summarized those beliefs succinctly,

> "Generally I want PSTs to have a knowledge base about how kids learn to read, what is important, and what best practices are. Be good diagnosticians and be instructionally strong."

Drs. Brooks and Vann added the importance of PSTs knowing materials and the National Reading Panel's five dimensions of reading (i.e., phonemic awareness, phonics, comprehension, fluency, and vocabulary).

When asked what they believed regarding effective traditional preservice teacher education, each professor compared traditional methods to CTELL. It seemed they had already accommodated case-based anchored instruction into their pedagogy. "So CTELL then added the context, put it all into a context. That is what is missing in traditional education, it was shallow," (Dr. Brooks). Dr. Grant explained that CTELL allows her PSTs to see how instruction looks, how kids learn, and "PSTs seem to pickup on that." She went on to say that instructional tapes she used before the anchor case were staged and artificial.

> "With the anchor cases then, you have that added piece of looking at the classrooms and seeing what the teachers are using and in what ways it matches what we have talked about or not. What are they using in all the grade levels? How are kids grouped, and how are they keeping them on task? Which you never see on a [taped] video because it is done outside a classroom a lot of times."

Dr. Vann agreed with Brooks and Grant that CTELL situated learning in an authentic context, adding:

> "Yes, the problem [with traditional methods] is that everything is decontextualized from real teaching experiences. And so I actually don't think very highly of how we do preservice teacher education. I think that they need to have much more of a mix, ongoing mix of being in classrooms and then having their courses directly linked to what they are doing in the classrooms. I have my grave doubts about how much learning the content of teaching reading up front makes sense to them. That is why the digital cases are helpful because at least you can show them a real classroom and what is going on in there and point things out."

Following their lead, inquiries contrasting the use of CTELL anchor cases for teacher education elicited a variety of related responses.

Dr. Brooks believed the anchor cases clarified abstract concepts and how they could be taught, "Seeing the instruction helped crystallize concepts." She also thought this mode of instruction was motivating for the professors because PSTs connected to teaching through the CTELL anchor teachers.

Dr. Grant thought the cases offered common ground for discussing classrooms and teacher-student interactions and seeing learners through a developmental lens. "In the field they do not get to see across ages. We can [only] discuss instruction, methods, and materials across grade levels."

Dr. Vann thought the anchor cases helped PSTs identify concepts and instruction. She used them to train PSTs to be informed observers of field teachers.

> "I have my PSTs watch at least part of an anchor and take notes. I have given them a coding scheme and I want them to be able to identify when the teacher is teaching phonics, when she is teaching vocabulary, when she is teaching comprehension and within those things what kind of instruction she is using."

In each of the above instances, the anchor cases afforded PSTs opportunities to engage in higher order thinking by analyzing and evaluating the instruction they critiqued on the video cases.

The interesting thing about this theme is they were asked about using traditional teaching methods but the professors answered in terms of using CTELL materials. Whether asked about traditional instruction or instruction using CTELL, professors each outlined instruction in terms of CTELL anchor cases and the benefits of using them for teaching reading methods courses.

Conception of New Literacies Perspective

Each professor has a little different idea about the meaning of new literacies.

Dr. Brooks may have described New Literacies more narrowly than Grant and Vann, (i.e., "To me New Literacies is all of the online hypertext, hypermedia type of how we communicate online."), but her classes incorporated the most forms of digital literacies:

> "All of my lectures and instruction were PowerPoint. PSTs emailed me all of their particular responses by a particular time. Their midterms and their finals were online. I used Web CT for tests--it was multiple choice and true/false so they did their tests online. Their final was a game show at

> the very end...I embedded a lot of technology, used a white board, interactive white board for a lot of lessons to teach the PSTs the potential of using that in the classroom with the children. So I did a lot of demonstration with that, so we were not removed from the use of New Literacies."

Dr. Brooks believed she had aligned her instruction with a New Literacies perspective.

Dr. Grant recounted changes in definitions of literacy over recent years.

> "I think of New Literacies as expanding our thoughts about what literacy is. That it is very exciting how people now look at all kinds of things like museum literacies, visuals stuff, and non verbal things. It really is beginning to look like something that is dividing the field. But it is becoming more obvious that people are thinking about literacy in new ways--thinking about expanding that whole notion of all the pop culture stuff and how it involves literacy. Looking at all that is not anything I would have seen when I was going through school."

To understand these changes, she conducted a semester long seminar entitled *Multiliteracies* with a group of doctoral students to investigate the new trends in literacy. Grant voiced concerns that mirrored Gee's (2004) regarding the changing definitions of literacy and the need for that to translate into the classroom for children's literacy development.

> "I hear people from the technology field talk about where we'll be in five or ten years. And where jobs are going and what kinds of skills they will

expect from people they're employing and all of those kinds of things and I think we are probably falling short on that in schools."

Dr. Vann saw two intersecting views of a New Literacies Perspective. The first was interested in the socio-political and cultural dimensions of literacy.

"I would agree because in some literacy environments you don't even know who you are interacting with. Identities can be shifting, re-invented, and language issues can be bridged. So there is all this new identity formation. People can pretend to be any sex that they want."

The second focused on the new technologies of reading and writing and their effect on multiple literacies, "You just don't read with paper and black ink marks so much as you have reading and writing tools and venues." She agreed with Lue et al. (2000), that we need to come up with a New Literacies Perspective that is not print based. "I do think he [referring to Lue] is right, we need to come up with new theories."

In summary, each professor was acutely aware of the importance of digital competence (Soby, 2008) albeit for somewhat different reasons. Dr. Brooks utilized all forms of new technologies in her classroom to expose her PSTs to the means and methods available to them. She believed she had long ago accommodated her instruction to include new literacies. Dr. Grant relayed the epistemic shifts taking place within academia and recounted her active search to understand those shifts. She also suggests that our educational system needs to keep up with new perspectives. Dr. Grant sees the need for programmatic changes to align education with future employment concerns. Dr. Vann recounted her awareness of the new kinds of knowledge surfacing and suggests

that we need to think differently about both that knowledge and the contexts within which we encounter them. Each professor suggests a growing awareness of the importance of preparing PSTs to be digitally competent. They are, in fact, training PSTs to meet students "on their own terms in their everyday digital world" (Soby, 2008, p146; for an in-depth discussion on becoming digitally competent, see Soby, 2008).

