A QUALITATIVE STUDY OF TEACHERS' COGNITIVE ACTIVITIES WHEN

INTERACTING WITH VIDEO ETHNOGRAPHY

by

Yee Kong Peter Chan

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ABSTRACT

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INTERACTING WITH VIDEO ETHNOGRAPHY

This qualitative study examines teachers' cognitive development when interacting with
multimedia cases. It defines various types of video-related cases and uses a specific
genre of multimedia cases—video ethnography—as the object of the research. Its
method is based on grounded theory to discover embedded meanings and relationships
that emerge from descriptive data collected from six teachers.
Findings of the study include the identification of various categories of cognitive
activities revealed in teachers' thinking from interacting with video ethnography and
cognitive pattern emerged from case study of each individual participant. Using cross-
case analysis, four theoretical propositions are generated to describe the cognitive
development process and its two influencers: learning orientation and beliefs/experiences,
within the framework of video ethnography. The study has implications in improving
technology use in teacher development, production of multimedia cases, and research on
case-based pedagogy and other related areas.

KEYWORDS: Computer, Professional Development, Innovation, Case, Multimedia,
Technology, Ethnography, Cognitive Development, Learning Orientation, Grounded
Theory

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Chapter 1: Introduction

For decades, prominent teacher-educators have been advocating the use of the case method in the professional development of teachers (Hunt, 1951, Merseth, 1981, Ashton, 1991, Shulman, 2002). Traditional teacher education presents learners with abstract and generalized formal research findings. In contrast, case methods are narratives of authentic, concrete teaching episodes (Bruner, 1986). They argue that it also provides a way to foster the mental skills needed for the diversely eclectic classroom. Merseth (1999) categorized the commonly identified advantages of case-based pedagogy for helping students of teaching into four areas into four areas: developing analytical and problem-solving skills, gaining a wide range of pedagogical techniques, fostering reflection, and experiencing a positive learning community. These categories represent high-level cognitive activities that lead to greater internalization and construction of the meaning of complex reality.

More recently, with the development in media and computer technology, multimedia cases have emerged with the potential to expand the traditional text-based cases for use in teacher development. Articles published on hypermedia cases (e.g., Harris, Pinnegar, & Teemant, 2003) have proposed numerous advantages that may be divided into three areas: authenticity, constructivist learning, and theory application.

The authenticity argument suggests that teachers can better relate to content of multimedia cases because these cases provide opportunity for more direct observation of what is going on in the classroom. This realistic content engages more of the five senses, allowing greater cognitive freedom for interpreting case content. In providing visual and auditory cues, multimedia cases help teacher-learners develop pattern recognition skills

(Bransford, Franks, & Sherwood, 1989). Like authors of written cases, the authors of video cases direct the case foci by selectively taping and editing them. However, the moving pictures of video cases allow users to have more autonomy to make out the meaning of what they see and to choose their specific points of attention (Harris, Pinnegar, & Teemant, 2003). The moving pictures also give higher face validity, which is the level of realism that people feel when they interact with a case (Richardson, 1999). In other words, the more realistic a case seems, the greater its face validity (Kent, Herbert, & McNergney, 1995). This is an important concept in teacher development, because teachers generally find it easier to relate to and become emotionally involved in true vignettes than in decontextualized instructional materials. The visual images may also facilitate memory retention (Clark & Paivio, 1991), expand perspectives, and inspire creativity (Bliss & Mazur, 1996). Beginning teachers who see good teaching in action become more aware of the different perspectives and approaches to teaching (Hughes, Packard, & Pearson, 2000).

Another argument for multimedia cases is that they provide a constructivist-learning environment with rich, realistic, and multi-layered report of the living classroom, provoking a deeper reflection-on-action (Bliss & Mazur, 1995; Desberg & Fisher, 1996; Harris, 2002; Richardson & Kile, 1992; Risko & Kinzer, 1997). The use of digital video, for example, gives users the ability to pause the action, take time to reflect, and revisit a segment instantly. Cases can allow viewers freedom to select different video footage to watch and different commentaries that provide ways to understand how underlying concepts and procedures for problem solving play out in real-life. Some internet-based cases let users discuss related issues over a great distance and provide a large library of

support resources (Bliss & Mazur, 1996). Others permit users to create their own cases (Harris, Pinnegar, & Teemant, 2003). Therefore, multimedia cases give greater cognitive space and provide tools that can push reflection while allowing individually constructed learning.

Research has repeatedly stressed difficulties in trying to promote teacher change because teaching is a complex, ill-structured domain of knowledge that is difficult to convey (Richardson & Placier, 2001). Much of expert-teachers' knowledge is tacit. As Carter (1990) stated, "Simply telling novices what experts know will not produce expertise." As many believe, "Wisdom can't be told" (Bransford, 1989). Developing the wisdom of classroom practice requires real-world illustration of abstract concepts (Jacobson & Spiro, 1995). Many believe that multimedia cases give users the opportunity to see theory in action. In examining the use of video ethnography for reading, Harris, Pinnegar, and Teemant (2003) observed:

Such authentic cases provide opportunities for the development of praxis, because they bring together both teaching action and space for reflection. Both the observed and the observer are given voices in the process of capturing and analyzing the important happenings of the community. HVE (Hypermedia Video Ethnography) case studies can juxtapose theory against actual classroom practice, in the moment of practice, without requiring that pre-service teachers to be in actual classroom setting. Pre-service teachers, therefore, have the cognitive space to analytically examine authentic teaching practice and given time to reflect on practice with other students. Such authenticity allows pre-service teachers myriad opportunities to reveal, construct, and reconstruct their

knowledge about teaching and its practice with simultaneous access to both theory and practice. (p. 9)

Hence, current researchers have argued for multimedia cases for a number of reasons. They do have the potential to facilitate the acquisition of complex, ill-structured knowledge needed for classroom teaching by providing authentic rendition of knowledge in multiple situations (Spiro, Coulson, Feltovich, & Anderson, 1988).

Statement of the Problem

However, there is a general lack of evidence that cases do impact the thinking and therefore the practice of teachers (Bliss & Mazur, 1996), and the evidence for multimedia cases is even sparser. As Richardson and Kile (1999) point out, much of the current literature on multimedia cases is speculative and even promotional. Few systematic studies have demonstrated how they work in the minds of their beholders—teachers (Merseth, 1996). If teachers' cognitive complexity is influenced through interaction with multimedia cases, then the use of these kinds of cases may hold important promise in promoting teacher change, because research shows that increasing teachers' cognitive complexity leads to competence in handling difficult tasks (Kennedy, 1991; McKibbin & Joyce, 1981; Newmann, 1993). Therefore, prominent scholars in teacher education, such as Richardson (1999) and Shulman (2001), have called for research that can illuminate the relationship between multimedia cases and teachers' cognitive development.

Purpose of the Study

In direct response to this noted deficiency, the current study explores the cognitive activities of several teachers during and immediately after their interaction with video

ethnography, a specific form of multimedia cases. As Carter (1990) indicates, "Learning-to-teach questions might well be unanswerable at a global level. What is needed, instead, are frameworks that focus more explicitly on what is learned and that specify more fully how that knowledge is acquired."

Therefore, the purpose of this study is to explore how video ethnography, a particular kind of multimedia cases, relates to the thinking of a small sample of practicing teachers. Through observation and interviewing, theoretical propositions are developed to describe how teachers think about their own pedagogy as they respond to video ethnography.

Questions

The overarching question for this study is: What is the nature of teachers' cognitive activities when interacting with video ethnography? In exploring this question, four specific questions guide the study:

What cognitive activities are revealed in teachers' thinking through their use of video ethnographies?

What patterns emerge from examining participants' cognitive activities?

What theories of cognitive development in relation to video ethnography can be generated by cross-case analysis?

How might these theories guide future professional development research for teachers?

Background

Types of Multimedia Cases

Educators such as Bliss and Mazur (1996), Bransford, (1990), Harris (2000), Ingle (1984), and Tolhurst (1995) who work with cases that use multiple types of media have been

labeling them technologically or pedagogically. Technological labels include video case, hypermedia case, and multimedia case whereas pedagogical labels include anchored instruction, common thread case, and video ethnography. These labels place similar but slightly different emphases on the characteristics of these cases, causing teacher educators confusion when attempting to make distinctions in the literature. Therefore, an explanation of these labels and their emphases is necessary in order to lay a foundation for understanding the current study.

The most original and commonly used label is *video case*, which includes variations such as videocase, videotaped case, videodisc case, and so on (Ingle, 1984; Richardson, 1999; Sykes & Bird, 1992). Its main emphasis is using video as the medium to capture and present teacher-training cases. The early form of such cases was video tapes, often supplemented with text-materials, thus allowing viewers to see live unfolding action and to read supporting literature. The major drawbacks for using tape include its linearity, which prevents users' immediate access to a particular point of the video sequence, and the inability to integrate other supplementary materials into one source. Although the same term is still being used, it cannot adequately describe the nature of the latest computer-based cases.

A later term, *hypermedia case,* began to be used in the late 1980s as the age of information technology dawned. The term refers to "any computer-based system that allows the interactive linking, and hence nonlinear traversal, of information that is presented in multiple forms that include text, still or animated graphics, movie segments, sounds, and music" (Tolhurst, 1995, p. 25). It is often used interchangeably with *multimedia*, which refers to "the use of multiple media formats for the presentation of

information (Tolhurst, 1995, p. 25). Multimedia is a broader term that encompasses both the traditional linear presentation of multiple media and the latest nonlinear computer-based programs. In addition, multimedia and hypermedia cases do not necessarily use video. They can be narrated photos, animations, or other combinations of media. Figure 1 illustrates the relationship between video, hypermedia, and multimedia cases. Notice that the circle for hypermedia is bigger than that for video because the term *hypermedia* covers a wider range of media in addition to video, and *multimedia* is the label for the circle enclosing both.
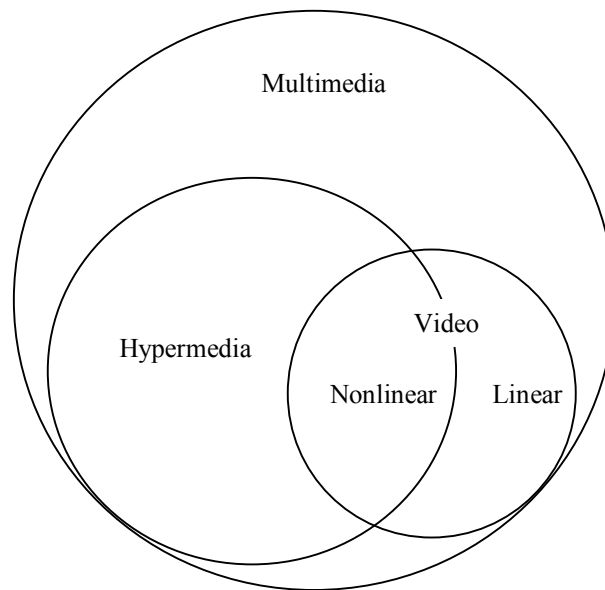
Figure 1. The relationship of video, hypermedia, and multimedia

Another set of labels for cases that use multiple types of media focuses on their pedagogical characteristics. *Anchored instruction* emphasizes nonlinear video of complex problem spaces (The Cognition and Technology Group at Vanderbilt, 1990). Its purpose is to create environments that simulate expert learning so that learners will more likely overcome the problem of inert knowledge. Although the anchor may include other media or experiences, authors using the term have generally referred to it as *nonlinear*

video (Bransford et al., 1990; Moore, 1994; The Cognition and Technology Group at Vanderbilt, 1990). A *common thread case* (Bliss & Mazur, 1996) is practically identical with *anchored instruction* because of its focus on creating a shared culture using multimedia cases. However, common thread cases place stronger emphasis on building a learning community using internet tools. *Video ethnography*, on the other hand, refers to using an ethnographic approach in the production and presentation of authentic teaching and learning situations (Harris, 2000). It adheres to four specific design principles. Because it is the object of this study, a more detailed description follows in the next section. Each pedagogical label is used by its author to convey a specific academic idea. Therefore, the labels should not be used as the universal identity for this genre of media of instruction. Thus, *multimedia case* is the most appropriate generic name to describe cases that use multiple media.

There are six main labels for cases that use multiple forms of media, depending on the technological or pedagogical foci of the authors. Of these labels, *multimedia case* is most encompassing and should be used to refer to the overall instructional instrument.

Video Ethnography as a Type of Multimedia Cases

Video ethnography (VE) is the genre of multimedia case examined in this study. Developed by Harris and others, its present form evolved through a long process of exploration from filmstrip to VHS tape, laserdisc, and HyperCard, and to its current multimedia authoring tools (Harris, et al., 2002). These cases are developed by adherence to four design principles: authenticity, problem representation, multiple perspectives, and theory and practice (Harris, Pinnegar, & Teemant, 2003). Following is an introduction of these principles:

First of all, the authenticity principle emphasizes use of an ethnographic approach in capturing and presenting "real human interaction based on participants' observation" (Harris, 2000). It conveys a sense of video vérité that reveals the bare strengths and weaknesses of a living classroom, and gives viewers the cognitive space to reveal and reformulate their own constructs of teaching and learning (Harris, Pinnegar, & Teemant, 2003). Thus the name *ethnography* is adopted to emphasize the instructional approach.

Second, the problem-representation principle emphasizes problem representation rather than problem solution, allowing users the freedom to formulate their own problem statement and solution paths from the raw data, and thus supporting the development of their cognitive complexity, which is needed for dynamic classrooms (Harris, Pinnegar, & Teemant, 2003).

Third, the multiple representation principle guides the development of multiple voices commenting on the seen and unseen actions of the video vignettes, allowing users to peel off layers of meaning embedded in the complex reality.

Finally, the juxtaposing theory and the practice principle enables case-users to develop both theoretical understanding of context and contextual reference of theory (Harris, Pinnegar, & Teemant, 2003). Some or all of these principles may be manifested in other forms of multimedia cases, but they are the blueprint of VE cases. Therefore, understanding VE cases and how teacher-users react to them enhances understanding of multimedia cases in general.

Structure of Video Ethnography

This study used one of these video ethnographies—*The Jean Turner Case* (Harris, Turner, Baker, 2001)—as the target object of investigation. It captures a master teacher, Jean

Turner, working with fourth grade students in a morning of balanced literacy. A CD-ROM that typifies the video ethnography interface, it will be introduced in this section using much of Harris, Pinnegar, and Teemant's (2003) work in introducing a similar title. Figure 2 shows the video ethnography's basic interface. On the top right are the five study buttons representing five studies of the key components of this balanced literacy lesson: (1) morning of balanced literacy, (2) writing, (3) reading, and (4) management and motivation. On the top left are the nine probe buttons, which "represent examples of concepts that develop the theme of the study" (Harris, Pinnegar, & Teemant, 2003, p. 13). In other words, each of the five studies brings forth a different set of nine probes. When teachers explore these studies, "they select a study button, and are immediately presented with the labeled probes, which contain video clips illustrating the probe and the larger focus of the study….Typically one of the probes in the study also allows the user to view all clips in sequence" (Harris, Pinnegar, & Teemant, 2003, p. 14).

The Jean Turner Case — Morning of Balanced Literacy

Study buttons

Video screen

Buttons for additional features

Audio slider for Commentaries

Probe buttons

Movie slider

Four sources of commentaries: literacy specialist, professional literature, case teacher, and another teacher
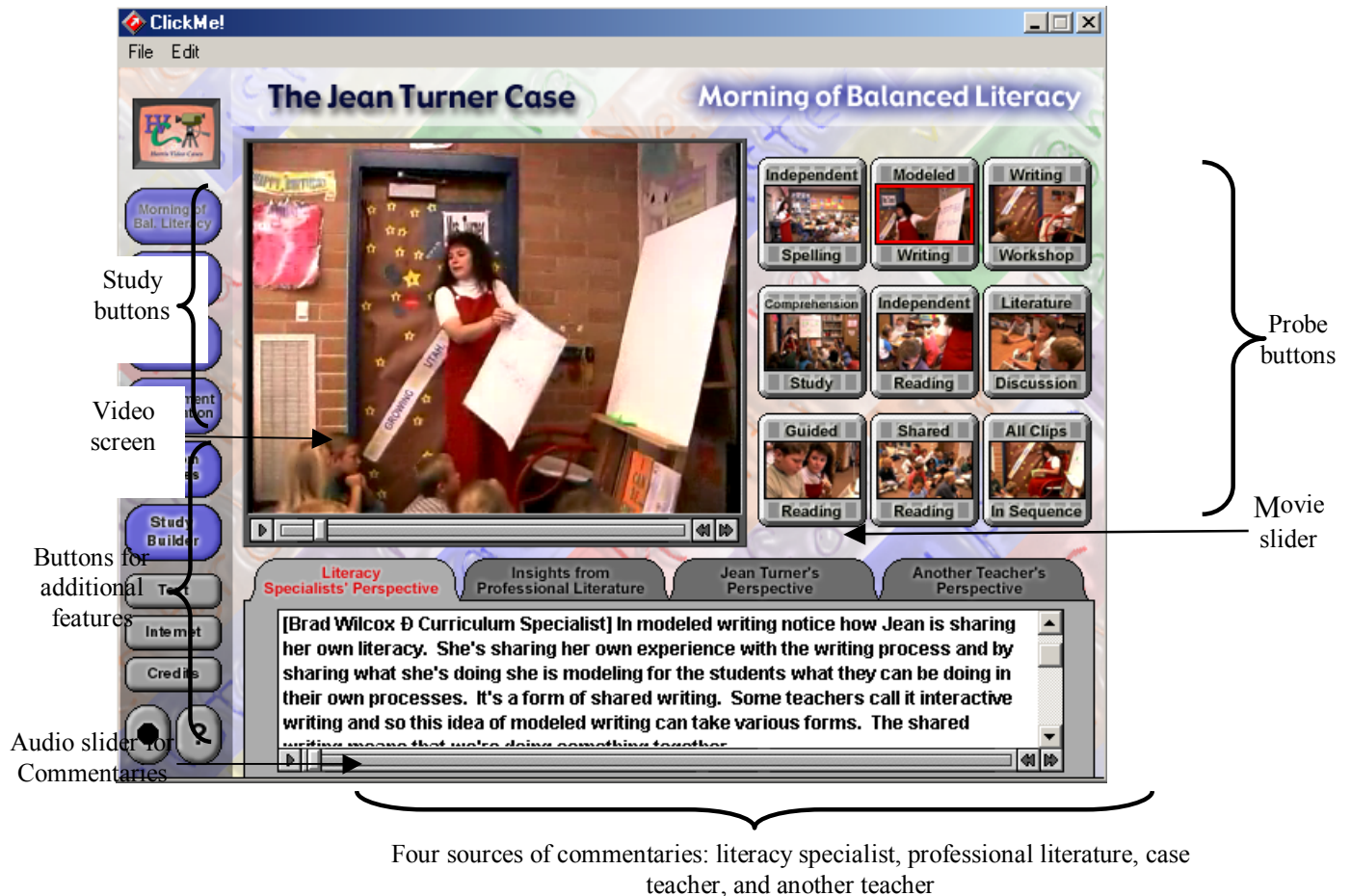
Figure 2. Video ethnography interface

In addition to the video, each probe also contains four perspectives or commentaries from constituents related to that particular probe: (1) literacy specialist, (2) professional literature quote, (3) Jean Turner—the case teacher, and (4) another teacher. "These perspectives can be both read and heard. The power of juxtaposition in the close proximity of time and space the various interpretations from the respective points of view while grounding all interpretations in a common, living classroom episode is unlimited in drawing forth questions and insights from pre-service [and in-service] teachers" (Harris, Pinnegar, & Teemant, 2003, p. 15).

The buttons for additional features, located below the study buttons, launch enhancing features such as custom studies by video ethnography users, text library from various perspectives, related internet links, production support credits, and tutorial.

In this research, participating teachers will interact with the first study—morning of balanced literacy, which contains nine probes: (1) independent spelling, (2) modeled writing, (3) writing workshop, (4) comprehension study, (5) independent reading, (6) literature discussion, (7) guided reading, (8) shared reading, and (9) all clips in sequence. The research limits its scope to this study so that in-depth examination of the large amount of qualitative data may be possible. In addition, because the first study gives an overview of key components of balanced literacy, it can better facilitate users' overall understanding than the other three studies.

Chapter 2: Design of the Study

The current study embedded its literature review throughout the first two chapters so that strong contextual links may be demonstrated between the study and related literature. This design section will introduce the data-collection process, the participants, and the analysis procedure, in this order.

Data Collection Stages

The data collection process was divided into three stages to inquire into participants' thinking before, during, and after their interaction with a video ethnography CD-ROM. It took place individually with each participant so as to avoid cross contamination. All participants' verbal responses were recorded on a tape-recorder and transcribed later.

Stage One: Before Interaction with the Case

The purpose of the first stage was to acquire basic understanding of the participants' cognitive makeup by assessing their biographic information, learning orientation, and beliefs about effective teaching generally and literacy teaching specifically. *Learning orientation* refers to a person's inclination to learn, which was measured using the Learning Orientation Questionnaire (LOQ) (see Appendix A) developed by Margaret Martinez (2000). It "describes dominant psychological factors that influence learning," "suggests how learners want or intend to approach learning," and "considers the learner's emotional investment in learning, strategic self-directedness, and independence or learning autonomy" (p. 1). Because video ethnography is self-paced instruction that requires student motivation and independence in learning, LOQ was used to reveal how these characteristics play out in the cognitive development process.

