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ACCEPTANCE

This dissertation, A KALEIDOSCOPE OF DECISIONS: USING COGNITIVE FLEXIBILITY THEORY TO ADVANCE A NOVICE ESOL TEACHER'S SCAFFOLDING EXPERTISE, by DONNA LESTER TAYLOR, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree Doctor of Philosophy in the College of Education, Georgia State University.

The Dissertation Advisory Committee and the student's Department Chair, as representatives of the faculty, certify that this dissertation has met all standards of excellence and scholarship as determined by the faculty. The Dean of the College of Education concurs.

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ABSTRACT

A KALEIDOSCOPE OF DECISIONS: USING COGNITIVE FLEXIBILITY THEORY TO ADVANCE A NOVICE ESOL TEACHER'S SCAFFOLDING EXPERTISE
by
Donna Lester Taylor

Instructional scaffolding is a powerful tool that many teachers utilize to meet the challenge of individualizing instruction for diverse learners. The concept of instructional scaffolding is complex (Meyer, 1993), in that teachers have to determine what, how much, and what kind of help to give to students in a moment's notice (Rodgers, 2004/05). Gaining expertise with scaffolding can take years, which leads us to worry about the effectiveness of novice teachers.

A scarcity of research examining how to support a teacher's development of instructional decisions such as scaffolding is reported (Anders, Hoffman, & Duffy, 2000). The ability to make scaffolding decisions requires teachers to be cognitively flexible, drawing from multiple domains of understanding to meet the individual needs of a group of students. However, little is known about which domains and understandings teachers draw on during scaffolding events or the rationales underlying this decision-making process.

This naturalistic study examined the decision-making processes of a novice elementary ESOL teacher as she scaffolded instruction for her third-grade students. As she videotaped what she considered to be a successful scaffolding event each week, we unpacked the event together using the lens of Cognitive Flexibility Theory (CFT). The

guiding questions were: (1) How can the decision-making processes underlying a novice ESOL teacher's instructional scaffolding be described? (2) How can the lens of Cognitive Flexibility Theory inform a novice ESOL teacher's scaffolding decisions?

Data sources included interviews, field notes, and reflections of the sessions. Constant comparative analysis (Glaser & Strauss, 1967; Miles & Huberman, 1994) was used to analyze data. Rigor was demonstrated by establishing credibility, transferability, dependability, and confirmability (Lincoln and Guba).

A grounded theory model of a kaleidoscope was created to describe the novice ESOL teacher's decision-making processes during scaffolding events. The participant's decisions were influenced by a variety of pedagogical and contextual domains while also being impacted by her views on scaffolding, on assessment, and on the connection between theory and practice. The participant's conceptions of scaffolding became more complex and her confidence and sense of agency became stronger as a result of mentoring underpinned by CFT.

A KALEIDOSCOPE OF DECISIONS: USING COGNITIVE FLEXIBILITY THEORY TO ADVANCE A NOVICE ESOL TEACHER'S SCAFFOLDING EXPERTISE

by
Donna Lester Taylor

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I dedicate this work to my first teacher, my mother, who taught me to value learning for its own sake and to strive for excellence. Mom, through watching you read volumes of the encyclopedia from cover to cover after waiting tables for eighteen hours, I learned that education is a precious gift that, like you said, no one can take from me. Thank you for your constant reminders of the nobility of teaching over other more lucrative careers and for reminding me, ad nauseum, that if one child can read because I have lived, then my life has had value.

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ABBREVIATIONS

ZPD	Zone of Proximal Development
CFT	Cognitive Flexibility Theory
DRA	Developmental Reading Assessment
CRCT	Criterion-Referenced Competency Test
ACCESS	Assessing Comprehension and Communication in English State-to-State for English Language Learners

CHAPTER ONE

INTRODUCTION

To an electric guitar player, finding the sweet spot refers to those moments in time when the musician's skill in selecting the appropriate line-up of instruments and equipment aligns with the talent, intuition and heart of the player such that magic occurs. For social constructivist teachers, instructional scaffolding involves finding the sweet spot of learning – the zone of proximal development (Vygotsky, 1978). Scaffolding occurs in those moments when the teacher's skill in planning materials and instructional support has aligned with the student's individual needs and interests such that the magic of learning occurs.

Statement of the Problem

In today's diverse schools, meeting the individual needs of students is one of the most challenging aspects of teaching. In literacy classrooms where all of the students are English language learners, this challenge is especially heightened. Instructional scaffolding is a powerful tool that many teachers utilize to meet the challenge. Many consider it to be one of the most effective instructional procedures available (Cazden, 1992; Graves, Graves, & Braaten, 1996).

Instructional scaffolding refers to support that a teacher or more knowledgeable peer supplies to students within their zone of proximal development that enables them to develop understandings that they would not have been capable of understanding

independently (Many, 2002; Meyer, 1993; Wood, Bruner, & Ross, 1976). The concept of instructional scaffolding is not a simple one, although it may seem straightforward at first glance. As Meyer (1993) states, "theoretically, empirically, and pragmatically, how this 'support' is built, maintained, and then gradually withdrawn is more complex than the simple metaphor implies" (p. 41). Teachers have to determine what, how much, and what kind of help to give to students in a moment's notice (Rodgers, 2004/05). They have to pull from a variety of domains and understandings to support these decisions. When teaching an entire classroom of students, teachers must consider the complexities of not only individual student's cognition, but of an entire group of learners who are at varying levels. "Students differ from one another in how much scaffolding they need, and an individual student's need for assistance differs from task to task" (Hogan, 1997, p. 2; Roehler & Cantlon, 1997). In their study of teachers scaffolding children who are delayed readers, Gaskins, et al., (1997) point out that regardless of the level of the learners,

> Decisions about how quickly to move through the process of scaffolding are based on the teacher's goals and the students' responses. The steps may be recursive or linear, depending on the situation. As teachers make minute-by-minute decisions about the level of scaffolding to provide, they are asking themselves questions such as: How does this move the students closer to the goal? How can I take this response and use it to make the students more aware of the process they are using. (p. 50)

Hogan and Pressley (1997), stress that effective scaffolding requires teachers to have extensive insights into individual learners as well as solid pedagogical content knowledge. Teachers have to then magnify that high level of insight to include an entire group of learners. Additionally, teachers need to know the curriculum well enough to anticipate where students might have difficulties and where the source of those

difficulties might lie. Hogan and Pressley state, "It can take years of experience to build up knowledge of all of the ways in which students can go wrong, which interventions help, and for whom" (p. 87).

This led me to wonder about the effectiveness of novice teachers. Are their students relegated to classes in which they cannot receive the advantages of expert scaffolding? How do novice teachers advance their expertise as well as their understandings of scaffolding?

While there has been an increase in research on teacher education in the past decades, we continue to struggle to understand how teacher knowledge and habits are formed and how they develop over time (Anders, Hoffman, & Duffy, 2000). Anders, Hoffman, and Duffy stress that a scarcity of research which examines the experiences of novice teachers is reported, and stress that teachers need to master the ability to make decisions on the fly. However, "research on teacher education offers us little guidance for teaching about these dilemmas" (Anders, Hoffman, & Duffy, 2000, p. 733.)

Smagorinsky, Cook, and Johnson (2003) make the point that due to the constraints of time, finances, mandates, and politics of varying perspectives within teacher education programs, teachers are likely to enter the first years of teaching with incomplete or incorrect understandings of concepts such as scaffolding. The ability to define scaffolding and explain how to assess students to determine their zone of proximal development with particular skills is not sufficient as novice teachers enter their own classrooms. Although they may not have achieved the practiced expertise that can only come with experience, they need to get it right as beginning professionals who are charged with the education of children. They must learn to make critical decisions in the

moment about which "ensemble of approaches and practices to select for a particular student and context" (Spiro, 2000, p. 658).

The ability to make instantaneous decisions based on a multiplicity of domain understandings to meet the individual needs of a group of students requires teachers to be cognitively flexible. Cognitive flexibility means "the ability to spontaneously restructure one's knowledge, in many ways, in adaptive response to radically changing situational demands" (Spiro & Jehng, 1990, p.165). In other words, teachers have to apply general knowledge from within and across various domains to specific incidents, in a moment's notice. However, little is known about which domains and understandings teachers draw on during scaffolding events, or the rationales underlying this often instantaneous decision-making process. The first purpose of this study, therefore, was to examine a novice teacher's decision-making processes as she scaffolded literacy instruction for her ESOL students. Understanding more about this process might help us hone in on emphases to consider within language and literacy teacher education programs.

Too often novice teachers are expected to move from a general exposure to a concept toward more advanced learning without having sufficient experiences to prepare them for this flexibility. Indeed, often the methods and goals of introductory learning can lead to misconceptions that interfere with advanced learning. According to Spiro, Coulson, Feltovich and Anderson (1988), the majority of these misconceptions can be categorized as oversimplifications of complex concepts resulting from teaching methods that foster simplification strategies. They developed Cognitive Flexibility Theory (CFT) to aid in this development from introductory learning towards advanced learning of ill-structured applications.

Cognitive Flexibility Theory is a theoretical orientation that addresses advanced learning of ill-structured, complex conceptual material. This study explored a novice teacher's work in her own classroom as she moved from introductory learning in which she excelled, towards advanced learning of the ill-structured, complex concept known as instructional scaffolding. Cognitive Flexibility Theory offered a lens through which I could more fully describe her decision-making processes as she drew from multiple domains of knowledge to scaffold instruction for her students.

As noted, this study focused on a novice teacher's advanced learning of instructional scaffolding. *Advanced learning* refers to the intermediate stage that occurs after introductory learning but before the learner has achieved the expertise that comes with a considerable amount of experience. In advanced learning, understanding the concept is not enough as the novice moves into practice in which correctness is expected (Spiro, Coulson, Feltovich, & Anderson, 1988). Consider for example, the novice teacher who has aptly learned how to write lesson plans based on sound theoretical understandings, yet now has to apply those understandings correctly in her own classroom when a mistake or misunderstanding might adversely affect a child's learning.

Cognitive Flexibility Theory is well-suited to examine a novice teacher's instructional scaffolding due to the nature of instructional scaffolding as an ill-structured domain. Spiro, Coulson, Feltovich, and Anderson describe *ill-structuredness* to mean that "many concepts (interacting contextually) are pertinent in the typical case of knowledge application, and that their patterns of combination are inconsistent across case applications of the same nominal type" (p. 641). Scaffolding is ill-structured in that teachers have to draw from many concepts which interact in the context and the relevant

concepts may change in a different context with the same child, or in the same context with a different child.

Cognitive Flexibility Theory highlights the need for intermediate learners to assemble schema from a variety of perspectives and mental representations to examine complex concepts through the vehicle of specific cases. This orientation encourages multiple ways of connecting elements from various domains of knowledge across specific cases and values participatory learning and tutorial guidance (Spiro et al., 1988).

Since instructional scaffolding is a "messy" application requiring teachers to make decisions which draw from a variety of domain understandings to address a specific case within a specific context, a second purpose of this study was to consider the use of Cognitive Flexibility Theory as a tool for developing novice teachers' advanced understandings of instructional scaffolding. Understanding more about the use of CFT as a tool for advancing students ability to adapt and respond flexibly to individual students' needs in a variety of contexts might contribute to literacy teacher educators' repertoire of ways to promote learning.

By examining novice ESOL teachers' decision-making processes during scaffolding and exploring the use of CFT as a tool to strengthen novices' cognitive flexibility with instructional scaffolding, we can continue to learn ways to improve teacher development with ill-structured concepts such as instructional scaffolding. This study will inform our understandings of how to allow for those multiplicities of understandings to converge at just the right moment such that the magic of learning occurs for novice teachers as well as for their students.

Background of the Study

As a novice teacher educator, I began to consider the implications of Cognitive Flexibility Theory for novice teachers while I was teaching in our alternative master's degree program in ESOL. I longed for ways to help the beginning teachers in my classes reflect on their teaching such that their insights would be deepened. While in my classes, they examined exemplary lessons to create group rationales for the model teacher's decisions. In addition, they wrote detailed rationales for their lesson plans as well as for their unit plans. I was certain that they understood the concept of providing a rationale for their decisions based on what they knew about their young students and what they knew about educational theory from scholarly readings.

One day, however, Katherine (a pseudonym) responded to a prompt in her student teaching notebook with a question about instructional scaffolding. She knew I had been involved in a research project examining preservice teachers' conceptions of scaffolding and wanted to know more. She said, "When I read the prompt [related to instructional scaffolding], I realized that I am not really sure what scaffolding is." Katherine was a high-achieving preservice teacher working on a provisional certificate. She had been chosen by the entire faculty as the most outstanding master's degree student in the program. Her question did not indicate a lack of response; rather her response signaled to me that she was thinking about scaffolding on a deeper level than she had previously. She told me that she had searched through her books again to think about the definition of instructional scaffolding before mentioning it to me. She felt unsure and was worried she wasn't providing enough scaffolding. Hearing the tentative, "Is that right?" whispered from the lips of this competent and usually confident teacher made my longing to reflect

with her on this topic even stronger. She said, "It bugs me that I don't know the difference between scaffolding and other types of support." As I pondered how to respond, I was keenly aware of the complexity of this concept. I couldn't find a quick response that didn't further simplify the notion of instructional scaffolding. As a social constructivist, I believe that knowledge construction is a shared experience (Prawat & Floden, 1994). Therefore, I wanted us to collaboratively build our understandings of the complexities of instructional scaffolding. I wondered if and how we could use Cognitive Flexibility Theory to inform our work.

Overview of the Study

In light of the two aforementioned purposes of this study-- the need to better understand the decision-making processes a novice teacher uses as she provides instructional scaffolding to her ESOL students, and the need to better understand how Cognitive Flexibility Theory can help explain and inform this process-- I designed this naturalistic study. The following questions guided my inquiry:

1. How can the decision-making processes underlying a novice ESOL teacher's instructional scaffolding be described?
2. How can the lens of Cognitive Flexibility Theory inform a novice ESOL teacher's scaffolding decisions?

Data collection began in the fall semester when I visited Katherine's classroom for one week to collect field notes focused on the context and her general approach to teaching. I also met with her to get her input regarding the context and her approach to teaching and scaffolding. A week before school began, I had interviewed her about her beliefs, her notions of scaffolding, how she felt about this inquiry, and any topics or

concerns she had related to scaffolding or the study. Katherine then began videotaping herself teaching a 3rd grade ESOL class. Once a week I asked her to select a successful episode of scaffolding for us to analyze, or unpack. I recorded Katherine as she recalled her decision-making processes, and as we reflected together on the event. Afterwards, using the lens of Cognitive Flexibility Theory, I recorded Katherine's recollections onto a conceptual map that I created according to the various domains from which she drew. Each week I reflected upon and analyzed the data using a constant-comparative approach (Glaser and Strauss) to look for patterns, connections, and themes, and discussed these with Katherine. We continued this recursive analysis and unpacking of scaffolding episodes for nine weeks, at which time we both felt that we had reached saturation with our data as the questions and responses had become redundant. I then continued to analyze the data looking for patterns and continued to have Katherine check my understandings as needed through phone conversations and email.

Through the lens of Cognitive Flexibility Theory, a concept must be considered many times from many different angles to master its complexity (Spiro, et al., 1988). Trustworthiness and rigor were established through a prolonged engagement of investigation, and by persistently observing data, triangulating data with multiple data sources within and across critical incidents, and member checking both informally and formally throughout the study.

Theoretical Lens

When I think of framing a study, I think of the decisions a researcher makes regarding how broad or narrow a scope she will use. In other words, the researcher decides how the study will be framed to focus on a particular aspect and not to focus on

other aspects that may not be relevant to the study. In that sense, I framed this study to focus on Vygotsky's concept of the zone of proximal development (Vygotsky, 1978) and the instructional approach for meeting students' needs in the zone of proximal development and leading them towards self-regulation that has come to be known as scaffolding.

While Vygotsky acknowledged that nature has a role in child development, he focused his work on the nurture aspects of child development. Vygotsky believed that children's mental processes develop from their social interactions. Through social interactions such as conversations with their parents and others, children come to understand their world and develop higher mental functions. He believed that in infancy thought and language are independent, but that they become increasingly interdependent as children mature, becoming intertwined around the age of two. At that age, we begin to see children talking to themselves out loud. Vygtosky believed that through this external self-talk, which he termed *private speech*, young children guide their own behaviors and thinking fashioned after the guidance they have previously received from others such as their parents. He proposed that this external self-talk eventually leads to internal self-talk which he refers to as *inner speech*. This entire process of developing higher mental functioning he refers to as *internalization* (McDevitt & Ormrod, 2004; Wertsch, 1985). Through this process of internalization, adults and others teach children how to interpret the world.

During Vygotsky's time, as today, much emphasis was placed on testing students' abilities to determine the level at which instruction should occur. Vygotsky believed that less focus should be placed on children's current levels of mental functioning and more

focus should be placed on their potential levels. He introduced the "zone of proximal development" to represent the notion that instruction should occur within the range of learning which takes children from their current abilities to their potential abilities (McDevitt & Ormrod, 2004; Wertsch, 1985). As Wertsch described, "It is the range of sensitivity in which the transition from interpsychological to intrapsychological functioning can be made" (p. 67). Instructional scaffolding refers to support that is provided to move students from their current level to their potential level. This support is gradually withdrawn until students are self-regulated at the new level. In a sense, scaffolding stretches the students' zone of proximal development.

I focused my study within this frame. More important for this study, however, is my choice of a theoretical lens. I chose to use the term *lens* because in addition to framing the study within Vygotskian notions of the zone of proximal development and instructional scaffolding, I believed that using the lens of Cognitive Flexibility Theory would affect not only the scope of the study, but also the focus and form of the study in the same way that changing the lens on a camera might alter the view in meaningful ways beyond what is framed.

During events of scaffolding, teachers draw from their multiple understandings of learning theory, of the individual student, of the nature of the task and its structure, and of the context to make decisions in a moment's notice which move their students towards self-regulation. I believe that the lens of Cognitive Flexibility Theory offers promise as tool for developing teachers' advanced understandings of incorporating these varied domains, often in a moment's notice, to scaffold instruction. I designed this naturalistic study to explore these possibilities.

In the following chapter, research in the field of language and literacy focused on instructional scaffolding and novice teacher education will be reviewed as well as research outlining Cognitive Flexibility Theory. The proposed methodology of the study will be described in further detail in the third chapter.

CHAPTER TWO

REVIEW OF THE LITERATURE

On three different occasions while I was planning this study, including a session at the National Reading Conference, I was involved in conversations in which education professionals were debating the value of instructional scaffolding. These professionals were questioning whether or not teachers are doing too much for their students, thereby "crippling" them in some way by providing too many crutches. In each of these occasions, the "problem" with scaffolding seemed to result from mis-defining any type of support as a scaffold. Since the nature of scaffolding implies that support is given and withdrawn in relation to the needs of the learner (Diaz, Neal, & Amaya-Williams, 1990; Meyer, 1993; Many, 2002), it is clear that these discussions were rife with misunderstandings of scaffolding which were oversimplified and incomplete. They provide evidence that such misunderstandings exist even among education professionals. I worry that such grassroots misconceptions can spread like wildfire through education circles until valuable approaches such as scaffolding are weakened or extinguished. Studies such as this one are important to explain the complexities of scaffolding. In this chapter I provide background to support my approach to this research. I begin by exploring the zone of proximal development and history of the metaphor of scaffolding. I then review research that has been conducted to help us understand scaffolding in the classroom. Next, I explore some studies that are relevant for understanding scaffolding as it relates specifically to linguistically-diverse students. Following that, I discuss

research that has been conducted on teaching teachers to scaffold and explore scholarly writings to help us understand Cognitive Flexibility Theory as it relates to this study.

Understanding Scaffolding

Vygotsky (1978) put forth the notion that development lags behind learning, therefore educators should be concerned with two developmental levels. The actual development level indicates the child's current understandings. This level is tested when we subject students to high-stakes achievement tests to determine what they have learned to this point. The potential development level indicates what the child can do with assistance from more knowledgeable others. The zone of proximal development is the difference between these two levels and is where learning occurs. Vygotsky describes the functions within the zone of proximal development as "the buds or flowers of development rather than the fruits of development" (p. 86).

Scaffolding refers to support that a teacher or more knowledgeable peer supplies to students within their zone of proximal development that enables them to develop understandings that they would not have been capable of understanding independently (Many, 2002; Meyer, 1993; Wood, Bruner, & Ross, 1976). Most scholars today believe that the term scaffolding was first used in this educational sense by Wood, Bruner, and Ross (1976) to describe the interactions between mothers and children in which the mother assists the child and provides feedback without actually giving the child the correct response. They refer to the "process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts" (p. 90). A concrete example of scaffolding that is sometimes used is that of training wheels on a bicycle which allow a child to be successful in riding, but can be removed

when that particular child is ready to ride independently (Graves, Graves, & Braaten, 1996).

Social constructivism emphasizes the idea that knowledge is always socially constructed (Au, 1998; Smagorinsky, 1995; Vygotsky, 1978). Learning develops socially through the interactions of scaffolding (Henderson, Many, Wellborn, & Ward, 2002). Scaffolding, therefore, necessarily involves a non-evaluative interaction between the student and a more knowledgeable other. Scaffolding means more than just simplifying a task, more than just providing supports, and always implies that the student is a co-participant (Many, 2002; Meyer, 1993). For scaffolding to occur there must be a dialogic, collaborative interaction, with the goal of transferring learning and skills to students within their zone of proximal development.

Scaffolding in the Classroom

Several researchers have examined the use of scaffolding strategies in the classroom. Tharp and Gallimore (1988) identified the scaffolding strategies of modeling, contingency management, feeding-back, instructing, questioning, and cognitive structuring as means of assisting students' performance in the classroom. They point out that teachers should be thoughtful and selective in choosing these strategies based on the individual movement of students through their individual zones of proximal development. Likewise, Dole, Brown, and Trathen's (1996) research indicated that teachers scaffold students' comprehension through the use of strategies such as cueing, prompting, use of analogies and metaphors, questioning, elaborations, and remodeling.

The National Reading Panel's report underscores the value of scaffolding, noting that reading comprehension improvement occurs when teachers demonstrate, explain,

model, and implement interaction with students. The panel's review of experimental research indicated that students who could decode adequately but were otherwise poor readers could be taught to apply comprehension strategies to expository texts in just a few hours of small group instruction with a teacher demonstrating, guiding, or modeling the strategies, and with teacher scaffolding (NICHD, 2000).

Many (2002), addressed the challenge of understanding how instructional conversations are used in literacy instruction. She examined a multiage classroom to "flesh out an understanding of the ways in which scaffolding manifested itself" (p. 382). She was able to identify episodes which reflected the focus of what was scaffolded, as well as those which indicated the process through which the teacher or peer scaffolded. She determined that in these classrooms scaffolding served two broad purposes: (1) to aid in the development of concepts, and (2) to support students' development of strategies for learning. The social constructivist teachers in her study wove scaffolding throughout their instruction over time to encourage a shared negotiation of meaning and value diverse ways of knowing. Students in this study became increasingly more able to provide scaffolds for one another as the framework for scaffolding instruction was co-constructed. This study was valuable in demonstrating that scaffolds are not necessarily removed as concepts are developed, rather they remain in place to support the construction of meaning.

Rodgers (2000) stressed that the kind of assistance students receive can vary in quality based on the needs of the individual student. She reminds us that the quality of a scaffold isn't determined merely by the nature of the teacher talk within the scaffold, nor the frequency or type of scaffold, but rather by the learning outcome of the student. She

described the interactions between teacher and student as *talk cycles* and the teacher's attempts to scaffold within these cycles as *moves*. Through this method she was able to demonstrate that the same teacher could make similar moves with two different students, yet have different outcomes. Meyer (1993) also argued that educators and researchers must consider the appropriateness of the instructional level at which scaffolding is directed and the ways in which responsibility is transferred to the learner.

In her case study of a teacher's role during literature discussion groups, Maloch (2002) stressed the importance of teachers' supporting students in the moment. She found three key features of this *in-flight* scaffolding to have implications for teachers and researchers. One of these features was the use of metalinguistic interventions which clarified the ground rules of the discussion for students. The teacher was able to appropriate students' ideas back to them, thereby highlighting their awareness of their own discussion process. The second key feature was the building of a shared knowledge of conversational strategies over time. The third feature she highlighted was the layering of back and forth moves by the teacher towards a gradual release of responsibility to students according to their individual needs and responses.

In a later study, Rodgers (2004/05) identified further key features of scaffolding as (a) offering opportunities for errors, and (b) for modulating support. She found that as students made errors or encountered difficulties, teachers were able to scaffold their reading performance. In other words, the errors or struggles created a space for the scaffolding to occur. In addition, teachers did not begin with more support and gradually decrease the support, but rather modulated support. They used different types of moves at different points in the lesson, but not necessarily less supportive moves. For example,

they used moves that were directive in one part of the lesson, and moves that were demonstrative in another part of the same lesson. She reminds us of the complexity of the concept of scaffolding in that teachers have to weigh in a moments notice questions regarding what to teach, what to ignore, and how much as well as what kind of help to give.

Scaffolding for Linguistically Diverse Learners

In the past decades, the number of ESOL students entering US classrooms has increased. A number of studies suggest that scaffolded instruction should be central to the literacy instruction of ESOL learners and that more research needs to be conducted to more closely examine the zone of proximal development for second language learners (Aljaafreh & Lantolf, 1994; Roehler & Cantlon, 1997; Williams, 2004). Previous research also indicates that instruction should include scaffolds for cultural differences such as patterns of interaction, language and thought that might conflict with mainstream patterns (Au, 1998; Heath, 2004; Jimenez, 2004).

Aljaafreh and Lantolf (1994) posit that scaffolding for second language learners should be graduated, offered only when needed, and dialogic. Therefore, scaffolding involves continual assessment of the student's needs which can only be accomplished through collaboration between the novice and the expert. They examined three key informants who were advanced level second language learners to investigate how the negotiation of corrective feedback in the ZPD promotes learning. The three female students had lived in the US for less than six months. One of the students was Japanese, one was Portuguese, and one was Spanish-speaking. Private tutoring-sessions in the area of essay-writing were held with the participants. These sessions were one-on-one, lasted

forty-five minutes, and were audio taped for analysis. At each session, the students were each asked to read their essay, underline any errors, and correct them. The tutor then joined each of them and began to collaboratively correct the errors. The authors stated that the interactions did not always proceed smoothly and were often quite complex. Two criteria were used to determine growth of the learner's interlanguage: first was improvement in the use of linguistic features in subsequent essays, and second was a movement towards self-regulation as determined by the frequency and quality of the help that was elicited. The authors concluded among other things "that linguistic forms alone do not provide us with the full picture of a learner's developmental level. It is essential to know the degree to which other-regulation, or mediation, impacts on the learner's production of the particular forms" (p. 480).

This study was not without flaws. For one thing, it is difficult to make generalizations about language learning from specific surface-level linguistic features which are language specific. In addition, the data were collected in audio format only, which eliminated the analysis of nonverbal interactions. Also, as much of the other work in this area, tutorial sessions do not explore the array of possibilities for scaffolding in classroom settings. I do believe, however, that this study has important implications in the area of scaffolding for second language learners in that it points out the difficulties involved in determining students ZPD based on linguistic features and highlights the need for teachers to not only be keenly sensitive to students' needs in the moment, but to keep careful records of dialogic interactions for purposes of assessing students' growth in developing self-regulation of language learning. More studies examining teachers' assessment of students' growth in this area are needed.

In the moment scaffolding decisions for linguistically diverse students also need to include considerations of the diverse mental constructs that according to Vygotsky (1934), are mediated culturally and socially in and by students' first language. Teachers need to consider whether a student utilizes mental constructs in a different manner than the information is presented or that the situation demands in the second language.

Ushakova (1994) describes a series of experiments conducted by and with his Russian colleague, Zachesova (as cited in Ushakova, 1994), in which respondents were given instruction in phonological sounds of an artificial language and were asked to learn the meanings of 20 "fake words" which were presented 200 times in an audiotape. They used reaction times and semantic categories to determine how participants' processes of memorization differed. They found that the processes of memorizing the meaning of a word depended on its category. Respondents confused only words that belonged to the same semantic category. They made further presentations of the same words, and found that when association of form with meaning began to occur (the effect of instruction), students stratification of words according to category became increasing apparent. Using the Wilcoxin-Mann-Whitney criteria to account for margins of error, they determined the response times for groups and found that response differences increased significantly in favor of nominal categories, although after the third stage of presentation the differences between categories of words learned was not significant. They analyzed the respondents' errors and determined that the majority of mistakes were based on meaning. On the basis of this, they concluded that the grouping of memorized words is subject to the semantic mental construct in the system of the earlier acquired language. In other words, acquiring a second language is a process of "plugging the new lexicon into the already established

linguistic structures which allows for categorization and linking of structures when necessary, and, most importantly, interpretation" (Ushakova, 1994, p.151).