Professors' Role as Agents of Change Enacting Resolution Literacies

Educators concerned with New Literacy Studies see literacy as a set of socially constructed practices situated within specific contexts (Moss et al., 2005) and as a "repertoire of social practices shaping and shaped by the social actors within the specific dynamics of [that] context" (Hines & Johnson, 2008, p.2). Literacies, like discourses signify specific world views (Hines & Johnson, 2008) and are situated historically, politically, and culturally.

Teachers with enlightened understandings contribute to the larger movements of social justice by working against institutional forces that operate in ways that benefit subjective interests over that of their students. An underlying premise of education is that as teachers gain knowledge about evolving issues, they transform that knowledge into socially responsible action to bring about change (Hines & Johnson, 2008). Yet, enacting change creates tension and stress into the lives of change agents. It is my contention that Drs. Brooks, Grant, and Vann functioned as agents of change by enacting resolution literacies to better prepare their PSTs to become educators.

Resolution literacies are those instantiations of social practices that promote social justice. They are the everyday micro level practices that educators

enact to resolve the competing commitments experienced in their own lives and those their PSTs will face as future teachers. Hines believes the name is somewhat ironic because definitive resolution is often never realized. In this study, the CTELL professors experienced ongoing tensions as they continually negotiated between competing commitments. On one hand, the professors understood and embraced the theoretical and methodological concepts of new literacies. On the other had, they were well aware of the reality that would confront many new teachers. That is, some schools overly focused on test scores, have created a test prep curriculum at a time when students need foundations that will prepare them for work within a global economy—one that demands innovation, creativity and problem solving. However, some schools "seem to be doing an ideal job of producing students fit only to be service workers" (Gee, 2006, p. vii). Gee also describes newer knowledge gaps many will face in addition to "our old reading gap: a digital gap (2008, p. ix)." He believes that having access to digital learning is not enough to adequately prepare students. Teachers and students need support and mentorship in conjunction with digital tools. While Drs. Brooks, Grant, and Vann created learning environments designed to prepare future teachers for the ideal, there was an ever present tension created by the need to prepare PSTs to be instructionally strong in less progressive schools.

I outline in this section and explain more fully in the following chapter, the competing commitments and reasoning for their actions. Specifically, this section details each professors' concerns about teacher education and the practices they instituted to address those concerns. The first and most obvious means to institute change was their implementation of the CTELL initiative as a way to

broaden PSTs knowledge of digital literacy and to offer their PSTs expanded classroom experiences. CTELL professors also knew that in order to prepare children for the literacy futures they deserve, PSTs needed to develop dependence on technologies as a vehicle for instruction.

Dr. Brooks used anchor cases to help PSTs reframe assumptions regarding instructional concepts that were based on early learning experiences.

> "Their definition of whole language is what it was when it came out. Teachers [at that time] were not getting whole language training, but were told to teach whole language. They were not to do worksheets, or use phonics books—they did not know how to teach it or embed those skills in the whole language approach. So PSTs sitting in my classroom are products of that environment. Those kids were not spelling and were having a very hard time."

Many of Dr. Brooks' PSTs came to her with a negative impression of whole language instruction. In order to help them interrogate those assumptions, she exposed them to systematic balanced literacy approaches in the anchor videos. This exposure undermined unexamined notions about whole language instruction, prompting PSTs to begin questioning and seeing the value in alternate approaches.

> "So hearing their questions and confusion, I used CTELL cases to show them a kindergarten--the teacher does a phenomenal job embedding skills in meaningful authentic ways. That visual helped clarify it in their heads."

Finding ways to eradicate naïve notions held by her PSTs created a visceral tension in Dr. Brooks. To explain this tension she relayed a discussion with a

local principal that caused her a great deal of stress, “He said teacher education programs do not teach [PSTs] to teach, we do.” As a result, she was driven to better prepare her PSTs to be effective first year teachers of reading.

Brooks used the anchor cases to help PSTs recode experience and begin to think professionally. “They were looking at it from a different angle, more as a teacher delivering instruction rather than as a student receiving it.” Dr. Brooks used the cases to support her instruction and in so doing offered her PSTs a transformative learning experience. In this way she enacted resolution literacies, providing opportunities for her PSTs to interrogate their assumptions and perhaps expand their instructional repertoire to include digital literacy instruction.

Thus utilizing case based anchored instruction; PSTs became aware of various ways to teach literacy. In addition Dr. Brooks was able to resolve the tension she experienced in trying to relay the efficacy of using balanced literacy instruction by utilizing the anchor videos to help PSTs reframe their notions about literacy instruction.

Dr. Grant, well aware of the situation described by Gee, stated: “They [inservice teachers] are required to do a lot of assessments but I am not sure inservice teachers do a good job of [diagnosing] children.” To bridge this gap and better prepare PSTs, she creates multiple opportunities using anchor videos and assessment segments for her PSTs to diagnose children’s reading proficiency. That diagnosis practice informs their instruction, positioning PSTs to deliver differentiated instruction. PSTs then evaluate the instruction they created. Grant’s approach offers PSTs authentic experiences—experiences that may not be

available to them or even encouraged in certain schools, especially early in their careers.

Graduate PSTs in her reading clinic course watch children reading on the anchors, identify strengths and weaknesses, and group the children for guided reading based on hearing them read and on the children's individual assessments. They are also asked to design instruction for those children. Thus, PSTs are functioning as teachers, and practicing thinking professionally. Dr. Grant employs digital learning experiences to provide transformative learning experiences by giving them multiple opportunities to be on the other side of the desk. She uses the CTELL materials to help her PSTs understand they are teaching kids rather than thinking about teaching content or raising test scores. Grant seems especially concerned about schools that are not thinking about digital literacies:

> "School districts are so focused on how to raise test scores; on buying kits and things...they're not really forward thinking. I don't think they're providing in service [about digital literacies]...teachers aren't trained to think about how technology could enhance their instruction or helping kids prepare for the kind of technology that will be available or the skills they'll need—digital literacy skills. I think that gap is getting huge.

She also expressed concerns about new teachers she has had in graduate classes,

> "They tend to fit more in the mold of whatever is going on at their school rather than what they have learned...they tend to get caught up in materials more than instruction."

As a result Grant designs her curriculum to prepare PSTs (and graduate teachers) to identify children's needs, create appropriate instruction and incorporate digital literacies. She points them towards student centered thinking. In so doing she provides a measure of protection from being vulnerable to institutional control. She incorporates digital literacy to help them recognize various types of instruction, to see what is embedded in instruction. Knowing what different types of instruction look like in the classroom will help them "see how it fits and be able to apply what they have learned." Their use of technology in her class "helps them think about using technology more in their classroom."