Participants' beliefs were also assessed because beliefs have an interactive relationship with teachers' practice and learning. As Richardson (1996) points out, "Beliefs are thought to drive actions; however, experiences and reflection on action may lead to changes in and/or additions to beliefs" (p. 104). Such relationship can have strong influence on what and how teachers learn. Thus the following verbal questions were posted to each participant to assess her beliefs:

What are the characteristics of effective classroom teaching and why?

What are the effective ways of teaching literacy and why?

Once the teachers had given their answers, they were asked, "Anything else?" This same follow-up question was used throughout the study to prompt participants to express their opinions further. It was repeated until they gave a definite "no" answer.

Stage Two: During Interaction with the Case

Stage 2 comprises the major portion of the data-collection process. It included think-aloud and self-reports stimulated by video clips and commentaries. Think-aloud means to verbalize one's thinking during a certain activity (Patton, 2002). This technique was used to monitor the participants' concurrent cognitive activities during their viewing of a video clip by asking them to say whatever came to their minds while they were watching the video. Because this technique might be initially awkward for the participants, they were asked to practice with a different video ethnography CD that had a similar interface but different content until they became at ease with the process. Participants were then asked to think aloud while they watched each of the nine video probes in the study. Keep in mind that participants took part separately in different schools or rooms so they did not distract or influence one other.

When each video clip ended, I asked the participant, "What is going on here?" and "What are some of your insights inspired by this clip?" The purpose of these questions was to provoke open-ended responses to the video. As in other parts of the study, I asked, "Anything else?" or "Is there anything else that you want to share with me?" to encourage them to share more. These steps were repeated following the initial three video probes until they became familiar with the process. Then I turned over the control of the tape recorder to them so that they could record their own think-aloud and video reactions.

The next step was to study the perspectives/commentaries. I told them what each of the perspectives in the CD was and that the text and the audio were the same. For the first two probes, I asked them to study all perspectives so that they could get a good sense of what they were. For the rest of the probes, they only had to choose at least two perspectives. After each probe, they went through the same "insights" questioning sequence. This whole process was audio recorded except when the teachers were just listening to the perspectives.

After repeating the same method from Probes 1 to 3, I asked them if they felt comfortable with the learning process. When they did, they continued without further promptings.

Stage Three: After Interaction with Case

The last stage was debriefing, which took place immediately after each participant finished reacting to the ninth probe. This was an opportunity for them to express their feeling concerning the overall experience. Each one of them commented on learning strategy, contents, technology, and anything else they wanted to express about the study.

Participants

This study used a purposeful sampling (Patton, 2001) of six teachers stratified by their years of teaching to explore probable relationship between teachers' seniority and their cognitive activities when using video ethnography. Two teachers came from each of the three strata, represented by the three teachers' career cycles: survival (first year), adjustment (second to fourth year), and mature (fifth year up) (Burden, 1980). The two teachers in each stratum provided opportunities for within-group comparison without being overwhelmed with large amount of data if more teachers were used. All participants were fourth grade teachers who had no prior training in balanced literacy but were interested to learn more so that they might find most relevant in the targeted video ethnography CD-ROM—*The Jean Turner Case: A Video Ethnography of Fourth Grade Balanced Literacy Classroom* (Harris, Turner, and Baker, 2001).

To recruit these teachers, letters were sent to all fourth grade teachers in nearby schools (see Appendix B). The six teachers who participated in the study were the first qualifying teachers who responded.

Analysis

The analysis used grounded theory (Strauss & Corbin, 1998) as the guiding method in its search for embedded meanings and relationships emerging from the data in order to fulfill the purpose of discovering teachers' cognitive patterns when using video ethnography and developing theoretical propositions of cognitive development and video ethnography.

It began with a deduction-induction/deduction-deduction process in analyzing participants' verbal responses to the CD, which (1) formulated a preliminary framework

based on existing literature, (2) engaged in a two-way process of analyzing the data and establishing the coding criteria, and (3) recapitulated the recurring patterns in individual participant cases. Then, a cross-case analysis of all participants generated the theoretical propositions. Each of these steps is elaborated below.

Formulating an Analytical Framework Based on the Literature

The first step was to construct an analytical framework. Authors of literature on information processing argue that human cognition "is conceptualized as representing a linear continuum from the less complex to great amounts of cognitive complexity" (Sprinthall, Reiman, and Thies-Sprinthall, 1996, p. 672). As teachers construct meaning from experience, they progress through stages of cognition. The higher stages are more complex and are characterized by increased ability in discerning and categorizing new information, reflecting through meta-cognitive activities or by examining external stimulus, and problem-solving in novel situations. Thus the initial framework consists of the following three elements:

1. Noticing.

Noticing refers to the awareness of an observed teaching and learning situation in relationship to educational theories and principles (Carter et al., 1988). Effective teachers can recognize layers of meaning implied in classroom activities and make higher levels interpretations and explanations of practice during these observations, which lead to a more complex view of the classroom. On the other hand, novices tend to be attracted by appearances and behaviors without the ability to discern the underlying principles. As Bransford, Brown, and Cocking (2000) explain, "One dimension of acquiring greater competence appears to be the increased ability to segment the perceptual field (learning

how to see). Research on expertise suggests the importance of providing students with learning experiences that specifically enhance their abilities to recognize meaningful patterns of information" (p. 36). The depth of a teacher's noticing indicates one aspect of his or her cognitive complexity and is a prerequisite for reflection (Mewborn & Wilson, 1999). This suggests that learning to see and being able to connect observed detail with underlying principles rather than merely responding to the surface structure is an indication of greater cognitive complexity.

2. Reflecting.

The need for teachers to be reflective practitioners was mentioned by Schön (1983) but its theoretical foundation goes back to Dewey (1933). A reflective practitioner is one who reflects in action and reflects on action (Schön, 1983). As teachers become more reflective, they become more flexible in their thinking about and in the ill-structured reality of the classrooms. Reflection is also a process, which allows for the expression of tacit knowledge learned from experience (Richardson & Placier, 2001). It reveals teachers' beliefs, which are their "dispositions to act" (Raths, 2001). Teachers' ability to reflect grows as part of their cognitive development "from authority-based concrete thought, to quasi-self-reflective abstract, and then to 'true' reflective judgment" (Sprinthall, Reiman, and Thies-Sprinthall, 1996).

3. Problem-solving.

Because of the uncertain, unpredictable, and eclectic nature of classrooms, effective teachers are problem-solvers, who can take appropriate action in previously unencountered circumstances. Novice teachers are less able to problem solve. They tend

to possess inert knowledge that cannot be accessed without explicit probes (Bransford, Franks, & Sherwood, 1989).

Creating and Applying Conditional Criteria for Each Statement

The next step was a continuous cycle of analyzing the data using the framework and advancing this framework based on novel instances. The result was a set of criteria for categorizing all statements uttered by the participants. This stage began with grouping the transcribed statements as either descriptive or reflective. The descriptive statements were analyzed for awareness. The basic idea was to see how much of the participants' verbal information was related to superficial behavioral activities that were not tied to educational principles and compare them to those who were able to, then explore what might account for such differences. New criteria emerged to offer specific depiction of new accounts. Two undergraduate students were hired to provide detailed coding of the data using these criteria. Their work was cross-checked for consistency. Occasionally, a noncompliant instance occurred, and the three of us would discuss until consensus was developed, established on a criterion or broadening the definition of an existing one. The analyzing techniques improved and modified as the study progressed. When two or more criteria could be used to label a particular statement, the most suitable one was used. These criteria continued to evolve around the data. Hence the resulting set became an indication of the participants' cognitive activities. In other words, on the one hand, the criteria were conditional labels for categorizing the data. On the other hand, they denoted the resulting patterns manifested from the data. The following is the final set of these criteria, and because of their close association with the results, they will be explained further in the Findings:

Awareness: Basic noticing, advanced noticing, and recalling

Comprehension: Interpreting, expressing uncertainties and assuming

Acceptance: Agreeing, liking, and judging positively

Rejection: Disagreeing, not liking, and judging negatively

Connection: Sharing belief, comparing, and sharing experience

Desire to act: Applying, and requesting more

Recapitulating the Recurring Patterns in Each Participant

After all statements had been categorized using the criteria above, they were reexamined within the parameter of each participant in order to determine recurring themes, patterns, and characteristics salient to that individual. The purpose was to project them as unique cases of "idiosyncratic manifestation of the phenomenon of interest" (Patton, 2001, p. 450). The process included identifying "core consistencies and meanings" (p. 453), comparing and contrasting typical and atypical qualities, and correlating multiple sources of information from various stages of data collection. Results were six case studies of video ethnography interaction from the six participants, each revealing different aspects of a common phenomenon and the cognitive state of individual participant.

Generating Theoretical Propositions by Cross-case Analysis

The last analytical step was to generate and examine theoretical propositions or hypothesis through cross-case analyses. Individual cases were compared and contrasted to explore probable explanations of common occurrences. Results were stated as provisional theories of video ethnography.

Credibility and Transferability Issues

Lincoln and Guba (1985) suggested credibility and transferability as the key principles in ensuring accuracy and plausibility of a qualitative study. In this study, strategies employed to adhere these principles include stating researcher credibility, triangulating the data collection methods, ensuring referential adequacy, involving people other than the primary researcher to analyze and confirm data, and providing descriptive detail. Following are explanations of these strategies.

Researcher Credibility

The primary researcher received training in qualitative research from graduate course work and hands-on experiences in evaluating a development project (Chan, 2000) and an international conference (Chan, 2001). He had engaged in the video ethnography research and development work in the last few years. Therefore, he is familiar with the related literature and technology to investigate in a way that may yield revealing information. However, his proximity to the project might have given him bias towards the effectiveness of the video ethnography tool. The researcher tried to avoid such bias by providing ample primary sources for supporting his points and employing various strategies to improve credibility.

Data and Methodological Triangulation

Triangulation is an important strategy for establishing credibility in qualitative research (Patton, 2001). It refers to using multiple methods or data sources in the study of phenomena. As stated earlier, this study used participants who represented different stages of the career cycle that provide a variety of data sources (data triangulation). It

also used multiple methods such as interviews, think-aloud, questionnaires, and self-reports to study the same program (methodological triangulation).

Referential Adequacy

Referential adequacy is another strategy in enhancing credibility. It refers to using original context rich materials to provide background meaning to support data analysis, interpretations, and audits (Lincoln and Guba, 1985). This study has provided abundant citations from the original transcriptions throughout the findings section.

Multiple Researchers

Involving people other than the primary researcher in analyzing and confirming data is another to establish credibility (Lincoln and Guba, 1985). As stated earlier, this study has employed two students in coding the transcriptions. Because they do not have special interest in the findings, they were able to code the data objectively as instructed.

Descriptive Detail for Transferability

Transferability refers to the applicability of the results to similar settings (Lincoln and Guba, 1985). This study provides descriptive detail that allows others to decide if the findings are applicable to other studies. It did not attempt to generalize results to other populations, but it did provide some analytical generalizations in its implications.

In short, this study has used a number of strategies to ensure its credibility and transferability despite the primary researcher's probable bias in the study due to personal involvement. Its findings and implications in the following chapters provide plausible depiction and understanding of participants' cognitive activities when interacting with video ethnography.

Chapter 3: Cognitive Activity Findings

This chapter and the following three chapters are organized to answer the four research questions of the study. The current chapter answers the first question: "What cognitive activities are revealed in teachers' thinking through their use of video ethnographies?" Answers to this question are found in the criteria developed during the analysis process. These criteria represent the types of cognitive activity the participants engaged in during their interaction with the video ethnography CD. The initial set of these activities includes noticing, reflecting, and problem-solving, as suggested in the literature. However, because the initial set of activities was used to label new statements uttered by participants, they appeared to be inadequate. Thus, new criteria emerged to depict novel incidents. At one time, the study employed more than thirty criteria. When they became so numerous, they lost their effectiveness in generalization. Therefore, they were consolidated and categorized into a manageable set so that they could serve the function of typifying all the participants' cognitive activities without being overwhelmingly detailed. For example, the idea of noticing was developed into many different types and then consolidated into basic and advanced categories.

Table 1 shows the final set of criteria, which resembles the initial analytical framework but shows greater sophistication. The two main cognitive levels are awareness and reflection: awareness is the fundamental and reflection is the sophisticated level of thinking. Awareness activities are categorized into three types: basic noticing, advanced noticing, and recalling. On the other hand, reflective activities are categorized into five types (comprehension, acceptance, rejection, connection, and desire to act) with fourteen subcategories. The following section provides a definition of each of these categories and

subcategories, with examples from different participants. These categories were not predetermined coding criteria. Rather, they were the resulting labels that came from the researcher's effort to depict the genres of cognitive activities that emerged from transcriptions of participants' protocol when they interacted with the video ethnography used for this study.

Awareness			Reflection												
			Comprehension			Acceptance			Rejection			Connection			Desire to act	
Basic Noticing	Advanced Noticing	Recalling	Interpreting	Expressing Uncertainty	Assuming	Agreeing	Liking	Judging positively	Disagreeing	Not Liking	Judging negatively	Sharing Belief	Comparing	Sharing Experience	Applying	Requesting More

Table 1. Final set of criteria for analyzing participants' verbal responses to the video ethnography CD-ROM.

Awareness Level

Awareness level activities are rudimentary to the higher reflective level activities. I had characterized them as first becoming aware of or paying attention to what is seen and heard. Awareness activities include noticing and recalling. Noticing refers to what the participants have observed during or after watching a video. It is further divided into basic and advanced noticing. Recalling refers to their recollection of a commentary.

1. Basic noticing

The basic form of noticing is a straightforward description of the observed with little or no usage of adjectives. It shows what attracts a participant's momentary attention

without apparent connection to any judgment or reflection. At times, an event or an object may be briefly noticed at the first encounter and further expounded on later. In these cases, I still code the first citation as basic noticing; the later citation is coded at a higher-level. Following are examples of basic noticing from Probe 1:

Deborah: "They're listening to music" (Think-aloud).

Elizabeth: "He's (a student) twiddling his pencil" (Think-aloud).

Heidi: "She started playing music" (Video Reaction).

Jennifer: "They're doing handwriting and coloring" (Think-aloud).

Carolyn: "She's got little things stacked in these things" (Video Reaction).

Kimberly: "Morning work" (Think-aloud).

2. Advanced Noticing

The higher form of noticing is characterized by using adjectives in the description. Statements at this level begin to demonstrate added value judgment, and interpretations of the details noticed. In other words, basic noticing is literal description, and advanced noticing is more subjective description that uses words with implied meaning or educational terms. For example, "the teacher is talking to the students" is basic noticing; "the teacher is encouraging the students" is advanced noticing. Following are some examples from Probe 1 (italics added to adjectives and interpretive actions).

Deborah: "Looks like they're all *engaged*, busily working" (Think-aloud).

Elizabeth: "Kids are *actively engaged* in their learning" (Think-aloud).

Heidi: "Very *positive* with them" (Think-aloud).

Jennifer: "She's *getting the class's attention,* and the kids all seem really *on task*" (Think-aloud).

Carolyn: "It seems like it's a very happy group of kids, *positive, involved*" (Video Reaction).

Kimberly: "Looks like a pleasant place to be. It's not chaotic. It's calm, and the music is nice in the background" (Video Reaction).

3. Recalling

Recalling was used only when the teachers reiterated what the commentators said in the CD. Therefore, if a participant gave her summary of the video after listening to a commentary, the description still fell under noticing. However, if the participant rephrased the commentator's description, it would be called recalling. The following examples are also from Probe 2:

Carolyn: "He said a good way to let the children actually take the pen" (Commentary 1).

Elizabeth: "He was talking about how she was modeling during this clip, and how it was considered a shared writing" (Commentary 1).

Deborah: "She's talking about, you know, sharing her thoughts with the kids that it's" (Commentary 3).

Heidi: "Telling why it is effective for these kids" (Commentary 1).

Jennifer: "She said that instead of making ideas implicit, she does it explicitly" (Commentary 3).

Kimberly: "She talks about the tools she used to scaffold, to layer, and to build, which is what I was thinking" (Commentary 3).

Reflection Level

After a participant became aware of a certain event or object, she might reflect further on it. The term "reflection" is used here in its most general sense as providing evidence of thinking further into the encountered. It is derived from Dewey's (1933) idea of reflection as "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (p. 9). However, reflection as a coding category was generalized to include other forms of cognitive activities grounded in common experiences. The purpose of this widening was to avoid leaving out any traces of cognitive development and to "move beyond simple questions about whether or not [an observed] practice is working to understanding how it is working and for whom" (Jay & Johnson, 2002). Reflection is divided into five categories, and each category contains two to three subcategories of activities. Subcategories are distinguished by subtle differences, whereas categories are more distinctive. Certain statements may overlap into multiple categories and they have been labeled with the one that seems most fitting by the raters. Following are these categories and subcategories with explanations and examples:

1. Comprehension

Comprehension is the essential beginning level of reflection and the process of internalizing the encountered. It is the taking in (or not taking in) of an external stimulus to make meaning personal. It includes three activities: interpreting, expressing uncertainty, and assuming.

Interpreting.

The first subcategory in comprehension is interpreting, which refers to a participant's description of what she has perceived rather than a direct account of an observed fact, which would have been labeled "noticing." An example of an interpretive statement is, "She's monitoring her class, but the kids are actually in charge of their own learning from what I'm seeing" (Elizabeth, Probe 1, Video Reaction). An example of noticing is, "She's just going around, encouraging the students as they're working on something" (Deborah, Probe 1, Video Reaction). Although both teachers described the same phenomenon, the first participant had interpreted the teacher's "going around, encouraging the students" as "monitoring her class," and "they're working on something" as "the kids are actually in charge of their own learning" while the second participant had merely stated the fact. So interpreting is different from advanced noticing because instead of rephrasing (advanced noticing), the participant could summarize an activity using educational terms (interpreting). Following are samples of interpretive statements from Probe 2 (some words or phases are italicized to emphasize their interpretive nature):

Deborah: "It sounds like she's *modeling* some writing" (Think-aloud).

Elizabeth: "So she's *doing a writer's workshop* kind of thing" (Think-aloud).

Heidi: "This *modeled writing* … seems to be *working for her*" (Commentary 3).

Jennifer: "Nobody was questioning it so *she must have them put these story maps together often*" (Video Reaction).

Carolyn: "She's pulled them up close to here so *they have a more intimate feel* of what she's doing, and that *makes reading and working more fun*, too" (Think-aloud).

Kimberly: "The *students are having ownership* in this story, so they're going to care about what happens" (Commentary 1).

Expressing uncertainty.

An expression of uncertainty generally includes phases such as "I wonder…," "I don't know…," and "I am not sure...," but it also includes asking questions. Therefore, it is an expression of incomprehension in the comprehending process. It often occurred when a participant watched a video but was unsure of its particulars, or when a participant had a keen interest in a certain practice and wanted to know how to carry it out. Following are examples of Uncertainties from Probe 5:

Deborah: "The teacher's got some papers she's checking off as she watches them do their reading. I'm not sure what she's looking for" (Think-aloud).

Elizabeth: "Okay, as far as reading books, are they reading independently? Are they reading together?" (Think-aloud).

Jennifer: "So it made me think how she structured that or how she monitors the book talk zone because it could be a really effective tool, but it also could be a big waste of time ... if your kids saw that they could get away with that. So that would be a question that I had of it" (Commentary 3).

Carolyn: "I'm not sure about the check-off book. She said she is going to have time to work with each group today, so I don't know what she's going to be doing with that" (Commentary One).

Kimberly: "I do have a question whether the students are sharing the books that they've both read together, or whether it would be two students sharing books that are different

from one another, but sharing what they read and what they liked about it and how they felt about it" (Video Reaction).

Assuming.

Presumptuous statements of participants are characterized by words such as "assume," "suppose," and "guess." They are evidence of extending one's comprehension of uncertain events by speculating based on what is known. In Probe 2, for example, Deborah, Elizabeth, and Kimberly made such statements:

Deborah: "When I think of a pre-write.... I guess they've read a book together, and they're breaking it down into sections" (Think-aloud).

Elizabeth: "I'm assuming that the balanced literacy and workshop are similar, or the same thing" (Commentary 4).

Kimberly: "She has.... I guess maybe they're writing a class story" (Think-aloud).

2. Acceptance

Acceptance refers to the favorable reception that a participant expresses. It contains three subcategories of activities: agreeing, liking, and judging positively.

Agreeing.

When a participant says, "I agree," that is an agreeing statement. Following are such examples from Probe 5:

Deborah: "I agree that students should be reading at home" (Commentary 1).

Elizabeth: "So those are some areas I would agree with them, that they need some independent reading, just pure independent reading" (Commentary 4).

Heidi: "He's just explaining how effective she is with their independent reading and that she's able to get the kids going and that she also models getting reading in a book and how effective that is for these kids, and I think that's totally true" (Commentary 1).

Carolyn: "Absolutely! I agree one hundred percent with what he said there. He said that it's important to have time in the classroom for the students to read, and I agree one hundred percent" (Commentary 1).

Liking.