Ushakova's qualitative study attempts to generalize the results of a few participants learning fake words to the entire population of people using a second language. Other factors could have affected the results of this study or it could be that these students tend to organize words in this manner based on their unique mental constructs from the Russian language that wouldn't carryover to other first languages. However, the results are important as they give credence to the notion that regardless of learning, students tend to filter new information through their first language structures. This filtering would seem to occur if the L2 is a different language, or just a variation of a student's initial discourse structure. A consideration of this process is essential for those who are attempting to scaffold students' learning. One must allow for students from diverse backgrounds to organize and present information in a variety of ways. Encouraging students from similar backgrounds to work in dialogic groups or dyads would appear to assist in their ability to filter through their first language. More studies of this nature are needed to examine this process in other contexts.

Donato's (1994) qualitative study further supports the notion that scaffolding should occur through instructional conversations between students. However, he found that students were able to scaffold one another's learning to co-construct language learning experiences in a second language. He examined the discourse practices of three students who had worked together in a class for a period of ten weeks and who knew one another well and seemed to have a collective orientation to their work. Donato used Wood, Bruner and Ross' (1976) features of scaffolded help to operationalize the

scaffolding that occurred in the negotiated discourse of the students. He audio taped these students' interactions as they planned together for individual oral presentations to be presented later in a class. He used three protocols focusing on different linguistic aspects to demonstrate how the students' dialectical process of collective argumentation provided scaffolds for their language learning and processing. As Donato (1994) explains, "During this interaction, the speakers are at the same time individually novices and collectively experts, sources of new orientations for each other, and guides through this complex linguistic problem solving" (p. 46). This study provides further evidence of the value of collaborative peer interactions in scaffolding students' language and literacy skills. The students were able to extend learning just from being part of the conversation so that not only the student who asked the initial question benefited from the resulting replies.

While Donato's study was conducted using a small sample of key informants learning French, the author generalizes to the entire population of second language learners. In addition, as he does point out, one can't assume that these students have acquired these understandings and will use them independent of this situation. The question of identifying at what point a student has acquired a new understanding is difficult if not impossible to determine. In addition, one should not generalize the learning from one language to the learning of all languages as linguistic constructs for language are more similar across some languages. However, this study reinforces the notion that scaffolding for second language learners occurs routinely as students work together, as they negotiate to organize and gain control and co-construct meaning in the second language.

In her ethnography entitled "*The Brothers and Sisters Learn to Write: Popular Literacies in Childhood and School Cultures*," Dyson (2003) traced the influence of various texts from a group of first-grade children's' lives upon school learning. She observed children in one classroom for four to six hours a week over the course of an academic year. She used Bakhtin's dialogic theory to help explain how these children made school learning meaningful through associations with their cultural knowledge, social relations, and shared history. As Dyson (2003) explains, "Dialogic theory situates children not simply within a particular studied practice, but on a landscape of interrelated voices" (p. 12) which enact the varied symbols systems involved in communicative practices that constitute the children's' world.

In a similar manner to that found by Zachesova above, the students in this study filtered their experiences from school through their everyday lives at home and in the community by appropriating and recontextualizing words. She described how the children's' writing involved "remixing semiotic material to suit the possibilities and constraints of new social practices with new expectations for the use of technological and symbolic means" (Dyson, 2003, p. 177). Dyson showed how these children drew upon a variety of resources in their lives to make new activities meaningful in ways that adults might never imagine, and that they always negotiated these events through interaction with one another. She made the important point that children's flexibility in using literacy provides them with the potential for responding adaptively to an ever-expanding multi-modal world.

Dyson's work points to the need to understand how teachers can scaffold for all students' language and literacy backgrounds. Dyson rails against the image of children

as unfolding in a linear fashion. As she puts it, "Nor should such a display of neatly ordered children in compositional tutus be expected" (Dyson, 2003, p. 65). However, much research has confirmed that children tend to learn some skills in stages (Ehri & McCormick, 1998; Richgels, 2001). It would have made the study stronger to examine some of these stage theories in light of her findings. Perhaps there isn't a dichotomy, perhaps they are moving along in stages but in unique ways. As Richgels (2003/2004) queries in his review of Dyson's study, "Can we not have stages of development and those expanding landscapes for flexible maneuvering that Dyson so richly depicts in this book" (p. 1063)?

Also, Dyson, who is a white woman, focuses on only a small group of African-American students in the classroom. Some critics agree that positioning these students in the larger context of understanding the other students in the room, including the European-American students, would have provided the reader with a wider purview from which to consider the implications (Richgels, 2003/2004). However, this study raises important questions regarding how teachers incorporate students' everyday lives when attempting to scaffold instruction for students from diverse backgrounds. One can see how the teacher allows students to scaffold literacy development through writing conversations in this kindergarten classroom. More studies are needed to explore how these ideas are incorporated in other contexts and with a variety of students.

Teaching Teachers to Scaffold

Although the concept of scaffolding is central to social constructivism, research regarding how teachers develop expertise with instructional scaffolding is scarce. Three approaches to reading instruction are founded on the concepts of instructional

scaffolding: (a) Reading Recovery, (b) reciprocal teaching, and (c) transactional strategies instruction. Looking at research on how these approaches have been taught to teachers will help us to understand more about how best to develop educators' expertise with instructional scaffolding.

Reading Recovery

Reading Recovery (RR) is a short-term intervention program for first-graders developed by Marie Clay (1985), which involves tutorial sessions delivered by RR trained teachers. The teacher obtains running records of students in each session from which to focus instructional decisions. Rodgers, Fullerton, and DeFord (2001), examined professional development of teachers using a RR model. "For these RR teachers, the power was in demonstration and conversation. The demonstrations they gave and received, and the conversations they had, aided them in taking on new theoretical understandings and integrating new learning with their previous experiences and practical notions of theory" (p. 529).

Pinnell and Rodgers (2004) studied RR teachers in several contexts and concluded that reflective inquiry has a profound effect on teachers' thinking, but also has a significant impact on student achievement. They point out that incorporating reflective inquiry into preservice teacher education would be challenging, yet they encourage teacher educators to do just that. They state "the real promise of reflective inquiry is its incorporation into ongoing professional development" (p. 191) and emphasize that no matter how well-trained teachers are in research-based practices, they will only result in student gains if they are established in classrooms. As Pinnell and Rodgers state, "When teachers have the opportunity to look deeply into their teaching, reflect on teaching, and

live within a learning community, taking on new practices is continual and automatic" (p. 192).

Reciprocal Teaching Approach

The reciprocal teaching approach developed by Palinscar and Brown (1984), is theoretically based on the notion of scaffolding. In this approach, students are taught specific comprehension strategies in small groups through a process of gradual release of responsibility where the teacher first models the effective comprehension strategies, then encourages the novice to begin assuming the role of dialogue leader for the group. In the second phase of this initial study, the researchers trained inservice teachers to use this approach by first discussing the theory, results of the first study, and viewing a video of the author employing the method. In the second session, the researchers modeled both the teachers' role as well as anticipated student behaviors. They discussed possible problems and steps to remediate those situations. Finally, the researchers modeled again and the teachers practiced on students that were not part of the study while the researchers gave feedback and suggestions. In addition, the teachers were provided with written directions and the researchers followed up weekly. The studies provided evidence that (a) students' dialogue improved; (b) improvement on comprehension tests were large, reliable, and durable; (c) students' reached or surpassed the average reading level of their peers; (d) classroom teachers in natural settings were no less successful than the trainers in conducting the intervention; and (e) although teachers were skeptical at first, they were enthusiastic about the intervention once they had mastered it and planned to incorporate it into their teaching.

Brown and Campione (1996) found, however, that sometimes teachers implemented reciprocal teaching strategies without a clear understanding of why the techniques were effective, thereby not producing the gains that Palinscar and Brown showed in their research. Seymour and Osana (2003) conducted case studies of two teachers to investigate the meanings they ascribed to the reciprocal teaching strategies. They used a cognitive apprenticeship model and placed emphasis in their training on understanding the theoretical framework including having the teachers write rationales for their current and projected reciprocal teaching practices. Their analyses showed those teachers' held misconceptions about both the principles and the procedures.

An important finding from Seymour and Osana's study is that for teacher educators to use instruction designed to improve reading comprehension requires more than presenting the approach. They found differences between what the teachers espoused and what they did, for example one of the teachers had difficulty defining the term "scaffolding", yet was able to guide her students to engage effectively in comprehension monitoring strategies. In addition, the rationales that the teachers presented indicated a transmission model of teaching rather than a constructivist model of teaching upon which reciprocal teaching is based. The researchers speculated that having the time to not only expose these antithetical beliefs, but also to address them would have been productive. They explain that misunderstanding the goals in programs such as reciprocal teaching may lead to deviations from the program. They conclude that teachers' beliefs should be regularly uncovered during training with better tools for reflection provided in an effort to track their cognitive development (Seymour & Osana, 2003).

Transactional Strategies Instruction

Along those same lines, Pressley (2002) stated, "When the earliest studies of reciprocal teaching appeared, they did much to stimulate teaching of strategies in schools. However, often the resulting instruction did not much resemble reciprocal teaching" (p 300). He and his colleagues began to see that successfully carrying out an approach to strategies instruction in schools involved more than was highlighted in carefully controlled experiments. This motivated Pressley and his colleagues to examine how comprehension strategies were implemented in schools and subsequently to develop a new approach for the teaching of multiple comprehension strategies in school called transactional strategies instruction. In this approach, teachers explain and model effective comprehension strategies, coach students to use strategies as needed, and both teachers and students model use of strategies for one another using think-alouds (Brown, Pressley, Van Meter, & Schuder, 2004). According to Brown, et al., it takes several years to become an effective teacher of transactional strategies instruction.

Examining research on how these approaches were taught to experienced teachers helps us to understand more about how best to develop their expertise with certain aspects of instructional scaffolding, but tells us little about their in-the-moment decision-making processes. Further, understanding more about how experienced teachers scaffold instruction for their students leaves us still wondering about novice teachers' decision-making processes as they attempt to draw from a multiplicity of domains to make instantaneous decisions to scaffold instruction for their students without the expertise that comes with years of experience.

In their meta-analysis of research on reading teacher education, Anders, Hoffman, and Duffy (2000) point out the need to understand how teacher knowledge and habits are formed and how they develop over time, and stress a scarcity of research which examines the experiences of novice teachers. While stressing that teachers need to master the ability to make decisions on the fly, they explain that there is a gap in teacher education research which would provide guidance for teacher development in this moment to moment decision-making. I designed my inquiry to respond to these questions and fill these gaps in research on the education of novice teachers and the momentary decision-making processes that are required of them as they provide scaffolding for their students. I used the lens of Cognitive Flexibility Theory to help examine these processes.

Understanding Cognitive Flexibility Theory

We can use the metaphor of a kaleidoscope to help us envision the complexities of the in-the-moment decisions that a teacher makes when scaffolding instruction for a particular student at a particular time and place. Imagine that the various domains from which a teacher draws understandings to be translucent-colored lenses from which the teacher selects bits of knowledge that are applicable to that child, in that situation, at that moment. As soon as the situation changes, the teacher will have to turn the wheel of the kaleidoscope just a bit so that the pieces fit the new situation. Sometimes the pieces fall onto one another and interact to change the color of what she sees slightly.

To further develop this analogy, let's pretend we can freeze-frame a moment when an expert teacher is scaffolding instruction for her students. We could envision that she is considering her knowledge of the child's linguistic abilities while at the same time considering what she knows about linguistic theory and how languages develop. At the

same time, she may be considering the child's reading abilities, reading interests, and what she knows about the reading process. She might also be thinking about the affective nature of the child, and how that may or may not interact with the nature of the task the child has been asked to perform. She may be thinking of the child's history with the other children surrounding him. Thinking of all of these things, she makes an instantaneous decision to model the task for the child. Imagine, however, that in the next moment, a different child walks up to the table. The teacher may need to turn the wheel of her kaleidoscope slightly to include this other child's interaction in the situation. Perhaps this second child has a stronger understanding of the task and might even have a partially completed task product to share. The teacher might then change her decision and, drawing from the domain of social constructivist theory, decide instead to prompt the first child to examine this child's product, in an effort to provide a more authentic model with peer interaction.

While this is a simple example, it helps us to visualize how teachers need to be cognitively flexible. The kaleidoscope is not a perfect metaphor because the pieces of domain understandings do not fall randomly during scaffolding as the pieces of glass in a kaleidoscope. The pieces of domain understandings in our scaffolding kaleidoscope are carefully considered and placed with each turn, more like an ever-changing mosaic.

As the kaleidoscope metaphor demonstrates, the ability to instantaneously make decisions that advance students' learning in the zone of proximal development requires teachers to consider and adapt their understandings from a variety of domains. Cognitive flexibility refers to this ability to draw from multiple knowledge domains and adapt them to meet the needs of the moment (Spiro & Jehng, 1990). It can be thought of as pulling

from multiple schemata to create a new evolving schema in the moment. The goal of Cognitive Flexibility Theory is to foster learning that illuminates the complexities of situations rather than de-emphasizing those complexities (Spiro, 2000). As Spiro describes, CFT encourages knowledge "that works with the jagged and messy contours of situations in the world rather than smoothing them out –open structures to think with, rather than closed structures that dictate thought" (p. 657).

Background of CFT

In the early 1980's, schema theory was the dominant model of learning. Spiro and Myers (1984) pointed out that pre-stored schemas for everything one might possibly encounter could not exist; therefore, the question of how old knowledge is used in new contexts resurfaced. To address the issue, Cognitive Flexibility Theory was developed to replace schema theory with the notion of more open and adaptable knowledge structures (Spiro, Collins, Thota, & Feltovich, 2003).

Spiro, Vispoel, Schmitz, Samarapungavan and Boerger (1987) addressed the issue of transfer in ill-structured domains. They explained that a domain is ill-structured when formulating knowledge to explicitly describe it is impossible due to a combination of its breadth, complexity, and irregularity, as opposed to more well-structured domains in which knowledge is more routinizable. The issue of how to acquire and organize knowledge so that learners could apply it to a wide range of situations was addressed. The primary claim was that in ill-structured domains, the most important factors affecting transfer will be the "*flexibility* with which the relevant prior knowledge is represented in memory, and the mastery or *control* the individual has over those flexible representations" (p. 178). These researchers explain that flexibility should include

unpacking knowledge in different ways so that the diverse dimensions are evident, and highlighting connections between knowledge domains or cases. They describe the results of two preliminary tests of the theory conducted on high school students.

In the first study, 24 paragraphs were written about different examples of 20th century events and phenomena. A control group received a text in which the paragraphs corresponded to the themes the texts best illustrated. While the experimental groups read the same texts as the control group, they also read the same paragraphs in a different context in which each paragraph was paired with a paragraph from a different theme to point out the differences between them.

The second study paralleled the first study except that instead of re-pairing the cases as with the experimental group in study one, this experimental group was presented the cases a second time in the same order but organized by individualized case-to-case linkages rather than by abstract themes that organized them in the control group (e.g. chaos, uncertainty, etc.).

While acknowledging that the studies were not ideal due to not allowing enough study time for students to process the materials, both studies conformed to the researchers' theoretical predictions. The students in both studies were given six different transfer tests. The results suggested that when measured by conventional tests that stress fact-retention, then conventional methods promote success. However, when the knowledge from the text had to be applied in some new way, performance of experimental groups exceeded that of control groups on six out of the six transfer measures. The authors then made recommendations for case-based instruction that might

lead to flexible knowledge representations (Spiro, Vispoel, Schmitz, Samarapungavan, & Boerger, 1987).

The following year, Spiro, Coulson, Feltovich, and Anderson (1988) outlined Cognitive Flexibility Theory at the Tenth Annual Conference of the Cognitive Science Society Proceedings. They described CFT as being an orientation for advanced learning which is often at odds with the goal of introductory instruction. As the goal of introductory learning is often to give the learner an overview of a subject, the goal of advanced learning is to learn to apply this knowledge. They also clarified in this piece that they are referring to the learning of ill-structured conceptual material for which no prepackaged schema might exist –for example, knowledge that will change or evolve with each new case or context.

After presenting these goals of advanced knowledge acquisition, these researchers described deficiencies often encountered in advance knowledge acquisition as students move from exposure to concepts towards application, citing research involving medical students' learning difficult content in their lab. Most of the misconceptions that they identified reflected a type of oversimplification of complex material. Often these misconceptions were a result of introductory learning in which material had been presented in easy to understand ways that fostered simplification. Spiro, Coulson, Feltovich and Coulson termed this tendency to simplify complex concepts as *reductive bias*, and provided examples of some of the types of reductive bias they had encountered while working with medical students. Most of these reductive biases are encompassed under the umbrella of oversimplifying complex and irregular structures.

The researchers then discussed their remedies for these issues which result in cognitive flexibility. They describe these remedies, or themes, as "conditions for developing mastery of complexity and knowledge transferability" (p. 644). The themes they describe involve:

(1) Avoid oversimplification and overregularization. This remedy encompasses most of the ones to follow, and involves making salient the ways that knowledge is not as simple and orderly as it might seem at first glance.

(2) Provide multiple representations. This does not apply only to understanding the complexities within a concept or case, but across cases as well. The researchers use the metaphor of landscape exploration in which one could not get a deep understanding of the landscape by traveling over it once. "Rather, the landscape must be criss-crossed in many directions to master its complexity" (p. 647). This metaphor is used in several explanations of CFT.

(3) Cases should be represented as central rather than as illustrations of abstract principles. Because of the complexities in ill-structured domains, exposure and reasoning from the diversity of cases leads to more cognitive flexibility than reasoning from general principles which may not capture the richness of diversity.

(4) Conceptual knowledge must be presented in use since concepts differ within a case as well as across cases. Because ill-structured concepts vary greatly from context to context, their meaning cannot be universally determined. Attention must be paid to the specifics of how the concept is used to fit the needs of individual applications.

(5) Emphasis should be shifted from a focus on retrieval of a fixed schema to a focus on assembly of schema from different conceptual sources to fit the need of the

situation. Due to the variation and complexity within and across cases in ill-structured domains, the use of rigid, prepackaged knowledge structures are not effective. To be cognitively flexible, one needs to draw from a combination of knowledge structures to fit the complexity of the situation.

(6) The interconnectedness of multiple concepts and cases along multiple dimensions should be highlighted since knowledge in ill-structured domains cannot be compartmentalized. The authors use examples of multiple crisscrossing vectors within a hypertext computer program to illuminate the possibilities of these multiple connections within and across concepts.

(7) Learners must be active participants accompanied by expert mentors and have additional support for managing the complexities of the concepts. These researchers describe how this remedy can be provided through a hypertext program with guidance and cognitive support provided such as integrated visual displays (Spiro, Coulson, Feltovich & Anderson, 1988).

Spiro, Coulson, Feltovich and Anderson concluded by suggesting that theory-based computer hypertext systems can implement the goals and strategies of cognitive flexibility theory.

The researchers and their colleagues then began to design Cognitive Flexibility Hypertext (CFH) systems of CFT which they have continued to develop through and up to the present time (Spiro, Collins, Thota, & Feltovich, 2003). For example, Spiro and Jehng (1990) drew on the principles of CFT to provide foundational principles of the CFH approach to random access instruction. (Random access instruction refers to instruction involving nonlinear learning with random access media.) Segments of a

classic film, combined with text, "are systematically re-presented at different times, in different content combinations, in different sequences" (p. 173). The intent is to allow for multiple representations to highlight complexities that learners may have missed with more linear, reductive approaches. The authors point out that the principles that this program is built upon are not domain specific. Spiro and Jehng make the important point that "although there has been considerable research attention devoted to differences between experts and novices, the intermediate stage of advanced knowledge acquisition that bridges between novicehood and expertise remains little studied" (p. 169).

For the purposes of this study, it is also important to note that in the late eighties the research in CFT began to be more focused in this vein of constructing random access media for various domains. For example, in 1992, Duffy and Jonassen published a book entitled *Constructivism and the Technology of Instruction: A Conversation* in which Spiro, Feltovich, Jacobson, and Coulson (1992) wrote a chapter outlining ways of thinking about the design of hypertext learning environments based on the principles of Cognitive Flexibility Theory. They explain, "We consider our work to be moving toward a systematic theory of hypertext design to provide flexible instruction appropriate for developing cognitive flexibility" (p. 72). While this chapter reviewed similar points that I have already described, of importance is the response to this chapter from others in the conversation, and the response back from Spiro et al., in a later chapter.

Dick (1992) takes an oppositional stance towards constructivism, yet acknowledges that Spiro, et al., are examining skills that are needed between novice and expert and acknowledges that cognitive psychologists know little about this middle ground. He agreed with much of what Spiro, et al., had stated, but asked questions

regarding who guides the learner through the examples and how does one know how many examples are needed. He also makes the important point that these hypertext programs are costly to develop and require costly technology to implement. In addition, he points out that the ideas of Spiro, et al., regarding context and multiple exposures "are extremely important if designers are to be concerned with the transfer of skills from the learning site to the site at which they will be used" (p. 97). In a later chapter, Spiro, et al., explain that the question of how many examples is enough is not as relevant because the cases are so rich that one can learn a lot from multiple passes of one or two cases, but the more the better.

I find this discussion to be of value to my study. I designed the study so that Katherine decided which examples she chose and we decided together when enough examples had been unpacked. We also viewed three of the videos twice to allow for the multiple passes that Spiro referred to above. I believed that this study would show that multiple representations could be presented in the natural context of the novice's own classroom which would avoid the issue of learning transfer to the site in which it will be used. In addition, the use of videotaped critical incidents in one's own classroom is more affordable and more immediately applicable than purchasing a hypertext program with real-world examples from other teachers' classrooms. This is not to say that Spiro, et al., do not have important reasons for their programs. In many situations novices cannot and should not apply knowledge at this stage of introductory learning. In my study, Katherine was already teaching in an elementary school. So, working with cases from her classroom seemed more than ideal.

Merrill (1992) in a different chapter of the same book asserted that Cognitive Flexible Hypertext prespecifies the knowledge that learners should acquire by housing these cases in a database. In a later chapter, Spiro, et al., explained that the knowledge that is prespecified "is limited to rough guideposts or starting points for thinking about the domain, with an emphasis on their flexibility rather than their rigidity of structuration and use" (p. 123). They further state, "We teach from rich, real-world cases, demonstrating a process by which case features and the context of other relevant concepts in the case influence conceptual application" (p. 126). I find this point of Merrill's to have some merit.

Therefore, since the goal of advanced learning is to apply knowledge and my participant is a novice who is already teaching in the field, I had Katherine choose the case and describe the domains from which she drew as she made scaffolding decisions. I recorded the domains and the understandings within them that she described, and encouraged learning by probing her to consider new domains and new connections in future scaffolding events. In this way I worked towards what Spiro, et al, refer to as "faded control from the teacher" (p. 124) so that learning is customized for the learner.

In 2000, Spiro introduced the concept of principled pluralism as meaning that when one who is cognitively flexible assembles multiple schemas from a variety of domains, the assemblage must not only fit the situation at hand, but the pieces must also be meaningfully related to one another. We can again consider the metaphor of the kaleidoscope described earlier to help us envision what Spiro means. If we imagine the particular pieces of knowledge from each domain that are specific to the situation assembled in a mosaic fashion unique to the situation such that the translucent pieces can

change color when overlaid to represent the intermingling of knowledge in meaningful ways, yet with one slight change in the situation, new knowledge pieces may come into play which connect differently and would change the mosaic in important ways. As Spiro (2000) emphasizes, "The key question for CFT is which approaches, theories, methods, and content schemas are most appropriate for a new situation, and then how are they to be put together (combined, coordinated, aligned) to fit that new context (p. 655).

Spiro (2000) states "one of the most important research questions for the next generation concerns the manner of operation of principled pluralisms. How does this situation-adaptive assembly of knowledge and experience occur, and how should it be fostered (in teachers and students)" (p. 656)? The two elements that he believes are essential to consider when responding to these questions are the centrality of the case, and the role of new technologies. Additionally, Spiro claims that finding ways to develop in teachers and students the habits of mind that are suited to dealing with complexity will perhaps be the most important frontier for new research (Spiro, 2000). My inquiry was designed to address each of those questions as they relate specifically to instructional scaffolding.

Current Uses of CFT in Teacher Development

More recently, Cognitive Flexibility Theory has been developing rapidly in the area of digital video cases for teaching. A large volume of video cases are being developed. "CFT is being applied in new ways to permit more learning to occur with video cases" (Spiro, Collins, Thota, & Feltovich, 2003, ¶ 15). For example they are using special effects to call attention to complexity in situations that are so familiar that we have to change our habit of mind to think of it differently. Hughes, Packard, and Pearson

(1997) developed a hypermedia learning environment for use in teacher education based on the concepts of CFT. Within their product, *Reading Classroom Explorer*, a variety of types of media are combined in six videotapes of exemplary teaching segments for preservice teachers to explore from a variety of perspectives. Several studies have been conducted focused on this product indicating that they enrich the classroom and expand student teaching experiences and allow for awareness of multiple perspectives and teaching approaches (Hughes, Packard, & Pearson, 1999, 2000). Again, while I see the value and merit in this application for those who are not already practicing their profession, it seems apparent that video cases of one's own authentic application would be preferable and less costly when they are feasible, as was used in this study.

Cognitively Flexibility Theory is currently focused on experience acceleration, or shortening the amount of time it takes for a novice to attain expertise. Spiro, Collins, Thota, and Feltovich (2003) point out that the goal of all of this work is to better prepare novice professionals to handle the complexities they will face as they enter the messy world of practice with more expertise.

In light of the lack of research related to novice teacher development, and the need to explore new ways to use technology to develop habits of mind that are suited to dealing with complexity, as well as the need to define what it means to scaffold instruction in the moment and to understand more about novice teachers' decision making processes as they scaffold instruction for their students, this study was designed. The first purpose of this study was to explore a novice ESOL teacher's decision-making processes as she scaffolded instruction for her students. The second purpose was to explore how Cognitive Flexibility Theory can inform the decision-making processes of a

novice ESOL teacher's decision-making processes. Understanding more about these processes will inform the field of literacy education research in the areas of understanding scaffolding and novice teacher education.

CHAPTER THREE

METHODOLOGY

Within a social constructivist perspective, all learning is a process of constructing meaning and is social in nature. As learners interact with the world, they gradually connect new understandings with previous understandings as they develop independence as problem-solvers and thinkers. Through this process, they gradually internalize information from the social plane to their inner knowledge (Roehler & Cantlon, 1997; Vygotsky, 1978). Vygotsky believed that attention should be placed on the student's potential level of learning rather than on students' current achievement levels. He coined the term *zone of proximal development* to describe the optimal range of potential for learning within an individual. It represents the distance between what learners already know and what they can learn with assistance (Wertsch, 1985). Assistance within this zone of proximal development has come to be known as scaffolding (Roehler & Cantlon, 1997; Wood, Bruner, & Ross, 1976). Learning develops socially through the interactions of scaffolding (Henderson, Many, Wellborn, & Ward, 2002).

My inquiry was focused on scaffolding. The purpose of the study was twofold. The first purpose was to explore a novice ESOL teacher's decision-making processes as she scaffolded instruction for her students. The second purpose was to explore how Cognitive Flexibility Theory can inform the decision-making processes of a novice ESOL teacher's decision-making processes. The guiding questions which framed this inquiry include:

1. How can the decision-making processes underlying a novice ESOL teacher's instructional scaffolding be described?
2. How can the lens of Cognitive Flexibility Theory inform a novice ESOL teacher's scaffolding decisions?

Consistent with a social constructivist perspective, a naturalistic design (Lincoln & Guba, 1985) was employed which allowed me to more richly describe the participant's description of the domains of understandings from which she drew as she made scaffolding decisions. Merriam (1998), referring to qualitative research, writes, "in this type of research it is important to understand the perspectives of those involved in the phenomenon of interest, to uncover the complexity of human behavior in a contextual framework, and to present a holistic interpretation of what is happening" (p. 203). This was the best design to allow my participant and me to collaboratively construct our understandings of her decision-making process while she scaffolded instruction, as well as to reveal the complexities of providing this scaffolding.