Hence Dr. Grant functions as an agent of change by providing transformative learning experiences and helping her PSTs build foundations that will benefit children in those schools that exercise scripted instruction and advocate test prep curriculum. Her use of technology and implementing the CTELL initiative in her reading methods courses, was also the means by which she chose to convey the importance of becoming digitally competent (Soby, 2008) in the ever changing global economy.

Dr. Vann's tensions stem from similar concerns. In some of the lower performing schools there is an emphasis on materials which means that teachers have little power to make instructional decisions.

> "That is one of the tricky things about any of these things we come up with because things keep changing in education. We will go back at some point to less top-down decision making and more teacher decision making but right now some of my PSTs are placed in a school where they have a scripted manual and they have to read the script."

Differentiated instruction would be difficult to achieve in such contexts. Institutional controls tend to override teacher innovation. Attributing current trends in part to the influence of No Child Left Behind, she explains the situation,

> "The more you get in the lower performing schools, the more scripted education you tend to find. In higher performing schools there is much more latitude for teachers to do different things."

Preparing PSTs to function across the range of schools and practices is challenging. In order to bridge that gap, Dr. Vann uses the video cases as one way to show PSTs how to deliver instruction in authentic ways.

> "I do use hers [a particular anchor video] when I want them to have a sense of what we talk about as whole language instruction. To look at what is considered a more authentic literacy experience because she has a wonderful example where the light is burned out in the room and she involves the kindergarteners in writing a letter to the janitor....this is an example of using literacy for authentic purposes as opposed to when you were in school and had to write a letter to the Acme Plumbing Company to learn the format of the business letter. That was an inauthentic literacy exercise.

She believes, "Whatever they [PSTs] end up falling into, they will at least be informed of basic things about teaching reading and hopefully they can use whatever materials not just blindly but knowingly."

To further position her PSTs, Dr. Vann trains them to be knowledgeable observers of instruction. By analyzing and evaluating anchor video lessons and diagnosing children's reading proficiency, PSTs gain expanded experience in the

classroom. Dr. Vann's intent is to help her PSTs understand the need for differentiated instruction. In this way, Dr. Vann has positioned her PSTs to enhance even the more scripted reading programs.

To recap, Dr. Brooks used the anchor cases to liberate her PSTs from unquestioned assumptions about instructional methods, which resulted in a transformative learning experience. Dr. Grant designed her instruction to help PSTs understand the importance of a student centered approach, i.e., to think about teaching kids rather than teaching content. Incorporating the CTELL materials in her class highlighted the importance of expanding digital literacies instruction in the primary grades for existing teachers. Dr. Vann also positioned her PSTs to build strong theoretical foundations, expanded their classroom experiences through anchor case use, and provided opportunities to analyze instructional methods and materials.

Each of these professors acted as agents of change by offering transformative learning experiences, liberating their PSTs from unexamined assumptions, and helping them build strong theoretical bases that will enable them to diagnose, enhance, and implement innovation into whatever curriculum they are required to teach. The resolution literacies these professors enacted were aimed at injustices by creating awareness, liberating PSTs from unexamined notions, and arming them with the theoretical foundations, methods, and insight that will enable them to prepare their eventual students for ever-changing literacy futures.

Summary of Chapter Four

In this chapter I presented the findings grouped according to the research questions. The findings for each question were subdivided by theme. The next chapter outlines the conclusions in the form of a bricolage and offers implications of this study.

CHAPTER FIVE

SUMMARY AND DISCUSSION OF THE FINDINGS

In this chapter, I summarize the purpose of the study and briefly review the lines of inquiry, and method of data collection and analysis as explained in the first three chapters respectively.

Second, I discuss the findings presented in Chapter Four. Third, I explain the significance of the findings. Fourth, I recount the limitations of this study.

Finally, I suggest ideas for future research and practice.

Summary of the Study

The purpose of this study was to examine the theoretical perspectives teacher educators and preservice teachers were forming as they encountered new technologies and methods for using these technologies in their classrooms.

The first line of inquiry studied teacher educators' perceptions of their PSTs learning and developing perspectives about literacy education. The second line of inquiry invited teacher educators, who were incorporating new technologies into their instructional methodology, to share their theoretical perspectives about literacy education and the resulting changes that may be taking place in the teaching learning environment.

To answer these questions, I adapted McCracken's Four-Part Method of Inquiry to build a bricolage of their perceptions. McCracken's method is designed to offer "explanations that take us 'back stage' in the culture in question, to let us glimpse assumptions and categories that are otherwise hidden from view"

(McCracken 1988, p. 49). As explained in Chapter Three, his Four-Part Method of Inquiry infuses a structure for uncovering cultural categories and the assumptions and beliefs of participants. Bringing these objects of research into view allowed a construction of a bricolage—an interpretive representation of the theories and assumptions that guided the CTELL professors' praxis.

In the strictest sense a bricolage is the construction of a work from a diverse set of available materials. For instance, a collage pieced together from a collection of photographs could be an interpretation of a particular event or biographical account of an individual's life. In this study, the perceptions of the CTELL professors were arranged to construct my interpretation of their experience and the experience of their PSTs.

It is interesting to note that the PSTs constructed their notions of what it means to be a teacher of literacy in much the same way as my re-presentation of their experience was created. That is, PSTs created a bricolage of understanding the prototypes, precedents, and parables of becoming a reading teacher from the activities and instructional methods used, and the philosophies conveyed by the professors who implemented the CTELL initiative.

One principal question guided this study: What are the teacher educators' perceptions of using CTELL anchored instruction for undergraduate reading methods courses? Specifically, I explored the teacher educators' perceptions of their PSTs learning experience and, the effect of implementing CTELL anchored instruction on teacher educators' pedagogies and personal philosophies. In addition, because I had three years of experience working on the CTELL grant interviewing PSTs and professors at multiple universities and had participated in

training sessions for CTELL professors, I had accumulated a good deal of background knowledge and personal theories related to this initiative. Although these experiences were not included as data in the previous chapters of this study, it would be naïve to assume those experiences did not also influence the bricolage of conclusions below.

Bricolage

Professors' Perceptions of Their Student's Learning Experience Using Digital Case Technologies

PSTs understanding of teaching literacy. Data analysis indicated that each professor anchored instruction to the video cases of master teachers' literacy lessons and assessment segments of children reading. They created problem based learning environments that allowed PSTs to develop better judgment and a greater understanding of teaching reading than would have been possible from passively attending lectures on methods (Ertmer et al., 1996; Silverman, Welty et al., 1992; Sykes & Bird, 1992).