The second subcategory of acceptance is "liking," which includes statements that explicitly use the words "like" or "love" to express the participants' preference of what they had seen or heard. All participants used the word "like," but there is a wide range of frequency among them. Elizabeth used it the most (72 times), whereas Deborah used it only once. The majority of the participants never used the word "love," but Elizabeth and Kimberly used it quite often. During this counting process, special care had been given to exclude other uses of these words (e.g., using the word "like" as "such as," or using the word "love" to describe a participant's own students' preference of an activity). Interestingly, the number of times teachers used liking words correlates strongly with their score on the learning orientation assessment, which will be reported at a later part of the findings section. Table 2 shows the total number of times each participant used the words, "like" and "love."

	"Like"	"Love"	Participant's Total
Carolyn	10	0	10
Elizabeth	72	14	86
Kimberly	38	10	48
Deborah	1	0	1
Heidi	13	0	13
Jennifer	50	0	50

Table 2. Participants' frequency in using the words "like" and "love."

Following are examples from Probes 5 & 6:

Deborah: "I like the idea that she is focusing her mini-lessons on these comprehension strategies, so that the students are aware of the things that they should be looking at as they read" (Probe 5, Commentary 3).

Elizabeth: "I like the fact that they're talking and discussing and making predictions and discussing it" (Probe 6, Think-aloud).

Heidi: "I like how the kids are directing this discussion group" (Probe 6, Think-aloud).

Jennifer: "I like how the kids had a hundred percent choice over what they read" (Probe 6, Commentary 1).

Carolyn: "I like the idea, as I said, of sitting around the table and discussing, and the fact that she did take a back seat, and she let the other kids talk and all" (Probe 6, Commentary 1).

Kimberly: "I like the idea that they're using bookmarks" (Probe 6, Commentary 3).

Judging positively.

The last subcategory of acceptance is judging positively, which is an expression of a favorable opinion towards what is observed or heard and use words such as "good," "great," and "wonderful." The "liking" statements can fall into this category, too, but in this study, I have separated them with a more specific description. Following are examples of judging positively from Probe 3:

Deborah: "She makes them accountable; very good management skills" (Commentary 1).

Elizabeth: "If this is how it is run on a daily basis, then I am very impressed" (Video Reaction).

Heidi: "He explains the process of how she's taken responsibility…which I think is a great idea" (Commentary 4).

Jennifer: "She just has a quick little checklist, which is an easy way to look down and see if they're never finishing stories or if they're always working on the same story, that'd be quick and handy" (Think-aloud).

Carolyn: "They're very attentive to each other, which is a very nice thing" (Think-aloud).

Kimberly: "It's cute that this child is in the teacher's chair, which is a special place" (Video Reaction).

3. Rejection

Rejection is another reflective category. Contrary to acceptance, rejection refers to participants' negative remarks towards a certain aspect of the contents. It is a rare expression for most participants except for Carolyn, the most experienced teacher in the group, whose comments were significantly rampant with negative comments. Carolyn's

experiences will be expounded further in her case study. Because these statements are rare, I will define the subcategories here and provide examples for all of them together. "Disagree" and "not liking" are expressions where participants explicitly said they disagreed or did not like what they had seen or heard. Statements that "judged negatively" expressed a negative sentiment but did not use either of these words. Findings in this area coincide somewhat with Fessler and Christensen's (1992) idea that experienced teachers are more confident in voicing their contrary opinion to what authority has instructed. The two most experienced teachers, Carolyn and Elizabeth, had significantly higher numbers of rejection comments, while the other teachers did not show significant differences among one another. Table 3 shows the number of rejection statements that each person made, followed by examples from various probes.

	Disagreeing	Not liking	Negative Judgment	Total
Carolyn	17	18	4	39
Elizabeth	7	5	2	14
Kimberly	0	0	1	1
Deborah	1	0	1	2
Heidi	0	0	0	0
Jennifer	0	1	0	1

Table 3. Number of critical statements made by each participant.

Deborah: "Well, it sounds like she is doing specialized lists for different kids on different levels, which would be very time-consuming and very difficult" (Probe 1, Commentary 2)

Elizabeth: "Reading aloud is a very key, essential point in my opinion. I don't think she's not doing enough of that, at least from what I've seen. So that's kind of where I'm goin'." (Probe 7, Commentary 4).

Jennifer: "I don't like the wording of that as much as I like Brad's (Brad Wilcox's commentary). It was a lot more technical" (Probe 1, Commentary 2).

Carolyn: "I don't like that song she was singing, or that she was playing" (Probe 1, Video Reaction).

Kimberly: "This is real 'textbooky.' It doesn't even sound like real-life teaching literature" (Probe 4, Commentary 4).

4. Connection

The connection category includes reflective statements that show explicit links between the presented materials and the participants' own teaching and learning beliefs and experiences. It is further divided into three subcategories: sharing belief, comparing, and sharing experience:

Sharing belief.

A belief is an opinion a participant shared based her own value and experiences. It may not necessarily be articulated as a belief shared in the beginning of the study regarding effective teaching and literacy, but salient belief gives a more complete picture of the participants' entire belief system. The following such examples are from Probe 4:

Deborah: "And if we can teach kids to love to read, that would be the greatest gift that we could give them" (Commentary 3).

Elizabeth: "It's important for us to make connections and that by modeling what good readers do, the kids start to make the connections and start to model those patterns in

their own good reading, and they become more engaged in their reading" (Commentary 4).

Jennifer: "They can fake their way through school a lot of the times by doing that because they can read really well and their teachers think that 'oh, they're great readers,' but if they don't understand behind it, then you're almost doing them more of a disservice" (Commentary 2).

Carolyn: "I think that if you teach the child something, and then when they go off on their own, then they use them, and they see that it makes sense. But particularly, if they see you doing it. So I agree with everything he said" (Commentary 4).

Kimberly: "I think a lot of students fall into that category of verbalizing without comprehension. Read the words, but miss the message" (Commentary 3).

Comparing.

Another subcategory of connection is comparing, which refers to statements that show participants' comparisons between the video ethnography contents and their own practices. The following are such examples from various probes:

Deborah: "The kids seem comfortable sitting on the floor. I'm afraid my kids would be very distracted" (Probe 4, Think-aloud).

Elizabeth: "I like the way the teacher redirected that and said, 'Don't go beyond that. If you've read beyond, then you need to just talk about what it was.' That would be a little frustrating to me as a teacher because I'm a little bit of a control freak on that sense" (Probe 6, Think-aloud).

Heidi: "She started playing music. I've never done that. I do it during art and things like that, but I've never done it while they're conferencing" (Probe 1, Video Reaction).

Jennifer: "I have kids who embellish and make things up as they go along and they sound like they know what's going on when they really have no clue" (Probe 6, Commentary 1).

Carolyn: "I think it's okay if the teacher is reading to the class to stop and do that, to have questions. But I don't know, to have a child read and ask the questions. I suppose it's okay once in a while, but I certainly wouldn't do it with every book" (Probe 6, Commentary 1).

Kimberly: "They aren't reading text in a critical, analytical, imaginative, or probing way or not. They're just reading the words. And I guess we're the same. And I'm doing it right now, reading these very big words" (Probe 4, Commentary 3).

Sharing experience.

Another form of connection is sharing experience, which refers to participants' statements about their own teaching and learning experience. In contrast to comparing, which mostly refers to abstract comparison of differences or similarities, sharing experience is supported by personal accounts. The following are examples from various probes:

Deborah: "Modeling is very important; it will develop good writing….I have a writer come in the classroom—oh, it's been a couple months ago—and her strategy of writing was very dynamic. She had the kids use that strategy in their own writing and it was very helpful, and she did model that" (Probe 2, Video Reaction).

Elizabeth: "She has music in the background, which creates, from my training and background and experience dealing with ITI training and those type of things, a homey environment. Comfortable" (Probe 1, Video Reaction).

Heidi: "I try to do that with my students, to show them that I love to read and I love to get lost in books and to spend a lot of time doing that silent reading" (Probe 5, Commentary 1).

Jennifer: "I know that at the beginning of the year I'm super-excited to start new things and to try new things. And everything's going just right, and then there's always up and downs, where you just fall back and teach what you're used to, and then you try new things and you fall back and what you teach what you're used to. But asking yourself these questions all the way through it ("Is it centered in meaning?" "Are the kids in the right books?" "Are they becoming more independent?") is going to help me to stay more on the right track as a teacher and to make it so that it's beneficial to the students" (Probe 7, Commentary 2).

Carolyn: "I find that also, to have a child follow along in the text that I'm reading, it helps their eye action, it helps them to keep up, it shows the expression of the teacher or the reader, and they sort of internalize that and make that into their own way of talking and reading" (Probe, Commentary 1).

Kimberly: "Shared reading was an important part of my childhood with my mother reading aloud. I have enjoyed teachers reading aloud to me. That is a very enjoyable experience, and I'm sure, in my own life, increased my love for literature" (Commentary 2).

5. Desire to act

Desire to act statements denote a desire to act. They consist of two subcategories: applying and requesting more.

Applying.

When a participant explicitly expressed an intention to apply what she had learned, that statement was coded as "applying." Although all the participants had expressed appreciation of what they had learned and implied desires to apply, not all of them explicitly said they would try one technique or another. Examples of Applying statements are as follow:

Elizabeth: "The fact that she's talking about using a traditional list for spelling where they're getting those spelling patterns—I think that's very good. In fact, I like that a lot. That was just an 'ah-hah' for me. That's something I would be jotting down. That's something I would like. In fact, I'm just going to right here" (Probe 1, Commentary 3).

Jennifer: "He was explaining how they were a lot more meaningful to the kids where they could connect them directly to what they were doing in class rather then just a random list of words…. I like that it's backed up, and it does help them a lot more if it comes directly from words they've misspelled or their writing and that. So it gives me encouragement to keep trying it" (Probe 1, Commentary 1).

Carolyn: "I'm not so interested in getting a finished product, but I can see that discussing a story of mine would be helpful to them, and so I may do that" (Probe 2, Commentary 4).

Kimberly: "This one let the students see the positive experience to be involved in creative writing, and even the teacher would like to ask questions and get some questions answered on what could make her story better…. I would like to do this in my own classroom. I enjoy writing and encourage creative writing a lot in my classroom, and I would like to see something like this. I would like to try this and see how it goes with my own students" (Probe 2, Commentary 4).

Requesting More.

Another form of desire to act is requesting more. When a participant was eager to learn more about a certain practice she had seen and expressed a desire to know more about the particulars of the practice or to contact the case teacher for more information, I coded it "requesting more." Only Elizabeth, Jennifer, and Kimberly made these statements, and among them, Elizabeth made many more of these statements than others did.

Elizabeth: "I want to know how long she takes to do that, and how long does she take to teach this process. Is it a matter of a few days, weeks? I want to sit down and pick this woman's brain, because I'm curious about how long she takes, because I like the fact that she's using this, and I think she sets up her classroom very well?" (Probe 3, Commentary 3).

Jennifer: "And I want to see how she transitions from the prewriting to… I remember she was doing her status of the class, or whatever the called it, so I want to see how she transitioned from her mini lesson to the status of the class" (Probe 9, Think-aloud).

Kimberly: "I would like to know if Jean chooses words or do the students choose the words, as well as the precomposed list? Do you know?" (Probe 1, Commentary 4).

In a nutshell, this chapter identified six categories and 17 subcategories of cognitive activities revealed by an analysis of teachers' responses to a video ethnography. This categorization process enhances the understanding of how teachers learn from multimedia cases and lays the foundation for the next two chapters in investigating further into how the cognitive activities manifest into different patterns in each participant and what factors may facilitate the development of these activities.

Summary

This chapter defined the cognitive activities demonstrated in all participants' oral responses in the study. There are two levels: awareness and reflection. The awareness level activities refer to becoming conscious about the happenings. They are further categorized into basic noticing, advanced noticing, and recalling. The reflection level activities refer to five categories of thoughtful processes differing in genre and depth. These categories of activities facilitated the labeling of participants' verbal reaction and thus, laid the foundation for the next chapters.

In Chapter 4, study participants will be introduced as individual cases to reveal cognitive patterns that are unique to them. Chapter 5 will link the cognitive understandings of the cases in order to establish theoretical propositions that explain the workings of the video ethnography. The last chapter will discuss the implications of these findings and conclude this study.

Chapter 4: Case Analysis

This chapter builds upon the findings of different genres of cognitive activities to shed light on how video ethnography relates to each participant's cognitive development patterns. It is divided into cases of individual teachers. Each case contains background information, statements of beliefs in general and literacy teaching, and cognitive patterns that are salient in participants' verbal responses. The cases are presented according to the participants' years of teaching, beginning with the most experienced teacher. Please note that actual names of the participants have been changed throughout this report to protect their identities. All participants are females.

The Case of Carolyn

Background Information

Carolyn is the most senior of all the participants. She has been teaching for 36 years. For the majority of those years, she taught second graders at the same school in northern Utah until two years ago when she was reassigned to teach fourth grade. Carolyn obtained her baccalaureate degree from a state university and a master's degree from the satellite campus of a prominent U.S. university in Germany while she was working in Germany. Carolyn's classroom is a portable unit outside of the main school building. It has a mixture of desks and tables, and a reading corner with two shelves of books. She teaches in the same school as the other two participants—Elizabeth and Deborah. Their school is unique in Utah because the majority of its students (over 90%) come from families who are not permanent residents of the state; instead, they are dependents of the personnel working at a nearby military base. The student body, therefore, tends to change from

year to year and sometimes, month to month depending on the guardians' assignments. There is greater ethnic diversity in this school than other schools in the area. In most of the other schools, students come from suburban middle-class Caucasian families. It is logical to assume that teachers in a school like Carolyn's are more adaptive to student changes during the school year—a fact that does not have obvious relationship to the study but should be stated, nonetheless.

At the beginning of the study, I asked each participant about her general beliefs in effective teaching and specifically, their beliefs in literacy teaching. Carolyn's answers were characterized as being detailed, student-centered, and well supported with many personal examples. Her answers were much longer than those of other participants (see Figure 3) because she provided detailed examples to support her points. Many of her teaching beliefs focused on the students. With regards to effective teaching, for example, five of her seven beliefs focused on the students, and the other two were on the classroom and the teacher.

Number of words in answering questions regarding participants' beliefs

- Beliefs about Effective Teaching
- Beliefs about Literacy Teaching

Word counts

Kathleen: 1080, 1951
Emily: 303, 174
Kayla: 52, 72
Debbie: 141, 105
Heather: 65, 35
Jamie: 175, 189
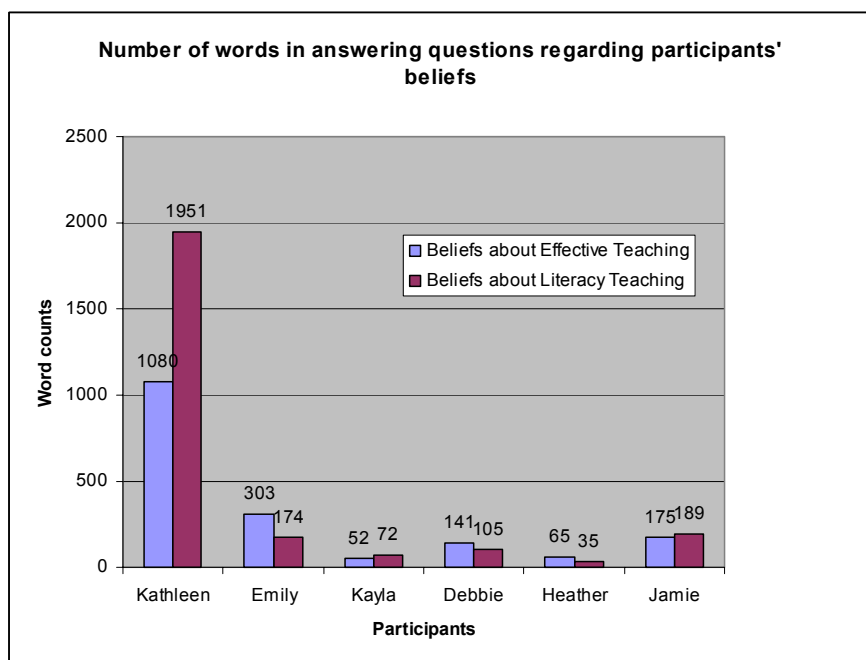
Participants

Figure 3. Number of words participants used to describe their beliefs in effective teaching and teaching literacy

Beliefs

Beliefs in Effective Teaching in General

Like other participants, Carolyn was asked the following two questions to assess her beliefs, and she answered them with explanations accompanied sample statements:

What are the characteristics of effective classroom teaching and why?

What are the effective ways of teaching literacy and why?

With regards to the first question, Carolyn's statements are chronologically identified as follows:

Students' interest: Carolyn believes that teaching effectively is to teach in a way that interests the students. She said, "I guess [effective teaching] would be to engage the students, to have them have an interest in what it is you are saying, to have it be interesting so that the children aren't dull, so they don't think it's dull…" The idea of focusing on students' interest is prevalent in her belief as she repeatedly identified similarly from somewhat different perspectives.

Students' need to understanding the purpose and relevance: Carolyn's second belief in effective teaching relates to showing students the rationale for teaching. She said, "They've got to see the point of what they're doing. It's got to be meaningful to them, and it's got to have a focus down the line. …" These first two beliefs were linked together with an example of her tutoring after school, in which, she found that the day-time teacher of her sixth grade students had given them very dull homework—"count[ing] the number of E's in these words."

Orderly classroom: Carolyn's beliefs also include how the classroom should be setup: "The classroom needs to be orderly because there are some children who have a hard time focusing if things aren't in order… the room itself has to be conducive to a peaceful place to think." She indicated that she was a "very sloppy person" and had "a real problem with this" but she did think it was important. She used the example of having "a blank wall" with nothing on it in her classroom so that students, especially gifted students, could "look for peace."

Giving students freedom in the classroom: Carolyn's fourth belief adds a new perspective to her earlier belief relating to students' interest: to teach effectively, students must be interested and happy, and to make students happy, teachers must give them freedom in the classroom. Carolyn said, "I try very hard to let the children sit where they want, with whom they want…unless the child has given me a real problem, and then it's only for a few minutes or a few days or a few hours because I believe that we are emotional people before we're anything else. And if a child is not happy, they can't learn, and so I try to do everything I can to make learning fun, but also happy." She gave the example of her allowing the students to move from one side of the room in early morning and then "by 11:00," they had moved to the other side of the room because she saw such moves as important to them in "relating" and "making friendships."

Knowing what upset the teacher: Carolyn also believes in expressing her feelings to the students: "I think I have to tell them [what] makes me a happy teacher, because if they are irritating me constantly, and they don't know it, then that doesn't make for a good thing." She gave an example of informing the students when she hadn't had any sleep, and she was "gonna be really mean unless the students be nice to [her]." She also took

the students "into [her] confidence," involving them to find her lost items in the classroom.

Level of learning: Carolyn briefly mentioned a belief in adopting teaching to the students' level of learning, "The level of learning has to be where the children can do it, and so I try not to make anything too hard or too easy." She did not provide an example for this belief.

Students' enjoyment: Carolyn's last point was a summary statement, reemphasizing the importance of enjoyment and relevance in learning: "I want them to think that learning is fun. I don't want them to think that, Oh dear, here I've got to learn this awful, ugly thing…I teach with games…songs because if everything is just fill out a sheet of paper and answer the questions, what's the point…So, to them learning is exciting, it's fun, it's not open your book and answer the questions on page 31."

Beliefs in Effective Literacy Teaching

Some of Carolyn's responses to the second question on her beliefs in effective ways of teaching literacy were elaborations of her general effective teaching beliefs, but most of her responses were pedagogical ideas.

Importance of phonics: Phonics is Carolyn's first pedagogical belief in literacy teaching, and it is very important to her: "Well, I believe that phonics is a very important part. I believe if children can't sound out words, they're kind of lost. To be honest with you, when I taught at second grade, my phonics program was very, very good." Then, she gave the particulars of how her phonics program works and her plan to use phonics in fourth grade next year. She used two spelling lists: one for children who had already mastered phonics and one for those who had not. The first list was adopted from a local

newspaper, and the words there did not have much relationship to each other. Words on the other list were "all the 'am' family or the 'est' family or the something so they get those sounds in their head," Carolyn continued, "because I don't see the point of just memorizing a word. It doesn't make any sense to me, so I think phonics is basic."

Stimulating students' creativity in writing: Regarding writing, Carolyn believes in promoting students' freedom and creativity: "I think as far as creative writing, to let a child just flow…it has to be exciting. It has to be fun, and I have found in today's child imagination is almost nil. They watch TV, they have no experience of putting a picture in their mind very well…Second [grade] wasn't so bad…but by fourth grade, they've lost it all. So I spend a lot of time trying to get them to think in their mind what could happen. And so I start little stories like: I was lost in space, and all of a sudden... And so you give them a little bit of a beginning, and then say, what could happen?" Then, she continued to comment that her students this year were "stultified" and "in a box," so she used a 'read a story, write a story, workbook time' strategy to help their ideas flow. Students were thrilled with the process and wanted to put on a play. In general, she thought students should be able to write better by the fourth grade, but if not, she would "start out with phonics and then…give them opportunities to write."