I also drew from Cognitive Flexibility Theory which is consistent with a social constructivist orientation. One of the guiding tenets of this theory is that ill-structured domains reveal multiple truths, and therefore multiple knowledge representations must be criss-crossed like a textured landscape to illuminate their messy edges and connections (Spiro, Feltovich, Jacobson, & Coulson, 1992). A naturalistic design helped me to uncover and illuminate these complexities rather than diminish them.

Context

The context of this study was an ESOL classroom in an elementary school in a large metropolitan school in the Southeast. I collected data during the first year after the

participant, Katherine, received her Master's degree in an alternative preparation program in Reading, Language, and Literacy, which led to initial certification in ESOL and a reading endorsement, in a large urban university in the same metropolitan area. I was a teacher educator in that program in which we selected Katherine as our most outstanding master's degree student. Katherine and I, along with others, developed a friendship throughout this year. Although she was not ready immediately to pursue a higher graduate degree because she had young children who needed her time, she expressed regret that her education experience would be finished at the end of her program. She enjoyed learning and growing as a teacher. When I asked if she might enjoy participating in a research study, she eagerly agreed so that we could continue our talks and I could continue to visit her ESOL classroom. She said it would allow for her to continue learning and improving as a teacher.

I chose Katherine for the study because of the ease in which we converse, because she strives for excellence as a teacher, and because she has proven herself to be a lifelong learner. She studied hard to develop deep understandings of educational, reading, and linguistic theory and how they affect what teachers do in the classroom. Although she had never seen a rationale when she walked into her first class, she soon was writing complete and thoughtful rationales for her work based on theories from a variety of domains. In order to move towards advanced learning through CFT, I needed a participant with a strong knowledge base from a variety of domains. Katherine was well-suited to participate in this project with me. I believe that the friendship we had developed helped to foster a sense of trust and comfort as she began sharing her thoughts about her decision-making processes.

Data Collection

Data collection began in the fall semester when I visited Katherine's classroom for a week to collect field notes focused on describing the context and her general approach to teaching. During this initial week, I also met with her to discuss my notes and gain her input regarding the context and her general approach to teaching and scaffolding. This provided me with the opportunity to note, for example, any on-going scaffolds for her ESOL students she built into her instruction such as instructional routines. I also interviewed her about her beliefs, her notions of scaffolding, how she felt about this inquiry, and any topics or concerns she had related to scaffolding or the study (See Appendix A). Throughout this process, I discussed my reflections and thoughts with Katherine to ensure that she agreed with my interpretations.

Next, Katherine began videotaping herself teaching her third-grade ESOL class each of the three days a week that she taught them. I asked her to do this during each lesson to reduce the impact of observation on instruction. Once a week, I asked her to select an episode of scaffolding in which she felt she was successful. I recorded as she recalled and described her decision-making processes during that scaffolding event. After the session, I mapped her processes onto a conceptual model. I continued to interview Katherine with questions which emerged from our discussion and from the previous week's analysis. I wanted these questions to push her to consider the domains from which she was drawing information as she made decisions, and to conceive of other domains of knowledge which might inform her decision-making during scaffolding events. During each third week, we revisited previous videos with the goal of considering again these same queries and to see if her decisions or considerations had changed, then

we began to tape again for another two weeks in like manner. Each session lasted about an hour. I audio taped the sessions, which were transcribed for data analysis purposes.

Table 1

Sources of Data Matrix

Research questions	Process data and outcome measures	Sources of data
1. How can the decision- making processes underlying a novice ESOL teacher's instructional scaffolding be described?	Documentation of various domain usage during decision-making Self-reports	Field notes Interviews with participant Emerging conceptual model Transcriptions of audio taped sessions
How can the lens of Cognitive Flexibility Theory inform a novice ESOL teacher's scaffolding decisions?	Documentation of domain usage during decision-making Self-reports	Field notes Participant's student teaching journal Interviews with participant Video clips Emerging conceptual model Transcriptions of audio taped sessions

Data Analysis

As mentioned above, after each session, using the lens of Cognitive Flexibility Theory to guide me, I recorded Katherine's recollections onto a conceptual map that I created according to the various domains from which she drew. Each week I reflected upon and analyzed the data using a constant-comparative approach (Glaser and Strauss) to look for patterns, connections, and themes. I discussed these reflections with Katherine and used them to help guide our discussions. (See Appendix B for sample questions used to guide our discussions). This led to continual refinement of the coding system and elaboration of specific definitions for each category, and allowed the conceptual map to emerge from the data.

Through the lens of CFT, a concept must be considered many times from many different angles to master its complexity (Spiro, et al., 1988). Therefore, after every two unpacking sessions, we spent a session revisiting the videos that we had previously unpacked, to explore them again. We completed this cycle of unpacking sessions for two weeks, and reexamining a session one week, for nine weeks.

As Table 2 shows, we continued this recursive analysis and unpacking of scaffolding events for nine weeks. I continued to analyze the data looking for patterns and continued to have Katherine fine-tune my understandings until we had reached a saturation of data in which we began to see the same patterns and responses. In fact, during the final session, we had little new to add from the video, so we spent most of that session discussing the impact of this process on Katherine's teaching. Due to her schedule, I followed this session with an email in January for further debriefing.

Table 2

Timeline for Data Collection

	Week Ending:														
	07/28-08/04	08/11	08/25	09/29	10/06	10/20	10/27	11/03	11/10	11/17	11/21	12/08	12/15	12/20	01/03
Task															
Build Foundation:	X	X	X	X											
Interview participant for initial conceptions															
Collect orientation field notes															
Begin observation of context															
Begin to analyze possible domains/themes															
Build data base:				X	X	X	X	X	X	X	X	X	X	X	X
On-going data collection															
On-going data analysis															
Design emerging interview questions															
Conduct unpacking sessions															
Continue research log															
Continual member check															

Fine-tune findings:	X	X	X	X	X	X	X	X	X
Document construct validity through triangulation of data									
Continue writing up data									
Debriefing sessions									

Establishing Trustworthiness

As Lincoln and Guba (1985) suggest, "In the final analysis, the study is for naught if its trustworthiness is questionable" (p. 287). Trustworthiness for this study was established by ensuring credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985), as described in the sections below.

Credibility

Credibility refers to the goodness of fit between the participant's construction of reality and the researcher's representation of that construction (Schwandt, 2001; Tobin & Begley, 2004). The following measures were used to build credibility: prolonged engagement, persistent observation, triangulation, member checks, and peer debriefing (Lincoln & Guba, 1985; Merriam, 1998).

Prolonged engagement. In order to become fully oriented to the context, the researcher needs to spend enough time in the context to thoroughly understand it and to understand what impacts and shapes it. Prolonged engagement implies that the researcher understands the context well enough to know when distortions occur in the data, and to build trust with the participant (Lincoln & Guba, 1985; Merriam, 2002). As I was the cohort instructor in Katherine's preservice program, including the supervisor of

all of her practicum and student teaching experiences, I had been in her classroom numerous times during the year before the study began. Through these experiences, as well as through reading her teaching reflections, we had developed a sense of trust and background with one another, and I had come to know her students. Since she is the only ESOL teacher in this elementary school, the majority of her students remained with her during the study year and throughout their elementary experience. In fact, there is very little transience among her ESOL students in relation to the other students in the school. This understanding of Katherine and her students allowed me to be more effective as a researcher, because I had insight into how Katherine thinks about her students and her teaching. Additionally, I spent a week at the beginning of the fall semester re-orienting myself with the setting and the students for whom she scaffolded instruction. Following that, I met with her weekly for nine weeks as we unpacked the scaffolding events she selected. I then followed-up the study with debriefing emails in early winter. All interviews were emergent in nature.

Persistent observation. Lincoln and Guba (1985) describe the goal of persistent observation as "to identify those characteristics and elements in the situation that are most relevant to the problem or issue being pursued and focusing on them in detail" (p. 304). In other words, this criterion for credibility requires that researchers take care in ensuring that the themes and patterns that are the most salient emerge from the data. It provides a layer of assurance that the researcher does not become so enmeshed with the participant and context while collecting data that she misreads the findings. In this study, this criterion of credibility was met by collecting and analyzing data simultaneously. Data were collected and analyzed weekly using an emerging design, with participant

collaboration and member checking to encourage continual exploration of salient factors which informed future sessions. A reflective journal was kept by the researcher to record emerging themes and ongoing questions which informed further questions, data collection and analysis.

Triangulation. The process of building redundancy into data collection so that multiple sources of data corroborate or confirm one another is referred to as triangulation (LeCompte & Schensul, 1999). Merriam (1998) describes triangulation as "using multiple investigators, multiple sources of data, or multiple methods to confirm the emerging findings" (p. 204). While this study involved only one researcher and one participant, multiple sources of data were explored through interviews, observations of the classroom, and field notes and audiotapes of our unpacking sessions, along with the videotapes of Katherine's teaching. Additionally, each of these data sources occurred multiple times which enabled me to analyze within and across data sources.

Member checks. A number of writers suggest "taking data and tentative interpretations back to the people from whom they were derived and asking them if the results are plausible" (Merriam, 1998, p. 204). As mentioned in the section regarding persistent observation, member checks occurred each week as I discussed the data and analysis with the participant. Her input was crucial as I attempted to uncover the domains from which she drew information while making scaffolding decisions, and to understand if the lens we were using was informing her decision-making process.

Peer debriefing. To further avoid situations in which my bias and influence may affect the credibility of this study in a negative way, I asked a peer doctoral student, Meadow Graham, who is familiar with naturalistic design methods to consult with me

and to push my thinking regarding the emerging data (Lincoln & Guba, 1985; Merriam, 1998, 2002). We completed this process via mail and email as she moved to another state prior to the beginning of this study.

Transferability

As a social constructivist researcher, my intent was not to provide findings that are generalizable to a larger population. My intent was to describe the findings so richly that others may draw their own conclusions as to the applicability of any part of these findings to other situations. Therefore, I attempted to include rich, thick descriptions that include enough details to facilitate the readers' ability to decide when findings should be transferred to a different situation (Merriam, 2002).

Dependability

To establish dependability, qualitative researchers use triangulation, peer debriefing, a discussion revealing the investigator's position, and the audit trail (Merriam, 2002). In this study, I have discussed how I achieved triangulation, as well as peer debriefing, and I will describe my role in a following section. I also kept an audit trail in the form of a file which contained all field notes and data sources. I kept a research log in order to continually reveal my position through the study by describing the data collection and analysis, the emerging themes and findings in the study and how they were achieved, as well as a record of my reflections and consideration of my own reflexivity within the study.

Confirmability

Confirmability is "concerned with establishing that data and interpretations of the findings are not figments of the inquirer's imagination, but are clearly derived from the

data" (Tobin & Begley, 2004). Lincoln and Guba (1985) suggest that an audit trail as described in the preceding section, along with triangulation, peer debriefing, and member checks be used to meet the standard of confirmability. As my explanations for how I used these strategies for building trustworthiness through confirmability have been discussed in previous sections, they will not be elaborated upon again here.

Researcher's Role

Our background shapes our perspectives on how we define and interpret scaffolding events as well as how we interpret students' reflections on scaffolding. We each have a personal lens through which we view the world. I realize that no matter how rigorous my data collection and analysis, the way I constructed my narrative around Katherine's recollection of her decision-making process reflects my interpretation of her memories and understandings. The results from this study were built around the limitation of my perceptions and beliefs about her experience, as well as the limitations of not being able to replay her thoughts or see them clearly in the moment they occurred.

During data collection, I was an observer participant and did not serve in the capacity of instructor for this teacher. However, I had been the instructor in seven of her cohort courses during her year-long initial preparation alternative master's degree program. Therefore, I recognize that while we established a friendship during that cohort, my role as instructor also influenced her as we discussed her decision-making processes together. As mentioned earlier, I see this as an advantage, and it is a reason that I chose this naturalistic design.

I also recognize that our discussions impacted the results of the study in that her scaffolding may have been shaped by our inquiry. My questions regarding domains and

the complexities of scaffolding were naturally guided by my understandings of the principles of Cognitive Flexibility Theory. Presumably, this affected how she proceeded with scaffolding in subsequent sessions, and it intentionally impacted the kinds of questions I asked. Again, I see this mutual simultaneous shaping (Lincoln & Guba, 1985) as a strength of naturalistic design.

Limitations

Beyond the limitations mentioned previously in building an understanding of another person's constructions of reality, this study required the participant to attempt to recall what she was thinking during a particular episode of scaffolding that she video recorded. It would have been disruptive, if not impossible, to ask her to think out loud as she made decisions while teaching. It would be unrealistic for anyone to believe that she would be able to remember at another time all that she was thinking in a particular moment, yet I believe that she was able to remember enough to reveal the various domains from which she was drawing as she made her decision-making processes over time. I believe that she was able to remember enough over time to give us a deeper understanding of this process. As we returned to the videos time and again, I believe that her knowledge and expertise with scaffolding deepened and that she began to analyze them with ever-increasing ability to see them in a new light with greater expertise. This may be considered a limitation of the study, while at the same time it was a goal of the study.

CHAPTER 4

UNDERSTANDING KATHERINE'S KALEIDOSCOPE OF DECISIONS

The term kaleidoscope is being used in this dissertation to remind us of the ever shifting complexities that shape decision-making processes. Katherine's decision-making is related to both her teaching context and the level of expertise she currently has attained. Expertise is a difficult concept to identify as it is a relative term. Berliner (2001) suggests that expertise varies with context; therefore, this chapter will begin with a description of Katherine within the context of her own teaching before exploring the kaleidoscope of her decisions. These descriptions will set the stage for understanding the results reported in Chapter Five.

An Introduction to the Context

Katherine's classroom was warm and inviting to students of all cultures. A large, beautiful pale blue floral wool rug was crowned by two tables pushed together to form one large table surrounded by chairs for students to sit as one group. A large chalkboard and easel were nearby and it was obvious that the previous students had been working on the /aw/ sound in saw, awful, awesome, and crawl. To the right were a world map with photographs of the students and their families connected by yarn to their place of birth. Posters and trinkets from other countries such as a Tibetan prayer cloth and wooden shoes, and other languages and flags dominated the room. The chalkboard was lined with books which focused on multicultural or Spanish themes as well as books that focused on

themes and books that non-readers could enjoy. A stack of construction paper with word webs created by students and another group of posters on which students had pasted their wants vs. needs were lying neatly on a nearby table. The room was lined with large purple letters that spelled out "Reading is thinking." The room also included two computers, a television, and an overhead projector.

When I arrived for my first observation this year, Katherine let me know that her schedule had changed. That day I would observe her with a first-grade class before she would go into the third-grade class which was the focus group for this study. The lights were turned down low as the first-grade students entered. Katherine allowed them to explore and discover the room since this was the first time they visited. She explained to them that "sometimes you will come here, and sometimes I will come to your room" and that "you and your families will be added to the bulletin board" (09/26). They seemed interested in explaining that they were from Mexico and Vietnam. Katherine said that she was from Georgia and talked about her background and location on the map. She was warm and kind and gentle with the students.

As she shared a book with the theme love comes in all colors with them, she explained that they she would show all of the pictures so that everyone could see, and she allowed them to move to where they were comfortable and could see. She pointed out the structure of the text, "Look! I like the way the words are on this page – they go like this!" The children expressed that they also liked the way the words formed shapes on the page. Katherine continued, "The fun thing about reading is that we don't know what will happen next, but we can use our imagination."

Following this activity, she allowed the children to write their names and home countries on wipe-off boards. As they were working, another ESOL student from a different grade came in to interrupt the class and wanted to work on a project. She was a student I had met during my observations of Katherine in the previous year. Katherine said "of course" and reminded the student how to greet me and to greet the new students.

Since she had forgotten that I was coming on this day, Katherine left to ask the third-grade teacher if I could come into the classroom to observe with her, but she returned instead with five of the third-graders. Apparently there had been an incident of inappropriate behavior in the general education class. Katherine first tried to determine what had happened so that she could explain it to the students. She found out that the entire class was in trouble for yelling, so an alternative to the planned assignment had been given by the general education teacher. The students had brought their textbooks and were sitting around the table with their worksheets. Katherine used a map and began to demonstrate the difference between country and state. As she began to read the directions that the teacher had written on the worksheet, she realized that the teacher had changed the assignment but she had not had an opportunity to discuss or explain it to Katherine. Therefore, Katherine needed to quickly determine the lesson objective, the directions, and what the students' prior knowledge and language skills were related to this activity. The students not only needed to answer the questions on the worksheet in complete sentences, but also to color and write the names of the various regions on their blank map. She noticed one of the students who was highlighting the word "regions" on the worksheet as he tried to read the question, and she commended him for using that strategy and reminded them all that highlighting words will help them to recognize the

word when they see it again on an upcoming test. She quickly scanned the textbook trying to determine where to locate the answers herself in the text, and asked all of the students to read the questions first so they could be thinking about the questions. The children expressed that Katherine had rescued them. Katherine responded, "OK, but we need to get lots of work done so that [classroom teacher] will feel good that you came here. Let's think about the questions as we read." The group began to read chorally from a section of the book where Katherine directed them. The first question asked them to respond to what they read with their opinion. As the students began to discuss, Katherine said, "Let's write some ideas that you are sharing on the board. Remember these are opinions. Yes, it does start with an 'O' like octopus, you are right. The question says your opinion." She stopped and had a discussion regarding fact vs. opinion. The students then began to give her some opinions. They were becoming long-winded and somewhat off-topic, so Katherine continued, "[classroom teacher] said we have to answer these questions or you can't go outside, so let's get busy. Here are some things that you might want to write. How do we write in a complete sentence?" She modeled some opinion statements then said, "Do we write that? You can, but remember this is an opinion so you write your own. You might write this, or this" (09/26). The students appeared to be confused and tried to write down all of the opinions Katherine had modeled on the board as a response to the question on their worksheet. One student asked, "How do you spell important?" and Katherine responded, "Can you find that word here to copy?" Then another asked, "How do you spell learn?"

Finally, Katherine suggested that they go on to the second question. She seemed to realize that question two was also too difficult for them, so they wrote a sentence

together, as a small group, and then copied it onto their individual papers. Katherine suggested that the students get their maps colored quickly so they could go outside. She noticed then that this map was segmented differently than others she had seen. She explained to the students "Mrs. [Katherine's last name] hasn't studied this, so I'm going to have to figure this out" (09/27). As they began to fill in the mountains region on the map, I helped Katherine to quickly research the topical map which was segmented differently than most that either of us had seen of the regions of our state. Finally Katherine, seeming tired, said, "I'm so glad you got all of your work done. Quietly put things up and you have a few minutes to run outside."

The next day, we both entered the third-grade class in which Katherine was serving as an ESOL inclusion teacher. The ESOL students in this class were those I observed yesterday. With this group, Katherine sometimes used the "push in" model in which she went into the classroom, and sometimes the "pull-out" model like she did during the previous visit. The students had received their directions before we entered. Music was playing and the general education teacher was walking around helping individual students. Katherine walked around to each of her ESOL students to make sure they understood what the directions asked them to do. The ESOL students were not sitting together as a group. Katherine reminded each of the ESOL students of what they had talked about regarding regions during the previous class session. The teacher walked around and praised those students who were successful. Katherine continually used a very soft, calming voice with her students. She asked her students to find the first word and to name the letter that it begins with. Katherine explained the directions line by line with some of the students individually.

The students in this class were free to walk around and work at their own pace. They helped one another and retrieved their own supplies from the shelves. They made torn paper regional maps of the state. A few of the ESOL students worked alone. Katherine worked with one student for an extended period of time before moving on to another.

At one point, Katherine stopped and asked the teacher what the directions were. She then encouraged her ESOL students and reminded them of the directions. Eventually, when she realized that one of her students would not finish in time to have any recess, she asked the other teacher if she could help him tear paper and proceeded to do that. The ESOL students did not finish their work as quickly as the others and Katherine reminded them often to do their work "very quickly."

After the students finished their work, they had to copy their homework from the board into their assignment book before going outside. Again, this was laborious for the ESOL students. The teacher had abbreviated the word project as "pjt" and eventually explained the abbreviation when one of the ESOL students asked. The general education teacher gave final announcements and directions and she and the general education students talked through all of this. The ESOL students who were continuing to work were not talking and were focused on finishing. Finally the teacher asked for silent time. The student Katherine was working with was new to the country. Katherine said, "[student name], you are almost done!" The student responded that he was tired. Katherine told him to copy the map key from the board and she held the book and pointed out words to him as he wrote. At this point, Katherine took the glue gun and began gluing the torn paper for one of the students. She helped him to locate the capital

on the map and glue on his star. By this time, most of the students had already gone outside with the general education teacher. The handful of students who were still inside were ESOL students.

When I arrived for the next class session, Katherine said she and the classroom teacher had discussed that most of the students were not getting much from Science and Social Studies due to their ESOL issues. She had explained to the general education teacher that most of them are reading at a level that is much lower than the textbooks they use. She shared that the classroom teacher was overwhelmed by the amount of students with special needs in her inclusion class, and was glad to receive any help and suggestions. Together, they decided to let Katherine pull out the ESOL students to work on phonics during the Science/Social Studies time for three 45-minute sessions each week. Therefore, during my third session, Katherine tested the students to get baseline pretest data.

I emailed Katherine during the next week to clarify her reasons for this decision and to ask her to explain her schedule and the context in general. In a return email, she explained,

> There are several reasons [for this decision to pull the ESOL students out of Science and Social Studies]. At the heart of this decision and process is the need I feel to "get a grip" on this particular group of students, not just on their reading difficulties but on my own difficulties in knowing what, when and how to work with them. This decision is complicated by the following….
>
> <u>My schedule</u>
> I am teaching ESOL 60% of the week and [gifted education] 40%. Essentially that is 3 days ESOL and 2 days [gifted education]. I only see my ESOL students on Tues., Thurs. and Fri. The 60% limit to ESOL is not my choice, but is the allotment based on our ELL population, though the numbers have grown in my 3 years.

In the spring after I had signed a contract for this schedule, the 3-day [gifted education] teacher left our school, and my principal offered me the full time [gifted education] job. I thought about it for several days, since a full time [gifted education] job in our area is difficult to come by. I just could not "abandon" my students. How would it look to them if I quit teaching them and taught 'the smart kids' in the same building? ESOL is what I want to teach…. I'm just not sure how in the real world.

<u>These students' backgrounds</u>
This is a 3rd grade class, and I feel the pressure of the CRCT looming. None of these students passed the reading section last year, and I don't feel there's much hope at this point.

[student name] came to [school name] in Feb (or so) of 2004 from Mexico. He was placed in 1st grade just prior to the CRCT. His teacher quickly decided that he did not have basic literacy skills, and in fact, it looked as if he did not attend school prior to [school name]. He was moved back to kindergarten for the last few weeks of school. He then proceeded through 1st, 2nd and now he's in third. I don't have the feeling that these teachers stressed routines and systematic instruction, and I've always felt that [student name] missed something. He is struggling with reading, and he tells me that he can't read and that he is stupid. He has made progress but not enough to catch up.

[student name] has been referred for SST. He is the highest proficiency of this group, but his progress is also not up to speed. His brother has autism, and it is difficult to separate family situation, language etc. [student name] can read if you sit next to him and coax.

[student name] came to [school name] in kindergarten at the beginning of the year. She started on the first day of school. She has the highest proficiency level of this group, but she's below grade level.

[student name] came to [school name] in first grade, from Texas, I think. He left after first grade to go back to Mexico. His teacher had recommended that he repeat 1st, and his father was unhappy about that suggestion. He was in Mexico for a year and ½ and returned after Thanksgiving last year. [student name] went to school in Mexico, but, of course, his English regressed. He's big for his age, and he's also below grade level.

[student name] is a newcomer to the U.S. from S. Korea. He entered the U.S. in July and started the first day of school. He has had a lot of trouble adjusting and cries many days. His difficulties really erupted during Cogat & ITBS testing. He only had to take the math portion of the test, but the English was too much. He had a breakdown that morning, and I

had to call the Korean facilitator to talk to him on the phone. Since that time the facilitator visits each week to meet with him and his sister. He seems some better.

The regular classroom situation
These students are in one class, and the teacher was my mentor teacher last year. She agreed to take the ESOL students so that we could work together. Last spring, when we set up the classes, it was only 4 students. [student name] was added in the summer.

[classroom teacher] is really overwhelmed by her class which includes not only the ESOL, but also other kids with special needs. I wonder if it was a mistake to stack her class, and I feel bad for her and the kids that she is so stressed. Really, I can only be of help 3 days a week, for five 45-minute segments. She has even told me that she feels like quitting. There are just too many things to do, too many needs and not enough time.

Summing it up
So there you are… All of these things make for a complicated, urgent situation. After trying several weeks of "inclusion" due to pressure from the state, I started realizing the futility of trying to teach these kids [name of state] regions etc. They can't read. I know they need more than phonics. I thought that if I use this phonics program as a guide for systematic instruction, I can supplement with other texts for comprehension lessons. The program is for two grade levels, and I want to give them the pretest to know where to start. Also, in the spirit of NCLB, I want pretest numbers to show growth (Email, 10/06)

As one can see from this glimpse into Katherine's classroom, understanding the context is of utmost importance in understanding her decisions. It is clear to see from this that indeed expertise varies with context as Berliner (2001) suggests. The experienced classroom teacher's expertise was challenged within the context of having such a large number of special needs and ESOL students in her classroom, and Katherine's expertise was impacted by the context as she worked to make decisions to scaffold instruction for her individual students.

The Kaleidoscope of Katherine's Decision-Making

To understand the kaleidoscope of Katherine's decision-making, I present illustrative transcripts of our sessions to provide a reflection of the nature of our work and the discussion which occurred. Three categories of Katherine's views shed light upon all of her scaffolding. I have labeled these categories a) Katherine's views on scaffolding (b) Katherine's views on the connection between assessments and planning, and (c) Katherine's views on the connection between theory and practice. We will return to these categories at the end of the next chapter when we discuss in more detail how this process impacted Katherine's decision-making. By reflecting upon these interview sessions through the light of the views Katherine held, we can better understand her decisions. Therefore, several interview sessions are presented which highlight these categories in an effort to give the reader an essence of the interview sessions.

Katherine's Views on Scaffolding

Throughout the sessions, Katherine lacked confidence in her definition of scaffolding. I was reminded of this uncertainty and that this research process might be uncomfortable for Katherine when she emailed me before our first session to say that she wasn't sure what I was looking for. When I arrived, she asked, "Can it be spontaneous scaffolding?" [10-20]. I reassured her that we could discuss any type of scaffolding and that I would ask her what she could remember thinking while scaffolding. She walked over to the video which she had previously cued up and the following interaction played:

> *[Video transcripts are presented in italics.]*
> *K: I want you to match the words. Then, we're going to sort the words. Watch this. Watch what I am showing you so you will know how to do it. I want you to take these words and sort them by where the "ah" sound is in the beginning. What does beginning mean?*

S1: Not in the middle.

K: That's why I ask you. Because I wasn't sure if you guys knew. Beginning?

S1: Oh, last.

K: Act. Where is the "ah" sound in act? The beginning, middle, or end?

S2: Middle.

K: Middle?

S1: No. Beginning.

K: Beginning.

[follow-up discussion}

D: Do you remember what you were thinking?

K: I wasn't sure, when I first started saying it – the beginning / middle sound. Medial vowel is what I'm working on. And when I asked if they knew if it were the beginning or middle, I wondered "do they know what that means?", because I always think about the academic vocabulary. And, of course, *[student name]* in the hat said, "The beginning. The ending." So I thought immediately, "He doesn't know what beginning, middle, and ending is." I also thought the ITBS has a whole section on beginning and middle sounds. You know you have to know that. I don't know if CRCT does, but I thought about standardized testing and the fact that that is on there.

D: So you had to stop everything, like we have to do so often, and just do a whole new lesson right in the middle.

K: Well, I didn't really stop. I picked this one because it was one of those things where I consciously thought to myself that here's one of those examples where if I were a classroom teacher, I might just keep going and not notice that that one didn't know what beginning, middle, and ending was. But, because I'm in a small group and because I'm aware of their language background, I'm always thinking of academic words they don't know. So I did ask that question. And, when he said what he said, you heard me saying, "I'm so glad I asked you." And I was glad I asked. Because, to me, that's a perfect example of on-the-spot. (10/20)

It is important to note that while this was indeed an example of on-the-spot scaffolding for this one student, Katherine stopped the lesson she had planned for this 45-minute class to teach a mini-lesson on beginning, middle, and end, which the other students did not need. Throughout the sessions, she grappled with how to meet the needs of one student within a small group setting while keeping the other students engaged.