The affordances of the digital case technologies contextualized what PSTs were learning in their methods classes, (e.g., Dr. Brooks' PSTs were finally able to see how instruction was threaded, not fragmented, as they once thought). PSTs in Dr. Grant's classes acquired a better understanding of literacy development and instruction across ages and grades. Inservice teachers expanded their instructional repertoire to include technology for early literacy learning. Dr. Vann's PSTs were able to analyze and critique the anchor's teacher's instruction—something first semester PSTs are rarely equipped to do. In short, the affordances of the CTELL materials offered PSTs instructional models to help them map

theory to authentic contexts of learning and solve authentic problems within those contexts. In addition, PSTs had instructional models from which they could draw upon during their field experiences.

Furthermore, each professor held a series of debriefings that helped integrate the visual with the abstract. Jerome Bruner (1966) indicated students of any age without sufficient relevant learning experiences can achieve mastery of a task through engagement of three types of experiences presented within a defined sequence (i.e., enactive or direct experience, iconic representation, and symbolic representation). The above examples of instruction facilitated those requisites. That is, PSTs had all observed in classrooms (enactive experience), then viewed case-based anchored instruction examples (iconic representation—the use of videos), and followed those with discussions, readings, and debriefing critique sessions (symbolic representation—the use of words and theories). Thus as Bruner advocated, PSTs understanding of teaching literacy was also impacted by the pairing of digital case technologies within sequenced instruction.

Metacognitive engagements. In traditional educational approaches teacher educators often express concerns that PSTs do not begin thinking like teachers early enough in their careers. In contrast, the professors reported many PSTs in this study began thinking like professionals during their first semester, in part because metacognitive engagements were elicited by assignments that required PSTs to make connections across sources of learning; but also because each professor paired the videos with relevant experiences in the classroom and in the field.

CTELL professors also introduced cognitive conflict by asking controversial questions during discussions in an attempt to stimulate critical reasoning. PSTs had to consider what they knew, analyze the professor's question, and evaluate relevant responses to solve classroom dilemmas.

Thus, in terms of Bloom's taxonomy (1984) of cognitive skills, PSTs engaged higher level thinking skills. The post-viewing discussions subsequent to PSTs field experiences revealed PSTs synthesizing across sources of learning, analyzing anchor teacher's instruction, and evaluating and diagnosing children's reading abilities.

As a result, by their second semester PSTs were aptly applying diagnostics to the children in the videos. They were also able to analyze and critique their own instruction as evidenced in Dr. Vann's class (i.e., PSTs analyzed their own instruction and rewrote their lesson plans based on that analysis). However, there does seem to be a developmental aspect to the transmission to "the other side of the desk" for PSTs. During discussions, undergraduate PSTs asked questions related to prototypes, but graduate student PSTs' and inservice graduate students' questions were more developed and directed towards the precedents and parables of the profession.

Epistemological insights. Many studies (Hofer & Pintrich, 1997; Kitchener & King, 1990; Perry, 1970) suggest epistemological beliefs are fairly resistant to change within a short time span. It may be unrealistic to expect such change within a semester or two. It would be interesting to conduct a study designed to investigate the potential effects of digital case technologies on epistemological changes over time.

Perhaps this is why Dr. Brooks identified an epistemological shift limited to prototypes—PSTs burgeoning awareness that skills can be embedded within a whole language context. She attributed PSTs understanding of a balanced literacy approach to experiences derived from the anchor cases.

It is also interesting to note that two of the CTELL professors verbalized a personal epistemological insight regarding their PSTs' learning. Dr. Grant realized her PSTs were restructuring pedagogical assumptions related to prototypes and precedents, "And they were surprised little kindergartners could be doing XYZ on the computer."

In considering her PSTs' epistemologies, Dr. Vann realized her PSTs' had not seen the anchor teachers using teachers' manuals. This realization suggests two things. First, that she believes the anchor videos impacted PSTs pedagogical assumptions regarding prototype issues. Second, that identifying PSTs' epistemological stances informed her instructionally. That is, this insight became a diagnostic informing her personal prototypes and precedents.

Teacher orchestration. Insofar as identifying the subtexts of literacy instruction displayed by the anchor teachers, the professors reported that PSTs required explicit instruction, as Johnson (2008) suggests. The precedents anchor teachers developed over years of practice were obvious to the CTELL professors yet too subtle to for the inexperienced to detect. This was an interesting development because many PSTs I had interviewed during the grant period (prior to beginning this study) expressed concerns regarding class management and being able to create constructive activities for their prospective students.

Based on this experience, I anticipated PSTs would be tuned in to the way anchor teachers managed children during and apart from instruction. Yet, this was not the case.

Each CTELL professor had to actually stop the video and point out issues related to class management and organization. In addition to pointing these things out, Dr. Vann thought it important to analyze instances of distractions in the videos in order to create a better understating of managing children's behaviors. Perhaps, it is as Karasavvdis, Peters, and Plomp (2003) suggest, some higher order thinking skills are best achieved in formal learning environments. In this study the visual informed the inexperienced about instruction but little vicarious learning was evident regarding teacher insight and orchestration unless the professors directly addressed it.

Adopting and forming new literacy theories. The PSTs referred to in this study were engaged in digital literacies on a daily basis to a variable degree. CTELL professors believe PSTs are expanding their knowledge of new technologies through the examples of technology use in the anchor videos. The expectation is that PSTs are forming new theories about literacy education and that they will accommodate traditional instruction to include digital literacies if they receive ongoing guidance and support within their schools.

If incorporating digital technologies across the curriculum is an artifact of PSTs technology use during preservice education, and if use increases metacognitive engagement and epistemic insight about digital instruction, then it follows that teacher education programs would benefit from similar instructional

models. As Dr. Vann said, “maybe we shouldn’t be teaching reading, writing, speaking, and listening the way [we] were taught.”

Dr. Vann, familiar with the New Literacies literature, suggested the need to align instruction with a New Literacies Perspective. This is an important point, which I believe, is connected to Teale et al., (2002) notion that it is necessary to develop curriculum aligned with this perspective in order to prepare students to be fully literate. The implication is that new kinds of knowledge may be produced and that we will come to value knowledge differently. Her point is well taken.