Giving students time to do things. Carolyn opposes the idea of limiting students into rigid time slots, because she believes students need more time to think and create: "Another thing that teachers need to do is to give [students] time to do something." She hinted that she gave a workshop in which she questioned how many of the participants break down their daily personal schedules into 15 minutes chunks, and yet "that's the way we chop up a kid's life." Therefore, she suggested, "we need bigger chunks of time so that the

children have time to think, they have time to create." She identified this as a major problem in school: "I think much of education is: Here's what I've given you, here's the worksheet paper to show me what you've learned, now let's go on with here's what I'm telling you, here's the worksheet to show you what you've learned. And that's why we have children who hate school and drop out, and they have a terrible time."

Developing fun and meaningful vocabulary. Carolyn believed on "giving vocabulary that is fun." She had two drawers of pictures of words. She gave the example of explaining the word "bizarre" using these pictures when the students asked her what it meant. She also liked to expound deeply into some vocabularies. "I love, as I read, to stop and say, do you know what that word means, and then talk about it," she said. She gave the example of telling the story of Arturo Toscanini as an illustration of kindness when she was explaining the meaning of the word "late" as dead rather than not being on time. "I'm always stopping what I'm doing to explain something that I think they might not understand. And then they have the free opportunity of coming to me at any time and saying, what does this mean?" Carolyn continued and she called this type of explanation as "pulling from your own self what you have to offer."

Teaching students rules of writing. Although she places a strong emphasis on giving students freedom, Carolyn also recognizes the importance of teaching them writing rules: "I talk a lot about rules of writing, you know, periods at the end, question marks, and explanation marks, showing expression and stuff." She gave the example of student picking out a mistake in a reading and said, "So I think you have to give them skills. I think you have to give them the opportunity."

Giving students time to show. To Carolyn, giving students sufficient time is not only important in the creative process, it is also important for recognizing and demonstrating student achievements: "I think you have to give them time to do it, and then I think you have to give them an opportunity to show what they've done. So once they have written a story, I let them read it to the class if they want to." She did not provide an example for this point.

Giving students time to read. Carolyn continued to expound on the idea of giving students time not only in writing and presenting, but also, reading: "I give them a huge chunk of time just to read." The school recommended giving the students 15 minutes to read, but she gave 45 minutes because she found that 15 minutes is just too short. During this period, she did not monitor or control what students read even if they read books with little or no words in them.

Teaching students what they want to learn when they want it. In talking about her belief in teaching penmanship, Carolyn revealed another fundamental belief about teaching students what they want to learn when they want it. She said that students wanted to learn cursive in second grade, but they were not allowed until later grades when they had lost their interest. She indicated she had asked the principal if she could teach cursive when she was teaching second grade, the principal responded by saying, "Carolyn, the third grade teachers would eat you alive. It is not your prerogative to teach them that." Carolyn concluded, "This is another thing about education that is so bad."

The basic biographic information and her statements of beliefs created a contextual portrayal of Carolyn, which would later help explain the occurrence of certain cognitive activities identified in the next section.

Salient Cognitive Patterns

This section identified salient cognitive patterns that emerged in Carolyn's think-aloud and reflective responses to the video and commentary components of the video ethnography CD. These patterns are stated in the chronological order as they occur. In order to retain authenticity, Carolyn's words (in quotation marks) would be frequently used to describe these activities.

Three Observed Elements

Carolyn's comments always contained three attributes of a classroom scenario: environment, teacher's behavior, and students' behavior. In Probe 1, in addition to the music and the wall, Caroyln also noticed the tables that let students be "a little more in control" as part of the classroom environment. She also noticed Jean, the case teacher, was "walking around" and "giving good [and] positive comments." In addition, the students were "focused," "very relaxed," "unaware of the camera," "positive," "fine," "happy," and "involved."

Viewing Things from Own Perspectives and Asking Relevant Questions Due To Personal Experience

Carolyn viewed things from her own perspectives and asked relevant questions due to her personal experiences. In Probe 1, for instance, as soon as she heard the music being played, Carolyn asked aloud whether "this is a self-contained classroom," because she was concerned that the music might be too loud if "you've got some class right next door." Carolyn had a strong music background, which included writing and recording her own children songs. This training was unique from other participants and made her more susceptible to critiquing the selection of songs in class. She despised the song used

in the video because she thought, "the words were not uplifting," and it might be "putting bad thoughts into kids' minds." She did not think Jean "ought to be doing that." Another example from Probe 1 was Carolyn's noticing of the clear space on the wall. Carolyn indicated that based on her background in gifted and talented education, students needed to have a clear space to look at so that they could rest their minds and think. She mentioned that she was often skeptical of teachers who put up materials to cover every inch of their walls. Later in the study, such as in Probe 8, she continued to admire Jean's bookstand, different kinds of books, and the storage area. Carolyn seemed to be especially intrigued by the storage area, she said, "[Jean] has a nice little storage area in her classroom so she can keep everything neat and out of the way." In contrast, Carolyn's own classroom was a portable unit full of teaching materials and books. It was not surprising that she longed for more storage area or better shelf space. She noticed students' attentiveness, and their compliance in turns taking, sharing, etc. Thus, her comments could be traced to their needs and values when she made comparisons.

Criticizing Frequently

Carolyn had the propensity of making rejection statements (negative remarks). As evident in Figure 4, which shows the number of statements that each participant made that were coded as rejection (disagreeing, disliking, and judging negatively), Carolyn had made more rejection statements than other participants combined.

Number of "Rejection" statements
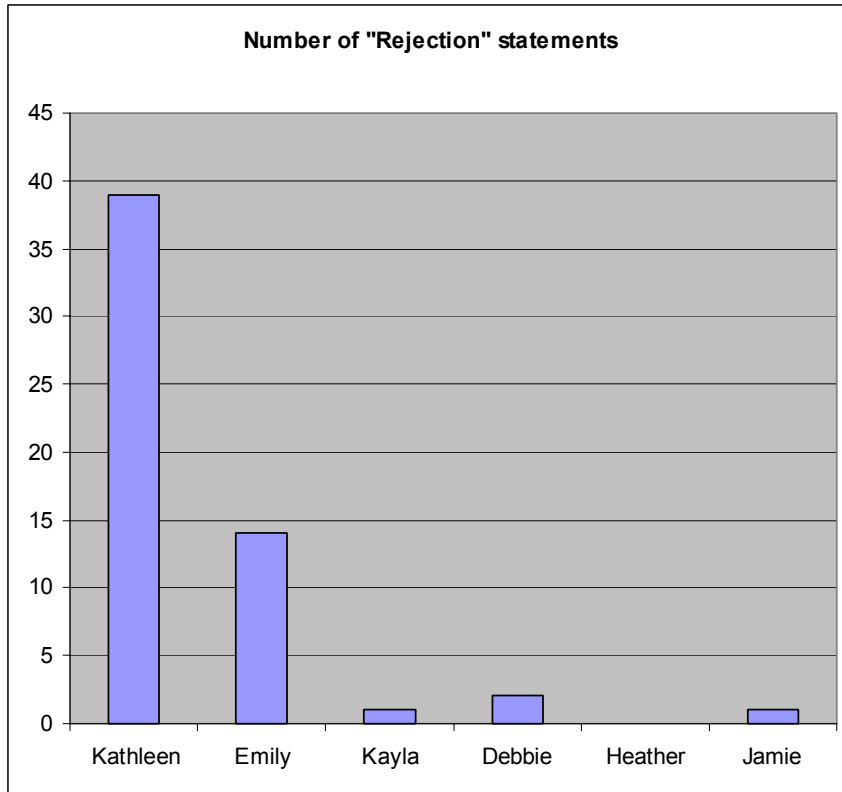
Figure 4. The total number of "rejection" statements that participants made in all the probes.

Perhaps, one reason for her critical behavior was her seniority in teaching—she was more experienced in teaching; therefore, it was easier for her to find shortcomings in others. Furthermore, if her seniority is compared to Kohlberg's stages of moral judgment, her behavior would match with the results' of Peter's (2002) study, in which Peter found that teachers at principled (senior) stages on Kohlberg resisted authority more than those at lower stages.

The more fundamental reason was, perhaps, Carolyn's personality. Much of what Carolyn appeared to know or value in teaching emerged as she compared her teaching to the teachings of others. Before the study began, Carolyn mentioned that she had a

reputation for being critical of her peers. In her expressions of her beliefs in literacy teaching, for example, four out of eight belief statements contained criticisms of other teachers, the school, or the educational system. For instance, in Probe 1, Carolyn was not only initial doubtful about the use of music, she later even disagreed with one of the commentaries on the issues for two reasons: 1) She thought the song, 70's hit "Starry, Starry Night" by Josh Groban, did not have good lyrics; and 2) according to Carolyn, using music while students write could be very distracting, especially for some gifted students. She said, "I couldn't do a thing as long as the music was on. So, for me to be in a classroom like this it would be stultifying."

Her critical comments were, however, not to be perceived as a dislike for the entire study, rather, as Carolyn indicated, the multimedia case had given her a clear understanding of an authentic classroom, so she was able to value or criticize certain practices, which she had not been able to in regular professional development courses. Besides, observing practices that did not coincide with Carolyn's beliefs forced her to make her innate values explicit. This comment showed how a seasoned teacher may have different ideas based on her own experiences and is generally more confident in expressing them.

Relating Beliefs, Perception, And Experiences

In Probe 1, Carolyn disapproved of the way Jean Turner used the spelling list. This incident illustrated how Carolyn's beliefs, perception, and experiences were related. Although Carolyn had two spelling lists: one for those who had mastered phonics and the other for those who did not. Carolyn believed that phonic was the key instrument to literacy success. Thus, when she perceived the first commentator's support for a spelling list as limiting students' writing, she rejected the idea as "wrong." She said, "That means

you memorize this word…you memorize [that] word…I think spelling should be…putting phonics in your mind." She continued, "If you want to write, give them the vocabulary they are going to use or let them write or whatever, but to say, we're going to take our spelling words out of our writing interest, I think is wrong."

Carolyn, nevertheless, continued with her negative comments after listening to the commentary but over time, she changed to a softer tone and her comments became more revealing of her own experiences. After hearing the case teacher's comment, Carolyn continued to state the conflict she perceived as existing between the teacher's use of spelling lists and Carolyn's own commitment to using phonics. She criticized it as "non-productive," and she perceived the class as spending "inordinate amount of time" on spelling. However, she used "I don't know" and "it seems," rather than "wrong" and "disagree" implying a softer stand; she even expressed appreciation for a "good idea" she learned from the case teacher. This "good idea" led her to reveal her practices, "I used to try to do three a day, but I never made it a mandatory-learn type thing or that they had to use it; just expose them to it."

After listening to the fourth commentary, which she perceived as "the exact same thing that I am thinking," she began revealing her experience with spelling list, and how she developed such a strong reaction to the kind of spelling lists used by Jean Turner. She further articulated how the use of spelling lists by the case teacher contrasted with her own belief in and focus on phonics as a tool rather than the memorization which most spelling lists usually elicited.

Her strong reaction to spelling lists was due to her belief in phonics and her belief shaped her response to the case. If she had never tried spelling list in her teaching, her feelings

might not have been so strong. In other words, her past experiences shaped her

perception, which in turn determined her present attitude and behavior towards an issue.

Constructing New Learning Based On Existing Knowledge And Practice

In Probe 2, the case teacher demonstrated brainstorming the conceptual chunks of a "pre-

writing" process by writing them down on a big piece of paper in front of the students.

Carolyn used a similar method in her class, but to her, the case teacher had improved it

by "simplifying it" into "block form." Therefore, she praised the video as "nice,"

"good," and "interesting." Some parts of the video were uncertain to Carolyn such as,

whether the case teacher had all the parts of a completed story in the chart but then

Carolyn said in an afterthought, "I'm sure she probably does." These assumptions

showed her increased respect for Jean's teaching. Both the question and her comment

revealed Carolyn's ability to use her practical knowledge to fill in omissions in the video.

She was able to think more about this video than to merely observe since the teaching

gain validity, allowing her to see and express her beliefs about teaching and literacy

development.

Observing Details That Related To Beliefs and Practices

Carolyn could observe details that were related to her own beliefs and practices. For

instance, the beginning few seconds of Probe 2's video show Jean standing up from a

rocking chair and students sitting on the floor around a board where Jean put up her chart.

Although this part of the video was very short and it was not the focus of the clip, it made

an impression on Carolyn who also had a rocking chair in her classroom but had never sat

in it—"I just let the kids sit in it," she said. Carolyn thought sitting and talking to the

students from a rocking chair was "a nice cozy thing to do." She gave a rather detailed illustration on how it gave her "a warm feeling."

Jean's use of the rocking chair clearly evoked Carolyn's student-centered beliefs. Her reflection on the reading revealed her understanding and concern with the emotional aspects of learning. She saw the simple act of reading from a rocking chair as an easy way to further promote her own concepts of the intimacy, positive feeling, and teacher-student connection needed to promote reading.

It is probable that Carolyn had been pondering about sitting on her own rocking chair to tell stories and seeing Jean did so, confirmed the practicality of such an idea. Allowing students to move seats was also one of Carolyn's expressed beliefs about effective teaching, which had led her to agree with Jean's approach, "When you can get out of your assigned seat and go wherever you can. . .you can get a better view of it."

Exposing Unstated Theme Belief

Video ethnography led Carolyn to expose her unstated theme belief. After listening to Probe 2's professional literature on what the students learn from a modeled writing process. Carolyn said that such modeling was good, but doing too much would "make it so laborious for the children that they figure why bother, why try." Her uncertainty about the mechanics of this modeling process and her concern for the students' interests led her to share her apprehension concerning editing children's work:

But I think when you take something a child writes and you try to make it a finished product by editing and re-editing and all that stuff, I think you take the joy out of it, and I think you, at this age anyway (maybe if you're in college it would be different), but *I think in elementary school you do too much teacher-directing, teacher-criticizing of the*

child's product, they figure why try, why bother. I have found that in my own examples as I teach the children and try to tell them what's wrong with it or try to have them to change it and have the other children help, they get very hurt, they get very offended, and they don't want to do anything else. And so I basically take what they have given me and am thrilled with it, and then we try to teach concepts separate and apart from what their actually story shows. Because when I take their actual story and show what's wrong with it, it just destroys everything (emphasis added).

This belief of not criticizing the students was not explicitly identified in the beginning of the study but was expressed throughout and emotionally reiterated at the end. She explained how wrong it was to edit young students' writing and hinted at how she had learned from her own mistakes. Then, she introduced the practice that she adopted and gave a strategy on how it worked:

So I can say to a child, here's a story and yours is wonderful, and then talk about another story and say…Like for instance, a child brought me a story and she wrote "The End" at the end of it, and I didn't say a word and said, how wonderful, and then a couple days later I made the point that somewhere I had read, in some literature or something, that saying "The End" at the end of a story makes it less of a professional story. And the little girl picked right up on that. So, I didn't criticize her particular story, but I took the point and later on shared it so that it can be not such a personal put-down.

At the end, she expressed her frustration with this pragmatic side of the issue, "teachers do too much with a child's story to make it a finished product and ruin their interest." It is interesting that Carolyn shared this theme belief at this point. The teaching event on the video triggered a reaction to a practice she had adhered to. Obviously, she felt deeply

about this. She might have been encouraged to use peer response and teacher conferencing and had found the practice counter productive. At this point, we witnessed an interesting irony in Carolyn's commentary. While she was strongly opposed to criticizing students' work, she was very willing to criticize her peers. This further illustrated her belief against applying negative reinforcements to students only. In order to protect the children, she was quite vocal in pointing out the "malpractices" of other teachers.

Carolyn continued, "I know that many teachers and probably most teachers take a piece of the child's writing and they edit and edit and edit and carry on until they've got a nice piece of work but what does the child feel about it." She later revealed, "I think to do it on a child's [writing] is wrong…when I put red marks on a paper I think it kills it so I do not do that." In her class, she "would do the same type of corrections [as Jean's] in the whole class instruction so that the child's work is not singled out." However, Carolyn's last comment seemed to suggest that such practice of modeled writing was acceptable but not most effective: "I think it's okay for her to do it for her story, but the idea that you're showing it and then the children do their own, I think it's way past fourth grade for that."

Increasing Understanding through Commentaries

Carolyn's understanding increased as she listened to the commentaries. Like in Probe 2, Carolyn had been skeptical about the idea of editing a piece of writing in front of the class because she thought the case teacher might be suggesting the editing of a student's work. It was only after she had listened to all the commentaries that she expressed an increased understanding of the rationale behind Jean's action. Carolyn could see "more the possibilities of that," and added, "I have never done that with my writing at all. I just

write something and that's it. But I can see if this is her piece and she's sharing it with the students on how she went here and how she went there and all like that, then maybe, I just don't know."

Although the focus of the probe was on a teacher modeling the writing process, but Carolyn initially perceived it as editing students' work in front of the class, which she strongly cautioned against. As she understood the activity more by listening to the commentaries, she was realized that when the teacher so willingly expressed her own challenges in the writing process, students who were interested in improving their own stories might be willing to accept help, but to Carolyn, it could still be "chancy." Carolyn's passionate response to a particular teaching practice positioned her to learn from commentaries about the practice and lead her to rethink her original objection. Carolyn's strong disagreement might have created a mental block leading her unable to grasp the full meaning of the commentaries. She commented concerning Probe 3, "[the little girl] got a beautiful finished product there." However, when reacted to the video after it finished, she insisted that she did not "agree with that whole process for a child's writing." To her, the process of "conferences, peer response, and sharing" suggested by one commentator must be "someone else's work," such as "a famous poem" or "the teacher's own story in progress," but it must not be the "children's work." Carolyn totally dismissed Jean's stated methods, "Well again, I'm opposed to that whole process. I think that the pre-write, the draft, the response, the author's circle, all of that, revision, edit, and publication, I think is stifling. My feeling would be, as I have explained in the other thing." Her strong feeling prevented her from considering using the writing process on student writing. However, she saw the value of a teacher modeling the writing

processes. Seeing authentic practice using this strategy, which avoided the negative consequences she expected, might have given her new insights. This episode reveals that observing teaching practices interpreted by commentaries triggers teacher beliefs. It exposes a teacher to their passion and thinking about their own teaching practice.

On the other hand, there was an incident whereby Carolyn initially disagreed with Jean's approach but after listening to other commentaries, she changed her mind. For example, in Probe 8's Commentary 4 where another teacher first introduced the poetry that Jean used in this video clip, then he stated his insights:

Shared reading is a very safe place for children to read text that may even be a little difficult for them. The poetry that they were doing wasn't particularly easy, but it was fun and because it was a choral reading and everybody was joining in and reading along, and yet they had their own part, that the kids were really enjoying it. You could see the smiles on their faces. One interesting thing that Jean did in the shared reading is she prepared the kids for the shared reading.

Carolyn's response was a complete change from her last commentary. The other teacher's comment had helped her see the point of Jean's approach. Carolyn said, "I'll *revise* what I think about this because I do think that's good. If it was difficult, she did, I *remember*, go over and say, let me read it for you in case we have some difficult words (emphasis added)." She revoked her earlier comment and said, "The fact that if it's choral reading, maybe a child who would have difficulty could get lost in the other people's voices, and maybe it wouldn't be so threatening." She also linked more to what she had seen in the video and thought more deeply about it:

I do remember she did that, and so that does make a difference. She also did tell them, this is difficult. When they did it she told them how great they did it. But then that also gives them confidence. This was hard, and yet we did it, and we can now do something else.

Carolyn's change demonstrated the importance of multiple perspectives in the commentary. They were different pairs of glasses for Carolyn to see deeply into the "layers of meaning" (Harris, 2000) embedded in the video. In this case, Carolyn initially found Jean's comments conflicting with her underlying values. The commentary led her to reflect and outwardly verbalize such value, and state her disagreements. Yet, another teacher's comment helped her think more deeply about the issue at hand and her own values. She eventually recognized the exceptions to her values or beliefs and constructed a more sophisticated belief that incorporated her old values and the new exceptions—it was a process of reluctant cognitive accommodation that led to assimilation.

Extending Concepts with Personal Examples

Carolyn was able to connect and extend concepts with personal examples. Throughout the study, Carolyn often related her own experiences to support her ideas. In Probe 4, Carolyn approved of a commentary, which stated, "The days of read the story and answer the comprehension questions...those days are behind us." However, she added, "yet all the fourth grade tests at the end of the year that they grade the teachers on, they grade the students on, they grade the school on, they grade the state on are all 'read the story and answer the comprehension questions." She urged, "Tell the people who write the test, and tell the senators and the legislators, because this is very frustrating to say teach this way and then we test the other way." In another example in Probe 3 about the problem of

students being able to sound things out but not fully comprehending the meaning, Carolyn "absolutely" agreed with the "whole point." She then went on to give examples from her second and fourth grade classes. These reactions reflects higher-level thinking in a way that a respondent not only shows the initial or casual approval of an abstract concept, but also a deeper reflection of her own practice and provides an opportunity to expand her knowledge.