The conversation continued with discussion of some of the various topics she was thinking about in the moment, when Katherine made another statement which shows her lack of confidence regarding individualizing scaffolding based on student needs.

> K: And, also, I'm a little bit – the background on this. As you know, I did the pretest with the vowel sounds and all that. I'm a little bit worried because I feel that it's kind of babyish. They are in 3rd grade. On the other hand, they have gaps in their education so I feel that it's important to go back and do that. At the same time, I'm torn because I don't want to do something too easy. But when I hit on something like that, I feel that the whole day was worth it if he now knows the beginning, middle, and end. I'll keep doing that. This was Day 2 of this week. It's not wasted time if I found something like that which is huge on the test.
>
> And also in classroom directions-- if they are making something and the teacher says, "Put whatever at the beginning of your tree map," which we do right from the beginning. They are doing tree maps. If he doesn't know that goes over here, then he's already messed up on his Organization for Writing. It's not just the standardized test. It could also be teacher direction. (10/20)

I wanted Katherine to consider thinking more about the connection between what she knows about her students and planning instruction. I had encouraged her on several occasions to make checklists or take notes to inform her planning. So, I asked her if she had thought ahead of time how she would teach beginning, middle, and end if her students didn't know it since she had said she "felt" they might not know it. Her response indicates that she did not make this connection with prior planning, as she

shows me video transcript of a game she created in the moment and had all of the students play even though only one needed it.

K: No. That's next. You are going to see what I did.

[Video continues]
K: [student name], look at this word. This word begins with the letter. . .]

K: He's the one that doesn't know out of the five.

[Video continues]
K: What letter does "middle" start with?

S1: M. Inaudible.

K: Beginning, middle, and ending. Let's mix them up. Now I want to see who can put them in the right order. Put those in the right order for me. Left to right. Beginning, middle, and ending. Going from the top to the bottom. [student name], which is it?

S: Top.

K: Good. That's exactly right. Can you say the word?

S: Inaudible.

K: Look at the first letter.

S: Beginning, middle, and end.

K: Excellent. Mix them up and hand them to [student name.]

[Follow-up Discussion]
K: So you get it. I made a little game.

D: I have a feeling, and you tell me if I'm right, that you had everybody do it because you were thinking about . . .

K: Self esteem. He already thinks – he'll say, "I'm stupid. I can't read". And they are like, "Why can't he read?" It's 3rd grade and the others are all…. But as far as his actual language score, he did not score the lowest. He's in the middle. But he just has this idea that he's low. And he missed kindergarten. So he didn't get any of that stuff. He didn't go to kindergarten in Mexico and he came

> here in first grade. You know because I've written all about this. They put him back in kindergarten, but he only got like six weeks. (10/20)

Katherine's intention was to scaffold this child's learning while protecting his self-esteem. Yet, by stopping the lesson and asking who understood and then having everyone play a game although only one needed it, she may have inadvertently actually highlighted his lack of understanding to the other students. As we continued discussing different concepts that Katherine was considering while she made decisions, she said the following which indicates again that she continued to struggle with determining how to meet the individual needs of her students.

> K: They have so much to catch up to their peers. And this year, one of my big things is no longer do I want to treat them as remedial students. I want to treat them like students who need to do double. Not half as much as everybody else, but twice as much. Because it has occurred to me, they are not going to catch up by doing less. They have to do more. Their teacher agrees – their classroom teacher. So it would be easy to just gloss over beginning, middle, and ending, and just keep going because you want to stay on course. So that's another thing; you just have to give it up depending on what you see.
>
> D: Depending on what the moment calls for.
>
> K: Yes. And today, we did beginning, middle, and ending again. We've moved on a little bit further than the last time. But we are still talking about that. I think it will stay in my mind, "Okay, that was a weakness. We are going to always revisit that." In fact, I'm giving them homework now. I've even thought that for one, I'm going to give him some sort of written homework that is similar to the test, that says, identify the sound at the beginning-- or something-- some sort of written homework. Because that's what he's going to have to do. He's going to have to be able to do it on paper. (10/20)

Katherine and I continued to discuss this particular student for a few moments when she commented that the way she reads with each of her students is completely

different based on their needs. This was a clear example of excellent scaffolding that Katherine recognized.

K: I guess that's scaffolding, too.

D: Absolutely.

K: Because I was thinking, *[student name]* read and I had to help him scaffold his reading. *[student2 name]* read a very similar book. He just read it to me without any help. Today, *[student3 name]* read another one of those books, and he just had to have little reminders like, "Don't forget the right page" or "What's that word?" A few things like that. So all three of them were totally different as far as how you read with them.

[video continues]

K: Is "ah" the beginning, middle, or ending sound?

S1: Beginning.

S2: Beginning.

K: You think so, too. What do you think [student name]?

S2: Beginning.

K: It's at the beginning. Cat. Is the "ah" sound in the beginning, middle, or end?

S3: The middle.]

K: That was him.

[*Video continues.]*
K: When you sort your words, I want you to look at them. And if the "ah" sound is at the beginning, I want you to put it in this pile. If it's in the middle. . .] (10/20)

The discussion continued in general and I asked the following: "You told me you thought about what the child already knows or can do, and how you knew about that because you had already tested. You had just tested him on that. And you had in your

mind a feeling that he was not going to know beginning, middle, and end. What gave you that feeling? "

> K: I think just my history with him. I gave him the ITBS – all of them. I'm not sure if I'm allowed to do that or not. But I know that they didn't all get that.
>
> D: And you had a sense when you gave him that question that he didn't know?
>
> K: I wouldn't say that I specifically thought that he wouldn't know, but I felt like I should ask it to that group. Because I think so often I take for granted, and classroom teachers take for granted, academic language. I just notice that a lot when I'm around.
>
> D: And you are sensitive to the fact that even just the word "beginning" is academic language. I think a lot of times, when teachers think of academic language, they think of things like compare and contrast. They don't think simplified – that something as simple as beginning, middle, and end could be academic language.
>
> K: Fewer and more/greater. Big, huge problem – that kind of stuff.
>
> D: And there again, this will sound a little redundant. Did you think about the child's cultural background and how it might affect the task? Tell me more about that.
>
> K: Well.
>
> D: And you may not have.
>
> K: I thought about it as far as the vocabulary words are concerned. For example, *[student name]*, who is from Korea, does not know what a bat is. He's never seen a bat.
>
> D: So for this particular activity?
>
> K: Bat was one of the words we were going to be sorting. We talked about bats and that's why I pulled out the bat book. I thought that would be kind of fun for him because he doesn't know what they are. I don't know if there are any others. (10/20)

The interview session continued as I asked continued to ask Katherine to consider various domains she may have considered during these scaffolding events.

In early November, during the third session when we re-visited this case, I attempted to highlight some of the complexities of scaffolding when I asked Katherine to consider if the other students needed to be taken off-task by the needs of this one student. Her first response was to focus only on the behavior of the students and she suggested that the problem was her need to move them. When I asked if she felt that the other students needed to have the lesson stopped to teach one student the concept of beginning, middle, and end, the following conversation occurred:

> K: I don't think it hurt them. But I don't think they were as confused [student name]. I think he knew it. But [student name]– I'm not sure. He would be one I wouldn't be sure. I don't know. I don't think it hurt them because it's so important for academic language.
>
> D: Here's what went through my mind. You may decide, no, that's just wrong and that it was one of those in-the-moment things. But what occurred to me when I saw it was that the flow of the lesson was stopped to deal with this one child's misunderstanding.
>
> K: Yes. Very true. And it wasn't a lesson. At that point, I was sending one group off to do an activity and I was going to read with one. But I did have to delay everybody doing what they were going to do to deal with that. (11-03)

Katherine's Views of Assessment

A second category which impacted Katherine's scaffolding was her view of assessment. Katherine shared during the initial interview in the summer that she didn't feel confident regarding how to assess and then lead individual students into their zone of proximal development and that she longed for the activities to be richer and within the students' zone of proximal development as the following excerpt describes:

> D: What other questions might you ask?
>
> K: Umm... Well, let's see. I guess one of our big questions is always assessment. I'm not sure how that builds into scaffolding because I have so much freedom, even on assessment things that I have to make my own

> system on those. But for the CRCT and different tests they do things and then the ACCESS language, but as far as the rest of the year I have to do my own thing, and so I used DRAs this year and I think that helped me to see, it gave me structure as far as how far we should go, but I don't want to use that kind of thing to limit what they're allowed to do- "you can only use this book" because I saw, from doing the DRAs and then I saw what they had done on the DRAs on that particular little book, but I knew they could read something they were interested in at a higher level.
>
> D: How did you know?
>
> K: Because I'd seen them do it, yeah?
>
> D: Did you take notes on that sort of thing for their files?
>
> K: Well you know, mostly the notes I take are deficit type comments. Well you know there are maybe a few that are not deficit type comments, but I do enter occasional notes where I would go, "wow, so and so realized that this is a word that..." and we weren't even talking about that, and he'd point it out that cat and bat are the same family." So there were times when I did write that. But in general you know, that's the thing I'm concerned about, because you know I want to do more of a portfolio type assessment. I want to be able, when they come to me at the end of the next year, and say, you know, ___should be allowed to go to the next grade. I really want to have more than just those scores to show.
>
> D: You have had a few portfolios in the past?
>
> K: Not really, I've kept folders on each one, and I do keep some work, and of course I keep DRAs and I have a checklist that shows all their actual scores on other tests, but as far as what I would consider a portfolio, I haven't really done that. Now I actually could put that together with what I did for student teaching, now, but I would like to do that. Of course I don't have the requirement now. Still I would like to do something, and I would like for them to have it so they can see what they've done. So yeah, I have questions about assessment and I don't know, just the general idea of guiding someone into their zpd, I'm not sure about individual students, exactly how (initial interview, 07/28).

Throughout our sessions, Katherine did seem to know a lot about her students and their levels and what they did and did not know as indicated throughout all of the sessions. However, she maintained much of it in her memory and relied often on her intuition. While longing to help other teachers learn to modify instruction for her ESOL

students, she did not regularly maintain portfolios or other data to show what they could do beyond their own content-area tests and the high-stakes tests. She expressed that the classroom teachers often did not realize the limitations or the strengths of these students, yet Katherine did not have a clear documented way to record their accomplishments with language and literacy.

As the following interview sessions will show, Katherine's consideration of these issues became more complex as she began to change her views of her role from teacher to that of teacher educator through her focus on helping teachers to modify their traditional end-of-unit assessments to be more understandable for her ESOL students.

> K: I think, too, by doing this that I feel that I have a little more confidence to talk to other teachers about scaffolding. And this happened today, which I didn't tape because it was an end-of-the-day thing I did with that group. And they came in with a Science test which I kept to show you. But they could not answer one question on the Science test. I ran down to the classroom and asked the teacher -- I was going to make a copy of it and have them do it – just take the test and have them take it again with the book so I could show her. Well, the books were in the classroom. So I ran down to do that. Actually, I was going down, and then I realized there was no need to make a copy of the test because they couldn't answer a single question. So I went down to the teacher, with them in here ("Can you be quiet? I'll be right back"), and told her, "They can't answer the questions. They can't even read the questions. What can we do? Because I know you want them to do something." She [the student teacher?] said, "Well, they had a study guide." And then their teacher said, "No, they didn't. They didn't have a study guide." And she said, "They didn't take it home." And she said, "They can use the study guide. We can give them a copy of the study guide if they want to use that. I'll just mark it as a modified grade, which is fine." So I said, "Cool. No problem. Give me one and I'll make a copy." Well, it turns out that the study guides were handwritten by the children. Then I gave them [the ESOL students] a copy of this and said, "You can do the test." Well, they can't read the girl's writing, nice as it is that she did this. So after school, they tried. And they were writing stuff that was totally not making sense, because they can't read the writing. So I went down after school and said, "You know, I can give you some ideas to help with this, if you would like for me to." And she [classroom teacher] was really nice. She was, "Sure. What do you want?" I suggested that she type up the study guide and cut

it into strips and let them match the strips as their study guide. Also, reduce the number of things. I said, "Just look at the standard and pick the three things that you really want them to know. If it's the three kinds of rocks, if it's whatever." Then I said, "Too, if you can make the test shorter. For example, here you have them name the three main layers of the earth. Here they have to write them again if they label it. Maybe you can eliminate that and have them do it one time -because that's a great idea. You are showing them a picture. You can give them a word bank. That would help."

D: Yes.

K: You could have them use their study guide.

D: But do they [*inaudible*] the test?

K: That's a good point. I've already had the discussion with their classroom teacher that this is where they switch to go to Science. So it's another teacher. Their classroom teacher walked out in the hall and said, "No. They can't do that." Anyway, I said, "Well, the thing is, what is it you want? Do you want them to know the material or do you want them to be able to recall it? You have to decide here what's important. What if they can take their study guide and match it. Then they can transfer the answers to a shortened test. Is that enough?" She was like, "That would be great." I said, "Then that's what we need to do. If you can't do that, I'll be glad to do it for you." And she was happy with that.

D: So you had to do it?

K: I'm probably going to do it next week. One reason is that I want to show her how to do it, because she doesn't know. And I think if I do it one time, it will help. I want them to know the material. It's on the CRCT, which I'm thinking about. So it's not that I want them not to learn it. Now the classroom teacher and I talked. We talked about me pulling them out for reading and all that in the afternoon and doing this program. At first she was saying, "I don't want them to miss Science and Social Studies." But then she said, "You know, if they can't read, what does it matter?" I was like, "Yes. They don't know the [name of state] regions." Remember, I told you this discussion. They don't know the [name of state] regions. That's not the end of the world but not being able to read on a third-grade level is the end of the world for a third-grade reader. She said, "Okay, just take them and do what you need to do and then we'll worry about it." (10/27)

Katherine continued to grapple with the concept of assessment and the value of informal assessments to guide her work. During the second week in November when I probed Katherine regarding the value of having her ESOL students complete a project such as a poster instead of a traditional book report, she responded "…I'm not even sure – I'm not completely convinced that would be . . . I think that would be a great activity, but I'm not completely sure that that would be a great way to assess them because they have to pass the test in March, and it can't be a song or a dance" (11/10). She understandably worried that her students would fail the high-stakes achievement tests due to their language barriers, and believed that the way to best prepare the students for these tests was to give them practice with similar tests.

By November, Katherine began voicing that her time might be better spent working with teachers than trying to meet the numerous needs of the students. As the following excerpt shows, she even suggested that she and I present at a conference on the topic of helping teachers design assessment for ESOL learners.

> K: I think that is a way that I'm slowly starting to get in to where I realize that I can't plan with every teacher and I can't see every kid, enough. But I can show them how to do some things that they can take and go, "Oh, you know I can do that. That's nothing. It's not brain surgery."
>
> D: What if you took – at a former school where I worked we used to have specialist teachers take five minutes at the beginning of faculty meetings, for strategies - one strategy at every faculty meeting. And people loved it because those are strategies that people – any kid struggling with language can use. It's not just ESOL.
>
> K: I even thought about. . . Did you get my e-mail about the ESOL conference?
>
> D: Yes, I remember seeing it. But it went by in a flash.

> K: They're wanting people to present, of course. And after whining about that last thing I went to, I thought, "You know, if I could get somebody to do it with me." I think a wonderful class for that conference would be about assessments -- just designing assessments. I took a whole class on that for Gifted. And the same things apply. You know what I mean? Because people don't really know how to do that. But they want to know. And it's one of those things that you could come away with a packet of stuff where you go, "I can use this. This is real." (11/17)

Katherine kept records of her students' formal assessments, yet many of her scaffolding decisions seemed to stem from her students' lack of understanding in their content-area class based on their content-area teachers' comments and assessments. She stored most of this information in her memory rather than documenting it. She also drew from her memory of her students' abilities with language and literacy, rather than from documents such as anecdotal notes. Katherine had more intuitive, informal knowledge of these children than most teachers since she had taught many of the children over a period of several years. However, the main source of knowledge about the students that drove her scaffolding decisions seemed to be intuitive and based on her recall of students over time. Katherine expressed to me several times that she struggled with finding the time to document much of what she knows about her students and that she often encountered situations with them on the fly or during other teaching sessions which would require her to go back and write them down later, which was difficult with her busy schedule. During our next to last session in December, I asked Katherine directly about this again. The conversation that followed illuminates Katherine's grappling with the concept of record-keeping, with what counts as assessment and its value in determining individual student's zone of proximal development, as well as her struggle with incorporating language and literacy assessments along with content area assessments.

D: The thing that keeps popping up for me is, I see you basing a lot of what you're doing on what you know about the child. But I'm wondering if you just know that in the back of your mind? Do you assess for that? How do you know where that zone of proximal development is? Is it intuition?

K: You mean?

D: When you scaffold for these children. I see it happening. And I know you know them. I know you know a lot about them.

K: I think part of it is just the response. I read their responses. When I said, "What is heat?", I knew we had talked thermal energy. And we watched a little streaming video about thermal energy, conductors, and all that. So I knew [student name] knew it, and he said, "Thermometer," which is related - same unit, at least. When I scaffolded by saying, "starts with a 'th'. It's in this line," I think I'm just reading the moment.

D: So you're kind of in the moment and then you're building on what you already know in your mind.

K: I know what we studied. I keep up with what they do. When I don't have them, I know what they do.

D: How do you do that?

K: I collaborate with teachers.

D: So are they just talking about what the kids do or do you look at their work?

K: I go and talk to them weekly at least.

D: Do you look at the children's work?

K: No. I don't really look at their work. (12/15)

Katherine and I continued to discuss the value of being organized and detailed with recording both formal and informal knowledge of students' abilities, and the difficulties she faces with that due to her schedule and lack of time with these students. The following excerpt demonstrates that she continues to grapple with determining what counts as assessment and the value of informal recordkeeping or portfolios which might

inform her scaffolding decisions. She also implies below that she sees assessment as different from instruction, although at other times she has made it clear that she understands the use of students' work to informally monitor progress. Additionally, she continues to struggle with the question of how much focus she can give to assessing and individually scaffolding students' literacy skills systematically while keeping the focus of her lessons on content-area standards:

> D: Great. Are their Reading and Language Art skills growing?
>
> K: Well, I have so little time to be with them, I guess my choice is to teach them rather than assess them.
>
> D: But you don't use their artifacts?
>
> K: I could go look at their work. I could go look at what they're doing with the teacher. But, basically, the teachers tell me, "Oh, they all got A's on their test" or whatever. And I'm like, "Good." I knew they knew it. I know they know it before they walk out of here. And later, like this week when we started Heat and Magnets, [student name] said, "I remember everything about Creeks and Cherokees." And he said, "The most important ceremony was the Green [inaudible] ceremony". They just started naming off things they remembered.
>
> D: For those content standards.
>
> K: I guess part of it is -- it's not good. I have such little time with them.
>
> D: I'm not criticizing you at all. I'm trying to say, "How's it happening?" Because I'm seeing a lot of good scaffolding. And I see a lot of it that I know is in their zpd.
>
> K: It just makes me so mad though. Because I'm thinking, "I could do such a great job with them."
>
> D: If you were able to have all the time you need?
>
> K: I'm just saying if I had them every day. Not that I need them every day, as much as I don't need to be doing other stuff. That takes huge amounts of time. But that's just the way it is. And it's okay. But I feel like I'm sacrificing. Something has to go, so what's it going to be?

D: I think it helps that with most of these kids you've had them more than one year. So you do have a longer term . . .

K: Actually, I've had them since kindergarten. So I really feel like I know them.

D: You do know a lot about them already.

K: The teacher stopped by. They're all in one class. She comes by and says, “This one knows. This one knows”. So she kind of keeps me updated.

D: As far as those levels, like in phonics for, example. If they're not writing, how do you know where they are in their phonics?

K: I'm learning it from their reading. [student name], this week, we were doing SRI. The teacher asked me – they're all coming up. . .

D: They were doing what? SRI? What is that?

K: Scholastic Reading Inventory. It's a computer program where they read and answer.

D: Kind of like a DRA type thing?

K: Kind of, but not exactly. They do it on computer.

D: So you were doing that assessment with them?

K: Well, the teacher asked me to do it individually, because they do it in a big group in the computer lab. And she feels like they are still coming up as beginning reader, which is below a level even. There's no level for them. So she wanted me to do it one-on-one to see what was wrong. So I got [student name] to pull up the same story that she had read in the computer lab, where she got beginning reader. And I realized, as she was reading to me, that what she was doing is, if she came to a big word and she didn't know what to do with it, she would just skip it. And then, if she really didn't get anything out of the first few sentences or words, she would skip the question. Well, you can only skip a couple and it throws you out. So I just sat with her and we practiced decoding. And I reminded her -- the same thing I was doing with [student name] that day. Take off the ‘ing’, take off the ‘s’, take off the ‘er’, and see what you’ve got. Remember silent ‘e’. And we went through the vowel sounds and all that. And, suddenly, it was like it kind of clicked that she could do

something when she comes to a word like that. And so then, she got really excited.

D: That's what excites me. Because, to me, that's going to transfer to everything – not like whether they know the Creeks and Cherokee. Those little things, to me, really matter. And you see how much information you got from that one assessment. I don't mean that it has to be a formal assessment like that. I just think that you might be surprised.

K: They're the one group that I don't get alone. I get them in a group. And they're pretty high maintenance.

D: What about if they write more? I wonder if you would feel that way? Because I feel like sometimes journal writing, when they're just writing anything…

K: Maybe what I should do with them is have them write a journal with me. I do that with other students.

D: Or just write a sentence a day. Because even just things like I learned with my little [student]. The hardest thing is for her to think of something. And so we talked about how to brainstorm ideas. And it changed her world. I just see so much when they're writing. And, there again, I don't mean bringing up another little assessment. I mean making it a part of what you do I think will help you key in more.

K: To what's going on with them. Like, for example, the decoding thing with her. She and I both – I went, "Uh! I know what's wrong here". And she was like, "Uh!" She did, too. We both knew. Today, she's pulling out her [name of chapter book] and she said, "I'm on Chapter 6! I can read!" So she's really feeling extremely successful in being able to do it.

D: That's great. It's just sometimes just watching their eyes when they're reading, to see what they're doing. It's just like the most informative thing to see, "What are they really doing?" I really did want to ask you about that zpd because I wondered – I see you doing it and I see you doing very well. And I'm wondering if it's just – I know that it's not haphazard and I know it's not guess work. And yet. . .

K: It kind of is.

D: It's more intuitive?

K: It's not guess work. It's intuitive. But it is somewhat haphazard.

D: As far as not systematic.

K: Because my whole life here right now is haphazard. I mean my teaching life is pretty haphazard.

D: And I can't help but wonder. One of the things we learned was wrong about whole language was that it wasn't systematic phonics. That it was haphazard. And that it needed to be more systematic. And I feel like these kids sometimes need it more than anybody. And yet, has anybody given them systematic? Are they getting that in their other classes?

K: Systematic what?

D: Phonics - because they're beyond the level where phonics would be taught.

K: They don't get phonics in 3rd grade. They get [name of program] spelling which does use word families and spelling rules and things like that. And she does go straight through [name of program] spelling. But much of [name of program] spelling is beyond their grasp. (12/15)

In these ways, Katherine's views of assessment shape her scaffolding processes throughout the study. Another category which seemed to be reflected in Katherine's decision-making was her views of its connection between theory and practice.

Katherine's Views of the Connection Between Theory and Practice

Another category which seemed to be reflected in Katherine's decision-making was her view of the connection between theory and practice. Katherine had been required to reflect upon and write rationales for lessons during her coursework and student teaching. While she sometimes balked at this requirement at first, she eventually was able to connect the strategies she used to a theory-based explanation of why she chose a particular strategy for a student. However, I knew from informal conversations that she didn't feel confident connecting theory to her process of scaffolding for her students. In the initial interview in July, she said,

> I think as far as reading, I think those things are in my mind. As far as reading, with shared reading -that's why I do all of those different reading strategies. I don't think about the name of the person. I know Howard Gardner, I think about multiple intelligences ... and that's one reason I did the reader's theater, and I try to bring in, I think "ok, I don't naturally do that, I need to bring that in." I try to think, art, hands-on, I try to think about those kinds of things, I do language experience accounts. I guess a lot of the strategies I do are based on theories and I don't necessarily think of the theories themselves. I think of background knowledge as a way to link new things, I think of questioning as far as teaching students to find a way to fit in new knowledge with what they have, connections-- so yeah, I do think about theories, but I don't necessarily think about the theories themselves, except for certain people who really influenced me like Janet Allen- but I don't know if you could call her work theories - based on theories. But her work was so practical, but I guess that appeals to me, that's what I really link onto. And that also, Harvey and Goudvis, those readings... I guess they're really just authors- authors writing about theories. But they write it in such a practical way, with real daily... that's what impacts me every day I think. (07/28)

The following November 3 interview session highlights the lack of confidence Katherine often expressed regarding theory and its application to scaffolding in her classroom. As we viewed this video segment for the second time during this follow-up session, I asked her what she knows about how people learn that might have influenced her scaffolding decisions and if she was thinking about that in the video as she made decisions.

> K: I was thinking . . . And a lot of forethought didn't go in to that. At the moment, I was just thinking that I wanted him to be able to show me, which is why I wrote the words out real quick. I wanted it to be hands-on. And I didn't want to spend any time on it. That's not what I was here for. I wanted him to learn it and move on. That was a bump in the road.
>
> D: But I'm also thinking that at the same time (because I'm trying to think of all those things that you are drawing from at the moment) you are probably thinking he needs something concrete to look at. …I saw those things happening in the video that you are almost unconscious of but you are thinking about. And, yet, I hear you say, "I don't know what I'm doing." Yes, you do.

K: I hear a lot of people say that.

D: Yes. A lot of us do it. And, there again, what linguistic theories might affect your decision in the future and were you thinking of that in this video? ...

K: No. I don't think linguistic theory was right there. You know how I feel about theory.

D: You also have to remember that everything we do is based on theory.

K: I know it is. I know it is.

D: You just draw on what it says. And that's the purpose of this conversation.

K: It's just thinking about it that is . . .

D: I know.

K: I hate to say it because it's so superficial. I'm so much more conscious of the test.

D: It's not superficial. It's right there. I feel it too, Katherine.

K: It's horrible. I really don't want to be driven by that, but I am. Because I'm thinking, "Oh, my goodness. My little [student name] is going to fail?"

D: And your schedule.

K: Yes. I had this much time to do this much. And he has this much time to do that much. It's like you are on the hamster wheel. When do you get off?

D: So what about the theory helps you? What I am trying to do is, I hope that in that moment it will be so natural that it comes out. Because theory does help you to get there faster in those little amounts of time. And I think it does affect what you do.

K: Yes.

D: Think about what you were doing before you were going to school and what you are doing now that you know a lot more.

K: It's like growing. You know, it's hard to tell until you step back and compare the whole picture. It's hard to see when you're in the process. (11/03)

Katherine and I continued to discuss the theory she was drawing from as she made decisions, and I asked her what she knows about vocabulary learning and how it relates to what these particular children know about sounds that she was connecting. As she responded, she began to realize that she did know the theory behind her actions. Yet, she demonstrated a lack of confidence in this area as she continued to ask me with her words and with her body language if she was correct.

D: What do you know about vocabulary learning and how kids know these sounds?

K: That they have to learn it in context, which I was trying to do through the words, letter, the placement in the words, hearing the sounds in the words, and using the manipulative thing. Then later, I followed up with more reading in the book. "What's the beginning of the book? What's the middle of the book?" They did something with [name of magazine], and I did like a treasure hunt thing with it. I did, "What movie was at the beginning of the magazine? What's in the middle?"

D: So it did affect your future planning?

K: Yes.

D: And that knowledge that you have to repeat something lots of times for them to get it.

K: Repetition and context was forefront for me. Was that good?

D: That's very good. What do you know about the reading process that might influence your decisions and your future steps? You've already answered this, but is there anything that comes up again.

K: Now I can't remember what I said.

D: That's part of why we are doing it. To see if this time, having said it before [during the first video discussion], it will help. Have you thought about it?

K: The reading theory behind the whole thing is there are gaps in their decoding – in their ability to decode, phonemic awareness, phonics - it's all about that initially. The beginning, middle, and ending thing was all about . . . Well, you can't tell what you know with all those things if you don't know what those words mean. So that's an academic vocabulary base that you need to show that you know phonics, sounds, and all of that, in words.

D: You look like you are expecting me to. . .

K: Is that right?

D: I'm not your teacher any more.

K: I don't know what I'm supposed to say.