We use standardized testing to measure our students’ standardized learning at a time when innovative thinking is required to be globally competitive (Gee, 2006). The better jobs are those that cannot be standardized, those that a computer cannot do, those that require imagination and creativity. Shaffer (2006) makes the point that our survival as a nation depends on educating our students to utilize technology in ways that neither person nor computer can accomplish alone. He is simply saying that many of the skills taught in American education systems are test-driven and focus on outdated thinking (i.e., formulaic knowledge that can be externally stored and retrieved from a computer). Instead, our foci should direct PSTs towards skills and concepts that will help them function on collaborative teams of complementary expertise so they can “develop innovative solutions to complex problems” (Shaffer, 2006, p. 58). By preparing our PSTs to work in problem based learning environments, as discussed in the following section, we are at least, advancing towards that objective.

Professors' reflections on the effects of implementing digital technologies into their education courses: challenges or enhancements to pedagogy and personal philosophies.

Prototypes: Professors' use of digital case technologies. CTELL materials were integrated into all methods classes each of these professors taught during the CTELL grant period and are still in use at the time of this writing. It is fair to say that these professors are aligned with the method and philosophy undergirding CTELL. Each professor anchored instruction to the video cases albeit with idiosyncratic variations. Each also created collaborative problem-based learning contexts, situating instruction within a sociocognitive theoretical perspective. As discussed in Chapter Two constructivist learning theory informs CTELL's sociocognitive perspective. In this study PSTs experienced whole-to-part instruction (Brooks & Brooks, 1993) followed by part-to-whole instruction. That is, PSTs were introduced to big concepts in an authentic context before the components of literacy education were examined in depth (i.e., viewing videos before studying concepts such as decoding, then after experiencing decoding in the classroom and in readings and discussions, PSTs were sent back to the videos).

This approach suggests the professors were also aligned with dialectical constructivist tenets (Moshman, 1982) because they created reciprocity between exogenous and endogenous descriptors of knowledge construction. Specifically PSTs experienced the dialectic between Vygotskian (1978) and Piagetian (Piaget & Inhelder, 1969) notions about knowledge accretion. For instance PSTs aligned with whole language adapted these previously formed knowledge structures to

accommodate a more balanced literacy approach. This is so because they experienced instances of cognitive conflict from encounters with competing instructional practices and theories in the anchor videos and in orchestrated class discussions and debriefings.

Although Karasavvdis et al., (2003) indicated that higher order thinking skills were best achieved in formal learning environments that included targeting deficits in cognitive skills, that was not the case in this study. PSTs exhibited advanced cognitive skills in debriefing sessions and post viewing discussions.

Utilizing the CTELL desktop resources required full engagement of the PSTs cognitive tools. The professors each asked PSTs to not only view the video cases but to apply what they witnessed to their personal experiences, readings, discussions, and lectures. In terms of Blooms taxonomy (1984), this methodology engaged PSTs' higher order thinking skills (i.e., analysis, synthesis, and evaluation). Analysis was employed as PSTs identified patterns of instruction and its relationship to the skills being taught; they had to separate and organize components of instruction (e.g., dissfluent readers and completing running records). Inference was also required in that PSTs could infer relationships with their previous knowledge of the schools, some of the students' abilities, and parental conferences.

PSTs employed synthesis in the planning of lessons and creating instruction for individual students or groups of students, as Dr. Grant's PSTs did their second semester. Evaluative skills were engaged during debriefings as they verified information, reasoned which instructional tactics were appropriate in

which circumstances, and evaluated evidence from competing theories. Thus PSTs were constructing a coherent interpretation of what it means to be a reading teacher.

Precedents: Assumptions and Practices Based on the Wisdom of Experience and Training

This section presents the findings related to the precedents, those practices employed by experienced professionals and their perceptions of their CTELL experience.

Potential for professional development, continued use, and pedagogical changes. Each of the professors agreed that the CTELL initiative embodies excellent potential for continuing education for inservice teachers. Each professor also continues to use CTELL materials for teacher education classes. However, their opinions differed regarding the changes they made in their instruction and the challenges they faced preparing preservice teachers to be effective first year reading teachers.

Pedagogical changes. Dr. Brooks has only taught PSTs with CTELL materials and will continue to do so. As a mentor teacher she used similar methods, taping her own classes to help indoctrinate new inservice teachers. As a result, she felt her mode of instruction did not change drastically. Dr. Grant said CTELL materials changes how she tackles topics. She described it as a great tool for being able to talk about kids' reading, seeing and hearing instruction, and offering an authentic experience while learning assessment. Dr. Vann agreed her instruction changes but was ambiguous regarding the source of those changes. She thought reciprocity exists among the various pedagogical tools that

contribute to the evolution of her pedagogy. She did suggest that a forum for discussing the CTELL initiative might help her use the CTELL materials as a central text.

Hence, her comment coupled with the opinions of the other professors (i.e., in this study and those interviewed across campuses) is a testament to the potential of CTELL and similar approaches to offer PSTs and inservice teachers more authentic learning experiences.

Challenges professors faced preparing PSTs to be effective first-year reading teachers. Findings indicate two important points. First, PSTs make considerable strides in teacher insight by their second semester. The affordances of the cases helped them better diagnose children's abilities, appreciate the value of using digital technology for instruction in all grades, and better understand orchestration issues.

Second, although PSTs indicated increased knowledge about instructional flexibility in class, they struggled with fluidity when teaching children. It comes as no surprise that experience is a factor in developing competence. Differentiated instruction necessarily requires diagnosing children's development, strengths, and weaknesses. And although PSTs showed substantial growth during their second semester assessment classes in this regard, the professors expressed concerns about PSTs delivering rigid lesson plans, and understanding that the primary objective was to teach children first, and content second.

Collectively these comments suggest PSTs have not transitioned to the other side of the desk in all respects. It may also be that because they are in fact

still students themselves, they are vey much aware that they are being graded on lessons and delivery. Deviating from a planned lesson based upon feedback from the children they are teaching might mean a shift in focus, purpose, and perhaps identity. In addition, it may be unfair to expect that level of performance from PSTs who do not have the advantage of knowing the children well enough to make such decisions. In any case, it is important to note that as the professors gained experience with the CTELL desktop materials they began to use the anchor cases to address these challenges. Future research may consider investigating the outcomes of increased use of case-based digital technologies and first year inservice teachers' implementation of best practices.

Parables: Professors professional beliefs, instructional approaches, and philosophies.

As previously mentioned, parables are the third principle invoked by case-based instruction. Parables convey the morals and values of the professional community. The following section summarizes the findings on this issue.