Misunderstanding Concepts

Carolyn's reflection revealed her misunderstanding of literacy development concepts. In Probe 7, the video showed Jean helping an individual student who struggled to read a certain text. In the commentary, the literacy specialist suggested that Jean was helping the student to read at his instructional level. Carolyn's response to this commentary was an outright objection. She said, "I don't see how this man can say, 'this child is reading at his instructional level.' The child can't read at all. He's struggling, struggling, struggling." She said that the child could not comprehend the text and mumbled along because the text was "too difficult." Carolyn seemed to think that the commentator suggested the child was reading at his reading level but missed the key term, "instructional." There is a difference between "reading level," which can vary from student to student, and "instructional level" which is the level of instruction for the whole class. The commentator, therefore, was not saying the student was reading at his reading level but at the fourth grade level that needed to be attained in this particular school, and the teacher was helping the student do that. Carolyn's own comment gave hints of this misunderstanding: "It's okay to say, well let the child read what they want when it's free reading time and then instruct him on this level;" however, she did not see what Jean was

doing was instruction. She repeatedly mentioned "struggle" four times, and she ended by repeating the words, "poor choice [of book]."

The Case of Elizabeth

Background Information

Elizabeth is the second most senior teacher among the six participants. She is 36 years old and has eleven years of teaching experience with seven of those years teaching in fourth grade. She obtained her baccalaureate degree from a state university near the school where Carolyn, Deborah and her teach. In her classroom, she uses tables rather than desks. Her office corner is cluttered with books, papers, and other instructional materials.

Beliefs

Beliefs in Effective Teaching in General

Elizabeth's beliefs in effective teaching can be categorized into five areas. Unlike Carolyn, Elizabeth did not include examples or detailed explanations when stating most of her beliefs, except when she talked about teaching styles--she stated them in a very logical sequence:

Love for teaching: Elizabeth's first belief in effective teaching is the love for teaching, "First of all . . . you have to have a love for what you're teaching. You have to like it in order to convey that to your kids, to have them like it."

Teacher's knowledge: To Elizabeth, this passion for teaching must be supported with a solid content knowledge, "You have to have a good basis of knowledge of what you're

teaching. So you have to do your research and have a good background of what you're going to teach so you can answer questions as they come up."

Teaching styles: With passion and knowledge, Elizabeth thought the third key to effective teaching related to pedagogy or "teaching style" as she called it:

You have to hit different levels of teaching styles. You have to hit the auditory and the visual and the kinesthetic, and get them moving and get them involved, because kids today are into the high-tech world, they are not used to sitting, listening lots, or reading lots, or those types of things. So you have to hit all those levels. I personally believe that, unless it's in actual reading skills, a lot of it needs to be classroom discussion, some reading and discussing for those kids who aren't on grade-level reading so they still get the benefit of that. In math I'd use a lot of hands-on, manipulatives, to abstract, to applied kind of things. So you just have the shell of all the different facets, all the different learning styles as much as you can.

Classroom management: Elizabeth's third belief is classroom management, "Discipline's a big deal and a characteristic of that. If you don't have classroom discipline, you don't have teaching going on. You have crowd control."

Teacher-student-parent relationship: Her last belief in effective teaching extended beyond classroom instruction:

A key important thing is that you have to respect your kids and for them to show respect, you have to build rapport, you have to get into that. You have to build a team with them and their parents also so that their parents are behind you in what you're doing also. That would be, I would say, characteristics of good teaching.

Although Elizabeth explained her beliefs quite briefly, their logical sequence indicated a well thought-through belief system of an experienced teacher.

Beliefs in Effective Literacy Teaching

With regards to teaching literacy, Elizabeth indicated, "Literacy is . . . probably not one of my strongest areas." Although she later justified that her student did read well, her beliefs in this area was not as developed as her general beliefs in effective teaching. Rather, they were more like individual ideas that facilitated reading and writing:

Reading a lot: Elizabeth's first belief in teaching literacy was the importance of frequent reading, "My kids go out of here reading well, very well. And it's because we read a lot."

Using "Accelerated Reader:" She then introduced a supplementary program that further improved her students' reading:

In our school we use 'Accelerated Reader' as a bonus, not as the whole program, but as a bonus. I tie a lot into that with my kids. They like that challenge, to see how many points they can get and those types of things. We do a lot of that type of thing.

Doing whole text: She introduced "whole text" as a practice in her classroom without specifying its value as if she was not certain of its effectiveness-- "We do a lot of whole text. I tie all my literacy back into my content reading so if we're studying soil, we're reading books about soil so that it's building the framework behind it."

Phonics: Elizabeth thought that phonics was somewhat important in fourth grade, "Phonics has to be a part of it, not so much in fourth grade, but in lower grades. I think phonics is a major part of building good reading skills and literacy."

Frequent writing: Like reading, Elizabeth believed that frequent writing is also important, "Writing is a major component. That's one thing I've found—that the more they write, the better they read, the better they understand."

Salient Cognitive Patterns

This section identified Elizabeth's salient cognitive patterns in her oral response to various components of the video ethnography CD:

A Teacher's Three Observed Elements

Like Carolyn, Elizabeth's think-aloud observations contained three elements: 1) environment, 2) teacher's behavior, and 3) students' behavior. In Probe 1, for instance, these elements were evident in the following examples:

Environment:

"Some use of music."

"Starry Night or is that Candle in the Wind...Elton John. No, it's Starry Night music."

"Love the fact that she uses tables. That's something that I do. I hate desks."

Teacher Behavior

"Okay. You said she had a Utah train-up, which is a Utah thing. [She is] using words on the back for spelling. [I] like the way she monitors her classroom, moving through it."

"She has a mountain language board kinda going on."

"She's monitoring."

"Okay...I like the comments on organization, reaffirming what they are doing."

"Love the fact that she uses tables. That's something that I do. I hate desks." (This statement is also classified under "Environment".)

Students' behavior

"Kids are writing"

"Kids are actively engaged in their learning. They seem energetic except for this little guy. He's twiddling his pencil."

Beliefs and Experiences Affect Observation

Elizabeth's think-aloud utterances were affected by her beliefs and experience in teaching, and these were apparent in Probe 1. First, before we started the study, Elizabeth asked me if this case teacher was teaching in Utah, and I told her, "Yes." Hence, she was confident in tying the teacher's practice of "using [putting] words on the back [of the classroom] for spelling" to her experience that this was a common practice in Utah schools. Second, her experience in using tables rather than desks in her own classroom gave her a preference for Jean's use of tables. Third, she accurately identified the instructional activity in the video as an application of the "mountain language board." Without prior experience in working in these areas, she would not have been able to identify these elements.

Elizabeth's expressed beliefs were also manifested in her think-aloud of this probe. First of all, she noticed the teacher moved around in the classroom and used music, which adhered to her belief that teachers should use activities that involved more than one learning modality. Second, she used the word "monitor" twice in this short think-aloud session to describe what the teacher was doing, which demonstrated an aspect of her belief in classroom management. And Elizabeth noticed the students were "actively engaged in their learning. They seem energetic…" This was an extension of her belief that classroom management was more than mere crowd control. As we will learn later in the study, her belief in student learning was beyond the management level—it was

student engagement. Third, Elizabeth's last think-aloud statement connected to her belief in building good relationships between teachers and students. She commented that the case teacher was "affirming what [the students] are doing."

Her ability to recognize teaching practices appeared to be based on her own training. For example, in Probe 3, Elizabeth noticed a number of techniques that seemed familiar to her: "she'd doing some excellent post-it-note things …[and] by pointing out things." She then related the connection between her learned concepts and the concrete examples she had just observed, "I make a connection to this, personally, with the strategies I learned this summer at the Utah Teaching Academy. A book called 'Strategies That Work,' there're a lot of these things in that book. What she's doing here with the post-it-notes and the predicting, and even the book, that was one of the books we did this summer was the book about the figs." Noticed that her experiences provided the schema that caused her to agree to many things, "I agree wholeheartedly that kids need to talk about their literature. I really like the fact that she focuses in on reading groups."

Elizabeth, in addition, was also subconsciously looking for what she wanted to see that might reinforce her own beliefs. For instance, one of Elizabeth's effective teaching beliefs was the need for classroom management where there was "classroom discipline" so that learning could take place. So Elizabeth was particularly intrigued to see that the students were actively engaged in the work, "What I notice is that she teaches a lot from this corner. The class doesn't seem that large as far as number size, but every one of her kids is actively engaged" (Probe 3, Video Reaction).

Elizabeth had a particular belief about classroom management. She is concerned about encouraging self-discipline and not just "crowd control," so Elizabeth carefully observed

how Jean went about managing her classroom and organizing her students to participate in reading a poetry. In Probe 8, Elizabeth mentioned, "I enjoy watching her set up her students for success. Students knew her expectations, and there weren't any discipline problems. Students were engaged and involved. I'm so very impressed by how well they're behaved, and how well they're on top of it. Her pacing is great. If you've never seen this book, it's a pretty cool book."

Experience Affects Reflection

As stated earlier, what Elizabeth observed was affected by her experience, and her experience also influenced the depth of her reflection on issues causing her to make comparisons and connections between the video ethnography and her own practice. In Probe 1, the combination of present commentary and personal practice made Elizabeth reexamined how she taught spelling in her own classroom:

It was really difficult to pull off a completely individualized spelling thing. As a matter of fact, I tried it one year and it is way hard. But if you break them into small groups, taking into consideration the different levels and things, you can use generalizations and then pull in some specialized, individualized spelling words. It might be more manageable. I think she knew my perspective right on target because personally I run four spelling groups in my classroom, depending on levels. They're straight from spelling books because I haven't found anything I like better, but I'm always in search of something I like better. She was hitting more on what I teach like, and so I would agree with her.

Elizabeth's quick switch from reinstating the commentary to describing her own practice demonstrated how the former had stimulated the reexamination of the latter, and how she

tried to compare and contrast the two. The result was a deeper introspection into her own practices.

Inquiry Leading To Queries

As Elizabeth thought of Jean's spelling approach, she became excited about it and wanted to know more. She was especially intrigued by Jean's comments of her practical experience and used adjectives such as "great," "very good," "like that a lot," and "really like" to describe her feeling about what she saw. She called Jean's comments an "Aha" experience to her and wanted to "jot down" and "take and use in [her] classroom." Her desire to apply prompted her to ask follow-up questions that were beyond the scope of this segment of the case:

I'm curious how she determines where they are on their high-frequency lists [and] where they are developmentally on their high-frequency lists. I would like to know more there. If I could ask her questions I'd say, okay show me how you get them to the point where they're at to start. That would be something I would want. And I'd want to know her activities. She says she does activities with the high-frequency words. I want to know that. I want to go in and see what she is doing.

Elizabeth provided her reasoning for such inquiries: "…because spelling, honestly, is one area [that] I don't feel very comfortable with." Although she tried to make assumptions that filled cognitive gaps between knowledge and practice, she continued to have pragmatic questions relating to practices that excited her. In Probe 3, for instance, she asked, "I want to know what the different parts are. There's sloppy copy, author's circle, edit--I'm not sure what that is. I would like to know information on that…I'm assuming that what we're seeing right here is author's circle, so they're helping one another…I want

to know what the other kids are doing while she's doing that and how they can be so quietly doing that." As Elizabeth observed practices that she was unsure of in her own teaching, her inquiry led her to produce questions that could assist her assimilating ideas learned from Jean.

Queries Leading To Action

As Elizabeth continued her queries regarding the various practices, she was inclined to think of actions that would expand her inquiry process, "I would like to go in and observe this," she concluded at the end of her remarks on the Probe 3 video. After listening to the commentaries, she inquired further into a certain aspect of implementing the techniques, "I want to know how long she takes to do that, and how long does she take to teach this process. Is it a matter of a few days, weeks?" At the end, she expressed a great desire to approach the case teacher in order to have some of these questions answered, "I want to sit down and pick this woman's brain because I'm curious about how long she takes, because I like the fact that she's using this, and I think she sets up her classroom very well."

Relationship between Learning Orientation and Cognitive Activities

On the average, Elizabeth had more statements in every cognitive activity of each probe compared to other participants. In other words, Elizabeth noticed and reflected more items than any other participants (except Carolyn's statements of rejection). This greater amount of cognitive activities interestingly correlated with her score in the learning orientation assessment—which was also the highest. This correlation will be expounded further in the cross-case analysis section that dedicated to discussing learning orientation.

Reminder of Prior Knowledge

Teachers generally receive much training before and during their teaching career, but that training may be evident in practice because they view what they learn as abstract concepts not practical for their own teaching. Such knowledge becomes innate in the minds of teacher-learners. In Elizabeth's case, such innate knowledge was reflected in her experience with modeled Writing in Probe 2, in which she admitted that she was "not very good at [modeling]" because she "forget to do [it]." Therefore, she reminded herself, "I need to be refreshed like this frequently to remember that modeling is important, especially in the writing process because writing is so important." She repeatedly expressed how she enjoyed this renewed knowledge. She seemed to have no experiences that allowed her to "see" how teaching writing his way looked in teaching practice. "It's refreshing to me as a teacher to see this. I would like to start. It refocuses me as a teacher because I think we need to see other teachers doing good things like this." She concluded that the idea of modeling for writing in this probe "have nailed right on [her] head." Seeing it successfully enacted in practice helped her recover innate knowledge and see its potential in her practice.

Uncertainty of the Main Concept

One interesting find at the end of Probe 2 was that Elizabeth was still not sure about the definition of balanced literacy—title of the video ethnography case, because she said, "I'm assuming that the balanced literacy and workshop are similar, or the same thing."

Limitations of Think-Aloud

Because our minds often think faster than we speak, think-aloud has its limitations that was apparent in Elizabeth. First, Elizabeth continued to utter incomplete thoughts

throughout the think-aloud in each probe. In Probe 3, for instance, when she talked about the students getting into groups, she said, "Lots of the kids are.... Okay. Boy, I like the kid's reading." Later, she said, "Then she's having them go to the different plots where she's.... I want to know what the different parts are." She continued, "The young lady in the rocking chair, I really like the fact that she's.... Good little writer." When she had a new thought from the new information that she obtained from the clips, she did not linger to complete the initial thought but moved on. Second, in her video reaction afterward, she had reported additional details that were not mentioned in think-aloud. For example, in Probe 2, these details included forming students into small groups "sitting in a small area" and using a rocking chair to create a "comfort area."

Experience Affects Reflection

Elizabeth first mentioned and expressed her liking of the rocking chair after watching the clip in Probe 2. In Probe 3, she revealed how it connected to her own classroom--"I personally have a rocking chair in my own classroom. I don't use it as well as I should, I don't think." --no wonder Elizabeth had such an interest in the rocking chair. She might have been thinking about how to properly utilize it in her own class. Sp people see what they wanted or needed to see because they have a need to be filled.

Advancing Levels of Thinking

In her think-aloud, Elizabeth seemed to start with recalling and interpreting information, then move to a higher thinking level whereby Elizabeth compared what she saw and heard with her beliefs and then made a judgment. In Probe 4, Elizabeth started by observing, "Okay. He's talking here about how she allows for silent and sustained reading in the class." Then she interpreted the information and expressed her belief, "I guess

that's what the clip is trying to show, although she had them reading specific book. I would assume that a silent sustained reading those books of their choice. In my opinion, that's what silent and sustained reading is, is books of their choice instead of assigned reading."

Again on another commentary, Elizabeth started with a recall, followed by comparing it with her beliefs and then making an evaluation:

He talks about in today's world kids don't have time at home to read (which I think is a fallacy). I think that if that's part of their.... I just think that as a teacher that has to be something that you strongly encourage at home and tie it back into your curriculum. So, I like the fact that he talks about how she gets lost in a book every once in a while. Also to show modeling in silent reading, that silent reading and self-selected reading is really important.

Elizabeth agreed and liked "the fact that [Jean is] allowing [silent reading] in her class. I think that every teacher should have a block of time where kids can just silently read." However, Elizabeth's strong belief caused her to disagree with the commentator on the following point:

And that's important. But I think there's some fallacies in the fact that we're letting parents off the hook when we say, even the best-intended parents don't allow time to read. I think that's wrong. I think as teachers we need to strongly encourage that. So, I would strongly disagree with that.

Elizabeth's response to the third commentary in this probe again demonstrated the different levels of thinking respectively: recalling, interpreting, liking, sharing belief, comparing, and questioning. Elizabeth recalled, "Okay. She's talking about how she

provides a silent, sustained reading time everyday, and that's where they can practice their reading skills that they've been taught, how to monitor their own reading." Elizabeth interpreted this strategy to mean, "They can support each other by going to book-talk zones and discuss questions and responses that they have toward their literature." Then Elizabeth expressed positively with an explanation of her belief:

I like that idea of the book-talk zone where they can go and talk about it. I had never thought of that, and I think that's kind of an important thing, to have it in the classroom, a place where they can talk, where you allow informal talking and discussing and talking about the books.

Elizabeth's thoughts were followed with a comparison, "I discuss books with them that they're reading, but I've never thought of having a book-talk zone where they can actually just go and sit and talk about it." Then, her higher level of critical thinking was exposed with the question, "And I wonder if that's of use sometimes, if she monitors how often they can go there?"

Unstated Belief

Elizabeth's beliefs about effective teaching as she stated in the beginning of the study related mostly to what a teacher should do. Although she provided bits and pieces of information on her beliefs about students, she did not describe the role of the students in the teaching process. However, throughout the study, she revealed her belief about the significance of student-centered or student-controlled learning. In Probe 3, she expressed her liking of a student reading aloud a text. She also liked the text that the class in the video was reading. Because she was so impressed by this clip, she watched it twice! In Probe 6, she also commented further on the importance of focusing on the students:

I think it's important to shift from teacher-directed to teacher-facilitated, and let the kids direct and learn it, and you just kind of guide them. And I think that's what this literature group does. I think it's important that you lay groundwork, though, as far as respect and letting equal share of talking. The importance of making connections, I think, is invaluable.

Desire Versus Difficulty In Assimilating A Teaching Technique

As Elizabeth interacted with video ethnography, she discovered new ideas for her own teaching. She also came across good ideas that she desired to adopt, but feared they conflicted with her own teaching style.

In Probe 7, she expressed difficulty in assimilating Jean's style of student-centered and student-led discussion groups:

These kids are talking one-on-one and she is just sort of listening, and sitting back and maybe interjecting ideas once in a while and taking the opportunity to teach, if she sees that opportunity. I agree with that if you were going to do literature groups; that would be the way to do it. It would be hard for me to sit back and not to try to direct them in the direction I wanted them to be going.

 Her concern caused her to inquire further:

I'm wondering if it's hard for her to do that, but I like the fact that they are doing that. I want to know what kind of notes she's taking while they' re doing this, as far as antidotal, so that she can show growth and assessment. I think it is effective. And are they truly getting out of the book what they need, the enjoyment, the deeper understanding, the predictions, those sorts of things?

Elizabeth answered her own last question: "I think they are." This conflict in implementation shows the need to provide additional help for those who are unfamiliar with a new technique. Note how this also reveals inquiry leading to queries.

Commentaries Improve Understanding

Like Carolyn, Elizabeth had learned more about various concepts illustrated in the video by listening and reading the commentaries. In Probe 5, for instance, she saw the teacher and students using a special bookmark to aid their reading process. She said, "I'm not sure what the bookmarks had to do with it, but it did look like they had some writing on it. I'd like to look closer up on those bookmarks." The commentary that followed helped Elizabeth understand how the bookmarks were used:

He's talking about how she manages her literature groups, and how she has little bookmarks where they can write down their questions and their predictions, and then they can actually come back to the literature group and all she says is, 'okay where are we going to start? Who has the first questions?' And they discuss.

The Case of Deborah

Background Information

Deborah is 49 years old with three years of formal teaching experience in the current grade and 10 years as a teaching aid. Her classroom is across from Elizabeth's and is characterized by its tidiness with rows of student desks in their exact locations, creating an interesting contrast with Elizabeth's. Her office desk and shelves are also neat and clean. She obtained her baccalaureate degree from the same university as Elizabeth just before the former became a teacher.

Beliefs

Beliefs in Effective Teaching in General

In speaking of her beliefs in teaching effectively, Deborah identified three points. The first two points were short statements that students' learning behavior was both a definition and an indicator of effective teaching. However, as she started giving specific student learning behaviors, she started conveying her concern or even a sense of helplessness towards the struggles of both the students and the teacher—this feeling dominated the major part of her beliefs. Following are explanations of these three beliefs:

Students' behavior as the definition of good teaching: Deborah's first statement of belief was her definition of effective teaching which stated, "Students are learning; they're engaged; they're excited."

Students' behavior as an indicator of the state of the class: Deborah also saw the students' learning behavior as an indicator of the effectiveness of the instruction, "If you're doing good teaching, you not going to have behavior problems because the kids are actively learning and involved in what is going on."

Doing your best: As she talked about student behaviors, she started giving specifics of the struggles of her own class:

Oh, my gosh, I have so many things going on in this classroom. I have a little girl who doesn't speak a word of English. I have a little boy whose baby brother died two days ago. I have a little boy whose parents are fighting for custody over him. I have a little boy, my little Devin, whose mother just went remote, who's gone for a year, and he is really struggling with that. I mean, I have, these kids have so much baggage, so many things

going on in their lives. How can they learn? It's very hard, and so you just do the best that you can. You have to stay on your toes. That's right. It's not easy.

Beliefs in Effective Literacy Teaching

Deborah's beliefs in effective literacy teaching included two points: practicing a lot and using a variety of materials:

Practicing a lot: Deborah's first belief in effective literacy teaching was practicing a lot, "To be a good reader, you need to do a lot of reading. To be a good writer, you do a lot of reading and a lot of writing."