D: It is right. And it's a lot more than what you said when we watched it [previously]…..

K: See, I can't even remember what I said. (11/03)

Katherine and I continued to discuss various domains from which she drew and to view this video the second time and she continued to reflect on a deeper level than she did during the first viewing. Katherine's response to the following section is indicative of this deeper reflection, but also indicates that while she was creating lessons designed on theory, her understandings were still developing and left her frustrated when she didn't understand the value of a particular activity. This excerpt is also included because it is representative of the informal learning that occurred between Katherine and I during our interview sessions, especially during these third week sessions in which we were viewing the same video for the second time and had each had time to reflect upon what we had seen and discussed.

[*Continue watching video]*. . . .

K: Let's keep reading. [Choral] "Some bats live in caves throughout the year. Some live in trees during the summer and in caves during the winter." Where is the picture of the bat hanging upside down?

S1 answers.

K: What does upside down mean?

K: Get your finger ready. [Continues reading]

K: Do we want to have bats flying in the sky?

S1: Yes.

K: Why? What are they eating that we don't like?

S1: Bugs

S2: Spiders.

K: They are eating insects.

[follow-up discussion]

D: Anything about that?

K: I think the more I watch it, the more I think of things I do differently. I think part of this is experience. Like you said, it's so valuable. What you mentioned last time about the choral reading. I thought about, as I was watching the video to try to get to the right spot earlier, that in the very beginning I said, "We're going to go over phonics. Phonics is the sounds letters make." And I explained why we were doing this whole phonics thing. But you can tell on the video that the kids are just like [noise] because they have no idea what I'm talking about. But I said it because I'm supposed to say it. But I know they don't know why we are doing it.

So, with the Choral Reading, it might be good if I made some sort of graphic that shows Choral Reading and a chorus of kids singing. So when we are doing one of those kinds of reading, I can point to it and say, "This is Choral Reading. This is this kind of reading." I'm not sure why that matters.

D: That's not what I would think is important. Here is what I would think is important. I would think it's important to say, "Boys and girls, when we read, it's really important that our eyes are on the words."

K: So they make the connection.

D: "Because if you are just saying it, that's not really reading. When your eyes move. . . " "One of the things we are learning when we do this is learning to say the right rhythm with the language, too. So it's really important, as you learn English and you learn to read, that we say it all this way. That's why we are doing this activity."
In other words, they need to know that they are not just doing this to get a grade-- that there's a reason that they need to stay with you and that there's a reason that their eyes need to be on those words.

K: That they are pointing to the words. Okay.

D: And most of them will at least get that it's important. I think a suggestion is that as long as you are getting that kind of putting the head down and turning, like "I don't know where all the words are," I might do it on the overhead together. And point to the words and have them say it with you. So that he knows exactly what words you are on.

K: Okay.

D: And that may be one way to focus his attention - because you saw...

K: That he was zoning out.

D: Yes.

K: Oh, my goodness. I never saw that before.

D: I don't mean to be coming in and giving you. . .

K: I'm glad you are. Because that's what I want.

D: I think when you see. . . And you are feeling that.

K: That there's something missing but you're not exactly sure what.

D: Right. And you said, "He's not paying attention." You know that for the reading process to occur, he has to actually look at those words.

K: Exactly. And make that connection.

D: You have to keep looking for strategies that focus his eyes on that word while you say that word. Because until that connection is made, he's not going to get that word. Maybe it's to not do so much text, even if it's to repeat that same page over.
These are just things I'm throwing out. I'm not sure because I don't know

how much content you have to get in there. Or perhaps rewrite the text so it's smaller… less…you know what I'm trying to say. Make it shorter text. Do a little overhead. Then they will start recognizing some of the words maybe.

K: Good point.

D: I know you have to go. Can I just ask you this?

K: Sure.

D: Do you believe that these sessions are helping you? That they are going to influence your scaffolding in the future?

K: I definitely do. It's forced reflection, which is good. I think it's so easy, as an overwhelmed beginning teacher doing two different jobs, to just blow through and not reflect - even though I nag myself mentally to do that. Because I know how important it is and I really miss it. I had so much more opportunity to do that when I was in school. And I was doing this job every day, all day. So I really regret that. So seeing the video and all really helps.

D: Does it help you more than seeing somebody else – like a master teacher teach?

K: Definitely.

D: Can you say how?

K: Because I know all the background, all the details, and I know the kids. I'm so in tune to that. I was there. Everything I was doing is about me.

D: And you know the good you were doing, as well.

K: Right. So it is good.

D: You see how to fine tune it.

K: Yes. Like, "I'm doing some stuff here, and here are some things I could do better,"

D: To fine tune it.

> K: And because I care about those kids, it's almost like multicultural literature. It means more because it is my class. So I do. This is very helpful for me.
>
> D: I'm not sure if it's clear yet how this is connected with cognitive flexibility. But I think as we think more about all these different domains that we draw from, that it maybe expands our use of those domains and makes us a little more able to, like you were saying, multitask in the moment. Because we're thinking, "Gosh, I do know this about linguistic theory. I was just talking about that and what it means in <u>my</u> world." (11/03)

One can see from this interview that these sessions were already causing Katherine to reflect more deeply on the value of understanding theory so that she isn't re-inventing the wheel when she tries to understand her students and plan instructional scaffolding based on sound principles and what she knows about these students' individual needs.

Yet, the following statement about theory made during our November 10 session shows that Katherine values theory, yet still struggles with confidence in her ability to connect it to her scaffolding decisions.

> It's important because you can't explain. I'm trying to help other teachers, because I'm seeing the limitations of my job mean that one way that I can help my students is by helping their classroom teachers. When I can't be there, I can do this to help them. And if I can't explain. . . When I came in there they were like, "Oh wow. What a great idea." And I want to be able to say, "Well, we know because of research that…." (11/10)

In conclusion, these interview excerpts were presented to provide the reader with the essence of the video sessions which occurred between Katherine and me and to better visualize Katherine's decision making within the context of her classroom. While Katherine had many strengths as a novice teacher, her views regarding concepts such as the notion of scaffolding, the connection between assessment and planning, and her views on the value of theory reflect what Spiro, Coulson, Feltovich, and Anderson (1988) might

refer to as oversimplifications resulting from introductory learning. In the following section, I will explore Katherine's decision-making more fully as well as reflect on the impact of this individualized case-based process on her scaffolding decisions.

CHAPTER 5

RESULTS

In this chapter I examine more specifically the two-fold purposes of this study. The first purpose was to explore a novice ESOL teacher's decision-making processes as she scaffolds instruction for her students. The second purpose was to explore how Cognitive Flexibility Theory could inform her decision-making processes.

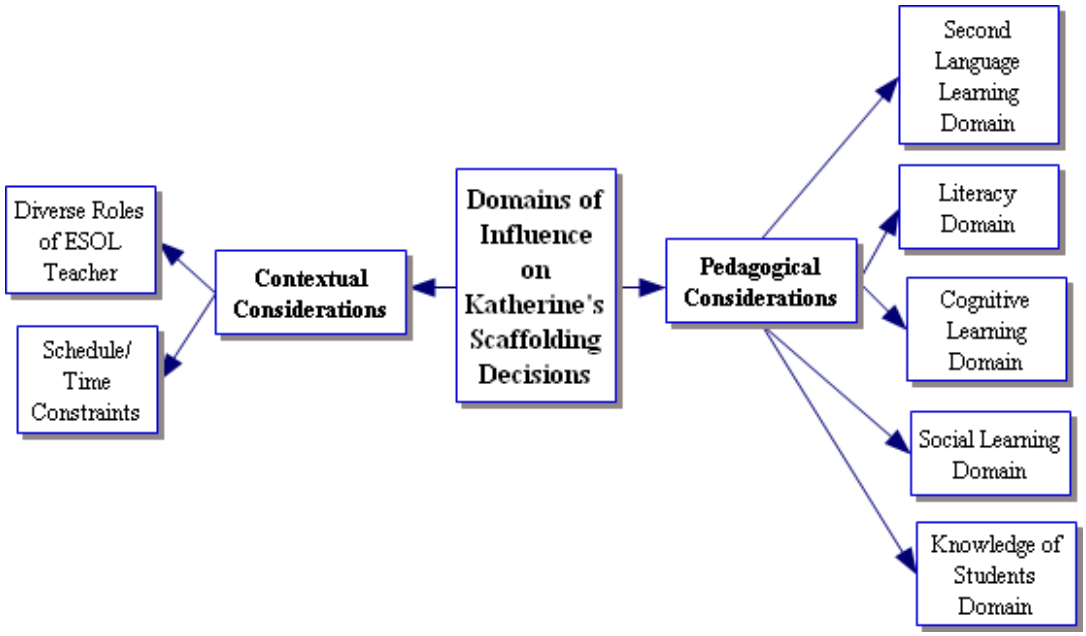
A Description of Katherine's Decision-making Processes

The guiding question which framed this part of the inquiry was: How can the decision-making processes underlying a novice ESOL teacher's instructional scaffolding be described? Chapter 4 illustrated the ways in which Katherine selected a video, taped episodes of her classroom teaching, and then reflected with me on her own decision-making processes. In that chapter I describe three categories of views through which Katherine's decisions were filtered as she scaffolded instruction.

My initial interview questions, which were created after a thorough review of professional literature in the field on scaffolding, gave me a starting point from which to think about the larger domains that made up the kaleidoscope of decisions she made in these scaffolding events. I first analyzed our conversations for the particular domains that Katherine recalled drawing from as she made scaffolding decisions. As we reflected on our conversations and as I analyzed our conversations each week, I began to see a wider range of domains and contextual influences that colored Katherine's scaffolding decisions.

These domains which impacted Katherine as she made scaffolding decisions could be grouped into two major strands to make them more understandable, (a) pedagogical considerations, and (b) contextual considerations (see Figure 1).

Figure 1. Domains of Influence on Katherine's Scaffolding Decisions



Pedagogical Considerations

As Figure 1 shows, Katherine drew heavily upon many areas as she made scaffolding decisions for her ESOL students. These domains reflected areas in which her university coursework would have had the most impact. Among Katherine's coursework were classes in linguistics, second language methodology, reading and writing process and methodology, as well as psychology and learning theory, so it follows logically that she would be influenced by considerations from all of these fields.

While an attempt was made to separate the focus of the domains which influenced Katherine's decision-making in an effort to identify them, many of the responses in this major category were cross-referenced because they derive from related fields of study.

For example, Katherine was drawing from second language learning theory, reading theory, and cognitive learning theory when she focused on repetition and context in the following response:

> They have to learn [vocabulary] in context, which I was trying to do through the words, letter, the placement in the words, hearing the sounds in the words and using the manipulative thing. Then later, I followed up with more reading in the book. What's the beginning of the book? What's the middle of the book? They did something with *Sports Illustrated*, and I did like a treasure hunt thing with *Sports Illustrated*. I did, What movie is at the beginning of the magazine? What's in the middle?...repetition and context was forefront for me. (11/03).

Therefore, the categories of domains from which she drew were expanded to reflect the wider range of influences that can be drawn from within any one particular scaffolding decision. Katherine's decisions were influenced by considerations of pedagogy related to second language learning, reading and writing process, cognitive learning, social learning, and Katherine's knowledge of her students.

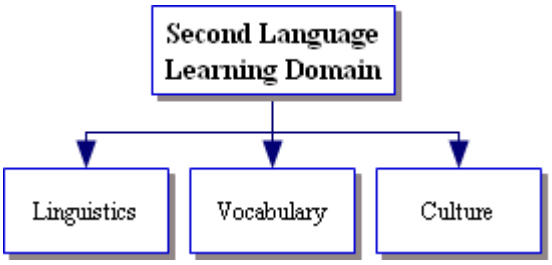
Second Language Learning Domain

Within the category of second language learning, I included scaffolding decisions related to all areas of second language learning (See Figure 2). At times this category overlapped with the literacy domain; however, even when this occurred, it was clear to see that Katherine was also keenly aware of and focused on her students' language limitations and spent considerable thought and effort focused on ways to assist their understanding specific to their language limitations. For example, Katherine explained that one of the teachers had expressed concern that the students didn't transfer the learning from their small guided reading groups to their other textbooks. She told Katherine that they knew words like glossary, table of contents, caption, etc., but didn't use them in their content classes. Katherine described her response as follows:

> And, of course, I'm thinking you can't hear it once. It takes repetition and time. So I can help by repeating and using those words in different contexts. I wanted to bring that in today, even though it wasn't my original plan. It took time away from my revised study guide. That picture – I wanted them to see that that was a very clear picture where there was one picture and one caption. So I held it up and got everybody's attention. I used hand motions and pointed to it. Because I knew they'd heard that word…. (11/10)

Entries such as this indicate that while Katherine is drawing from reading theory, she is also clearly focused as well within second language learning theory. Figure 2 shows that while scaffolding instruction for her ESOL students she made decisions based on her understandings of second language learning related to the areas of linguistics, in second language vocabulary learning, and in issues surrounding the impact of culture. To clarify that Katherine was thinking about these issues as they relate to second language learning, a description of each of these subcategories follows.

Figure 2. Katherine's Decisions from the Domain of Second Language Learning



Linguistics. While linguistics can mean a broad spectrum of language-related issues, for the purposes of this study entries were placed in the linguistics category to describe the decisions Katherine made based on oral and written scaffolds in phonology and phonics. Katherine helped her students to chunk sections of words such as "ing" to find the base word, which is a skill that general education children whose first language is English would normally have mastered by third grade. She also focused on the relationships between sounds and letters as when she said, "I was thinking that they were

doing war. And he was trying to say "/ah/…" "It's not exactly /ar/"(11/17). She also found ways to incorporate linguistics/phonics learning across the curriculum as when she created a poem about heat conduction to meet one of the content standards while also teaching rhyming words.

While Katherine was keenly aware of these types of issues related to second language learning in general, I did not see evidence during this study that she was making connections to individual student's specific first languages as they would differ from English. Katherine is fairly fluent in Spanish, so it would seem that she would naturally be more aware of the differences between Spanish and English phonology, but I did not see evidence of these types of connections in a specific way to each student's home language.

Vocabulary. Katherine's decision-making was impacted by vocabulary issues at almost every turn. She pointed out text features related to vocabulary such as when she taught her students that when words are highlighted, or bold, they are the vocabulary words upon which they should focus, and she taught them how to use a glossary. Some of the time she was building understanding of vocabulary related to the content standards, such as developing knowledge about the Creeks and Cherokees, while other times she focused heavily on vocabulary that would transfer and impact other learning. As she said,

> …phonemic awareness, phonics – it's all about that, initially. The beginning, middle, and ending thing was all about…well, you can't tell what you know with all those things if you don't know what those words mean. So that's an academic vocabulary base that you need to show that you know phonics, sounds, and all of that, in words. (11/03)

A conversation in December highlighted Katherine's reflective insight on the topic of which vocabulary might transfer and which might be the most important for her students to learn. We had been discussing an incident in which a student had been confused with the words light blue and bright blue.

> K: …I'm not sure at the end of the day, if it really is going to make a difference in his life to know that that was bright blue. All those little things add together.
>
> D: When you think about how many times we say things like that…
>
> K: That's exactly how I feel. It unlocks the code to many things. If you can't complete a class assignment because you don't know what light blue is, then it does matter. (12/08)

I did see evidence that Katherine thought about students' vocabulary knowledge as it related to their specific home country as when she brought out the bat book to show a Korean student who did not know what a bat was since they do not have them in his home country. This focus on vocabulary that is specific to students' needs based on their country of origin is further exemplified in the following response. We had been discussing the test in which she encouraged the students to draw animals if they could not think of the names of the animals. I asked her if she had been thinking about their culture.

> To me, vocabulary limitations are culturally-driven. I don't know if they have bears in Korea. Teddy bears are a big thing for us here. But I don't know if they are in Korea. He talks a lot about other animals like, "Monkey". He loves to talk about monkeys. He knows a lot of animals – cows and chickens. But I've never heard him talk about bears. (12/01)

I did not see evidence that a systematic vocabulary program was in place during this study other than the content specific words that would be required to past the chapter tests. Katherine seemed to make vocabulary decisions based on her observations of

words and concepts her students did not know during a lesson or from her knowledge of their backgrounds and cultures, and from information from the general education classroom teachers.

Culture. Katherine said that an awareness of the impact of culture permeates all that she does. As she so clearly stated, "Like I said before, I don't think I ever *don't* think about their culture" (12/01). At times this awareness seemed to be focused on the topic of instruction and a concern over the lack of schemata the children had related to the topic, or to the vocabulary. At the same time, this focus on the topic seemed to cause her to be concerned about their interest or engagement with the topic as the following excerpts demonstrate:

> In some ways, it's almost like I also know that rocks and minerals, I don't think that that's important to them. So I'm wondering how much that's affecting their retention of what they've studied. I don't know if that's part of their background at all. I don't know if they care. (11/10)

> Well, yeah. Any time I'm teaching those kids that Social Studies stuff, I just always think it's foreign to them. They are foreign to this culture. It's not part of their background. So I question whether it's even good to worry about even teaching it. But, on the other hand, it's on the test. And I feel like I'm teaching Reading and Language Arts, and the Writing process. Everything is being taught. (12/08)

Katherine's scaffolding decisions also drew from her awareness of the impact of culture on the children's interactions at home. For one thing, she tried to make her lessons engaging and provided lots of reading for fun because she knew that reading and education in general isn't valued in all of her students' homes. At the same time, she made some other scaffolding decisions based on the knowledge that in other students' home cultures education is so highly prized that her students feel undue pressure to

perform. The following excerpts exemplify these two extreme pulls in her decision-making:

> That group, one of them (not the one I was working with that minute) told the teacher that when he grows up, he wants to be a house painter like his dad. So she's mentioned that to me several times. She says, "Well, he wants to be a house painter." You know, that's fine. But I want him to be a house painter that can read. (12/08)

> And their attitude toward learning, oh, my word, that's huge. Look at the difference between that student and my [deleted] student who's having stomachaches because he doesn't have 100 on his work…I allowed him to use his study cards to complete the test on Creeks and Cherokees. He kept saying to me the whole time, "It's cheating. It's cheating." He got 100 on the test. "It's cheating." Where the other students would say, "Wahoo!"(12/08)

Katherine also thought about and attempted to scaffold instruction based on her awareness that some of her students don't have the types of conversational interactions at home which foster retention such as those which build home-school connections. When I asked her about an incident in which she scaffolded learning for a student by making a connection to something he had asked about during a chance encounter earlier in the day, she said:

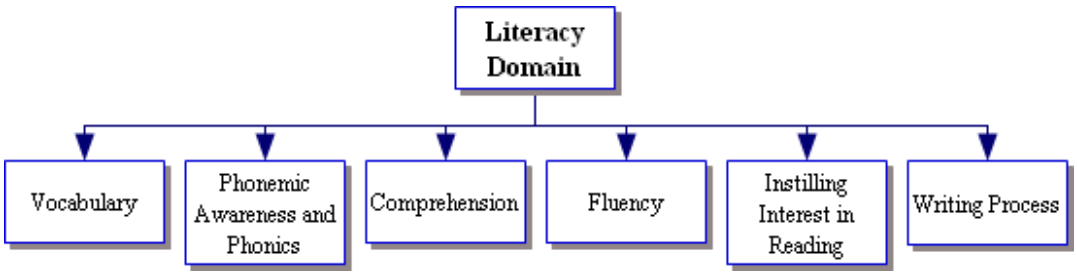
> And there's something, too, about – there's just something about familiarity with a person. The fact that I just happen to know what he was doing this morning and was able to tie that in to something that he's doing in the afternoon, and in a completely different subject - I think that's helpful…I think that children that are raised in households like that tend to be really successful in school because their parents pull things in all the time and make connections. (12/08)

Katherine's understanding of these issues helped her to make connections between the language and literacy skills they brought from home and those they would need to read and write at school.

Literacy Domain

Entries were placed in the literacy domain if they indicated that Katherine was considering the issue as it related to the students' abilities to read and write, but not necessarily related to their ESOL status. As Figure 3 shows, Katherine drew from a range of decisions related to this domain.

Figure 3. Katherine's Decisions from the Literacy Domain



Vocabulary. Katherine drew heavily from her awareness of her students' need for vocabulary development beyond their specialized needs as second language learners, although the two areas are intertwined. She expressed often that context and repetition are crucial to her students' vocabulary learning and ability to transfer learning to other areas, so she was often thinking of these things as she scaffolded instruction. As she said, "We know it takes a certain number of times to really know a word, in a different context" (11/10). Katherine also considered the need to make cross-curricular transfer with vocabulary, as was demonstrated in the previous excerpt in which she discussed the importance of students understanding the terms beginning, middle and end before they can participate in a phonics discussion on beginning sounds. Another time, she remembered that the students had read a holiday book about a train. The following conversation between Katherine and her students demonstrates how she used that

knowledge to make a vocabulary connection with the term conductor as it relates to heat energy:

> K: You were reading The Polar Express. What was the guy's job in that story? What do we call that guy? He's a conductor, too. A conductor of a train and a conductor. . .
>
> S: It moves.
>
> K: Right. It has to do with something moving. The conductor of a train is doing what?
>
> S: Moving.
>
> K: Moving what?
>
> S: The train.
>
> K A conductor when we're talking about heat is moving what?
>
> S: Train. I mean heat.
>
> K: What are two words that are also the same as heat? It starts with a "th".
>
> S: The mama bear.
>
> K: it's ther.
>
> S: Ther – mal. Thermal.
>
> S2: Thermal energy.
>
> K: Thermal energy is the same thing as?
>
> S: Heating. (12/15)

In addition to using repetition, the above excerpt shows that Katherine was creative in using multiple means of presenting words. The following conversation which was presented in part in the section on ESOL vocabulary, is presented here in full to elaborate further Katherine's emphasis on vocabulary as she demonstrated not only her

consideration of multiple ways of presenting words, but also her understanding of the complexities and the value of vocabulary knowledge to these students in understanding all types of texts:

> K: [Student] was having to do something this morning where he needed to know what light blue was. So he saw me in the hall and he ran out in the hall and pointed to it. "What is light blue?" So I was showing him different colors – pencils, dark blue/light blue, dark red/light red, like that. And then when I said that –[in the video] when I was trying to get them to turn to the right page and I said bright blue, then I thought to myself, that's something that – what does that really mean?
>
> D: And what does *light* blue mean? Because he's saying light.
>
> K: Right. And I did explain to them this morning light blue and dark blue, and we went through several different combinations of dark and light. And then when I said, bright, I just thought, oh, bright blue. So that's why I turned to him to make that connection. Plus, it's a bright blue page and he was looking for light blue this morning. So it was another example. . .
>
> D: Did he get it?
>
> K: I think so.
> [*Interruption*]
>
> D: Start at the beginning. Tell me what you were thinking about doing that with him.
>
> K: Well, I was thinking about this morning that he was struggling with the bright and light blue, with an assignment that he had. It was a class assignment. And so I had taken the time this morning just to show him light blue and dark blue with different pencils. When I said that, when I said, "Turn to the page. It's a bright blue page," I thought to myself, "Oh, another one of those idiomatic English phrases -- bright blue. What did that really mean?" And so that's why I turned to him and pointed and said, "Bright." I also pointed to the light and he looked up at the light and said, "The light's bright." I'm not sure, at the end of the day, if it really is going to make a difference in his life to know that that was bright blue. All those little things add together.
>
> D: When you think about how many times we say things like that…

> K: That's exactly how I feel. It unlocks the code to many things. If you can't complete a class assignment because you don't know what light blue is, then it does matter. (12/08)

Katherine was keenly aware of the impact that vocabulary knowledge holds for her students, and worked tirelessly to help them unlock words. However, as mentioned in the section above focused on vocabulary as it relates to their ESOL status, no systematic method for presenting, recording, or assessing vocabulary seemed to be in place other than the content area vocabulary and the high stakes tests at the end of the year.

Phonemic awareness and phonics. Katherine's ability to draw from this domain was demonstrated by her inclusion of scaffolding focused on chunking, focusing on sounds in words, rhyming words, and word families. However, it is also important to emphasize that she often attempted to scaffold students by focusing their attention on the text itself, so that they would notice the letters that connected with the sounds. She said, "Sometimes I feel like they try to read words and they are not looking at the letters. Because they will say things that – I know they know the letters now. But they're saying things that aren't related. So I make them say the names of the letters" (11/17). When they would ask for help in spelling a word, she would ask those whom she knew could do it to sound out the first letters, etc., yet she rarely gave them time for extended practice in writing to use this skill. Katherine expressed how difficult it is to allow time for writing when she only sees the students in 45 minute segments three days a week.

During my initial observation of the context, Katherine formally assessed students' phonics and reading levels. She told me during that time that she wanted to focus on a more systematic phonics program, yet later she agreed with me that her

phonics lessons were not systematic as she had originally hoped. She confirmed that the only systematic phonics instruction her students receive in third grade is through their spelling program in their general education classroom and that most of it is beyond their grasp. Katherine was frustrated by this, and hoped that after the beginning of the new year she might be able to see the students on more days so that she could provide them with more systematic phonics instruction.

Comprehension. Many of Katherine's scaffolding decisions reflected her knowledge of the reading and writing process as it relates to students' comprehension of texts. She made decisions based on her recognition that she had to compensate for their lessened ability to comprehend texts in their general education classes. She made scaffolding decisions which drew from her understanding of their need to read connected text, to notice and understand textual features such as captions, glossary, and bold words, and through the incorporation of both shared and silent reading of fiction as well as non-fiction texts in her lessons.

Katherine also thought often about her students' ability to make connections from texts to other parts of the curriculum and to their world. She considered not only how to scaffold these connections to help students retain information and make sense of their world, but also how to scaffold them to think about texts at a higher level. She was often frustrated when she felt that her students were not pushed to comprehend texts on a higher level by their general education teachers. For example,

> I think I also think about high-level thinking. I don't want them to always be on the bottom of the pot, as far as on the knowledge level - that we're always just trying to teach them these basic concepts. I just want them to actually think beyond. …That's something I was thinking about today. I want more for them than the lowest echelon. And I think they <u>can</u> do that. For example, this is a different class. … [student] did his book report on a

> story which is the butterfly. And it's about a little boy. He watches this cocoon. He doesn't speak English. He's from Mexico. He's poor. He doesn't know what's going on. He's in school. But every day, he watches that caterpillar and it becomes a cocoon and then it becomes a butterfly. And at the end of the story, he begins to speak English. And he makes a friend with a kid who wasn't very nice in the beginning. So he made that connection. He actually made that connection that the boy was like a butterfly. That he changed. …And to me, wow! That's going beyond just your lower level. And he's having to make a diorama [in his general education class], which is not my favorite. Then, today, when he was making his diorama, he was gluing on the pieces. He had to have the title, the author, the etc. The main character's name is Francisco. He's a little boy. Then when he went to put the author on he said, "His name is Francisco." And I said, "Wow. I didn't even notice that. Why do you think the author's name is Francisco and the little boy's name is Francisco?" And he said, "I think that was his story." To me, that's higher level. (12/15)

At the same time, Katherine was aware that her students were unable to comprehend much of what they read in their subject area textbooks. She was thoughtful about this as she created lesson plans and scaffolded instruction as is demonstrated in the following conversation between myself and Katherine.

> K: This assignment came as a result, as so many of mine do, as a reaction to something that's done in the class.
>
> D: In the regular classroom?
>
> K: That's not accessible to them. And then, when I see it, I go, "Oh, they didn't get that. Unless we do something, they are not going to get it." They had done this all with words – roles of men and women in Native American culture. And they had said fishing, gathering. . .
>
> D: They wrote words down?
>
> K: They wrote words down - with no pictures, no visuals, or anything. I wanted to do something, because I felt like it is part of the assessment at the end. And I wanted them to really know what all that stuff was. (11/11)

The students' inability to comprehend their content area lessons and assignments concerned Katherine and influenced her decision-making greatly. She brought in texts

written at a lower-level, and provided them with several comprehension strategies. Often, however, it appeared that even these lower-leveled texts were not at the appropriate reading levels for the individual students, so even within this small group she had many interruptions and explanations.

Fluency. Katherine's consideration of fluency was demonstrated through her encouraging choral reading and repeated readings of text. She often incorporated cross-curricular knowledge as she designed activities such as in the following excerpt which demonstrates that she was successful in having her students create notecards of information related to a content standard, which they had gleaned together through shared and choral reading. The student then was able to gain fluency practice through repeated readings of the study cards.