Instructional approaches and professional beliefs. Findings indicated each professor created situated learning environments wherein PSTs could build cognitive models across instructional contexts patterned by the anchor teacher's instruction (Gee, 2004). Professors indicated their theoretical alignment with the sociocognitive tenants of CTELL by positioning PSTs within a cognitive apprenticeship. A cognitive apprenticeship framework acknowledges that learners benefit from interactive goal-oriented instruction with a more knowledgeable other (Lave & Wenger, 1991). In this case PSTs had multiple

opportunities to work with more knowledgeable others i.e., the CTELL professors, various anchor teachers, and classmates.

Professors' responses about traditional teacher education were somewhat negative in that they believed traditional methods too often relied on fragmented transmission based instruction. Such instruction denies PSTs opportunities to experience context-rich authentic learning experiences. Consequently PSTs are also denied opportunities to hone the analytical and decision making skills they will need in an elementary classroom. Unprompted, each professor compared traditional methods with the affordances of digital case technologies explaining how they were using the anchor cases to address these problems. Drs. Brooks and Vann used CTELL materials to contextualize learning, demonstrate integrated instruction, and crystallize concepts. Dr. Grant used CTELL to help PSTs connect instruction to developmental aspects of early literacy learning, and as a common ground for discussing classrooms and teacher-student interactions. In each of the above examples, professors used the CTELL materials to situate learning in an authentic context that offered PSTs opportunities to analyze, evaluate and reflect on the instruction they witnessed.

Conceptions of new literacies. Dr. Brooks said little about the philosophical aspect of new literacies; however, she incorporated every means of digital literacies into her pedagogy as they became available. She also believed her PSTs' expectations were aligned with technology as a vehicle for instruction. She knew delivery modes of instruction were in transition and fought to develop that awareness across educational contexts (i.e., in her classroom and in professional development sessions she conducted in locals schools). Although Dr.

Brooks was not ready to articulate her philosophy regarding new literacies, she expressed an awareness of being influx but was as yet unsure what that would mean insofar as her future instructional approach.

On the other hand, Drs. Grant and Vann expressed interest in the epistemic and philosophical aspects of new literacies. Dr. Vann reflected on the new types of knowledge surfacing (e.g., definitions of text and shifting identities) and believed we need to think differently about that knowledge and the contexts within which they are encountered. She was most concerned about current trends towards skill and drill, test driven curriculum and suggested we need to think differently about teaching reading and writing. Dr. Vann took measures to address these concerns in her classes as I will explain in the following section.

Dr. Grant was most interested in the epistemological characteristics of multiple literacies and recounted her active search to understand the academic shifts and trends in thinking. She understood the ties between technology and the skills future workers will need to be competitive globally. This understanding created both an awareness and tension regarding her approach to preparing PSTs to be effective literacy teachers.

The next section explains how each professor responded to the tensions they felt regarding the competing commitments they experienced as teacher educators in our current economical and educational climate.

Professors' role as change agents enacting resolution literacies. Findings indicated each professor functioned as agents of change by implementing micro level practices that offered PSTs transformative learning experiences—

experiences designed to help them become progressive educators equipped to offer children less standardized educations.

As introduced in chapter one, the velocity of change introduced by technology and ICTs impacts our economy, education, and beliefs about the kinds of knowledge that will be valued in a global economy. Yet, many of our schools use standardized assessments to test curriculum based on standardized knowledge and skills. The concern is that we as a nation are still training our students based on outdated notions (Donald, 2002; Gee, 2003, Shaffer, 2006). As formulaic knowledge becomes externalized (i.e., stored and operationalized by computers) a simple mouse click allows other countries to perform many of the jobs that were once performed here. To make matters worse, these jobs can be performed more economically oversees, encouraging more employers to seek opportunities offshore.

Shaffer (2006) makes the point that, "learning to do what a computer can do by definition means learning some standardized skill...the high-paying jobs are the ones that can't be standardized" (p. 66). The point is that in this digital age we should be teaching students to think in innovative ways that will help them achieve creative technological use. In other words, they should not be learning to do what computers can do for them. Students should be learning to think in ways that will allow them to utilize technology to accomplish tasks that neither can do alone (Donald, 2002; Shaffer, 2006).

When do we begin teaching our students to think as Gee (2003; 2004) and Shaffer (2006) suggest? It is my contention that we begin with the classroom teachers, as did each of the CTELL professors in this study. The professors in this

study implemented revolutionary practices intended to stimulate independent thinking and creativity. Such practices are intended to improve the lives of specific others. Such practices aim at injustice. CTELL professors instituted micro level everyday practices that targeted institutional forces operating in ways that benefited self interest over that of students. These professors targeted systems tied to outdated modes and notions of educating children. Drs. Brooks, Grant, and Vann were working towards the underlying premise of education highlighted by Hines and Johnson (2008): that as teachers gain knowledge about evolving issues, they transform that knowledge into socially responsible action. Such social action, however small, promotes social justice. Hines and Johnson (2007, 2008) refer to these actions as resolution literacies—*resolution* because educators attempt to resolve the competing commitments in their own lives, and *literacies* because literacies denote world views that are historically, socially, and politically situated.

As agents of change each professor worked towards improving the teaching learning environment, aligning literacy education with the skills learners will need to be globally competitive, and protecting their PSTs from becoming marginalized by authoritative instructions. Each professor enacted resolution literacies in several similar and unique ways. The following section summarizes the findings first, according to the similarities and then by outlining the particular practices of each professor.

Similarities

The first and most obvious practice is the implementation of digital case technologies as a unique method of teaching. That is, PSTs training was anchored

to case-based learning through digital technologies, an environment able to produce authentic learning experiences in distinctive ways. Professors introduced cognitive conflict to help PSTs cultivate the ability to think clearly about ambiguous unstructured situations. Problematizing classroom situations viewed in the anchor cases allowed PSTs to: a.) develop skills identifying important information, b.) determine what was missing, c.) develop a concise course of action (Wertheim, 2005), d.) formulate potential solutions by synthesizing information across sources of learning, and e.) hone evaluative skills.

Second, by implementing digital technologies the professors contextualized learning, adding an iconic context (Bruner, 1987; 1990) that offered PSTs practice predicting behavioral outcomes—both their outcomes and students outcomes. In so doing PSTs were provided opportunities to identify implicit models of instruction, and identify underlying assumptions and personal epistemologies.

In both of the above examples the CTELL professors created a learning environment that necessitated taking on a professional persona (e.g., practicing the parables evoked by CTELL professors). Quite simply PSTs were gaining experience thinking and functioning as teachers, an occurrence not often achieved during training.