Using a variety of materials: Her another belief was to use a variety of instructional materials, "you need to expose the children to a variety of things, and that's always been one of my philosophies, to try to expose them to a lot of different things: video clips, music, art, lots of different books, a lot of vocabulary, you know, I think they need a lot of different experiences to really link to all of those ideas. But they all come together. You can't have one without the other."

Salient Cognitive Patterns

From Deborah's verbal reports, the following cognitive patterns were identified:

Three Observed Elements

Again, we see the three observed elements in Deborah's think-aloud:

Environment

"She's got the kids sitting at tables instead of individual desks."

"Very colorful. She's got a lot of bright colored things on the walls."

"Oh, she has music playing while the students are working."

Teacher Behavior

"She's doing a lot of walking around between the desks and encouraging individual children."

Student Behavior

"She has a very large class."

"They're listening to music."

"Looks like they're all engaged, busily working."

Concern/Belief-Centered Observation

One of the first things that Deborah noticed in Probe 1 was, "You know, the kids are all being very quiet." Then, she made a comparison and confided about her class, "That is not my classroom." Her belief in classroom management and her concern for classroom management led her to focus on the same issue in the video, and due to her difficulty in dealing with her troubled students, it was almost difficult for her to believe the students in the video were usually that quiet. Deborah assumed, "They must know they are being video taped and they're being very good because my kids would not be that quiet. Number one, they couldn't sit across from somebody without wanting to talk to them." Through this think-aloud session, we caught a glimpse of Deborah's classroom. Indeed, Deborah's eyes was focus on the on-task student, "Just that they obviously know what they are supposed to be doing, and they're all busy."

Deborah's classroom of neat orderly desks separated in rows shows how she depends on the structure of the environment to help her keep order. Deborah prefers an orderly and organized classroom. This preference influenced her observations of Jean. She contrasted the predicted behavior of her students and Jean's.

Disagreement Caused By Personal Experience

Probe 1 (Independent Spelling) demonstrated the implementation of individualized spelling list. Deborah explained that she did not put much emphasis on spelling because it was "very time-consuming and very difficult," and "not very valuable." She does teach spelling; however, her method has an underlying rationale, which is to put the spelling words in sentences. She gave the example of teaching the book "Where the Red Fern Grows" and one of the words was "sack." "At the beginning of the story when he goes and gets his hounds, he puts them in a sack," Deborah explained and added, "so when I make those sentences, I usually try and make it something that we're already talking about in class, so it has a hook, you know, to something that we are learning." She gave two other examples from this year and last year's experience.

However, Deborah disagreed with Jean's approach: "She talks about the real test is how they use that spelling in their writing, and that there are no excuses, that there are these words that they should get right all the time, and I guess I don't necessarily agree with that." Deborah then introduced her approach: "I want my kids to…write…I want them writing. I don't want them stopped and hindered because they're worried about spelling." More importantly, she introduced her rationale and the experience leading to it: "In fourth grade I think creative spelling is okay. And if there is something that they have a real need to look up, I have dictionaries for them. But I don't spend a lot of time on that…I've got some little kids that are such perfectionists that wouldn't write a word if they thought that...they wouldn't, they wouldn't write anything because they would be too afraid that they would spell something wrong." Thus, Deborah dismissed the idea of a traditional

spelling list due to her experience with students who are spelling perfectionists, deterred from writing due to a need to spell each word correctly.

Initial Confusion Caused By Technical Limitations

In both Probe 1 and 2, Deborah showed her initial confusion on not knowing what the video was about until a later time. In Probe 1, Deborah wondered, "Were they working on spelling? I'm not sure what they're working on…I don't know what they're doing." Later, she looked at the Probe button again and realized, "Oh, it does say spelling." In Probe 2, she had a similar experience: "I'm not sure what she is doing. Something about the pre-write…Is she writing a story, and she's telling the students how she came about writing a story? So this is her story? I wouldn't have had a clue what she was doing. I'm not sure what she's doing there." This shows the implied video shots of the editor. Sometimes, the viewer had to jump into making conclusions because they weren't able to see the entire classroom happenings hour by hour, just short snippets of it. Although Deborah did find out more about the probes later, it might have been helpful to her if the title and a short introductory phase or sentence was stated in the beginning of the video.

Unstated Belief in Teacher Modeling

There is a teaching strategy that Deborah strongly believed in, but did not state in the interview on her teaching beliefs. This salient belief was mentioned by Deborah in all except two probes. It is her belief in teacher modeling. For instance, in Probe 2, when Deborah finally understood what Jean and her students were doing, she commented with additional advice, "So she's just modeling how she planned, how she's thinking, how she's putting her story together. It would have to be in bite-sized pieces. I could see a classroom getting very bored with that very quickly unless they are actually doing that

themselves. Watching somebody else write a little bit and explaining it a little bit would be fine, but if it were a long process, I don't think that would keep the kids very interested. Modeling is very important; it will develop good writing. And of course, just seeing the finished product, that's not going to help students to see that it is a long process that we write and rewrite. Students need to see that. They also need to see, you know, where that comes from, what the writer is thinking about."

Furthermore, Deborah went on to share an example of the writing process in her own classroom teaching, "I have a writer come in the classroom, oh, it's been a couple months ago, and her strategy of writing was very dynamic. She had the kids use that strategy in their own writing and it was very helpful, and she did model that. And it was good for the students to see that it is a process." To her, modeling is the key in developing writing skills: "Writing isn't just an assignment; you need to model and show students the process, how we get from point A to point B, that there is a process and a struggle along the way" (Probe 3). Later, Deborah further elaborated on why modeling is such an important strategy: "She's modeling these good strategies, she's making "I" statements. When I was reading I found myself predicting. . . I think that the most important piece of this is that she's showing her love for reading to her students. And if we can teach kids to love to read, that would be the greatest gift that we could give them." Deborah also noticed some elements of modeling in other probes. Such progressive revelation of an idea shows that the video ethnography case has helped Deborah develop a prevalent implicit belief into a well-reasoned explicit teaching philosophy.

Cognitive Development Process

Deborah followed a cognitive development process that was common among participants. In such a process, the participant moves from one category of cognitive activities to another. Deborah began by becoming aware of the elements of interest in the video and comprehending or making sense of an observation, accepting or rejecting the idea, and connecting it with personal beliefs or experiences for support. Sometimes, she moved on to an occasional expression of a desire for action or a request for more information. At times, parts of the process may be reversed because the participant may make a comparison with her own practice before expressing an acceptance or rejection, or she may show her desire to implement before sharing a personal experience, but this seems to be a natural process. The participants usually began with noticing, or observation of what is happening.

In Probe 5, for instance, Deborah first noticed the teacher was meeting with the students on the floor for some group work and then they moved the desks. She interpreted what they were doing at the desks as independent reading. Also, the video showed Jean turning a page on a clipboard that she was holding, and Deborah interpreted it as "checking off as she watches them do their reading." She expressed some uncertainties of the video footage: "I'm not sure what she's looking for," but hoped that the student knew what the teacher was looking for. After listening to the commentary about giving students time to read, she shared her belief in reading: "I think it's so important to do that sustained reading, especially in fourth grade. These students should be able to do sustained reading for 30 minutes."

Deborah showed a slight disapproval of the teacher's action of walking around checking things off. This can be due to Deborah's prevalent belief in teacher model, "I also think that she should be sitting down, involved in a book, showing her love for reading," but she also showed an approval of reading at home: "Students select their own books. They're in charge of their reading, that there should be some written record. I agree that students should be reading at home." Then, Deborah gave an extensive account of her own practice:

"My students have to read 30 minutes every night, and they have a reading log that I check on a daily basis. Students are given this individual reading time. They also have an opportunity to talk with other students. I think that's really an important piece. After our sustained reading I give the children opportunities to share something that they've read, the books that their excited about, books they would recommend other students to read. After our sustained reading I give the children opportunities to share something that they've read, the books that their excited about, books they would recommend other students to read."

This whole cognitive process is obvious in this example and evident of a teacher's cognitive development as she tries to make sense out of what's happening. Another example is in Probe 8 on Shared Reading. Deborah's comments showed the natural process of cognitive learning. She first noticed what they are doing, the environment, and then the interaction between the students and teacher, "They're talking about poetry. They're sitting on the floor. Some of them are having a hard time sitting still. You can tell she's excited about it. (Teacher modeling enthusiasm for reading)." All learners want to be successful; all learners want to be appropriately challenged. So Jean Turner seemed to

know that and her strategy to letting her kids try and take risk is to give them warnings ahead of the difficulties that they will be facing. Unlike most teachers, Deborah was able to identify Jean's strategy of anticipation in preparing her students, "She's telling them it's going to be tricky." Later, Deborah noticed again, "She warned them that this was going to be difficult. It's okay to stumble. We'll go through it again and again and get better at it."

A final example of cognitive development would be Probe 9 (All Clips in Sequence). Deborah explained the pros and cons, and related her experience with shared reading:

> The goal here with shared reading, apparently, is that everyone is reading along. It's valuable for those students who aren't on that level to at least be exposed to that, to see that reading. It is very difficult for any student to be singled out, to read alone. Students are looking at the mistakes and not the text. Shared reading, having more than one student read at the same time, is very valuable. It's easier to do, however, with poetry, that kind of thing. It's difficult to do that with a textbook and non-fiction type information. It is a way for all students to enjoy some really rich, interesting material, even though they're not all reading or following along and involved in the material. This shared text, it's important that everybody's involved, everyone can see. As I listen to her talk, I thought about times that I have my students sing. I think singing can do the same thing. When we're singing a song, I have an overhead; they're reading. There's a melody, a beat. They're all involved, and we do the same song for a whole week so over a period of time, they become more comfortable with the words. Some can

memorize, because there is a lot of repetition. Music is also a great way to use this strategy. It does take practice.

Note that Deborah started out with an advanced noticing which is then followed by some analytical evaluation of the pros and cons of such shared reading and finally, ending with some shared experience.

Learning a New Approach with Additional Cognitive Insight /Value after Reflection

Deborah liked Literature Discussion in Probe 6 where students were interacting with one another and shared many valuable insights to the advantages of such an activity—"It's so much more valuable to be student-directed than teacher-directed". Deborah noticed, "That this is a question and answer period that the students were allowed to read and come up with their own questions. It is something that they are curious about. It's not something the teacher has told them to look for. And then to be able to share that and discuss that with a group is very valuable." Also, Deborah observed:

The students are encouraged to raise their own questions. And I think that one of the great things about this is that they are learning from each other. Two heads are better than one. Somebody may have an insight that they hadn't thought of, and to get all those ideas. What a great way to share and learn about a story….I agree that it's really fun to see students interacting with each other. It's not just back and forth to the teacher, that these kids are interacting. What great life-skills she is teaching them, to communicate. Certainly there are going to be things that they don't necessarily agree with, but in this practice of communicating and agreeing and having this communication is going to be a life-skill that they are going to use later on.

Reflection Exposing Teacher's Problems and Concerns in her Classroom.

Personal reflection often let us into the world of Deborah's classroom when she commented about Jean being "very positive. I don't see anything negative, just telling them a lot of positive things that they are doing. I don't have that luxury." Since Deborah viewed praising as a luxury. This attitude implied the possibility that not much praise was given in Deborah's class. This makes Deborah aware that perhaps praise should not be a luxury.

Also, Deborah's comments of Probe 2 were mainly on the interaction between the teacher and students:

> Students are going to different areas. They don't hesitate at all. They know exactly where they are going to go and what they are going to do. Teacher is keeping track of what they are doing, making them take some responsibility, doing some tracking. She's laughing with the kids. Very fun. She's asking questions, making sure they're clear in what she's saying. She's sharing. Very bright. Likes being in the teacher's chair. Oh, look at that grin. She is so excited. . . Students are very good at expressing themselves and their thoughts. You can tell that they've been doing it.... Students involved in the reading. They've got their questions written down. They don't necessarily agree, but he does have a strong point. He doesn't want to tell him something that he hasn't read yet.

When Deborah, saw that the kids could all sit on the floor, she lamented, "Oh, it's hard to imagine a classroom with an area to sit on the floor and a big area to have the students read together. Our space is so limited." So, by doing some advance noticing, they do

trigger a teacher to review their beliefs and make comparisons to their own classroom teaching. This video case has brought us valuable information in letting us reflect on Deborah's own struggles that in turn had shaped her approach to learning.

In another incident, Deborah's reflection finally revealed some of her concerns in her classroom teaching. First of all, Deborah's comments were mainly on the interaction between the teacher and students:

> Students are going to different areas. They don't hesitate at all. They know exactly where they are going to go and what they are going to do. Teacher is keeping track of what they are doing, making them take some responsibility, doing some tracking. She's laughing with the kids. Very fun. She's asking questions, making sure they're clear in what she's saying. She's sharing. Very bright. Likes being in the teacher's chair. Oh, look at that grin. She is so excited. . . Students are very good at expressing themselves and their thoughts. You can tell that they've been doing it.... Students involved in the reading. They've got their questions written down. They don't necessarily agree, but he does have a strong point. He doesn't want to tell him something that he hasn't read yet.

When Deborah, saw that the kids could all sit on the floor, she lamented, "Oh, it's hard to imagine a classroom with an area to sit on the floor and a big area to have the students read together. Our space is so limited." Interestingly, teachers seemed to pick what they like to watch or need. Hence, the advantages of this video ethnography in probing reflections that may result in problem identification.

Making Sense through Layers of Meaning—the Struggling Child

Deborah agreed that individualized reading time is good and "some of these students just crave that individualized time." She noticed that the boy is "struggling a little bit, not flowing very well. I can't tell if she is sitting on the floor, but it looks like she is actually lower than him. He seems a little uncomfortable. Looks like she is encouraging him, showing the reading strategies that he's using. It looks like it's just a little bit too difficult for him. He's worrying about the words and not enjoying the story."

Even though the commentator "expresses that if there is a high interest that that will compensate for ability" Still, under the experienced eyes of seasoned teachers like Carolyn and Elizabeth, Deborah felt that the reading level is too difficult on him. The child was simply struggling. Later on in Probe 9 where all clips are portrayed in sequence, Deborah finally spoke blatantly about her feelings, "If he's struggling that much, I would say it's too difficult for him." We were also shown Deborah's uncomfortable feeling with students when Jean was helping the struggling reader, "There's still a student standing behind her, waiting for her attention. That would make me very nervous."

Another probing incidents is previously in Probe 1, Deborah noted about the music in the background without sharing how she felt about it-- "Oh, she has music playing while the students are working. They're listening to music." However, in Probe 9, she was able to voice her concern, "Music seems to a little loud to me. It seems more of a distraction than anything."

Moreover, as Deborah watched the interaction of teacher with students, she was also able to pick up some details:

Lot of paper-turning, very noisy. They're not necessarily where they need to be. Somebody is sitting there bored cause he can't even see one. Lot of wiggling around. . . . Some seem really interested. Some don't seem to be as involved at all. . . .Not everybody's reading. Not everybody can see. . . . One boy just not comfortable sitting next to a little girl.

After viewing all the clips, Deborah commented, "She does have a good balance of teaching with the literature. She's making it interesting and fun for the kids, but she's not beating it to death 'til they're just sick of it. They are enjoying the literature; they seem to really love it."

Through this video case, Deborah had come off learning and gaining new insights into teaching literacy. It had fulfilled one of Deborah's professional needs—to know what other teachers were doing in the classroom and learn from them. Deborah's video insights were all higher level of thinking— expressing agreements, giving positive judgments, sharing of beliefs, experiences, questioning, recommending and applying:

I have learned a ton. I am amazed. You know, I've always wished that I could sit down and watch a master teacher. When I did my student teaching I had a teacher that was really good, but you know, I only saw bits and pieces of that one teacher. And so I've always thought it would be very valuable to see other classrooms. But how can you do that when you're so busy with your own class. And so I thought that was very valuable. I do, and when I walk up and down the halls, I'll kind of listen at a door and see what's going on and pick up little things here and there, things that teachers do. It's pretty hard to pick that up all by yourself.

The added advantage of video ethnography—bringing the world of master teaching into the lives of other teachers at their own convenient time and pace with as many repetitions as they desire:

> You learn from seeing others, and doing it on a computer is wonderful. I had no idea that there were tools like that. I enjoyed it very much. You know, if I could see something like that and then tomorrow go right in and do something similar, wouldn't that be, and then use it, and then I would remember it, and it would be very valuable. I enjoyed it very much. But, you know, it reminded me that it's not just the reading and the writing, but it's the speaking and the listening, and I try to give my students opportunities to share what they've written, and for the students to learn to be good listeners. I think that's part of the process, if you can listen and learn from that.

Basically Deborah compared her approach with Jean by sharing her beliefs and experiences with various activities like spelling, silent reading. Also, compared to the other teachers, Deborah mentioned most often the importance of teacher modeling. This showed us that although she didn't explicitly mention it, it was nevertheless salient and important to her. However, even though Deborah claims to learned "a ton " from this case study, it is interesting to note that there were few comments made that implied Deborah would apply them in her classroom teaching. Perhaps, Deborah is troubled with the type of students she has in her class, as a lot of her comments seem to relate to classroom management. The lack of comments about personal application despite sharing her experiences and insights seem to correlate with her learning orientation score, which is the second lowest among the six participants.

The Case of Kimberly

Background Information

Kimberly is 44 years old with four years of teaching experience and two of those years are in fourth grade. Like most schools in Utah, her school is located in a sub-urban middle class predominately Caucasian area. She is in the same district as the previous three teachers and went to the same local university as Elizabeth and Deborah.

Beliefs

Beliefs in Effective Teaching in General

Kimberly's statements of beliefs were quite general and diverse. She introduced some ideas without much explanation of what they were or making any reference to her own practice as the previous teachers did.

Hands-on involvement in learning: Kimberly believed that effective teaching must involved hands-on experience, "Lecture is not effective in getting the point across and getting them involved; it has to be a hands-on, physical experience to make it concrete in their minds."

Variety in teaching: She also believed in using a variety of teaching techniques, "A variety of teaching techniques and group learning and individual learning, and I think the variety adds a lot to the teaching situation."

Beliefs in Effective Literacy Teaching

Kimberly identified three beliefs in effective literacy teaching.

Literacy as the foundation to education: Kimberly's first belief in effective literacy teaching was its importance, "You can't even survive in the world without being literate, and so that's why it's enormously important; the foundation of education is literacy."

Modeling as an important strategy: Modeling was an important literacy teaching strategy to Kimberly, "In the younger grades, and even in the pre-school—well, it would certainly start in the pre-school with modeling it by reading."

Accessibility to genres of reading materials: Variety was also a critical to Kimberly, "having a wide assortment of reading materials that children see at home and at school, that it's a wonderful, positive adventure, not anything hard or drudgery."

Salient Cognitive Patterns

Kimberly's Learning Process That Resolved a Pedagogical Concern

In Probe 1, Kimberly was initially skeptical about individualized spelling, but as she watched and read the commentaries, Kimberly's beliefs about spelling changed, and she went through a learning process, coming out of it with a decision to implement some of the things she learned from the successful master teacher.

First of all, Kimberly observed the environment and teacher-student behavior. She noted that students were "well-behaved at their tables" doing "morning work." Then, she realized what was being taught, "She's talking about it's Tuesday and they're doing well on their spelling, so they must have a linear spelling program where they move from point to another." Next, Kimberly observed Jean's classroom management skills:

[Students] apparently know what is expected of them as they work through their morning assignments. There don't appear to be any questions. She's making quiet, positive comments that they're doing well, and she's pleased with their independent work. Well-

organized classroom. Looks like a pleasant place to be. It's not chaotic. It's calm and the music is nice in the background. The students seem comfortable and pleasant, and they know what is expected of them and they are taking care of what they need to do. It looks like a well-organized start to a day.

Even though Kimberly reported favorably about the learning environment, after reading the initial commentaries, she disagreed on the issue of spelling:

First of all, the environment, the setting is pleasant. As far as the music and the tables, and I noticed the no clutter. The spelling is not.... He talks about, where did you come up with the spelling lists. And she said from high-frequency words or their reading. *It would be more meaningful if they had their words coming from something they are involved with already*, not just a random list of words. That's what we do here (emphasis added).

Therefore, we were reminded of Kimberly's teaching belief that learning "has to be a hands-on, physical experience to make it concrete in their minds." Kimberly explained:

I agree that it's a nice environment, and I like the idea of having their spelling words come from their reading. Trying to plan a total, individualized spelling program is time-consuming and would be a huge task. But, if you were to take either whole class or small groups and do some individualization of words, but then also using some words that, whether it's homophones (she didn't specifically say that one), and then individualize, kind of a combination approach would be effective and would be something that could be handled without sending the teacher crazy.

As Kimberly continued reading the commentaries she remarked her concern again, "It makes good sense because spelling is individual. But coming up with an individualized

program would be unreasonable; it would take a huge amount of time." Then, Kimberly read Commentary #3 and discovered how Jean's idea would resolved her time concern:

Sounds like a good idea. This is an interesting spelling program. She's got the word of the day that the students are given, and they're expected to use them in their writer's workshop. And they've got...every five days they're tested, which would be a typical spelling cycle that I have used. Leaves no excuse. She's not going to allow them to make mistakes and misspell their 'no excuse' words, and holding them responsible. That's clever. She's got a way to make an individualized spelling program, which is doable. That they add a word-a-day, and the student's responsible for knowing that word-a-day, using it in their writer's workshop….