> There was a session where we were studying together using the cards. It was really great for me to see …[student name] who has been the most struggling reader, be able to read. He could read all these questions. There's a possibility on CRCT that he'll see the word Cherokee and know it. His decoding is improving. His fluency is better. A lot of things are improving. And that is just from reading those cards over and over. So he was getting fluency practice and he was getting. . . (12/01)

During most events that I observed, Katherine involved the students in choral reading and repeated readings of texts indicating that she valued fluency practice.

Instilling interest in reading. As Katherine made scaffolding decisions she also thought about the importance of instilling a love of reading both for pleasure and for gaining information about the world. As Katherine explained when I asked about her goal for a particular lesson:

> I wanted them to enjoy the book. It was really for enjoyment. We didn't write about it. I wanted it really to be an enjoyable experience with non-fiction. In the beginning, I mentioned that it was non-fiction. I wanted to extend that little program, which is systematic. And I'm happy about that.

> But it doesn't have those really interesting, rich reading experiences. And they are all in the areas where they struggle the most. So I really did it for just purely – for enjoyment. Maybe learn a little bit about bats. But, mainly, I want them to be turned on to books. So that was really what that was about. (10/27)

In mid-November, she expressed how difficult it is to have time for extended reading for pleasure when she expressed "…I feel like we should be reading every day. It's really hard for me to not read something, but there's hardly any time" (11/17). As noted previously, in December, when I asked Katherine if she thought about how cultural attitudes toward reading impacted her students, she described a situation in which a teacher had mentioned several times that a particular student said he only wanted to be a house painter implying that he may not need strong literacy skills. The following conversation elaborated on Katherine's perspective.

> K: That group, one of them (not the one I was working with that minute) told the teacher that when he grows up, he wants to be a house painter like his dad. So she's mentioned that to me several times. She'll says, "Well, he wants to be a house painter".. You know, that's fine. But I want him to be a house painter that can read.
>
> D: He needs to know the value of that.
>
> K: I want him to be able to read safety precautions. I want him to be able to read the bills.
>
> D: And you want him to be able to read for pleasure if he wants to read a novel.
>
> K: Right. And I want him to have the choice to be a house painter or not. That's fine if he wants to make that choice. But I don't want to just not worry about some of those things because that's what he says he wants to be at eight years old.
>
> D: Right. He'll change his mind a million times by then.
>
> K: Reading and writing are so valuable no matter what you do. He could be a painter/poet. (12/08)

It is clear from excerpts such as these that Katherine thought considerably about the value of instilling interest in reading not only for information, but also as a source of pleasure. Another area which concerned Katherine, and which she struggled with scheduling for her students was extended writing.

Writing process. Katherine frequently mentioned worrying about the writing process when she made scaffolding decisions, yet she rarely included any extended writing in her lessons. She expressed that she did not have time to teach writing in the three 45 minute segments she had with her students each week. Their writing was often laborious as they tried to complete lessons, so tasks with even a small amount of writing took large chunks of time from other types of instruction. Also, Katherine believed that she rarely taught the same content long enough to have a writing topic which would impact their learning. As she put it, "I want to do more writing. But I don't know. . . I know how to do writing. I don't know what to do writing about. You know what I mean" (11/03)?

She further explained this dilemma in the following excerpt:

> Yes. I was just thinking about writing. I think about it a lot – every day. But today I was thinking, "I want some cool writing to hang up." But about what? Especially when everything is interrupted. I never teach the same thing twice. Thursday and Friday are the only days I get to do the same thing. (11/03)

It is clear that Katherine was influenced by her knowledge of the value of the writing process, yet was unsure how to incorporate such lessons. A few weeks later, she pointed out that it concerned her that she is encouraged to incorporate open-ended writing strategies with her gifted students, yet not with her ESOL students. She then incorporated an open-ended writing prompt for her ESOL students on a test. She said

> So on the back of the last page, it was empty. And I just put on there "Which would you rather be, a Plains Indian or a Woodlands Indian?" "Why?" I don't know if any of them wrote anything on that. I'll be curious to see. But I thought, "Now, that would be a good writing assignment. So, I am thinking about the writing – getting writing in there. It's all so time-consuming. (11/17)

As the study progressed, she scaffolded the general education teachers to have the students create a PowerPoint book report presentation in an attempt to incorporate more writing. She began to have them take notes that they could use to study for their tests. Her thinking about how to scaffold both the teachers and her students in this area became more complex and she became less willing to let writing be dropped from her lessons in the service of her schedule. For example, when considering that she has these students for such a short period of time, in December she stated, "Maybe what I should do is have them write a journal with me. I do that with other students" (12/15).

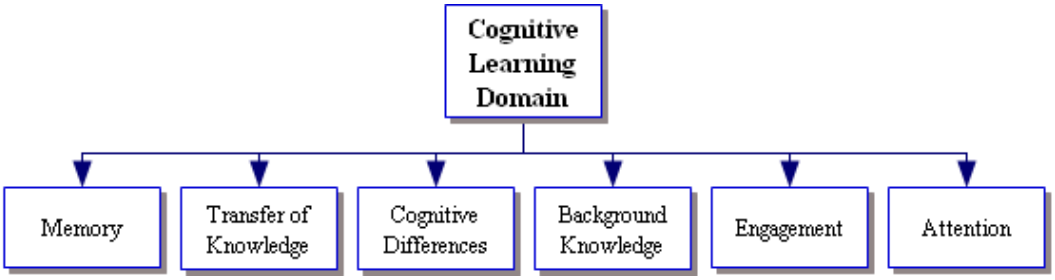
As these discussions demonstrate, Katherine drew from her understanding of vocabulary, phonemic awareness and phonics, comprehension, fluency, the importance of instilling an interest in reading, and the writing process within the domain of literacy learning. In the following section, I will illustrate how she also drew heavily from the domain of cognitive learning as she made scaffolding decisions.

Cognitive Learning Domain

While many of the learning domains were cross-referenced in this study because they derive from similar theories, the data in this domain was significantly cross-referenced with other categories because research in the field of cognition and human learning has so heavily influenced other fields of learning. Therefore, I attempted to specifically group data into this category if the focus of the entry was on learning theory that focused on memory, retention, engagement, and other foci from cognitive learning

theory whose value as a distinct decision-making influence may have been overlooked if not viewed through this separate lens. As demonstrated in Figure 4, Katherine clearly drew from this domain as she made scaffolding decisions for her students while considering learning theory related to memory, transfer of knowledge, cognitive differences among students, background knowledge of the students, student engagement, as well as issues related to attention.

Figure 4. Katherine's Decisions from the Domain of Cognitive Learning



Memory. Katherine often spoke of her consideration of how to use mnemonic devices and repetition to help students recall information. My analysis of the data revealed that she used graphics, hand motions, and letter associations for the express purpose of helping students recall information. For example,

> K: As I'm thinking about this, I think I draw a lot subconsciously on psychology of learning. The things I learned in there about the brain and memory. I think recall – what she was talking about was where they had learned something, but then they couldn't recall it or they couldn't transfer it. I feel like that little bit of scaffolding helps sometimes with recall - which is why I did that on their little test. If I'm trying to get them to come up with crust mantle core, and I do "cmc", that might help them come up with the rest.
>
> D: Mnemonics.
>
> K: Mnemonics, yes. Mnemonics is big, I think. I think I think a lot about the memory. Because, a lot of times, it's like they don't really retain. (11/10)

She also revealed her consideration of repetition as a valuable tool for recall as she made scaffolding decisions. As she said, "And repetition. I think repetition. … Learning and retaining vocabulary. We know it takes a certain number of times to really know a word, in different context" (11/10).

Transfer of knowledge. While these memory devices also overlapped into the students' ability to transfer learning, data analysis revealed that Katherine was thinking about all of these understandings to scaffold instruction. As she said,

> Transfer is something that is really a big problem for all kids. It's not always a problem, but for some kids, they don't seem to do it as well as others. And I feel like every synapse . . . what are those connections? Dendrites? Every connection I can weave a web to include things, there's more of a chance, at least, of them absorbing it. Plus it was repetition from the morning. (12/08)

Katherine's focus on her students' ability to transfer knowledge was also previously demonstrated in the sections focused on vocabulary development in which she discussed academic vocabulary and text features that would transfer to other content areas. She was keenly aware that her ESOL students had difficulty transferring knowledge from one area of learning to another, and this awareness colored much of her scaffolding decisions.

Cognitive differences. Katherine also thought about the differences in general cognitive ability among her students. She drew from her understanding of Bloom's Taxonomy and wanted to be sure that she scaffolded her students to use higher-level thinking. She also expressed frustration that others don't always realize her students' potential saying, "Unfortunately, I think so many people just get in a remedial mode. ESOL shouldn't be remedial. This is not a remedial class. I think that's the perception that is starting to really bug me" (12-15).

At the same time, Katherine had to also make decisions regarding ways to scaffold those students whose cognitive functioning was not as high as others as exemplified in her comment, “He's being tested for autism and everything. And I was thinking, too, I wonder if he'd do better if I gave it to him one-on-one - orally. I think they're going to find out there's something really different about him” (12-01).

Katherine clearly considered a variety of ways to help her students remember the influx of new information they were being faced with as ESOL students. Along the same lines, she drew from her understanding that learning builds on prior learning as she considered the previous knowledge her students had attained.

Background knowledge. Katherine’s awareness of her students’ background knowledge related to various content-area topics came into play as she made scaffolding decisions. In a previous section I mentioned that she thinks about their cultural backgrounds and consideration of topics and understandings they might not have developed due to cultural differences. However, other data entries indicated that Katherine not only was aware of those differences as they related to culture, but also of the need to build upon students’ previous learning from school. She considered what the content standards would have been in previous years and in previous lessons and made scaffolding decisions based on that knowledge. For example, in one lesson she said to her students, “In second grade you would have learned that buffalo are not in the woods. They were out in the plains. So, there were no buffalo in [name of state]” (12/01). Another conversation during a session in mid-December also reflects Katherine’s awareness of considering background knowledge:

K: But if their teaching is so segmented and isolated, then there is no tie-together. And we always say, "Why is there no transfer?" Well, because we aren't transferring. We aren't helping them connect.

D: We aren't teaching them to transfer.

K: No. We're not. And part of that's just the schedule and everything else. I think about my oldest two. I think one reason they were slotted early on as very potentially successful is they had a lot of connections. Because when I was there with them, I knew if one of them was interested in trains, and we were driving down the road and I saw a train, I would say, "Look. There's a train and it's going that way. That's the Northern."

D: It's that scaffolding that mothers naturally do.

K: Exactly. And I did that with them. So I think that I just think that way.

D: But that's really important, because that's where scaffolding came from. Looking at those mothers and thinking about how well a mother knows every little nuance of where her kid is on every level.

K: And that's one thing that's great about this job. It's that those children – they are my focus. And it's their whole daily life that's my focus. So I know everything that they're learning. Of course, the classroom teacher does, too. She knows even more than I do. But I try to tie in things that I know they're doing everywhere else.

D: And you're just holding all that in your head all the time.

K: Yes. I think because I do – I care about them so much. I mean there's no doubt. And I think that causes me to think about them with individual (*inaudible*) (12/15).

We can see clearly from this that Katherine drew from her understanding that knowledge must be built upon previous knowledge, and that she considered the background knowledge of her individual students.

Engagement. Katherine also thought about student engagement when she made scaffolding decisions. She created lessons that involved hands-on learning and involved

students in role-playing and art, in addition to using games for reinforcement. The following excerpt in November demonstrates this clearly:

> I brought them in and I said, "Okay, we're going to study for the test. Here's how we're going to study." We played basketball. I just use basketball for everything. And I would say, "Okay. Buffalo was most important to them." Well, they really didn't know. And I wrote Eastern Woodland Indians on one side and Plains on the other side on that whiteboard. And they didn't know. And I said, "Okay, let's just think. Let's think about what we know about buffalo." "They're big. . ." We were doing all this "moo" and they're stomping and they run and everything. "And what do we know about woodlands?" "Well, there are a lot of trees. Can a buffalo run around in the trees?" "No. That would be hard." We talked about funny things about buffalo running in the trees and getting stuck. (11/17)

When she felt that a lesson was boring, Katherine reconsidered how to make the lesson better the next day. This was not only true for her own classroom, but for her students' lessons as she went into their general education classes. For example, she discussed how strongly the students were engaged when she was able to convince one of the general education teachers to try a PowerPoint lesson with Katherine's students.

> It's just torture for her. And then we realized, the first time we got the laptops out, the class that she has a hard time getting to pay attention -- they're a little bit slow and they're a lot of things -- they were completely engaged. Everybody was totally into it. And they feel like winners. (12/15)

It is clear from these types of comments that Katherine was influenced by her knowledge of the value of student engagement as she made scaffolding decisions..

Attention. Katherine also drew from her awareness of the importance of focusing students' attention during lessons. This was demonstrated in the discussion of choral reading as Katherine scaffolded her students' attention to focus on the text while they were reading. She also considered attention as it related to scaffolding during class discussions. An example of this was on a particular Friday when she said she had been

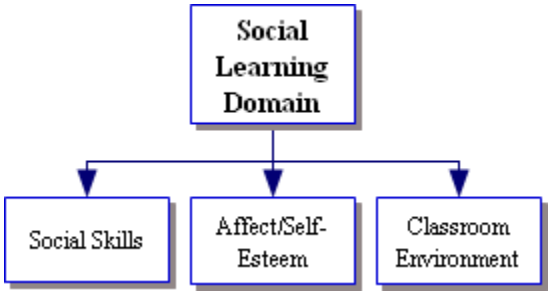
struggling to hold their attention all day with prompts such as "Okay, everybody hold the book up in the air." (11/10) to get their attention focused on the discussion at hand and through repeated lessons in which she asked them to put their fingers under the word and to keep their eyes on the text.

In summary, Katherine drew on several elements from within the field of cognitive learning as she made decisions to provide scaffolding for her students. An additional domain which influenced her thinking can be described as social learning theories.

Social Learning Domain

In the domain of social learning theory, Katherine made scaffolding decisions for her ESOL students involving (a) their social skills, (b) their affect and self-esteem, and (c) the impact of the classroom environment on their learning as shown in Figure 5.

Figure 5. Katherine's Decisions from the Domain of Social Learning



To some it may seem that teaching a small group of students eliminates issues related to discipline and social learning, but as Katherine's class demonstrated, smaller groups can sometimes illuminate such issues as students feel freer to take risks and develop closer bonds. Katherine was sensitive to these issues and worked to build a sense of community within her classroom and between her students. As she explained, "I like the table being together because the room is more –it's neater. It seems more

compact. But I wanted to do something where they were in smaller groups. Because, also, just for their sense of community." (11/17)

Social skills. Katherine considered students' diversity as she made decisions regarding how to scaffold them to get along with one another using the positive discipline approach that is carried out in her school. She proudly pointed out instances in which she praised one student's behavior and a different student imitated the good behavior. Within just this small group of third-grader students, she had to consider not only how to move them along towards their individual content area needs, but also how to help these individuals progress academically and socially who are often different not only in their culture, but also mentally and behaviorally. This was exemplified in the following excerpt in which her indecision regarding how to scaffold one of the students who is being tested for special needs reflects.

> I thought there's the one ongoing behavior thing with [Student]. And I almost got to the point where, because there's other testing and things going on, that I just think that I don't know that there's anything that I can do about that….But I look at that and I go, you know what, I don't think I can do anything about that. I don't think it's really a behavior management thing. I think it's beyond behavior. And so I think we're doing okay, if we just – for one thing, if the other kids are able to do what they have to do and he's listening. (12/08)

Affect and self-esteem. As Katherine made scaffolding decisions, she also drew from her knowledge of her individual student's affect and carefully protected their self-esteem. For example, in one session Katherine explained,

> I was really focused on [Student]. He hates the word test. Ever since yesterday, or two days ago when we started studying, he's like test, test. Every time I see him, testing? Testing?....And I knew he was getting big, watery eyes and getting a stressed look. And it made it worse because there were some questions that he could not do. I was trying to help him be able to come up with the answers. [12/01]

And in another excerpt she revealed,

> I don't know what the reason was. But, anyway, because of that [*starts video*], she always wants to share with me the book. I didn't have enough books. [*Continues video*]. She's the only girl and she always wants to share with me. And I did that. I realized that the way we are sitting, I'm totally focused – I'm looking at her. (12/27)

Some of Katherine's students were new immigrants to the United States and others had experienced some social traumas related to such issues as prejudice and one had been exposed to hate crimes. At other times, students were so aware of their own language limitations that they were frightened in new settings and of testing situations. Katherine was sensitive to the understanding that ESOL students are often faced with issues which impact their affect, and she clearly drew from this domain as she made scaffolding decisions.

Classroom environment. Katherine also drew from an awareness of the impact of the classroom environment with respect to room arrangement, materials, and interruptions as she scaffolded instruction for her students. She understood that the arrangement of furniture impacted the sense of community, as well as students' ability to see one another differently. As she explained, "…I changed my room…I want to break them up a little bit and not have them always in the same role, where they feel like we've been sitting here for a month" (11/17).

She also made thoughtful decisions regarding the materials and texts that she used as part of the classroom environment. She thought about which intervention text sets she had that correlated with the content standards for each grade, as well as how many of each material she had and who would need to share. As a general rule, Katherine felt that she had access to a wealth of materials from which to provide scaffolding to meet her

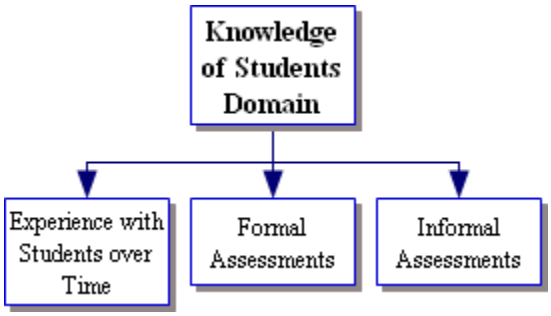
students' individual needs. Katherine chose these materials based on their being correlated to the content area standards while also requiring lower-level reading skills.

Another area which impacted Katherine's decision-making during scaffolding were the numerous interruptions to her schedule. For example, one day a speech teacher, who had been unsuccessful in working with one of Katherine's students during her scheduled time, entered Katherine's classroom and began working with the individual student. While Katherine is an accommodating teacher and aims to work collaboratively with all of the teachers to meet her students' needs, these types of interruptions did impact her scaffolding decisions.

Knowledge of Students Domain

An additional domain which impacted Katherine's decision making was her knowledge of her individual students' reading abilities, language abilities, and content area knowledge. This knowledge, which had the potential to inform her scaffolding, was derived through (a) her experience with these students over time, (b) through formal assessments, and (c) through some informal assessments (See Figure 6).

Figure 6. Katherine's Decisions from the Knowledge of Students Domain



Experience with students over time. Katherine had served many of her students consecutively for the past three years that she had been teaching. This was a paradox within her school because the student population as a whole had a high percentage of

transient students, while the population of ESOL students was fairly stable from year to year. This stability allowed Katherine the advantage of knowing her students' background knowledge and general learning abilities better than some of their general education teachers who only knew them for one year. As she put it, "Actually, I've known them since kindergarten. So I really feel like I know them" (12-15). This allowed her to understand their home culture and their personalities, as well as to have a vision of the content they had previously studied or struggled with in earlier grades.

Formal assessments. Katherine also had access to formal measures of her students learning. Her students' CRCT test scores from the previous year were in their permanent files, and Katherine had clearly studied them. During a discussion about the impact of ESOL students on high-stakes test scores, Katherine said,

> Do you have enough [ESOL] students to affect significantly the test scores? Because we do. …and as a result, I'm on the data team. And I got on that team for a reason. Because every time I go to a faculty meeting they are talking about the tendancy, dah, dah, - of the ESOL. So I made my graph and I showed – here's every one of our ESOL kids. And I highlighted in green when they passed. And most of them passed.(11/03).

However, when referring to the particular students which she was videotaping for my study, she said, "This is a third-grade class and I feel the pressure of the CRCT looming. None of these students passed the reading section last year, and I don't feel there's much hope [of their passing] at this point (10/06). She expressed that this was the reason she wanted us to focus on this group for this study. "I feel I need to get a grip on this particular group of students, not just on their reading difficulties but on my own difficulties in knowing what, when, and how to work with them" (10/06).

In the weeks before school began, I often asked Katherine about assessment data. She expressed that the general education teachers were happy if she gave some

Developmental Reading Assessments (DRA)'s for her ESOL students, therefore she would have some information about their reading levels from these DRA's. She would also have their spring standardized test scores, as well as their standardized ACCESS language test scores which is the state approved test of English language ability. I also observed Katherine assessing students' phonemic awareness and letter/sound recognition during the first week of school. When I commented that she knows a lot about them from the previous year, her response was:

> Right, like for example, I have two – I have one student who is really weak. He's in second grade going into third grade, and he came here in the middle of first grade towards the end – like the day before his CRCT. And he could not, he didn't know his abc's or anything, even in Spanish I'm pretty sure. So he went back to kindergarten for the last few weeks of school, then he went to first grade, then he went to second grade, now he's going to third – and I wonder about his phonemic awareness still. And I did, I tried to use a little phonemic awareness activity thing, I printed it off Dibels [a reading assessment], I used Dibels to see, and it seems like there's a gap in that very basic level. But I mean, he's in third grade…(07/28)

I know from conversations such as this that Katherine maintains formal assessment records, and that she is keenly aware that her students are at high-risk for failing some of the high-stakes tests due to their lack of proficiency with English. This domain impacts her scaffolding as she often refers to teaching concepts and vocabulary that they might encounter on such tests. During this study she did not seem to plan instruction based on information obtained from test data in a formal way, but she was aware of their test scores and their weaknesses, and it colored all of her lessons.

Informal assessments. Data were classified in this category if they represented formative or summative assessments that were teacher-created or were artifacts from a lesson that were assessed for the purpose of understanding students' knowledge.

Katherine was very involved in helping other teachers modify assessments to better suit the needs of her ESOL students, and she clearly used these assessments to determine if her students had met the goals of the general education classroom which she assumed were designed around the content-area performance standards.

While the initial interviews indicated that Katherine had numerous sources of assessment regarding her students' language and reading levels from which to plan scaffolding decisions, she did not refer to this data often or when planning, other than in a general way such as to refer to the group's lower ability in reading, or weak language skills. She did not seem to draw information from individual artifacts to focus more specifically on literacy levels, or decoding to plan her lessons. I continued to ask her about this. When I asked her specifically if she took notes of student errors from which to plan, she explained that she took mental notes, but did not document this type of information due to a lack of time and organization. She chose materials for the entire small group and during the time of this study never chose individual texts based on students' individual reading levels. While it may have been difficult to find various levels of texts for the content-area standards, I repeatedly suggested that she re-write texts or highlight short pieces of text on the overhead projector to "unpack" as a group to supplement her instruction. I did not witness Katherine designing materials in which she considered her students' individual reading levels as they related to content area instruction.

Katherine expressed frustration on several occasions that her students knew letter sounds but didn't apply them – yet she continually expressed that it was because they were rushing and not attentive. She provided scaffolding prompts to remind them to slow

down and use this knowledge, however she did not attempt to determine any other causes to their lack of application, nor did she keep any records of these interactions. Through our discussions, it became evident that she was aware that they were not applying the code and that she would like to be more organized about assessment. She said "Because that's something I've really noticed in the last few weeks. Just thinking about the errors they make in decoding. And it's not the decoding. It really begins with inattention. I know they know the code. They are not applying the code" (12/08).

During a later session she revealed that one of the teachers had asked her to help give a reading assessment to her students. During that assessment, Katherine discovered that one of her students was having difficulty as she encountered new vocabulary – big words. Through this piece of information Katherine realized that the student was skipping large words and not attempting to decode them. At this point, she stated that she planned lessons for this student to scaffold the student to chunk larger words to aid in the application of the letter sound knowledge she already knew (12/15).

As noted in the previous chapter, when I asked her if she looks at the children's work from their other classes when she collaborates with teachers she said, "No, I don't really look at their work" (12/15). She said, "I think I could do a better job if I were more organized and detailed with it. And part of that is because I don't have them every day. …I think, at the end of the day, at the end of the unit, when they take their little test, then we do see where they are - like Creeks and Cherokees – they all did very well" (12/15). Again, this comment reveals that Katherine used assessment to determine if her students were meeting the performance standards in science, which is the class from which she was pulling them. So although she was not assessing them as carefully with regards to

their reading and writing abilities, she struggled with the tension between teaching the content standards from the class from which she was pulling them, and teaching them the literacy skills they would need to be successful in all of their coursework. She expressed that she was frustrated because she wanted to keep more focused records and to have more time for reflection as she planned her lessons, but felt that contextual issues caused her to have to choose between important issues.

In summary, as Katherine made scaffolding decisions, she was influenced by pedagogical considerations from various domains (e.g. second language learning, literacy, cognitive learning, social learning, and her knowledge of students). In addition, Katherine's processes were also influenced by contextual considerations. These considerations will be discussed in the following section.

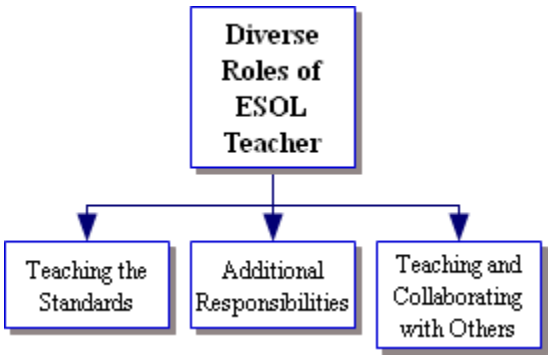
Contextual Considerations

Many contextual issues impacted Katherine's scaffolding and need to be illuminated in any discussion of her decision-making. Although the contextual issues overlapped and impacted one another, data analysis enabled me to group these contextual considerations under two major categories to highlight them: (1) Katherine's diverse roles as an ESOL teacher, and (2) her schedule and time considerations.

Diverse Roles of an ESOL Teacher

Katherine's roles as an ESOL teacher were diverse and somewhat undefined which greatly impacted her decision-making regarding scaffolding instruction for her students. The roles she filled can be categorized into (a) teaching the standards, (b) additional responsibilities, and (c) teaching and collaborating with others as shown in Figure 7.

Figure 7. Katherine's Diverse Roles as an ESOL Teacher



Teaching the standards. Katherine made a strong effort to teach the content performance standards while also teaching language and literacy standards. This was revealed in our first meeting when we were discussing planning. Katherine said,

> Last year I focused really hard on the content standards. And I mean that drove the content. And this year that's my mission, I want to allow them to go out of the box – even though I still need to do the content thing –and that's not even required. I don't have any sort of county mandate that I know of that says I have do to those standards beyond the ESOL standards, but I do – I want to because I think they need to (07/28).

While performance standards in general should provide direction and help define a teacher's role, the new ESOL performance standards under which Katherine is providing services are broad and did not help this novice teacher define how her time should be focused. These state standards for ESOL focus on incorporating listening, speaking, reading, and writing in the service of academic goals in the content areas. They were initiated during the year this study took place, and at the time of this writing are not published on the state website, so Katherine wasn't sure specifically what was expected of her by these new standards. Yet, she continued to grapple with the tension of incorporating language and literacy skills at the service of the content area standards. Near the end of October, she was explaining about a situation in which the students were given a test that was too difficult for their English language skills so she went to the

general education teacher and offered to help her develop a test that was more appropriate for the ESOL students. Katherine had been somewhat reluctant prior to that time to offer suggestions to teachers who were more experienced than herself. It is clear that she was considering the content-area standards as well as the ESOL standards when she said, "I suggested that she type up the study guide and cut it into strips and let them match the strips as their study guide. Also, reduce the number of things. I said, "Look at the standard and pick the three things that you really want them to know…" (10/27).

However, in order to meet these standards, Katherine's role vacillated between helping her students learn the standards and helping their teachers know strategies to modify content-area instruction to meet their ESOL needs.

Additional responsibilities. She was also influenced by additional responsibilities as an ESOL teacher, such as testing, interpreting for parents and students, finding resources to help their families. This impact tended to be felt mostly in the area of time constraints, and with the frustration around planning due to the interruptions that some of these other responsibilities can involve. Katherine thought that if she spent time making detailed lesson plans, then due to so many other unplanned responsibilities, her day would likely not go at all as she had planned and she would have wasted her time. As she stated, "It's a very fuzzy job. You spend a lot of time on things that you would think would be unrelated. Like I have a kid right now who failed the vision exam and we're trying to figure out how to get him some glasses for free" (11/17).