Individual Practices

Dr. Brooks campaigned to improve the teaching-learning environment. Her way to do that was to embrace technology in the classroom—not just as an ancillary resource but to actually accommodate instruction to include technology as a primary resource. Motivated by subjective experience and conversations with

other educators, she believed one way to improve teacher education was in the method of delivery. She understood the educational trends towards scripted literacy lessons, especially for first-year teachers. In some schools preservice teachers reported literacy lessons being largely written by reading coaches for first-year teachers. Such instances undermine teacher motivation and subvert opportunities to improve practice (personal communications from reading coaches in elementary schools). Dr. Brooks' response was both forthright and subversive, expanding her PSTs' thinking and instructional repertoire in two important ways.

First, to subvert institutional mandates that confiscate literacy planning from classroom teachers, Dr. Brooks modeled explicit instruction using technology. For example, she used an interactive white board for thematic and differentiated instruction, and demonstrated how multiple modes of technology could be used in all subjects from Kindergarten through third grades. Even though her PSTs' lives were sufficiently embedded with technology, they were surprised to learn that very young children could negotiate digital environments. Such examples of instruction expanded PSTs notions or how literacy could be taught. It also bolstered their motivation and creative enterprise. PSTs readily accepted this premise and began learning to construct digital literacy lessons--lessons across the curriculum designed to enhance those literacy lessons first-year teachers may not be allowed to write (e.g., may be required to read from a script).

Second, Dr. Brooks used the anchor video cases to expose PSTs to systematic balanced literacy instruction. As she explained, her intent was to

undermine PSTs negative impressions of Whole Language instruction and to undermine impressions of fragmentation. This exposure promoted PSTs to interrogate unexamined notions about literacy instruction. As a result, they began to look for the value in alternate approaches. Now open to new ideas these PSTs were thinking professionally, looking for answers that would offer their future students options for learning. Dr. Brooks offered her PSTs a transformative learning experience and achieved a measure of resolution from the tensions she felt by helping them build new understandings that could support the literacy instruction children deserve.

Dr. Grant's main concern was preparing PSTs to be instructionally strong. That meant being able to diagnose children and provide differentiated instruction. Inservice teachers are required to do a lot of assessments. The fact that those assessments did not seem to inform teacher's instruction troubled her. She lamented the fact that school districts were overly focused on test scores and "buying kits and things" and "they were not really forward thinking."

Dr. Grant thought school districts should provide inservice that would impress upon teachers the ways technology could enhance their instruction, and more importantly how technology could help train children for technological futures and skills. She also wanted PSTs to understand that they were teaching children not just teaching content or raising test scores. She thought schools were overly focused on materials. In addition, she noticed that many new teachers seemed vulnerable to institutional control, "they tend to fit more in the mold of whatever is going on at their school rather than what they have learned." They were getting more caught up in materials than instruction.

Her answer to these concerns was incorporating digital literacy into her curriculum. She orchestrated practices that would help her PSTs become technologically competent (Soby, 2008), (i.e., creating authentic learning experiences by anchoring instruction to video cases, and introducing cognitive conflict to motivate learning). She used CTELL materials to help PSTs learn to identify children's needs, create student centered thinking, and learn about the future needs of students which included becoming technologically savvy. The anchor cases helped her bridge existing educational gaps because PSTs saw what different types of instruction looked like, and how to apply various instructional methods across grades and developmental stages.

Using technology in her classroom afforded PSTs opportunities to understand the importance of digital literacies in teaching children to read. Dr. Grant's resolution literacies helped her address those issues which troubled her and offer PSTs transformative learning experiences. She was able to provide new prospects for teaching that will alter the learning environment and help her PSTs become creative teachers with the ability to enhance scripted programs and function around institutional controls.

Similar concerns troubled Dr. Vann. She thought institutional controls were overriding teacher innovation and motivation, particularly in the lower performing schools and attributed these trends in part to No Child Left Behind. Some of her PSTs in the lower performing schools were required to actually read scripted reading lessons. In the higher performing schools there was much more latitude for teachers to make instructional decisions.

As a result, Dr. Vann found it challenging to prepare PSTs to function across the range of schools. She believed as education continues to change we will go back to less top-down decision making and more autonomy for teachers to make decisions. To prepare her PSTs for such changes, and to position them to stimulate such change, Dr. Vann employed digital case technologies to train PSTs to become informed observers of instruction. Analyzing and evaluating anchor video lessons allowed them to gain experience diagnosing children's reading proficiency. Accordingly, they also gained insight into the need for differentiated instruction and would be positioned to deliver it within any curriculum.

She also used the anchor cases to illustrate authentic literacy instruction. Using literacy for authentic purposes contextualizes learning for children. They have a purpose for learning and in some instances they learn because they have purpose, as in her example of writing a letter to the janitor to inform him about a problem in their classroom. The anchor video case, in this example, modeled problem based learning in the primary grades. Her intent was twofold, to show PSTs how to deliver authentic instruction around mandated programs that inhibit teacher creativity and to show them how to utilize given materials and methods knowingly. Thus Dr. Vann's resolution literaices were an attempt to prepare teachers now, to instantiate the changes she envisioned.

In the foregoing examples, the objective was to enact change. Each CTELL professor employed resolution literacies as the method and digital case technologies as the materials used to achieve that objective. That is, while Dr. Brooks, Grant, and Vann created learning environments designed to prepare future teachers for the ideal, there was an ever present tension created by the

need to prepare PSTs to be instructionally strong in less progressive schools. Thus, it was the arbitration between the ideal and reality that constitutes the resolution literacies employed by these professors.

Limitations of the Study and Suggestions for Future Research and Practice

This study has several limitations. First, because this study is a qualitative inquiry, it is not generalizable to a wider population.

Second, issues related to teacher orchestration and class management were not fully addressed in this study. CTELL professors suggested the lack of awareness by PSTs in this regard may be related to an experiential component. They concluded that PSTs were so focused on delivering instruction that PSTs were unable to attend to inattentive or misbehaving children. Each professor had to stop the videos to point out instances of class organization and management. However, graduate students with classroom experience displayed higher levels of awareness about managing children during instruction. Future research might consider the effects of using digital technologies to explicitly train novice teachers in this regard.