Once Kimberly understood Jean's idea and approach, she got excited and wanted to implement it:

Okay, there's two parts. The first is choose the spelling list, the second is writing the high-frequency, and then each student is given a word on their level, and the way I understand it is the words will vary on the second list to their level. And then they have a series of activities and responses. Group spelling lesson. Maybe the individualized words are given to small groups, and see if they use them in the writer's workshop, and then they know the spelling words. That's an awesome spelling program. I'd like to try something like that.

Furthermore, from reading Commentary Four, Kimberly asked some practical questions for application and made a conclusion:

Do the kids come up with some of their own words? Let's see…I know that they would be in their writer's workshop, and that they may be doing some inventive spelling. It's like

they're wrestling with the spelling, so she sees a need for them to have some individualized words. I would like to know if Jean chooses words or do the students choose the words, as well as the pre-composed list?

It seemed that the commentaries helped to clarify many concepts observed in the video and also create questions in Kimberly's mind so that she knows how to implement them. Most importantly, Kimberly's mind changed when she read Jean's commentary and realized an aspect of individualized spelling that is "doable."

Next, in Probe 2's Modeled Writing Think-aloud, Kimberly identified an effective teaching strategy that Jean used while modeling the writing process:

I like the idea that she's using this large piece of paper, and she's not doing it on the dry/erase board which would take more time….She's got all the eight boxes filled out ahead of time. She's got it ready for them to read, and she's going through the parts of the story, and the kids are participating by sharing what they know so far about the story, the parts of the story. Nice visual, rather than to just be talking or to be writing on the board, so she can face the students and interact with them.

Another example of Kimberly's learning process came only after a series of advanced noticing, reflections or comparisons. In Probe 4 (Comprehension Study), Kimberly could easily identify the strategies that Jean used for teaching:

She's predicting. She's modeling how to predict. She's taking predictions from the students…She's sharing and they're making predictions. She's teaching inference and predictions…She takes some predictions with another books that she was sharing...She's allowing the students to do what she had just modeled… It's a good positive environment for reading.

Kimberly continued to just regurgitate what she saw:

She is showing how good readers read, and it's not just read the material, listen, and critique, but it's following a different, more interactive format. And it's not just recall questions of names, or characters, or colors of clothing items, or simple facts to find out if the student actually did the reading, but it is....And comprehension is not, 'What did the author say to you but what do you have to say to the author?' He said that this is a very social experience, a social situation where there's interaction between…

Then Kimberly shared her belief about the different levels of comprehension:

Having the student carry on an interactive response with the author, you would not only have the student go from the basic facts (what color the sweater was), but it would be a higher level of thinking of what's happening and how you feel about what's happening in the story, and how does that equate or interact with your experiences. The woman is talking about the reading in a critical, analytical, imaginative, or probing way.

Later, Kimberly gained a significant insight after some reflection and experiencing sharing. Kimberly commented:

[How students] aren't reading text in a critical, analytical, imaginative, or probing way or not. They're just reading the words. And I guess we're the same. And I'm doing it right now, reading these very big words. Just a few days ago I was talking to another teacher about reading out loud and how some students seem to verbalize very well, and fluidly. They're able to read the words, but they're so concerned about reading aloud that they absolutely have no idea what they said. And then trying to explain it to the class after reading a paragraph out loud, they have absolutely no clue what they read. I think a lot of

students fall into that category of verbalizing without comprehension. Read the words,

but miss the message… I like the idea that she talks about teaching comprehension

Most important of all, an insight came to Kimberly during Probe 6, Literature Discussion.

After Kimberly reiterated what she saw, she made a startling discovery about effective

literacy teaching and summarized it as follows:

She's got five students and they're doing a question and answer. Probably the most

intriguing thing to me of all of this clip is the difference between active reading and

inactive reading. I have never heard of this or even thought about it. But that the student

would have ownership by having the student's questions being answered, not the teacher's

questions being answered. The concept of read and mark where you have questions

would be much more effective than saying, read this and then answer these questions?

This cognitive discovery would not have happened if Kimberly had not been noticing,

making sense of what's happening. Kimberly found that the key that determines active

reading is student ownership in creating their own questions from their reading.

Interestingly, Kimberly's insight on the literature discussion group came from a wider K-

12 perception instead of viewing it from a fourth grade classroom, "The way Jean

handles the literature discussion group is more along the lines of a reading workshop

rather than just a literature group. I'm not familiar with this kind of reading workshop. I

can see that it would be effective." Then Kimberly gave a suggestion:

She could have a one-on-one conference, or she can do a small group conference. The

teaching can take place on an individual level if the teaching is individualized for what

that student needs. It's almost taking the best of both worlds from the primary grades

where the decoding and some of the basic skills are learned, and also some of the upper

grade level approach which is more of the literature discussion groups. It's kind of a way of blending the two types of literature groups and bringing out what I think would be the best of both reading settings.

Such awareness comes after some contemplation from a wider cognitive perception of education.

Kimberly's comments in Probe 8's Shared Reading were longer for this probe than any other probes because Kimberly learned quite a number of things from this probe. Kimberly complimented a number of happenings and shared her experiences. She commented the way of teaching poetry as "fun", "active", and "a great way." Kimberly explained:

> Some of the things I liked about this is that they were using echo reading, or reader's theater. We've done that in class, and that's been effective. Some other points that I appreciated were in shared reading the difficulty of the text doesn't matter. You can handle something that would be above the level of most of your students if you thought it was worth sharing. That would be alright. You can return to it again and again and rewind. You can take it back to the beginning and do it again and again and teach a different concept or a different idea. I love that. That was an excellent way of getting the most out of shared reading. It was an excellent idea.

Also, Kimberly agreed with this Shared Reading activity not only because it's part of her belief in reading a different genres but also because of her childhood experience:

> I agree with her that shared reading is definitely an enjoyable situation. And I love the idea that they can share rich literature with the students that would often be

maybe much more than they would read on their own, a much higher level than they would read on their own. Shared reading was an important part of my childhood with my mother reading aloud. I have enjoyed teachers reading aloud to me. That is a very enjoyable experience, and I'm sure, in my own life, increased my love for literature.

With her rich childhood experience in reading and belief in using a variety of teaching methods, Kimberly exclaimed:

I love the idea of sharing poetry with kids. It's often something that girls tend to enjoy and boys tend to hate. And here she's got an opportunity for them to not only listen to poetry, but to be involved in it and shared it in a choral reading type of way. I love the concept that she's using multiple voices. They go back and try it again, and the kids were smiling; they were enjoying it. I love that. And it is so fun to see students when they're nervous about poetry. Sometimes I've seen students moan or groan or feel uncomfortable with it. This is not a negative thing. She's introducing this as a fun, exciting situation for the students. And shared reading is a perfect place for poetry. I would like to try more of that. I found that very enjoyable.

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The Effectiveness of Master Teacher Modeling

Because of witnessing the success of a master teacher modeling, Kimberly was able to make comparisons, and identify key teaching strategies that created success, which in turn changed some of Kimberly's beliefs, answered her concerns, and inspired her to attempt such approaches in her classroom teaching.

For instance, Kimberly "loved the idea" that Jean modeled various comprehension strategies to her students, "She's got the post-it-notes that show questioning or predicting or inferences. She's showing the children that she does this in her own reading and that is a great way to teach it. I love that idea. It's having the kids see that the teacher is predicting and questioning on her own, and that she has the post-it-notes to prove it. I like that she's got...in their independent reading..." Kimberly saw other advantages of such an approach, "She's got them knowing the comprehension strategies, and so they're engaged in their own reading, and she doesn't have to manage them and walk through and make sure that everyone is reading because they're working their comprehension strategies. And it takes, like the teacher said, very little management." After some reflection, Kimberly added, "I can see that I would need that more in my own room."

Another example was found in the writing process, Kimberly observed, "I think that students can see that it's a process. That you just don't sit down and write and have your rough draft be your final copy, that there are several steps to go through to make it right and ready, and that each step is valuable and important, and the teacher is doing a good job of modeling that." After reading Jean's comments in Probe 3, Kimberly remarked:

> I like the idea that she has used…She talks about the tools she used to scaffold, to layer, and to build, which is what I was thinking. I also like the idea that she is trying to make what is implicit, explicit, meaning…she's showing how she thinks when she writes---the building blocks from first idea to published writing. She is modeling that and teaching them how to use very important writing skills. Interesting, I like the implicit, explicit.

Commentary 4 clarified Kimberly's confusion and she understood the rationale of the activity. Then, Kimberly explained concerning the writing workshop:

> But the writing workshop with so many different levels, she can see as they're working independently in that process, whether it's sloppy copy, or editing, making sure time is not being wasted. There's kind of an ability to track where the students are in their writing, and the end process is that you get a piece that is ready to be published or read aloud, and the child can share it in that special spot. Nice.

Again, Kimberly learned from the master teacher, Jean. Kimberly having seen Jean not only modeled to the children the writing process, but also, seeing Jean modeled how to carry out a writing workshop, Kimberly had made a comparison and developed that desire to help students experience the writing process:

> It's made me think about my writing. I really don't teach writing workshops. I have journal write. I give them time to write in their journal, either an assigned topic or a topic they choose, but we don't always go back and take it from that initial first step through several steps, and I need to do that. We do it with a couple of big pieces, but I just want them to get used to putting pen to paper. I'd like to try this approach.

Kimberly's agreement in approach coincide with her teaching beliefs.   From the professor's commentary in Probe 3, Kimberly discovered a better approach to motivate children to write and this approach is in keeping with her teaching belief that learning should take place in a variety of settings and hands-on concrete experience:

> I love the idea that she has them responding to literature and letters, poetry, reports. That is wonderful. She talks about...mini lessons occur, referring to the conferences, the peer response and sharing, as maybe little mini lessons, reinforcing what has been taught earlier. Neat.

In another instance (Probe 6), Kimberly revealed her concern about classroom management, "She's got her class in control and I would like to do better with that in my own classroom." Kimberly shared her insights on the pros and cons of giving students total freedom or limited choice in the selection of book for silent reading, again we can see her beliefs governing her suggestions, "I can see some pros and cons with that. The advantages would be that they have more choices there. The sky is the limit as far as what books they choose." Also, this activity is in line with Kimberly's viewpoint that learning is a shared, involved activity:

It is a terrific way for students to enjoy reading and improve their reading skills. I agree with that. I would also like to add that. It would be a wonderful opportunity to increase and introduce vocabulary, to share words and information that normally wouldn't be shared if the student chose the book themselves. I think that I would like to stretch in my classroom the literature that I share. I like the idea that they're actively participating by having their eye on the page. That changes from passive to active participation.

Beliefs Correlating With Opinions

A teacher's belief is important in shaping her perception of the world and, hence, influencing her attitude and behavior about things in life. Kimberly's agreements and disagreements can be traced to her teaching beliefs. For example, Probe 2 revealed Kimberly's belief on letting students be involved in the learning process. Kimberly favorably commented, "I loved the idea that she is helping create something with the students; they're not doing it on their own; she's not doing it on her own, but it's shared writing. And writing is a wonderful thing. The kids should know that it's not frightening. That writing is a positive experience. They're creating something together, which I like." Also, in Probe 5's Independent Reading, Kimberly admitted that silent reading is important and should be "scheduled" as she believed, "Free reading time rarely happens. It has to be scheduled in (silent, sustained reading), as far as I'm concerned, because if you wait for break and a time for it to happen, I don't think it would happen in busy classrooms and the amount of curriculum we need to teach. I need to do more of that, and they're showing that it can be done."

In another example, Kimberly noticed the book-talk zone and made a comparison which revealed her belief in learning that assimilates real-life experience:

This reminds me of book groups that have often been set up for older students or for adults, that they belong to a book club where they read a book on their own and then share it, and share their questions or feelings or responses to the literature that they've read. This book-talk zone, that is a great idea that Jean has developed, that she provides daily time for silent, sustained reading, and then she also has provided space for them to go into this little mini book club, or the book-talk zone where they can discuss their books.

Then Kimberly asked an application question:

I do have a question whether the students are sharing the books that they've both read together, or whether it would be two students sharing books that are different from one another, but sharing what they read and what they liked about it and how they felt about it. That would differ from two students reading the same book and discussing how they felt about the book that they both enjoyed, that they both shared.

Furthermore, in Probe 6 (Literature Discussion), Kimberly mentioned what she liked from this clip. Noticed that Kimberly's agreement revealed her teaching belief that learning comes from student involvement:

I mentioned earlier, she is involved in the circle but she certainly is not the dominant figure. I like that approach. She allows the students to kind of be as involved or to lead the discussion without her, even though she's sitting there. And I like that she has a window of discussion that she doesn't allow anything to

go past…. The members of the group would certainly change the dynamics. As the members of the group change, the dynamics of the group would change, and some would share what's important and meaningful to them. And so each group discussion, even though it could be the same group, would vary, which is interesting.

Kimberly was able to succinctly know what was happening this literature discussion group:

I like the idea that they're using bookmarks she has said to them, You may leave as soon as you have a bookmark. These bookmarks are where they take down their notes, the questions that they have, their predictions. And when they come to group discussion, they bring their bookmark basically all Jean has to do is say, let's hear what your questions are it started the entire group moving forward without her. She's watching. She's monitoring. She's paying attention. There was no need for her to be the intermediary. She is letting the discussion unfold between the students like they would with an adult book chat. And with the management she has done beforehand with the bookmarks and the writing down the questions and predictions. They're using these comprehension strategies. Once she gets it going it seems to be student-driven. I love that idea. I think that's excellent.

The above comments also reflected Kimberly's belief in the importance of student involvement and hands-on experience ("like they would with an adult book chat"). Interestingly, Kimberly's insight on the literature discussion group comes from a wider K-12 perception instead of viewing it from a fourth grade classroom, "The way Jean

handles the literature discussion group is more along the lines of a reading workshop rather than just a literature group. I'm not familiar with this kind of reading workshop. I can see that it would be effective." Then Kimberly gave a suggestion:

> She could have a one-on-one conference, or she can do a small group conference. The teaching can take place on an individual level if the teaching is individualized for what that student needs. It's almost taking the best of both worlds from the primary grades where the decoding and some of the basic skills are learned, and also some of the upper grade level approach which is more of the literature discussion groups. It's kind of a way of blending the two types of literature groups and bringing out what I think would be the best of both reading settings.

Advantages of Commentaries

Commentaries had helped to clarify ambiguities, share rationale for deeper understanding; otherwise, Kimberly would not have been persuaded to try the independent spelling modeled by Jean if Kimberly just watched the video without reading Jean's rationale in the Commentaries. "I appreciate that he clarified that she was talking about her own reading, and that she was predicting, and that she was modeling this kind of comprehension to her students."

In Probe 7, Kimberly's positive insights on the struggling child is so different from Carolyn or Elizabeth. Kimberly seems to be able to logically connect the ideas and understand what the commentator's explanation whereas the former two didn't differentiate both activities:

> In guided reading he talks about how the text has to be at their instructional level. Whereas in SSR the interest level can be much higher in a particular subject. The

book may be a higher level than the student is instructionally able to read. She did such a good job praising this child for the self-correcting that he wouldn't be nervous next time. If she comes over and listens to him read it would be a comfortable situation for the student.

Kimberly's keen ability to interpret activities helped her understand the rationale behind guided reading:

I appreciate Jean Turner's perspective on guided reading. There is no recipe or structure for this type of reading, which is what I have noticed as far as teaching that. But she mentions providing accurate support, instructionally and motivationally, by asking herself questions: Is this building independence? Are they on the right level of books? And is she providing the right kind of re-enforcement? It is a positive experience for students for guided reading. I would like to try that more in my own classroom.

In the final Probe 9, Kimberly's sets of beliefs was shown in what she says and put in italics. Kimberly saw the entire picture and connected them succinctly describing them each activity as "a building block of the whole literacy program…It was just interesting to watch her blend all of these together. She's modeled the writing workshop, she was involved in their writing workshop. Every aspect of literature, the spelling, the different reading independent, the guided, the shared, all have a place like a building block of the whole literacy program. It was excellent. It was interesting and it was excellent. Her students are very well behaved and she seems very prepared with all parts of her morning. Then from an overall perception and after some contemplation, Jennifer gave the following insight:

I agree with the literacy specialist's perspective that she's able to strike this balance with teaching literature and articulating it. There is so often, even with the literature program that we have, that we have to make a lesson out of every little thing, and it drags on so long; they're only allowed to read two or three pages a day, and it's reigning them back in when they're just wanting to read more and more, and their enthusiasm for reading.... If I have to keep pulling them back by saying, 'Oh we can't do that yet. We still have to predict what's going to happen on this page and in this paragraph and in this paragraph,' and it kills it. The kids get sick of it. In order to keep it flowing it takes balance, and she's doing it very well.

Kimberly also gave a profound insight into balanced literacy—its challenges as well as success:

In the insights from the professional literature…It is important for the students to gain the skills of reading early enough to serve them forever. How do you do that, how do you meet those needs? Well, that's hard, especially when you're in a classroom with the students and you want to manage them well, and to have them learn to manage themselves, and to provide the opportunity for reading and writing that will help them really develop their skills in a meaningful way.

Most importantly, Kimberly remarked:

I appreciate hearing Jean Turner's perspective as I've watched her in a morning classroom. It is amazing that she takes three hours in her morning, which is her full morning, to accomplish these goals. She has to be that committed to give up three hours. In so doing, she's not just taking care of spelling as an independent

topic or writing as an independent subject or reading as an independent subject, she's got them fully integrated, and they are able to participate in discussion. They are able to do the building blocks of writing workshop, and use their time well so that this three hours, this huge chunk of time, is used well and is benefiting them. It is really interesting.... It is exciting to me to see this three hour block work so well and accomplish so much.

Progress in Advanced Noticing and Comprehension

Initially, Kimberly did not mention a lot in terms of advanced noticing, but towards the end she commented in greater details and made many remarks on wanting to try the various approaches or activities. Unlike Carolyn, Deborah, or Elizabeth, Kimberly's comprehension at making sense of what's happening was very acute. Kimberly paid very little attention to the classroom settings even in the beginning because she had focused more on student and teacher behavior. Her succinct ability to make advanced noticing and to contemplate reading of commentaries left her to make many good logical conclusions about the activities, interpret the comments and finally feel the need or desire to utilize them in her classroom teaching. Overall, this case seemed to be a positive learning experience for her.

The Case of Jennifer

Background Information

Jennifer is 23 years old and has taught for two years in fourth grade. When her principal found out about this study, she recommended Jennifer to participate in order for her to learn balanced literacy and introduced her as an excellent teacher with great potentials.

Similar to Kimberly, Jennifer taught at a sub-urban middle class area in a different district.

Beliefs

Beliefs in Effective Teaching in General

In stating her beliefs in effective teaching, Jennifer made several brief statements of different concepts:

Classroom Management: Jennifer suggested that the fundamental condition to effective teaching was management: "To be an effective teacher I would say you first have to have management of your classroom. The class has to agree with your philosophies and be able to transition well and do things."

Student Accountability: She also suggested that students need to feel ownership of the class, "And you have to have an agreement where it's their class, not your class, 'cos they won't follow you if they think you're just giving them orders. They have to take accountability for what they do."

Student-Teacher Interaction: She indicated the importance of student participation, "And then I think that needs to be a lot of interaction in what you teach; that you are a partnership in learning. And you give them stuff but they also have to help you."

Student Level: "It needs to be on their level, not just a straight across, 'This is what you learned in fourth grade' even though they are not there or they are way above it. It's gotta be adopted to the child individually."

Enjoyment in the class: She simply stated, "Have fun."

Balance: Her last belief statement in effective teaching related to balance, "Balance in all things, you just have to incorporate all ways of thinking all together."

Beliefs in Effective Literacy Teaching

She introduced most of her beliefs in effective literacy teaching in the way of sharing experience from her own practice. These experiences demonstrated that she knew the rationale behind her instructions and revealed her beliefs in a practical way.

Guided Reading Group: Jennifer used a guided reading group in her class to lead students to read at their levels and she had found it to be an effective method. She said, "In my class I do a lot guided reading groups as far as they are on the books at their own level. And they're successful because they're on things they can read. And they feel successful at it. They're getting the comprehension and then they move up that way."

Straight Writings: Jennifer introduced an idea, which she called "straight writings" and believed that it was a process that could help both reading and writing. Although she did not explain the details of its operation, we could understand it to be a student-authoring method that empowered students to learn from their own work. "I have six straight writings where they learn directly from their writing. They improve their writing through their reading and back and forth. And the kids feel successful because they are authors and they can do things even though they're not you know—twenty-five or whatever."

Learning in Context: Jennifer provided many resource centers in her class because she believed that students could learn more effective from direct resources rather than text books, and she found this method to be successful. She said:

> I do a lot of centers as far as the basics of learning nouns, adjectives, verbs where
> they get it from actual books rather then a textbook. They get it from the authors
> or they find it in newsprint. They find it in places around them where it's
> applicable to their lives. And I like how the three tie in just because it gives them

a base of success. They don't care what they're friends are reading because they like what they're reading. They're successful at it. But it produces the results that I like.