Additionally, there were other second language learners at the school who did not qualify for ESOL services, but for whom Katherine would provide help and materials to their teachers, as well as testing. She did these things not because they were required, but

because she cared about the students. I suggested that perhaps other resources were available within the school system to help alleviate some of these burdens, but Katherine felt a strong personal connection to these families and believed that her students would not be a top priority and might be lost in the shuffle if she did not intervene. Also, she believed that it was her responsibility as the teacher to try and solve problems which may interfere with her students' learning. As she said, "In the meantime, he's a child who's struggling with reading. But I'm teaching and I want him to be able to read. What if it's just that pair of glasses?" (11/17).

As a novice teacher, the freedom of defining one's own role can be overwhelming. Katherine was the only ESOL teacher in the building, therefore she was considered the lead ESOL teacher. She does have an area ESOL teacher who serves several schools. This creates a situation through which this novice teacher must maneuver to provide the best learning environment for her students and to define her role within that environment. Throughout the study I observed Katherine continue to grapple with the question of whether her time would be best spent helping her students to be more successful in their content area classroom or helping their teachers learn to modify their instruction.

Teaching and collaborating with general education teachers. Katherine was diligent about working to be an asset to the general education teachers with whom she worked. The content area class for this group of third-grade students changed every two-three weeks, such that the students worked on a social studies standard with a particular teacher for two to three weeks, then switched to a different teacher for science for two to three weeks before switching back again. Katherine attempted to meet with each of them

on a weekly basis to plan instruction and assessment, yet expressed that she did not have the time to actually meet with them that often. This collaboration influenced Katherine's decisions and planning, while also creating a big demand on her time.

> This week, it's really a burden on my mind. Planning. I don't have the time to plan with her. This was actually a good bit of planning -- what we did together. And she actually had them work on their cards in her class, when I was doing something else another day. So we actually did more than we usually do, as far as coordinating our stuff. She let them do that in her class. (12/01)

This collaboration with the content area teachers not only impacted Katherine's decisions while planning for her students, but it also impacted the way she modified assignments and helped others to scaffold their assignments and tests. Creating testing modifications for other teachers became a recurrent theme in the data. While this was an important scaffold for Katherine's students, it negatively impacted her decision-making as it took away from her time to plan instruction. As she said,

> I'm discouraged with planning because so much of what I do is in response or reaction to what the classroom teachers are doing. Not at just the grade level you're looking at but every single grade level. They come and ask me for help. This week I had a 2nd grade teacher come and say, "We're having a test on Friday. Could you go ever this with them?" And so, of course, I said, "Sure." And this was the test that she wanted me to go over. So when I finally sat down and looked at the test I went, "This is horrible." So I dropped everything. Because, first of all, she asked me to do that and I wanted to do what she asked me. I want to be supportive to the staff. But then I thought, "This is a good opportunity for me to help the teacher with modification strategies for testing." So I took her test and I did it (this is the color one) front and back, so it didn't look as long. But I just had three questions. She has ten on one page. And I did a little picture that supported the main . . (11/17).

This began to be such an overwhelming issue that at one point Katherine began to re-consider the value of direct contact with students versus spending her time providing their classroom teachers with ESOL modifications. She said, "I really am starting to

think that my planning – I can't always be planning to be with the kids. It's not all about direct contact. It's actually about how can I best help them. And it might not be direct contact" (11/17).

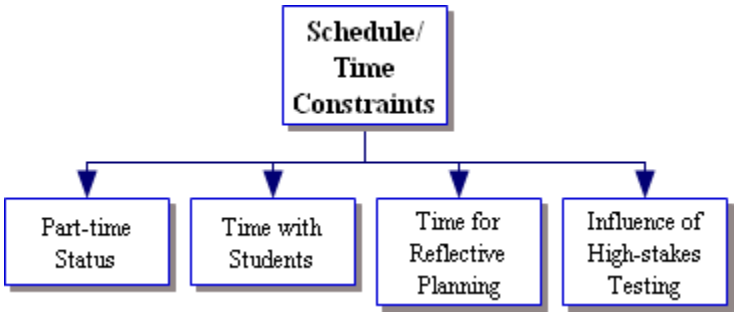
Time and Scheduling Constraints

Interrelated with the category above, Katherine's scaffolding decisions were impacted greatly by issues related to scheduling. Katherine's comment below is indicative of this interrelationship between her varying roles and helps illuminate the issues:

> For me, even though I'm not brand new, I'm in a little bit of a new situation this year because I'm doing the whole thing in three days. I'm required to do it in three days because I'm doing something else the other two days that really takes up my time. Before, I could just get paid part time and work full time if I wanted to. And I did that. So I've really had to adjust. And that's been a hard adjustment for me. Because before, I could work 8:00 to 12:00 or whatever every day, or I could work my hours differently, or I could just work full time.
>
> D: If you had a project that needed more time, you could take it .
>
> K: Yes. To me, the kids got more of a systematic – I was thinking about systematic. That word. And I really want that. But I'm teaching in an environment that's not systematic from the beginning. The schedule- It's hard to be systematic when, first of all, the job itself is not. I'm at the mercy of the classroom teachers anyway.
>
> D: What I call the tyranny of the urgent.
>
> K: Exactly. Whatever comes up. Then I'm working with the Standards. So if we're doing Heat and Magnets, I might really rather do something on *[title of book]* this week, but I can't. I have to do Heat and Magnets. I've got the curriculum, the Standards, the classroom teacher's agenda (which she rightfully has), and all those other factors that go on. Children leaving the country for traveling and holiday schedules. The test. The big test. All those things. That kind of makes the work itself not. . .
>
> D: It takes some of your control away from you.
>
> K: Yes. Lots of control. (12/20)

Katherine's schedule and time constraints can be categorized into groups according to (a) those related to her part-time status, (b) considerations of her lack of time with students, (c) the impact of her lack of time for reflective planning, and (d) the time pressures felt by the upcoming high-stakes test (see Figure 8).

Figure 8. Katherine's Time and Schedule Constraints



Part-time status. Katherine only served this particular group of third-grade students for one 45-minute segment on each of three days per week. As the above entry so clearly illustrates, this part-time status prevented her from having as much time and energy to devote to her ESOL students as she would have liked. During the other segments of these three days, she met with ESOL students from the other grade levels and undoubtedly felt the same frustrations with all of them, which impacted her overall frustration with a lack of time for making thoughtful decisions and reflecting on individual student's zone of proximal development in various areas of the curriculum.

Time with students. During several sessions when I asked Katherine what she was thinking about during a particular scaffolding event, she would begin with comments such as "Any time you are doing pull out, you are under a time limit. It's just time, time, time. Everything is about time" (10/20). In an earlier section in which our conversation was focused on Katherine's decision-making regarding writing, I noted that she rarely

included any extended writing in her lessons. As I mentioned earlier, her schedule impacted this not only because she didn't always know from day to day what she would be teaching due to the continued interruptions in her schedule and plans, but also because she also felt that she did not have enough time within the three 45-minute segments to incorporated any extended writing. This did concern her, and she continued to think about ways to incorporate writing. As she said, "So, I am thinking about the writing – getting writing in there. It's all so time-consuming" (11/17). She was able to work with one of the third-grade teachers to incorporate some writing as Katherine worked collaboratively with her to have students create PowerPoint book reports, however she felt less confident asking the other team teacher to make these types of modifications.

Time for reflective planning. Again, as has been mentioned in previous sections, any time we discussed reflection and planning, the conversation came back around to time and Katherine's schedule as when she said, "It's just that it's a bad year in that respect, as far as reflective time…" (10/27). In November, when I asked Katherine if she felt that this process was helpful, she responded,

> I definitely do. It's forced reflection, which is good. I think it's so easy, as an overwhelmed beginning teacher doing two different jobs, to just blow through and not reflect - even though I nag myself mentally to do that. Because I know how important it is and I really miss it. I had so much more opportunity to do that when I was in school. And I was doing this job every day, all day. So I really regret that. So seeing the video and all really helps. (11/03)

As one can see, Katherine's scaffolding decisions were impacted by this lack of reflective time for planning.

Influence of high-stakes testing. Data analysis revealed that high-stakes testing influenced Katherine's decision making due to the time pressure it created to design

lessons that would not only meet the standards, but also help her students learn skills they would need for testing. When I asked about this, she said,

> Everything about that [high-stakes testing] changes this job. I mean just everything. It's a frenzy. I was thinking the other day that there's no time for reflection or planning in this job. Because everything is at a frantic pace - and part of it is because our population has grown and my job has not – my hours have not. And I think that's just a microcosm of the whole county, and maybe the whole state and country. Do you know what I'm saying? (11/17)

Her frustration with this pressure was expressed when she stated, "It's horrible. I really don't want to be driven by that, but I am because I'm thinking, "Oh, my goodness. My little [student name] is going to fail!" (11/03)

Katherine believed that the high-stakes testing policies put in place in recent years have been good for ESOL students because it prevents them from slipping through the cracks, as she explains, "they are all getting an eye on them" (11/03). However, the pressures of knowing that her students might not pass during this critical year for advancement to the next grade, and trying to get them prepared for that did impact her scaffolding decisions.

Through the recursive analysis of this data and the consequent organization of the data into the categories of pedagogical considerations as well as contextual considerations, I was able to more clearly show that Katherine was drawing from many domains and to describe the many domains that influenced Katherine's decision-making as she scaffolded instruction for her ESOL students. She did consider what she had learned in our university courses, yet in the real-world setting of her school she needed to be cognitively flexible in order to better understand and apply this ill-structured concept to meet the needs of her individual students and their individual contexts. This led me to

consider the second purpose of my study which was to describe how the lens of Cognitive Flexibility Theory can inform this process.

Exploring the Influence of CFT on the Decision-making Process

The second purpose of this study was to explore how Cognitive Flexibility Theory can be used to explore and inform a teacher's decision making. The guiding question which framed this part of the inquiry was: How can the lens of Cognitive Flexibility Theory inform a novice ESOL teacher's scaffolding decisions?

As I interviewed Katherine each week, it soon became apparent that her conceptions of scaffolding were becoming messier and more complex as she became more cognitively flexible. Therefore, I analyzed the data to highlight Katherine's conceptions of scaffolding across the interviews. Through the process, I also began to notice that Katherine's sense of personal power was increasing as she became more aware of her ability to identify and connect theory from multiple domains to her practice and to define her role within the context in more assertive ways. Therefore, I further analyzed the data looking for signs of her growing confidence and sense of personal power. I began to realize that in order to highlight these connections I would need to see them interlaid chronologically. So rather than cutting this data and placing it into a computer program for analysis, I color-coded the interview data for this question using the two main categories of Katherine's developing conceptions of scaffolding, and Katherine's developing sense of agency. I also viewed the videotapes of all of the scaffolding events again to look for any instances which may have shed light on these categories.

Katherine's Developing Conceptions of Scaffolding

During my initial interview with Katherine she gave a strong working definition of scaffolding when she said, "I believe scaffolding is the support you give to a child or children to work above their natural level once you get the zone of proximal development … to help them do something they would not be able to do on their own" (July 28). Later in that interview when I asked if she thinks about the students' reading levels when she plans, she further indicated a somewhat strong, but broad understanding of scaffolding in her description of how she selects materials as she said,

> I look for things they can handle…So I spend a lot of time looking for things to support the text, though, because usually the textbook is not within reach. But then we use the books – the supplementary books – and then we take the textbooks after we've built some background knowledge and interest, and then we take the textbook and try to make it fit. (07-28)

This broad definition of scaffolding pervaded Katherine's interviews and was reflected throughout her lessons. This is exemplified in that initial interview when I asked if she had any questions about scaffolding. Her response was

> Well, I think that like I said to you before, it's so broad that sometimes I'm not sure if I'm even doing it. I think I've grown to understand even in the past few months that there are a lot of things that I just do without realizing they're scaffolding. It was a big 'aha' for me to realize that even just a routine is scaffolding (07-28).

In an effort to explore this topic further, I asked Katherine to describe what makes a scaffold different from other types of supports. Her response to my questions indicated that once the surface of this broad definition was scratched, she was uncertain about scaffolding. The conversation evolved as follows:

> K: Well, if the routines are scaffolds… so you're saying a routine is a scaffold or a routine is not a scaffold?
>
> D: I'm asking. What makes the difference?

> K: Well, I think that it, I guess the big difference to me is that it's helping them, it's not keeping them prisoner. It's letting them go beyond their own abilities to let them do a little bit more. Um, I just kinda think of the kind of classroom that I grew up in where everything was set, we did this page, and then turn the page, we did the next page, and I'm not that kind of routine. I guess I'm thinking of more of a broader idea of a routine, if I can walk in to this classroom and ask a question and if someone will help me find the answer to that question and if someone will be interested in that question. It's more of a... maybe that's the whole topical routine...
>
> D: Right, and this is what I'm talking about, and this is what we'll focus on the whole time, is thinking about, what is a scaffold, and how is it different from other types of support that we give to students. And so, sometimes I think routines might be scaffolds, and sometimes I think they might be
>
> K: Crutches?
>
> D: Well, depends on the routine. I think certain routines might be scaffolds for some students and not for others, depending on their ZPD. So how do we know?
>
> K: Yeah, right, how do we know, that's the hard part. Like I said before, I'm not sure what a scaffold is (07-28).

She followed this discussion by asking me how assessment builds into scaffolding. Katherine indicated that she kept DRA scores, but that she knows that her students can sometimes read at higher levels than indicated by the DRA scores. She expressed wanting to keep portfolios, but when I asked if she kept assessment portfolios as we had required in student teaching, she responded that she did not.

These particular comments reflected what I continued to observe throughout the study as Katherine grappled with this ill-structured concept. For many reasons, including the contextual complications discussed in earlier sections, Katherine's definition of scaffolding was broad, and this was reflected in the way she scaffolded her students. Her scaffolds appeared to be more focused on these students as a group rather than on their

individual needs. She did not see a clear-cut connection between assessment and planning for individualized instruction that directly impacted the way she scaffolded her students.

Throughout the process of observing and discussing the videos and reviewing some of the videos more than once, Katherine's definition of scaffolding began to become more fine-tuned. The path to these understandings was not direct, but rather reflected the messy contours and edges of the concept of scaffolding. Her over-simplified notions of scaffolding became more complicated as we progressed through the sessions. In our second discussion of this video session, Katherine said, "This group is limited in their ability level. For some of them, it was perfect. And it was a stretch for some…" (10/27) and during that same interview regarding scaffolding, she said, "It's going on constantly, or you're not teaching" (10/27). She was beginning to talk about these students' skills as individuals, although she did not begin to design individualized lessons, or keep notes on their individual weaknesses and strengths to build upon in later lessons.

As we moved through the sessions, the clips she chose to focus on became more focused on scaffolding individual students. In mid-November, she chose a clip focused on teaching a particular student to "chunk" the "ing" endings on words. Yet, she still showed a lack of confidence in her definition of a scaffold as she asked me, "Is that one?" (11-17). In December when we revisited that video segment for the second time, Katherine also indicated more thought about individual students' abilities during that session when she said, "…I have recently done, this year, letter-sound assessments on them, just to make sure that they had their letter sounds and that they can name their letters. We did phonemic awareness and phonics on all those kids. So I knew that he

knew all those letter sounds. But what he was doing was rushing"(12-08). When I asked how she determined where in the task to go back to, she responded, "…that's something I've really noticed in the last few weeks-- just thinking about the errors that they make in decoding. …It really begins with inattention. I know they know the code. They are not applying the code" (12-08).

Katherine continued to wrestle with the complexities of scaffolding. At times she seemed to fall back on her previous broad conceptions as when in early December she said, "My life really is just scaffolding. It's really my job here--not just the students, but the teachers too. Scaffolding them to know how to work better with my students…" (12-01). Even though in this statement it seemed as if she was again referring to all of her teaching as a scaffold, she had expanded her definition to include scaffolding the teachers to know how to work with her students. During that same interview when I asked her again to describe the difference between a scaffold and other types of support she responded "It's flexibility, It's spur of the moment. I don't know. I still don't know the answer to that question. To me scaffolding is something that you take away when you need it. You only use it when you need it…"(12-01). And later in that same conversation she expanded, "It's what makes a difference. It's important" (12-01).

In a follow-up email to Katherine I referenced the December 8 conversation mentioned above in which we were discussing the students' decoding ability. I particularly was interested in her assumptions that the students knew the code but weren't applying it due to inattention. I suggested that perhaps they didn't know when and how to use the phonics generalizations. Her response was as follows:

> The screening I used showed them to be "proficient" with phonics, but the reality is they don't use phonics generalizations as you said. That's where

> that assessment falls short. It's through one-on-one reading times when I notice this.… Another thing this process has done is to make me keenly aware of how far I am from where I want to be and completely dissatisfied with the way things are! It's a GOOD thing, just uncomfortable (Email 01-03)

These changes indicate that this process impacted Katherine's decision-making abilities as they influenced her to be more cognitively flexible in her conceptions of scaffolding. Another area in which the data indicated that this process influenced Katherine's decision-making was through her developing sense of agency.

Katherine's Developing Sense of Agency

As Katherine's conceptions of scaffolding became stronger and more rooted in what she knew about her students, she also was growing in her ability to connect her practice to theory, which gave her the confidence that accompanies having the strength of research to support her work. As with her developing conceptions of scaffolding, the path towards a stronger sense of agency was winding and full of ups and downs. As was mentioned in chapter 4, during our first video session, Katherine said, "People come up, classroom teachers, and say, "You're so good" and I am thinking that I hope they never know how little I really know" (10-20). However, as we talked about different theories each week that supported what she was doing, her confidence began to grow and she began to realize that she was indeed able to provide a rationale for her activities based in theory. During the second video session, for example, when I asked her to describe any ways she thought at this point that our discussions would influence her scaffolding, her response included, "I think, too, by doing this that I feel that I have a little more confidence to talk to other teachers about scaffolding" (10-27). Although later in that same interview when I asked her if she thought about linguistic theory, she responded, "I

don't think linguistic theory was right there. You know how I feel about theory" (10-27) implying that she felt it was unrelated. When I reminded her that all we do is based in theory, she responded, "I know it is. I know it is… I hate to say it because it's so superficial. I'm just much more conscious of the test" (10-27). Later, in November, it was evident that she was more focused on how theory helps her students with testing. While describing a session in which she was trying to help her students transfer learning, she explained,

> As I think about this, I think I draw a lot subconsciously on psychology of learning [class]. The things I learned in there about the brain and memory-- I think recall. What she [professor] was talking about was where they had learned something, but then they couldn't recall it or they couldn't transfer it. I feel like that little bit of scaffolding helps sometimes with recall. Which is why I did that on their little test. If I'm trying to get them to come up with crust, mantle, core, and I do "cmc" that might help them come up with the rest." (11-10)

Later in that same conversation she said, "We know it takes a certain number of times to really know a word, in different contexts" (11-10). Yet when I pointed out to her that she does these things that have come to seem natural because of what she knows about theory, she expressed that she still lacked confidence in her ability to explain this to other teachers in order to help her students. As she explained,

> It's important because you can't explain. I'm trying to help other teachers, because I'm seeing the limitations of my job mean that one way that I can help my students is by helping their classroom teachers. When I can't be there, I can do this to help them. And if I can't explain. . . When I came in there they were like, "Oh wow. What a great idea." And I want to be able to say, "Well, we know because of research that…." (11-10)

By December 8, when I asked Katherine if this process was valuable to her teaching, she responded "…there's nothing like actually looking at teaching and identifying the theory and all in the teaching to help you recognize it. …It's just putting a

very practical – it's bringing it down to reality. And then you really do understand the theory" (12-08).

During the next session, I began to sense that Katherine was gaining confidence in her ability to advocate for her students with other teachers. As we were discussing her role in the school and her concern that her students were sometimes being treated as remedial students and not being required to use higher-level thinking, she said, "I think when I keep talking about transfer, that's what I feel like we're missing. And that we are so focused on like, 'What's this word?', What's a Creek? What's a Cherokee?' That there's no room left for synthesizing all this stuff together. That was something that I hadn't thought about before in our sessions" (12-15).

During this same interview, she expressed,

> I guess if we all had faith in ourselves and in what we know is true about learning, then we'd teach at the higher levels and we'd let the test take care of itself. …But you have to really have confidence in your best practices. You have to really know that this is best, and be brave enough to stick with that. I think it's fear that pulls everybody down to the bottom and keep us in "well, if I just memorize all these words." (12/15)

During these few weeks in December, Katherine encouraged one of the teachers with whom she was working to try having students create PowerPoint book reports. She expressed that although this was difficult for the teacher, she was able to help her get going and work through the troublesome times when all didn't go well with technology. She also had begun to work with other teachers in the building to modify their tests to better meet the needs of the ESOL teachers. She expressed that she was gaining some notoriety within the building for this. She felt a sense of pride and accomplishment as teachers began to see her in the role of one who scaffolds their ability to meet the needs

of their ESOL learners, and as her students gained from her expertise in these areas. Katherine expressed,

> They've [her ESOL students] done extremely well. So well that the teachers are just loving this change and the way I'm doing things. …and I'm seeing when I go over with them the material, that they already know it. The teachers are teaching it where they can learn it. (12-15)

When I asked Katherine to describe if using this lens of CFT and viewing the videos with me over time was beneficial, the following exchange occurred which indicates a great amount of growth in Katherine's sense of personal power:

> Definitely, the process is helping. First of all, it forces me to reflect, which is good. It also allows me to really see what really happens at a bird's eye view of the entire thing that's going on. And that's been helpful. Because sometimes I see things that are going on while I'm focusing on one child, and I totally don't have a clue of what's going on with the others. So that helps. And I think that as we have moved along, I've seen more and more areas that I am using and other areas that I could.
>
> D: More awareness of what you are doing?
>
> K: Exactly. More awareness of what I am doing and what I could be doing. And I've made changes based on the videos. And like today, it didn't occur to me – I didn't really start thinking about the higher-level thinking. I'm always thinking things in the back of my mind. I guess I'm just a subconscious thinker - the whole PowerPoint thing.
>
> D: That's part of it.
>
> K: The PowerPoint thing has been on my mind because it's interesting to watch the reactions. Today we came out in the hall and were talking about how we're going to schedule the rest of the day in the lab. And one of the teachers went, "What are you doing?" And my teacher said, "We're doing PowerPoint book reports." And she just pointed at me. As if, "You know Katherine!" Like I'm getting her into this. She was teasing me.
>
> D: Good.
>
> K: And the other teacher went, "Oh, you have really high aspirations. You always have such high aspirations" or something like that. And then, "You're crazy to do that for that group." And yes, they're tough. But I

was thinking. I was just thinking about that exchange. I don't want to settle.

D: It's just hard. It just means our job is harder.

K: And you know what? It's the opposite of what people think. When you give kids rich -- if they're really learning something interesting, then they *are* engaged. I was trying to explain to her, "This work just makes your life harder in the short term. But in the long term, if your group can sit down, there's so much that they can do to keep themselves occupied."

D: And to help each other.

K: Right.

D: You become facilitator.

K: It will be in the long run, your life will be easier. It's painful in the beginning but it's worth it. So thinking about that -and then when I came in and I was going through the video, I didn't plan that ahead of time -- that I was going to do that. So I just started watching to pick out a scaffolding moment. And I went, "Wow. You know, that's pulling in some synthesis of information. He's just been to Speech and done his comprehension thing about a conductor on a train. And now we're talking about a conductor in Science."

D: That's a beautiful scaffold.

K: But if their teaching is so segmented and isolated, then there is no tie-together. And we always say, "Why is there no transfer?" Well, because we aren't transferring. We aren't helping them connect. (12/15)

It is evident through the analysis of this data that the lens of Cognitive Flexibility Theory from which this study was designed informed this novice teacher's decision-making as it impacted her developing notions of scaffolding from a simplistic definition to more complex conceptions. This process also facilitated her ability to connect theory she had learned to the real world of her classroom. This facilitation gave her confidence in her practice and in her role as an ESOL teacher and as a supportive colleague to general education teachers who teach her ESOL students.

CHAPTER 6

DISCUSSION AND IMPLICATIONS

This study began when the previous research in which I had participated examining preservice teachers' conceptions of scaffolding (Many, Taylor, Dewberry & Coady, 2006; Many, Taylor, Tinker Sachs, Wang, & Schreiber, 2005) converged with my readings in cognitive flexibility theory research and my concerns about the novice teachers in my classes. When I turned to the professional literature to guide me in making instructional decisions which would help novice teachers develop the understandings and skills needed to scaffold their students in the context of their own classrooms, I found the research lacking (Anders, Hoffman, & Duffy, 2000). Further, research suggested that it can take years for novice teachers to develop the experience and pedagogical knowledge required to scaffold individuals effectively (Hogan & Pressley, 1997) and that teacher educators need to carefully consider how much knowledge base preservice teachers need to develop within the domains of reading, language, learning theories, and child development in order to be able to effectively scaffold literacy instruction for learners in field experience situations (Many, Taylor, Dewberry & Coady, 2006). This led to the first purpose of my study which was to explore a novice teacher's decision-making process as she scaffolded language and literacy instruction for students.

Although novice teachers are likely to enter their first years of teaching with oversimplified views of complex concepts such as scaffolding (Smagorinsky, Cook, & Johnson, 2003), they need to make the same critical decisions as experienced teachers. They need to choose from among a combination of strategies, approaches, and materials to understand and meet the needs of individual students in particular contexts often in a moments notice (Spiro, 2000). Spiro and Jehng (1990) define cognitive flexibility as "the ability to spontaneously restructure one's knowledge, in many ways, in adaptive response to radically changing situational demands" (p. 165). Since instructional scaffolding requires teachers to respond and adapt to changing situations and students, I searched the professional literature to see if it could provide some insights into how to help novice teachers move from oversimplified understandings towards the more complex views of instructional scaffolding associated with more experienced teachers. This led to the second purpose of my study which was to consider the use of Cognitive Flexibility Theory as a tool for developing novice teachers' advanced understandings of instructional scaffolding.

Thus began my dissertation journey. My two guiding questions were

1. How can the decision-making processes underlying a novice ESOL teacher's instructional scaffolding be described?
2. How can the lens of Cognitive Flexibility Theory inform a novice ESOL teacher's scaffolding decisions?

With these questions as my guide, I met weekly with a novice teacher, Katherine, to explore a videotaped segment that she selected of her teaching in which she scaffolded instruction for her third-grade ESOL students. This study attempts to provide insight into

this novice teacher's decision-making processes as she scaffolded instruction for her ESOL students, and to explore the use of Cognitive Flexibility Theory to inform those processes as this novice teacher moved from introductory learning into the expertise that is required of a teacher charged with the education of children in the context of her school. The findings of this study address the guiding questions and provide insight into how teacher educators at the university and within the school systems can better meet the needs of novice teachers as they enter their first years of teaching.

Understanding the Findings through the Kaleidoscope Metaphor

Through the recursive process of this study, it became clear that Katherine's scaffolding decisions were influenced by considerations from a variety of domains incorporating both her pedagogical knowledge as well as considerations of contextual factors. Katherine's decision making was often influenced by many of these various domains at once, while also being impacted by her views on scaffolding, on the connection between theory and practice, and on her views on assessment, much like the multiple mirrors and lenses of some kaleidoscopes impact what the viewer sees at any given moment. I created a grounded theory model using the metaphor of a kaleidoscope to describe this process.

In the review of the literature chapter of this study, the metaphor of a kaleidoscope was described to help us envision the transactional complexities of the decisions that a teacher makes when scaffolding instruction. An elaboration of the kaleidoscope metaphor into a model will be instrumental in interpreting and understanding the results of this study. In a similar manner to the changing geometry that results when the kaleidoscope wheel is turned even slightly, the decisions that a teacher

makes when she scaffolds students can be altered by the slightest change in the context. Further, the often instantaneous decision-making which impacts students' learning in their zone of proximal development requires teachers to consider and adapt knowledge from a variety of domains, as can be represented by the multiple colors of glass within the kaleidoscope. Spiro (2000) introduced the concept of principled pluralism to represent the ability that a cognitively flexible person has to assemble multiple schemas from a variety of domains that must fit the situation at hand and whose pieces must be meaningfully related. The metaphor of a kaleidoscope helps us to visualize the cognitive flexibility that is required of teachers as they draw from multiple knowledge domains to individualize scaffolding decisions which would result in each student's progress within their own unique potential (Spiro & Jehng, 1990).