Third, although I anticipated exploring social issues related to diversity and academic performance, these anticipations were not realized. None of the professors considered using the anchor videos or other available desktop information to explore these issues. Yet, when queried about using CTELL in this manner each thought it would be a productive learning experience for PSTs. Perhaps more in-depth training for instructors would help them better utilize the potential inherent to digital technologies. Future research could explore this potential. Subsequent studies might also look at the digital gap described by Gee

(2006). That is, how much learning and the quality of learning children gain from digital media. This question goes beyond issues of access to digital media. It is dependent on how teachers utilize digital medial in the classroom.

Lastly, Dr. Brooks voiced concerns about PSTs not altering lesson plans during instruction despite evidence that these lessons were not productive. By not talking with these PSTs, I missed an opportunity to understand the implications of this occurrence. Future research might investigate the classroom environment and instructional methods of the cooperating teachers. For example, it may be that schools that have adopted scripted literacy instruction (i.e., where lessons are executed without deviation), influenced PSTs strict adherence to their written lesson plans. In other words, because cooperating teachers modeled this behavior, PSTs followed their cooperating teacher's example. Thus, interviewing the PSTs taught by CTELL professors would give educational researchers deeper insight into the learning experiences of both the professors and their PSTs.

A Final Word

This study set out to examine the theoretical perspectives and pedagogies teacher educators and preservice teachers were forming as they encountered new technologies and methods for using these technologies in their classrooms.

Data analysis indicated that the dynamic between traditional and digital teacher education facilitated a cultural learning experience for preservice teachers that enabled them to function and think professionally much earlier in their careers. In addition, because professors created a cultural learning experience, they were able to address social justice issues that created tensions in

their individual lives and practice. Professors addressed these issues by implementing resolution literacies in an attempt to develop literacy educators who could meet the instructional needs of children regardless of the political and social demands of their future placements.

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APPENDIX A

INTERVIEW PROTOCOL

Interview Protocol Guidelines: Potential Questions

What are your perceptions about using the anchor cases for preservice teacher education?

1. **Please describe your basic philosophy of effective preservice teacher education?**
   Possible Probes
   - Does your philosophical/ theoretical approach align with the CTELL anchored instruction socio-constructivist tenets?
   - If not, then what does it align with?
   - Do your perceptions regarding theoretical underpinnings differ from CTELL and does that difference help account for how you used the materials?

2. **What are your perceptions about the changes in instruction you made as a result of using the video cases, if any, and why?**
   Possible Probes
   - Do your perceptions align with CTELL or other data?
   - If not, what are the implications of their perceptions? Or probe for the reasons why no changes were made.

3. **What opportunities for student learning, if any, were afforded by using the cases?**
   Possible Probes
   - Which cases did you use the most?
   - Which components of the cases?
   - How did you structure activities and why?

4. **If the CTELL video cases were still available, would you use them today?**
   - Would you use something similar? Or, are you using something similar?
   - What would you change regarding use of anchored video cases and why?

5. **Do you think use of the cases facilitated any metacognitive engagements with course readings? Why or why not?**

6. **Do you think the use of the cases facilitated any epistemological insights or shifts in beliefs about teaching and learning? Why, why not?**

7. **What impact (if any) do you think using the cases had on students' understanding of literacy teaching in the elementary grades? Why do you think so?**

8. **Are your students adopting, resisting, forming new theories about the teaching learning experience to coincide with a new literacies perspective?**

9. **Do you think using the cases had an impact on students' understanding of diversity and cultural education? If so, please describe.**

APPENDIX B

PRELIMINARY QUESTIONS

Of the 16 classes during the semester, please indicate how often you used the cases by circling the number that most closely represents how often you used the video cases.

1	2	3	4	5
Not used	1-2 times	2-6 times	7-11 times	12/16 timeS

- On a scale of 1 to 5 how well do you think you used the cases? _____

- How well do you think the cases positively impacted preservice teacher learning?

- What type of activities did you assign in conjunction with the cases?

- Please describe any changes you made to your instruction.

- Briefly, please describe how you used the cases and provide a rationale.

APPENDIX C

CONSENT FORM

I, _____agree to take part in a research study titled "A Study of Teacher Educators' Perspectives and Practices Using New Technologies for Reading Methods Courses" which is being conducted by Betty P. Hubbard, Department of Language and Literacy, University of Georgia, (706) 542-2718, under the direction of Linda Labbo, PhD, department of Language and Literacy, University of Georgia, (706) 542-2718. My participation is voluntary; I can refuse to participate or stop taking part at any time without giving any reason, and without penalty. I can ask to have information related to me returned to me, removed from the research records, or destroyed.

The purpose of this study is to examine the ways incorporating digital literacies into instructors' reading methods course curriculum may have challenged or enhanced instructors' pedagogies. If I volunteer to take part in this study, I may be asked to do the following things: (I may omit any of the documents listed below from the study and still participate in the study).

1. Answer interview questions about the ways I used CTELL video cases for instruction. The initial interview will last between one and two hours.
2. Discuss my perceptions of that experience and any resulting impact on my teaching or current reading methods course curriculum.
3. Give permission for the interview to be audio taped.
4. Give permission for the researcher to review relevant course syllabi.
5. May be asked to give permission for the researcher to review student reflections, emails, course comments, instructor training materials and comments, lesson plans, student course evaluations and previously collected CTELL data.
6. May be asked to participate in a brief follow-up email or phone conversation to clarify interview responses.
7. May also be asked to participate in member checks of the researcher's analysis.

No risks, discomforts, or stresses are expected. The benefits I may expect are clarification of developing theories regarding a New Literacies Perspective grounded in the digital technologies and new insight about restructuring teacher education classes to implement curriculum that will enable students to build new literacy skills.

No individually identifiable information about me, or provided by me during the research will be shared with others without my written permission unless required by law. I will be assigned a number or pseudonym that will be used on all documents and questionnaires I fill out. I understand that audio tapes will be erased once transcribed and that I have a right to review or edit those tapes and transcripts. I also understand that any internet communications are insecure and there is a limit to the confidentiality that can be guaranteed due to the technology itself. However once the materials are received by the researcher, standard confidentiality procedures will be employed.

The researcher will answer any further questions about the research, now or during the course of the project, and can be reached by telephone at either (706) 542-2718 or 507 331-6615.

My signature below indicates that the researchers have answered all of my questions to my satisfaction and that I consent to volunteer for this study. I have been given a copy of this form.

_____	_____	_____
Name of Researcher	**Signature**	**Date**
Telephone: _____		
Email: _____		
_____	_____	_____
Name of Participant	**Signature**	**Date**

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address ***IRB@uga.edu****.*