Spiro, Coulson, Feltovich, and Anderson (1988) found that as individuals move from introductory learning and exposure towards advanced knowledge and application in the context of real-world settings, they tended to oversimplify complex material which interfered with their cognitive flexibility. The metaphor of a kaleidoscope can be further elaborated upon and clarified to help us visualize how Katherine's decision-making processes during this study represented these types of oversimplifications as she moved from the knowledge gained from her university classes towards the cognitive flexibility required to develop expertise within the context of her own school.

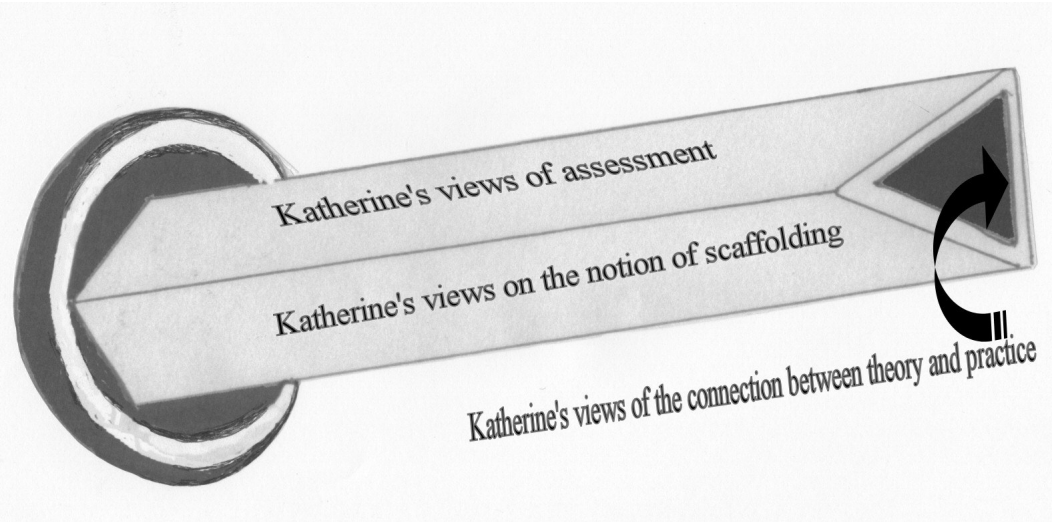
Impact of Katherine's Views

Kaleidoscopes have two basic sections, mirrors and an object at the end. Commonly three mirrors are placed in a triangular configuration such that they create a tunnel through which we look. The objects at the end of the tunnel (often wheels

containing pieces of multi-colored glass or beads) create the colors of the kaleidoscope. The degree of angle at which the mirrors are placed determines the different geometrical shapes (Schilling & Schilling, 2007).

In the kaleidoscope model of instructional scaffolding I have developed for this study, the mirrors represent three categories of Katherine's views which reflected light upon all of her scaffolding decisions. The angle of the mirrors represents the degree to which the particular category was emphasized during a given event. Additionally, as Katherine's views on scaffolding, on assessment, and on the connection between theory and practice changed, the way she viewed or utilized the domain may have become more or less focused with the new angle and its complexities. While looking through the mirrors reflecting Katherine's views in these areas, we can better understand her decision-making (Figure 9).

Figure 9. Views through Which Katherine's Decisions Were Reflected



This study was designed to utilize the lens of Cognitive Flexibility Theory to explore Katherine's decision-making process while at the same time highlighting the complexities involved in scaffolding instruction. In order to customize learning for

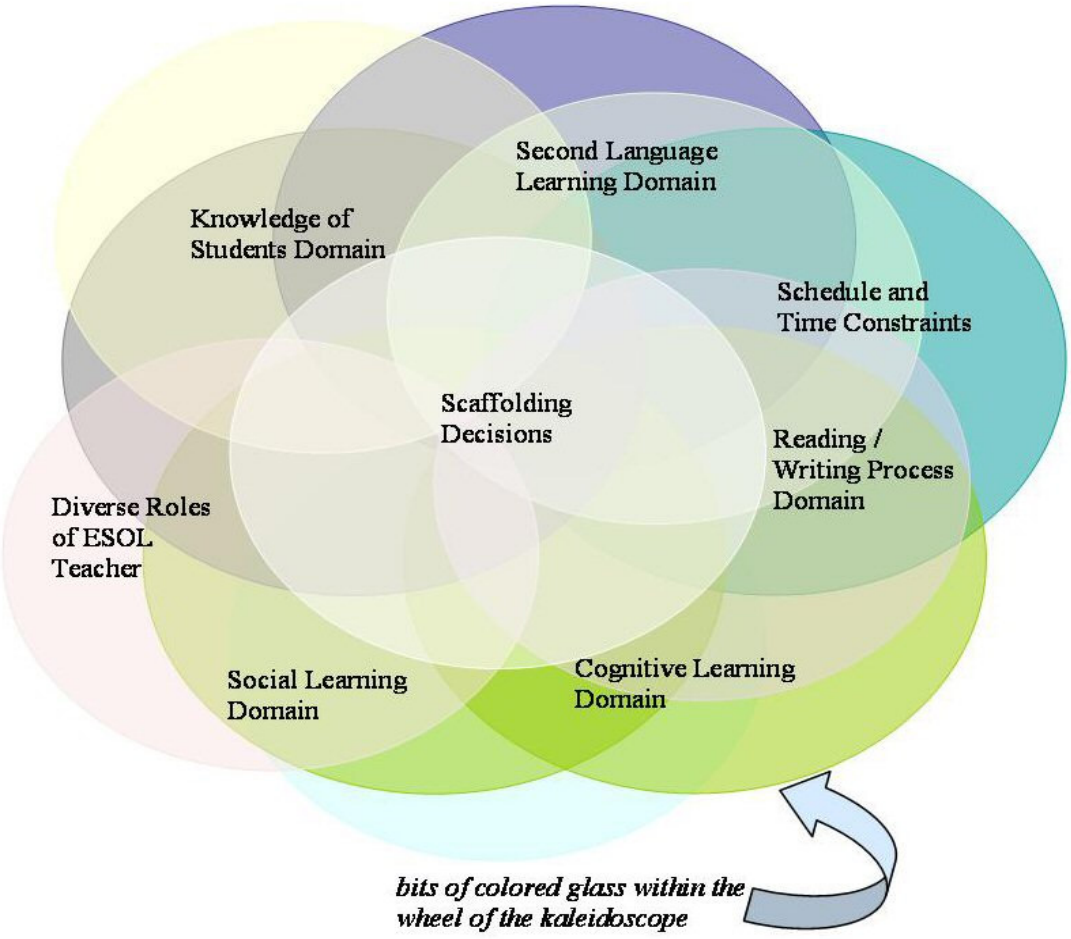
Katherine and work towards fading my control as suggested by Spiro, Feltovich, Jacobson, and Coulson (1992), Katherine videotaped herself teaching this class of third-grade ESOL students each week and chose a case of scaffolding to highlight for our weekly discussion. During each third week, she rested from videotaping and we reviewed one of the previous cases in an effort to criss-cross the landscape of complexities (Spiro, Coulson, Feltovich & Anderson, 1988) that these scaffolding cases presented.

I began to feel a little like in Alice in Wonderland (Carroll, 2003) as I pondered what was behind the looking glass of Katherine's decision-making mirrors. I needed to uncover and shed light on any oversimplifications of scaffolding that might be impacting Katherine's decisions. I was keenly aware that the term "oversimplifications" can denote a condescending tone. Yet, when considering this term as defined by Spiro, Coulson, Feltovich, and Anderson, I better understood that the term did not reflect negatively on Katherine. Within ill-structured concepts such as scaffolding, the goal of cognitive flexibility is to highlight the complexities of the concept. Therefore, it follows that this study needed to begin by exploring ways in which she may have been oversimplifying this complex, ill-structured concept. By reflecting upon these interview sessions through the mirrors of what Spiro, et al, might view as oversimplified notions that Katherine held related to scaffolding, I was able to see that her notions surrounding scaffolding did become more complex through this process.

This recursive process enabled me to determine that Katherine was indeed drawing from and influenced by a wide range of domains as she made scaffolding decisions. These various domains impacted her decisions like the many pieces of colored

glass that create the geometric patterns in the wheel of a kaleidoscope. The domains, like the bits of glass in the wheel of the kaleidoscope, overlaid one another and transacted with one another (see Figure 10).

Figure 10. Range of Domains that Impacted Katherine's Scaffolding Decisions



I also began to see that the impact of Katherine's knowledge from some of the domains didn't necessarily occur in the moment that the scaffolding occurred. For example, Katherine may not have been thinking in a particular moment about the impact of high-stakes testing on her students, yet it colored her decision-making as she was keenly aware that if these third graders don't pass the test this year they will be retained.

She continually attempted to incorporate tasks and vocabulary that would transfer to other subjects and give them stronger test-taking abilities. She wasn't always conscious of the influence of the various domains, but upon reflection, she realized that they were impacting her decisions. I began to imagine the interchangeable wheels of some kaleidoscopes to help me visualize this process. In other words, at times all of the pieces of glass (domains) may have been impacting her, while at other times particular pieces of glass (domains) may have been temporarily out of use. However, she drew upon all of these domains on some level at some time during the study as she made scaffolding decisions.

Katherine's Pedagogical Considerations

By thinking of Katherine's scaffolding decisions through this model, we can see that her decisions were filtered through her views on scaffolding, on assessment, and on the connection between theory and practice. She was drawing from considerable knowledge across domains that she had gained through her university coursework and elsewhere in the areas of pedagogy. Although at times she discounted her own knowledge base, as we discussed the videos and I continued to ask her to provide me with rationales for her decisions, she began to develop confidence that she was making decisions based on a variety of domains and theories. She began to develop clarity within domains, such as being quick to identify reasons based in theory for her decisions. She also began to expand the domains from which she was drawing. For example, as she was prompted to consider domains of influence, she realized that she wasn't finding time for her students to spend writing extensively due to contextual issues with scheduling. I observed her pondering this issue for several weeks before she began to incorporate

writing through daily assignments, tests, and incorporating technology projects with the general education teachers.

Katherine's Contextual Considerations

Contextual issues are significant when considering decisions made by any teacher, but they are especially salient when considering those made by an elementary level ESOL teacher as she meets both the literacy and the content area needs of students at five grade levels in different subject areas. Due to economic reasons, schools necessarily hire ESOL teachers based on percentages of ESOL students to be served. For Katherine, this meant that she was a part-time ESOL teacher with her remaining time consumed with her duties as a gifted and talented teacher. These time constraints severely limited her time with students as well as her time to plan and collaborate with teachers. Additionally, to address the state standards of meeting her ESOL students language needs at the service of content-area goals, Katherine needed to take the time to familiarize herself with all of the content-area standards of all five grade levels in addition to their language and literacy goals at all five grade levels.

Because the role of an ESOL teacher varies from school to school depending on the situation, the roles are left somewhat undefined both by states and by school systems to allow teachers to be flexible. Katherine needed this flexibility to be able to adapt to the varied demands across grade levels, and she navigated it successfully. Yet, she also found herself overwhelmed by it at times which affected her confidence in her own abilities. She grappled continually with the question of whether or not to spend the majority of time training teachers in ESOL modifications and strategies, or with her students.

As this study reveals, Katherine's scaffolding decisions were impacted by these contextual factors beyond what may at first seem obvious as they not only limited her time with students, but also with planning and collaboration, and with her sense of agency in defining her schedule and her role. The model of a kaleidoscope enabled me to describe the influence of these factors on Katherine's decisions.

Implications of the Study

While the purpose of this study is not to make generalizations to any other situations, this study has shown that Cognitive Flexibility Theory offers a lens through which the complexities of scaffolding can be highlighted to novice teachers and offers a model of how the decision-making processes of one novice ESOL teacher can be described. Hopefully, others may find the research valuable in considering ways to move novice teachers toward expertise. Therefore, I recommend that further research be conducted using this reflective process underpinned by Cognitive Flexibility Theory as a lens through which novice teachers can learn to examine the complexities of scaffolding within the arena of their own classrooms.

Exploring the Use of the Kaleidoscope Model

Impact of teacher beliefs. Teachers' beliefs and preconceptions impact their practice (Hammerness, et al., 2005). Katherine's views on scaffolding and on assessment as well as on the connection to theory and practice colored Katherine's scaffolding decisions and the contextual issues she faced. As we discussed these views and her reflections upon them became more focused, she began to reconsider the impact of all types of assessment to diagnose students' strengths and weaknesses from which to plan scaffolding decisions. She began to acknowledge that more detailed, yet simple record-

keeping such as portfolios and checklists would inform her knowledge of individual students' zone of proximal development with language and literacy skills. Yet, she continued to struggle to find ways to fit recordkeeping into her busy schedule.

In addition, research on teaching teachers to scaffold highlights the need for teachers to understand theoretical underpinnings of strategies (Brown & Campione, 1996), as well the importance of uncovering teachers' beliefs through reflection to expose misconceptions that might impact their scaffolding (Seymour & Osana, 2003). Those who work with novice teachers may need to help them consider how their views toward issues such as instruction, assessment, and/or theory may alter the way they make decisions in the classroom. Such views may enhance or limit their ability to draw on the domains of knowledge they have encountered in teacher preparation as they work to support their students' growth

The model of a kaleidoscope has been useful in explaining this multi-faceted transactional interplay involved in Katherine's decision-making during scaffolding events. The model clarifies that Katherine was drawing from a wide variety of domains to make scaffolding decisions, both pedagogical and contextual, and that these decisions were filtered through her views on scaffolding, on assessment, and on the connection between theory and practice. This model helps us to envision how novice teachers' beliefs and preconceptions impact their scaffolding processes. Other researchers should consider this model when attempting to understand novice teacher development.

Impact of contextual factors. In light of the findings regarding the significant impact of contextual factors on Katherine's decisions, school administrators and other school system personnel who work with novice ESOL teachers may need to consider

ways to mentor their ability to effectively navigate such factors over time. Katherine was an excellent novice teacher, yet she clearly grew in expertise from just one semester of weekly sessions with a more experienced mentor. Perhaps in schools such as Katherine's in which only one ESOL teacher is employed, cohorts of teachers from neighboring schools could meet monthly with a more experienced mentor for focused discussion and to analyze videos of their teaching as was done in this study. This notion is in line with the ideas put forth in Cognitive Flexibility Theory, and might take the form of a Critical Friends Group. When describing Critical Friends Groups, Bambino (2002) explains

> The structure and format of Critical Friends Groups create opportunities for colleagues to challenge their own practice as well as that of their peers. The work is critical because it challenges educators to improve their teaching practice and to bring about the changes that schools need, but the process is neither negative nor threatening. The work involves friends who share a mission, offer strong support, and nurture a community of learners. (p. 25)

A Critical Friends Group focused on discussions of complex topics utilizing authentic videotapes of ESOL teachers classrooms, offers a non-threatening, constructive, and economical way to provide on-going mentoring for novice teachers. Specified leaders such as ESOL area lead teachers could be trained to facilitate these groups and to mentor others to lead similar groups. Perhaps relationships between local universities and school systems could also be coordinated to participate and assist in providing on-going professional development and mentoring beyond the first induction year of teaching. In recent years, studies have been conducted which indicate positive impacts on novice teachers result from Professional Development Schools in which university teacher education programs are in partnership with local school systems to provide field experiences and staff development resources for and with one another (Zeichner, 2006).

Perhaps such partnerships could be include a Critical Friends Group focused on developing cognitive flexibility through consideration of authentic teaching videos in which university faculty participate along with school system mentors and novice teachers. I strongly suggest that research exploring programs such as these while utilizing the lens of cognitive flexibility theory is needed across a variety of settings.

Additionally, the significant impact of contextual factors on Katherine and her students suggest that it would behoove state departments of education to re-consider standards and guidelines for ESOL learners that are vague and lack a clear direction as to expected outcomes and how teachers' time should be focused, and that remain consistent for all learners across the P-12 curriculum. In this state, the ESOL standards focus on teaching the language skills of reading, writing, listening and speaking through content area standards. While these standards are desirable and allow for needed flexibility at the middle and high school levels, perhaps elementary ESOL students need more time devoted to building strong literacy skills which will transfer to the content areas. In other words, perhaps in elementary schools the focus should be first on developing strong language and literacy skills which often are not tied to content standards, such as instruction in systematic phonics. State administrators should thoughtfully consider Katherine's questions regarding the value of teaching ESOL students to memorize their state regions at the expense of focused instruction in language and literacy skills. For example, Katherine was clear that her students needed more systematic phonics instruction in line with suggestions from the National Reading Panel's report (NICHD, 2000), yet the standards led her to focus her time on lower-order content-area knowledge so that her students would not receive failing grades in the content classes in which she

was serving them. This suggested change might also indicate a need to allow local schools more flexibility in determining the breakdown of instructional hours to best serve the individual needs of their ESOL students.

State administrators, school system officials, and others working with novice teachers need to seriously reflect upon the time and scheduling issues that Katherine faced. As we envisioned through Katherine's reflections, ESOL students often need a variety of services beyond the classroom. She often needed to help parents of her students understand and locate various services, and to translate forms and official documents. Along with the diverse language variations within any small group of ESOL students, these students also bring diverse cultural values and ways of being. ESOL teachers need to help their students and their families navigate these differences so they can be successful in school. Perhaps it is time to consider lowering the pupil-teacher ratio for ESOL students to allow teachers to better meet the needs of their students and their families.

Along this same topic, state administrators and teacher educators need to ask ourselves what more we can do to ensure that our certification programs prepare novice teachers to effectively navigate the various contextual issues they will face in their own classrooms. The findings of this study lead us to question the effectiveness of P-12 certificate programs in ESOL to prepare teachers for these factors, especially programs designed to be completed in one year. When trying to prepare beginning teachers to teach across such a broad variety of roles and standards from preschool through high school, how can we prevent them from developing oversimplifications? It seems clear

that developing cognitive flexibility with a P-12 certification program is difficult to accomplish and therefore this broad certification is worthy of critical evaluation.

Teacher educators within all novice teacher development programs need to thoughtfully consider whether we are asking novice teachers to reflect upon complex issues within and across our courses which encourage cognitive flexibility. We need to reflect upon our program designs and conceptual models to look for ways that we can integrate coursework and field experiences around complex topics and questions. This will be discussed further in the following section on teacher preparation program design.

A dearth of research exists which follows student teachers into their first years in the classroom (Anders, Hoffman, & Duffy, 2000; Clift & Brady, 2005). This study addressed this gap by exposing the difficulties Katherine faced as she learned to navigate the contextual constraints within her school setting during the first years of teaching and by showing ways that Katherine's expertise with scaffolding developed in the context of her own classroom. In their meta-analysis of methods courses and field experiences, Clift and Brady (2005) state, "It seems clear that learning to practice is impacted by individual, instructional, and contextual factors –some of which we are only beginning to understand" (p. 331). More studies which reveal contextual considerations and how to better prepare novice teachers to work within these constraints are clearly needed across a variety of fields and grade levels. This kaleidoscope model could enhance researchers' repertoire of ways to think about and describe this impact.

Exploring Cognitive Flexibility Theory

This study also demonstrates the use of Cognitive Flexibility Theory as a theoretical tool which enabled Katherine to reflect more deeply upon her beliefs and

preconceptions and upon her scaffolding decisions to impact her students more effectively. Throughout this study it became clear that this process utilizing the lens of Cognitive Flexibility Theory to explore Katherine's decision-making processes was indeed encouraging her to think about scaffolding in more complex ways. This more complex thinking impacted her conceptions of scaffolding as she began to make more connections between various types of assessments and record-keeping with understanding students' zone of proximal development rather than through the use of intuition, feelings, or memory. As Hammerness, et al. (2005) state,

> Although some aspects of teaching can be made somewhat routine, what teachers do will still be influenced by changing student needs and unexpected classroom events. And many other decisions in teaching cannot be routinized because they are contingent upon student responses and the particular objectives sought at a given moment. Helping prospective teachers learn to think systematically about this complexity is extremely important. They need to develop metacognitive habits of mind that can guide decisions and reflection on practice in support of continual improvement. (p. 359)

Katherine was no longer a prospective teacher as referred to by these researchers, yet navigating these complex issues while struggling with contextual issues was difficult for her. As Katherine and I examined and questioned how she made decisions each week, she reflected more deeply on her decisions and their impact on her particular students. Because these students were her students whom she knew well and cared about deeply, the importance of these discussions was particularly heightened for her. As her frustration grew, she began to think of ways that she could navigate the contextual constraints to better serve her students.

As Katherine became more aware of her knowledge and ability to connect theory to her practice and more empowered to have an impact on the context, her views of her

role changed and became less simplified. She became more confident that she could talk to other teachers about scaffolding instruction for her ESOL students and began to consider ways to transfer her knowledge even beyond the school site such as through professional conferences. In essence, she became more cognitively flexible with the complex concept of scaffolding.

Early in the study Katherine indicated that much of what she did with students she just knew "naturally." This notion was in line with what other researchers have found as common to novice teachers (Featherstone, 1992). Yet later in the study Katherine acknowledged that what seemed natural to her now was the result of her hard work and study, and she began to acknowledge that her decisions were based in educational theory. This awareness empowered her to talk about her knowledge. Katherine's growing sense of agency gave her confidence in her abilities to meet the needs of these teachers and students in ways beyond those she had considered in the past, such as presenting at conferences to help general education teachers learn strategies for working with ESOL students.

Hammerness, et al. (2005) point out the difficulties in preparing novice teachers to go beyond understanding complexities to the point where they can enact their intentions. As they state, "Teachers must learn to weigh difficult dilemmas and to make and implement decisions on the fly; to put their plans into action effectively as well as to alter plans for unforeseen circumstances while they are in the midst of teaching" (p. 370). Such complexities are especially heightened with regard to instructional scaffolding during which teachers have to determine the nature of the problem a student is having, what type of help the student needs to advance their learning within a particular lesson

focus, and how much help to give to move the child within their zone of proximal development (Rodgers 2004/05). This study has shown that utilizing the underpinnings of Cognitive Flexibility Theory, Katherine's developing conceptions of scaffolding were made more complex through discussions with a mentor focused on videotaped sessions of her own scaffolding. This process impacted her scaffolding decisions and influenced her ability to control contextual issues through her developing confidence and sense of agency.

Previous research in CFT has led to its creators to develop hypertext teacher development software. In their discussion on the use of a hypertext program developed based on CFT elaborated upon in Chapter 2, Dick (1992) expressed concerns about who should guide the novice through the examples of teaching and how many examples are needed, as well as concerns about the enormous cost to develop and implement hypertext programs of master teachers which would address the needs of novice teachers. Additionally, Merrill (1992) pointed out that housing cases of master teachers in a database for novice teachers to use would prespecify the knowledge that learners should acquire. Through the use of one-on-one mentoring of novice teachers using authentic videos of their own teaching such as was done in this study, perhaps these issues could be avoided and learning could be more authentic. More studies utilizing this approach are needed in a variety of contexts and with a variety of mentors to hone in on the effectiveness of this method across teacher education programs, including induction and teacher preparation training. Studies focusing on the use of CFT in induction programs as well as research examining the model's use with initial teacher preparation programs could offer support to those in teacher education as well as those in professional

development schools, in mentoring programs, and in staff development programs in school systems.

Additionally, while the use of video cases has been researched in teacher education, we have much more to learn about its value and use (Grossman, 2005). As Grossman (2005) stated,

> …much of the work on video technology lacks a strong theoretical framework to guide the research. Although the materials seem to hold promise, we need a much richer understanding of the features of video materials that matter most in helping prospective teachers learn from others' practice, as well as the kinds of instruction that must be orchestrated around video materials to support the learning of preservice teachers. (p. 438)

Studies such as this dissertation provide a strong theoretical framework and extend this body of this research to using authentic videos of novice teachers in the classroom. Additionally, having a novice teacher along with a more experienced mentor examine videos of her own teaching for the purpose of unveiling complexities and working towards expertise as was done in this study has not been widely researched. With the increased use of technology in teacher education, perhaps personal video cases could be used to mentor students online or as a means of support for distance teacher education students. Therefore, I recommend that this format be further investigated in many other contexts and with other teachers, both novice and experienced to highlight complex concepts in teaching.

Teacher Preparation Program Design

Finally, scaffolding is a complex topic for even the most experienced of teachers. Teacher educators and mentors need to explore methods for presenting a variety of complex, ill-structured topics such as scaffolding to novice teachers so that their

conceptions of these topics do not become oversimplified. While Katherine was able to draw from her knowledge within a variety of domains, through the process of this study she was able to more fully develop cognitive flexibility across domains with the concept of scaffolding. Teacher educators might want to consider the implications of this when developing a shared vision of teaching across a teacher preparation program. As pointed out in the previous section on understanding the impact of contextual factors, we need to encourage novices to not only increase their knowledge base within domains, but also across domains and coursework. This might mean that our program designs need to expand to include less segmented, compartmentalized coursework in favor of more integrated designs focused on concepts that encourage cognitive flexibility. Describing such an integrated program design, Darling-Hammond (2006) explains, "In such intensely coherent programs, core ideas are reiterated across courses and the theoretical frameworks animating courses and assignments are consistent across the program (p. 306). This notion is in line with other research which has found that teacher development programs that encourage new teachers to have more flexible knowledge and to transfer knowledge across domains are facilitated by a design that is iterative, coherent, and reinforcing across settings (Darling-Hammond, Hammerness, Grossman, Rust, & Shulman, 2005).

This dissertation revealed that the lens of Cognitive Flexibility Theory was effective in exposing the complexities of scaffolding. It is my hope that more research using this theory to explore this process will be conducted to aid researchers and teacher educators in understanding how to present topics across domains and in understanding

how to transfer understandings about complex concepts such as scaffolding to novice teachers.

Concluding Remarks

For an electric guitar player, finding the sweet spot involves a transaction between the instruments, equipment, and knowledge, heart and intuition of the player such that the magic of beautiful music occurs. For teachers, finding the sweet spot of learning for individual students is more like an ever-changing kaleidoscope of decisions. Learning to scaffold instructions for students is a life-long process that one never fully completes, although one can be taught to develop more expertise and cognitive flexibility with this complex concept. Finding the sweet spot for a student to learn within a particular lesson is magical. It inspires us to try again and again. It gives us the confidence to face the awesome task of scaffolding instruction for children.

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APPENDIXES

APPENDIX A

Initial Interview Questions

- What is the difference between scaffolding and other types of support?
- Scaffolding can focus on minute-to-minute decisions that you make as you listen to kids during a lesson: teachable moments. Can you describe any teachable moments you have encountered while teaching?
- What are some of the types of things you think about during these teachable moments? Can you tell me more about this?
- Scaffolding can also occur as a result of planning - as you think about how a lesson went and plan where to go in a next lesson. What types of things do you think about as you plan your lessons?
- Describe some of the experiences you've had with scaffolding.
- You have expressed interest in the past in learning more about scaffolding. What questions do you have about scaffolding?

APPENDIX B

Sample Interview Questions for the Weekly Sessions

- Start at the beginning and tell me what you remember thinking about during that scaffolding event.

Depending on responses, possible follow-up questions might include:

- What steps did the task involve for the child? Do you remember thinking about how to make this situation easier or clearer for the student? Did that involve going back a step? If so, how did you determine what level or part of the task to go back to?

- Did you think about what the child already knows or can do? How did you know? Tell me more about that?

- Did you think about the child's cultural background and how it might affect the task? Tell me more about that?

- Did you think about the child's linguistic ability? Tell me more about that?

- Did you think about the reading/writing process? Tell me more about that?

As we move along during the third week sessions:

- Looking at the video this time, what do you notice that you didn't notice before?

- What could you do to learn more about the child's abilities/levels with this task?

- What do you know about how people learn that might influence your scaffolding decisions in future scaffolding sessions? Were you thinking of that in this video? Can you think of why you were or were not considering that?

- What do you know about language learning that might influence your scaffolding decisions in future scaffolding sessions? Were you thinking of that in this video? Can you think of why you were or were not considering that?
- What do you know about linguistic theory that might influence your scaffolding decisions in future scaffolding sessions? Were you thinking of that in this video? Can you think of why you were or were not considering that?

- What do you know about the reading process that might influence your scaffolding decisions in future scaffolding sessions? Were you thinking of that in this video? Can you think of why you were or were not considering that?

- What do you know about the writing process that might influence your scaffolding decisions in future scaffolding sessions? Were you thinking of that in this video? Can you think of why you were or were not considering that?

- What do you know about the context/group interactions that might influence your scaffolding decisions in future scaffolding sessions? Were you thinking of that in this video? Can you think of why you were or were not considering that?

- Do you believe that these sessions will influence your scaffolding in the future? Can you tell me how/why you think so?