Salient Cognitive Patterns

Concepts That Jennifer Learned and Wanted To Apply

In Probe 1 (Independent Spelling), Jennifer basically made many advanced noticing of what's happening and wanted to know how Jean approached it. The video was insufficient for Jennifer to know in greater detail about the assignment; so she asked at the end of watching the video, "I wonder what assignment she gave them for spelling and how they're practicing it. . . or kinda what was expected." Only after reading the commentaries did Jennifer come to a better understanding of Jean's approach. Jennifer felt that watching this probe had given her "encouragement to keep trying it" because "it made me feel good 'cos I just started to do personal spelling lists and it is a big pain because they all have their own lists and if they loose them it's just a big pain. But I like that it's backed up and it does help them a lot more if it comes directly from words they've misspelled or their writing and that." So, Jennifer's remark was realistic and favorable toward individualized spelling because her classroom experience told her "it benefits the students more in the long run" because:

> It was just saying that the individualized spelling is a lot more difficult then just giving them the same built list and half of the words they already know because it's something that they actually have to really work on. And it's individualized…But it said that if you set it up with the right structure it can be successful and very manageable. You just have to get through the rough times to

do it first but it benefits the students more in the long run. I agree with it. That a

lot of teachers look at individualized spelling lists and say there's no way 'cos it is

difficult to set up and no one can know how to do it perfect the first time. But just

in my own class I've seen a big difference in…Once they get used to it and they

get used to the routine it does get a lot better. And it's not perfect all the time but

they apply it a lot more to what they do in class then just random words I've

selected.

Also, Jennifer noticed another teaching strategy:

She said she had two different spelling lists. One she just gives them a normal

spelling list that they study throughout the week and they are tested every Friday.

And then the other one…was a really good idea that she gives them...finds out

where they are in the high frequency misspelled words list and she gives them a

word of the day every day…I really like that 'no excuse' words thing…that they

have to use them throughout the whole year. And you could tie it into vocabulary

and a lot more of stuff that way. That way that I think would be a good idea and a

help to my class.

 On classroom management, Jennifer remarked, " I also like that she monitors and

continually walks around. And points out a good thing even though they might not be a

hundred percent successful she always points out a positive thing first and then maybe

corrects them. So that's good. Good reminder."

 By reading Jean's commentaries on modeling the writing process, Jennifer was able to

discover her pedagogical problem, "I can see where I get stuck. I do a lot of the story

mats but then I just assume the kids know how to do the middle section and then we

publish. But I can see benefits in doing it step by step by step together even though it might seem really rote to me they need that basic going through the entire process together."

After reiterating what the commentator in Probe 3 Commentary One said about "the purpose of state of the class and the term 'guided writing,' Jennifer remarked, "I like that term. I like that he said that it was a routine. That it was the same everyday and the kids are used to that and it provides the structure that they needed. I liked the guided writing term just because that's what it is. You see what they need and you give it to them and you guide them as far as that goes. And I need to do state of the class more."

After reading Jean's Probe 3's Commentaries, Jennifer shared some important teaching strategies, "I like that she stressed that there needs to be foundation before they can become wonderful authors. That if they always just come up with ideas but they don't know what to do with it after that it's not going to do them very much good." Next, Jennifer points out the importance of sufficient guided practice before independent practice, "If you go through the whole part as a class and do it several times as a class they're going to be a lot more confident when they go through it on their own and a lot less frustrated when they get to the editing and revising process because they've done it several times and it's not as scary."

Most importantly, through the commentaries, Jennifer discovered the art of gradually helping students to be accountable for their learning. Jennifer was able to observe Jean's teaching, compare it to her previous professional training, identify a loophole and witness how Jean made the writing workshop activity a success:

He was saying that he noticed that she really focused on the process before the explicit Teach of it so that they felt comfortable with it. As well as it's a lot more direct Teach if they have something that they're working on when you teach them a concept and then they can go back to their writing and apply it directly there. So if they're doing punctuation they can go back and fix the punctuation in their writing rather than something that they are not attached to.

Then, Jennifer went on to share an experience about this activity:

At the first of the year I do it really well as far as the three parts of it and now as your class gets so used to what's going on and that it's easy to just slip into telling them what to do. 'They know what to do so they do it' type thing." Then Jennifer expressed her concern, "But there're still key Teach moments that I think are missed when you do that because the kids do get comfortable with it but at the same time it's a bad thing that they're comfortable with it because they just do what they've always done instead of continually pushing them farther and more on task. So I need to work on that part.

In Probe 4 (Comprehension Study), noticed that Jennifer would first make some advanced noticing, then she would reflect upon it, comparing it with her won experiencing "She's modeling what she did. And she's modeling what she did when she made a prediction or an inference and so she showed the kids what she was doing." Then she saw what Jean did with the post-its and remarked, "I've seen the idea of post it notes before and I've read about it in my lovely textbooks. But I've never tried...I've tried to do it with mini groups but not as a whole class but I can see the benefits of validating…" Then Jennifer reiterated what Jean said, " 'I tried this and look and what I did.'" Next,

Jennifer saw that Jean was inviting students to "try it together and put post it notes so the kids see how many predications they make." Jennifer also saw another benefit of such an approach, "Where some of the kids who don't clue in naturally to that's what good read do, that's a real tactual way to show them that they make predications and then to make the class go back and try it in their own books. Just that I really yeah--want to try it in my...try it in that part. I liked how it applied it."

Likewise, from Probe 4's Commentary Two, we are shown how Jennifer first made some advance notices, then analyzed by making comparisons, then explained her rationale and finally made a judgment that she whole-heartedly agree with the issue. Jennifer's cognitive complexity is revealed as follows:

> She that without comprehension or understanding they're not really reading. You can read the words on the page but you can totally miss the whole message behind. And I have a lot of kids that do that. They can be good readers but if they don't understand what they read it's not going to do them any good, basically is what she's saying. And she said that her whole goal is to move them from early levels of understanding to a greater awareness. She said that she really liked the Mosaic of Thought book and Strategies the workbook. My insight on that is that I should have paid more attention to Mosaic of Thought in college 'cos we were supposed to read that whole book, but I didn't. So I should go look it up."
> Jennifer knew the importance of such advance comprehension exercise, "I can see how the strategies that they do tie into her classroom and how I a hundred-percent agree with 'they can read the words on the page but if they don't understand it it's not doing them any good'. They can fake their way through school a lot of the

times by doing that because they can read really well and their teachers think that 'oh, they're great readers'. But if they don't understand behind it then you're almost doing them more of a disservice.

In Probe 6 (Literature Workshop), as Jennifer witnessed the literature discussion group, her comments were mainly focused on how Jean facilitated it:

She's making sure that everyone shares their ideas…They're looking on the back of the book to find answers to their questions. She's not just giving them answers right away. She's letting them search for the answers. . . . She's not saying very much. She's just letting the kids talk about it. She set up a page where they needed to stop at or a window of discussion type thing. She has a window discussion of stuff that they can discuss and not to ruin it for the rest of the class. Jennifer then commented:

I really like the window of discussion 'cos I struggle with telling kids that they have to stop reading at a certain spot. But yet I don't want them to read and then share. And you know the other kids way far behind and they still want to read the book. So I like that window of opportunity. I like that they had some sort of structure. And I want to read under hers to see what that structure was.

Moreover, in Probe 6, Jennifer made some comparison and noted, "I have kids who embellish and make things up as they go along and they sound like they know what's going on when they really have no clue. But if you see what they write you can really see what connection they made and how they termed it and how they worded it and you get a lot more about the student rather then the other kids and kind of what they feel safe with sharing. I like that part. Questions that I had about her structure of it. She started the discussion with a question and answer period. Not her asking the questions as:

What did the character do in this chapter?' But questions that the kids had that are a lot more applicable. So they developed the questions and then they discussed it. And she just kind of took a back seat and let 'em look it up. Let me try to find it before she just became the dominant figure and stuck you know stuck her answer in there. Personally I like the starting with question and answers. I struggle with some of my kids really understanding whether they understand the book or not or whether they're just reading and calling it good. But I think if they develop their own question rather then me asking questions I think they should know I would understand a lot more of what they know and what they're getting out of the book. And as a teacher I would think that was important as far as even picking material in the future. Anything that you can tell of how they think is important. And then that window of discussion again. I really like that you don't limit the kids. They can read and read and read but when they get together they're on common ground.

In Probe 8's Shared Reading, after watching how Jean physically prepared the class for a shared reading activity, Jennifer also noticed a salient teaching strategy of how Jean cognitively prepared her students. Jennifer declared:

She has a really well behaved class. She's setting it up kind of like a challenge. Saying it's tricky to read and it's going to inspire the kids to do a better job. She's gonna model it first and then have them do it. She's encouraging all the kids to follow along. Making sure everyone can read a book. She's going to read it to make it a safe experience and then they'll do it . . . . She's reading down through the poem. It's about grasshoppers. All the kids seem to be really engaged in

following along. It makes me wonder if they've done poetry or that type of stuff

before.

Jennifer's practical questions or desire to know more so that she can execute some useful

strategies:

> So what's the objective or outcome of video ethnographies…what do you want
>
> viewers to be able to do after viewing the case so that they feel confident to be
>
> able to execute it for success. That's the next level of issue that this discipline
>
> had to address otherwise teacher swill come off half cook and set up for failure,
>
> not success. I want to watch this spelling part because I didn't really follow. The
>
> insights gave me more then what she did in the class. So I want to see how she
>
> monitors the class when she does that.

Teacher Modeling

In Probe 2 (Modeled Writing), Jennifer commented on the teacher model and

involvement of the students in the creative writing. Jennifer even stated the positive

advantages of such an activity:

> And she's walking the students through the story. Which I think is a good idea
>
> because then they're all on the same page with you…I like that she went over the
>
> whole eight chunks of a story together as a class. And they seemed very familiar
>
> with it. Nobody was questioning it so she must have them put these story maps
>
> together often. But it allows the kids to guide where their writing goes and doing
>
> it as a class is a less threatening way then to just make them do it on their own.

Therefore, Jennifer agreed with the approach because it verified her belief in student

interaction:

I like that cause I think anytime you see someone else doing exactly what your doing it validates you a little bit more for yourself. So if the students see that the...their teacher does the eight story maps and they still need to talk to other people and get input and fix their story then they're going to be more willing to do that themselves rather then just writing an idea and being done. It involves them and it makes it more of a team effort, which I think is important.

In addition, Jennifer saw the value of modeled writing:

It was just describing everything that the kids can see when you're modeling writing. That they can see how you think, see how you draw your letters, see how you spell, see how you punctuate, see how you format. All these things you would do in a mini lesson. They see how you do it everyday which I think would probably rub off on the kids a lot more then just having them practice from a worksheet. That you could probably have a kid practice forming letters or punctuating on a worksheet for hours and when they do it in their writing it probably won't carry over unless you do it with them. But if they see you do it in your writing everyday and if they see you edit then they'll know that they need to edit too and they'll see how to implement that in actual writing instead of just fixing a worksheet.

From reading Probe 7's Guided Reading commentaries, Jennifer made another significant discovery about teacher modeling. She exclaimed

This passage from the professional literature just basically defined guided reading. It said guiding reading depends on the teacher to be the instructional leader. The teacher still needs to know the students and know where their limitations are but

the reading strategies are taught within the context of the literature."   They can directly apply them to what they just read. I like that because I can see more how much more applicable it would be when they're actually reading the materiel when you're doing the mini lessons are making the connections to the right materiel that they chose rather then an assigned piece of reading.

Then, Jennifer made another discovery from the same probe:

Monitoring is a big thing. She says at the end, 'I find myself asking the questions like 'Are the kids in the right books?', 'Are they becoming more independent?', 'Am I centering what I teach around meaning? And personal insight on that was that I know that at the beginning of the year I'm super excited to start new things and to try new things. And everything's going just right and then there's always up and downs where you just fall back and teach what you're used to and then you try new things and you fall back and what you teach what you're used to. But asking yourself these questions all the way through it 'Is it centered in meaning?' 'Are the kids in the right books?' 'Are they becoming more independent?' is going to help me to stay more on the right track as a teacher and to make it so that it's beneficial to the students.

Teaching Beliefs Governing Agreement

Probe 2 (Modeled Writing) demonstrated Jennifer's belief in student interaction when learning; she commented:

He stressed again how important modeling is in the balanced literacy classroom and how it's kind of a window into the way people think and the way she wants the class to think about writing. And it said from the kid's point of view if

she's...has the courage enough to put her writing in front of the class and get their opinions on it and share it back and forth then in the long run the kids will be more willing to accept her feedback as well as other kids feedback because they see it as a team effort and how everyone has good ideas and they can contribute or not contribute to each individual piece. I like the idea of doing it as a class because it validates it between kids as well. I never thought about that before. That I have my kids do buddy shares before they publish but if we did it as a class and they hear a lot more of what other kids were saying it would validate the buddy share a lot more then how they look at it right now. I like that they can either accept or reject what the other kids say. Maybe they want it that way in their piece and that's fine cause that's their story and sometimes they'll take it. So they still feel ownership over it.

In the same vain, after reading Probe 3, Commentary 2, Jennifer added:

So, it's flexible that way, but the students come up with their own topics and extend their skills how they want them. I like that she said that it could be letters or reports or anything like that and that it kind of has more flexibility that way. Where I don't feel bad if I assign them a topic but yet they can choose anything that they want to do.

Seemingly speaking from experience, Jennifer cautioned, "And also that the conferences, peer responses, and sharing are essential. That that's such a crucial part of the program. That they need to have that consistency there."

Concerning Probe 3's Writing Workshop, providing positive feedback in celebrating writing is an important form of validation as Jennifer shared:

If it's some part that you liked or a whole finished story, I think that's important for the kids to validate what they wrote by sharing it to the class. I think it just...need to remember to do all of those things. Sometimes, you get started and then you run out of time so you think oh that's OK we'll just do it later or...and then by the middle of the year you think, ahh, we'll just start it again next year. But just to pick it up and try it all the way through.

Belief In Classroom Management

In Probe 3 (Writing Workshop), Jennifer observed:

[Jean]checking the kids to see where they are. They're telling her sloppy copy or she's publishing or whatever, so she knows where every kid is in their class, which is nice. She just has a quick little checklist, which is an easy way to look down and see if they're never finishing stories or if they're always working on the same story, that'd be quick and handy.

Moreover, in Probe 3 (Writing Workshop), Jennifer observed Jean's management skills:

And then she did a quick check of where they were so they could tell her if she was on...if they were on sloppy copy or they were publishing or if they needed to meet or conference or whatever. And then she had a little conference with a group at the table where they were just in a small group to address what they were working on. And then at the very end some girl was sharing her story in the author's chair.

For example, when Jennifer was reading Probe 6 (Literature Workshop, Commentary One), she exclaimed:

I really like the last sentence that she said. It says, "Ownership is critical to develop motivation, independence, and success with readers. She said that the materials that they choose she does book talks on them, and then they can choose which books they prefer to read…She, of course, had to teach them how to pick books so that they didn't just pick books that their friends where reading or pick books that are thin and easy. She said, that she did scaffolding in the past so that they knew that they could pick books that are on and near their reading and books that they would be successful at. So that she's building the independent readers that she needs to.

Assumptions Fill Ambiguous Conceptual Loopholes

Ironically, in Probe 6 (Literature Workshop), Jennifer assumed that kids are given total freedom of choice while Elizabeth and Carolyn were complaining over the limited choice that Jean gave to her students. Interesting observation from each viewer over an ambiguous situation whereby it isn't clear how much freedom of choice students had over their book selection. Each viewer or teacher just assumed something and react to that assumption negatively or positively according to their teaching beliefs or perception: "I like how the kids had a hundred percent choice over what they read. There's going to be a lot less complaining about doing extra reading and a lot more connections made if they choose what they read as well as looking at what they write."

Disadvantages of Video Ethnography

Jennifer brought out a disadvantage of the video's limited view. Just like Elizabeth with the bookmark, Jennifer can't see what she wanted to see—"a kid's describing some sort of story. And now they're using the author's chair. And a student is sharing her story.

You can't really tell where the rest of the class is or if they're listening." Later, Jennifer

observed, they're giving her an appreciation at the end. And they're done."

Later into Probe 3, Jennifer noticed that the writing workshop had been cut and

commented that she, "It looked like it just went through a quick version of what her

writing workshop day was. She always starts the beginning, I guess, with a lesson about

what she was thinking or an idea of what they could do if they were stuck with a

problem."

Then, Jennifer gave a recommendation on how to improve the case study towards the end

of Probe 3:

> The only one, the Insight from Professional Literature, I like that it's read to me
>
> rather than me just reading it because I think that when I see... I mean, I have all
>
> the professional books and that but it's just a lot more overwhelming than having
>
> someone tell you it or seeing it. So when they read it to you it's a lot easier to
>
> focus in and connect to. But if I would just have to read it then I wouldn't have
>
> gotten anything out of that part, I don't think; just because it's a textbook that you
>
> had in college that you had all the way along. So…But I like the other insight part
>
> of it.

Advantages of Video Ethnography

So, on the other hand, Jennifer exclaimed concerning the video in Probe 3 (Writing

Workshop), "I like that it kinda showed just a quick overview of everything. That you

start with a mini lesson. You do need to know where all your kids are. And then to

always end with an author's chair even if it's not a big deal."

Towards the end of Probe 3, Jennifer gave an important feedback on the benefits of different perspectives of the commentaries:

> At first I thought, 'Okay, you're just going to read the same thing four times in a row.' But I like how you can view it first and kind of form ideas in my head and then when you see all the different perspectives of it, it just reminds you mean the basic information's still the same but different ways that people can look at things is almost like doing a group project all at the same time. Where there's five people here and you can see what they thought about things and it makes you think about things in a different way where if I would have just looked at the clip and went to the next one then I would have just had my thoughts on that. So I like that part. I think it's a good idea to listen to all of them because they do have the different perspectives.

Another example of utilizing the potential of video ethnography was when Jennifer commented on her confusion of Probe 1 and her solution, "I want to watch this spelling part because I didn't really follow. The insights gave me more then what she did in the class. So I want to see how she monitors the class when she does that.' Then Jennifer realized the management procedure: "Oh, she's talking about what they're choosing to work on whether they were doing their personal lists or their word of the day and I like that. I like that."

Hence, Jennifer used this last probe to look for questions that she was unanswered in the earlier viewing. She thinks aloud the things she will be watching out for during this second viewing so as to answer her previous questions. That's good because Jennifer was able to correct what she missed hearing from which some of her questions came

about which would not have arise if she had listened carefully for the first time. So this tells us the advantage of technology whereby numberless repetition aid in clarifying issues at ones' own leisure time and to witness any details to one's own satisfaction. This last probe is essential as it help viewers to look for answers to questions they had, inspire greater insights, and inspire teachers to watch for other strategies they had missed on an earlier setting. For example, Jennifer remarked, "You can look for different things when you go back through it….I mean like going back to look for the spelling question to see if she really explained that or to see how she transitioned where before I wouldn't have noticed that because I didn't know what to look for."

Discovery after Watching the Video Again

Her earlier Probe 1 question was answered:

> Oh, she's talking about what they're choosing to work on whether they were doing their personal lists or their word of the day and I like that. I like that...She's meeting with the class with her pre-write. And she's saying that it was her writing rather then the class's writing, which I missed the first time….And I want to see how she transitions from the pre-writing to...I remember she was doing her status of the class, or whatever the called it, so I want to see how she transitioned from her mini lesson to the status of the class. She's talking about what she's going to do that day so she must write when she does it. And now she's almost ready to excuse them….It missed the transition part. She must have just ended what...what she was talking about with what she was going to do that day and then say, "What are you going to do that day? And then give it to me. Maybe it'll say something

on the insights at the end. I like her checklists that she can just simply write a

letter on.

Significantly, Jennifer was able to utilize the flexibility of technology, "I understood the

Writing Workshop part really well so I think I'm going to the Comprehension Study and

kind of see the questioning part again. "

Furthermore, Jennifer always had a stated purpose for watching a particular clip. For

example, she spoke aloud:

> She's doing the post it note a thing...post it note thing again and I want to see how
>
> she has the students share where they put the post its. Again she's asking for
>
> predictions from the students. And she's putting the post its straight into the
>
> notebook...straight into the picture book that she's using. And then she can go
>
> back and show them the prediction that they just made. She's going to talk about
>
> the groups that she's going to meet with again and I want to go see what their
>
> literature discussions look like. She did the Independent Study in the middle but I
>
> want to see the discussion of the literature group again.

Jennifer's also made some valuable advanced noticing that the rest of the teachers failed

to note because they did not mentioned. For instance, "some of the kids are being a little

quieter and you can tell that...that they wait until everyone's shared so that must be some

sort of rule; that everybody has to share something." Also, Jennifer identified another

strategy "And again she didn't answer. She waited for another student to answer their

questions. She reminded them about the window of what they could discuss. And she

tied it into this student who's not quite there. She said, "If he waits and reads on will he

find out the answer to this? And the other kids said yes."

Jennifer continued to share her insights on uses of technology:

> You can look for different things when you go back through it. You can I mean like going back to look for the spelling question to see if she really explained that or to see how she transitioned where before I wouldn't have noticed that because I didn't know what to look for. I like the...the freedom to go back and the parts that I understood to go over it. To really look at the...kind of to reflect of what I saw to make sure that's what I saw or to see how I would use that in my classroom. Yeah. Well it answered... it connected between the...what the specialists or the comment people said. It made me kind of see what they saw. Where before I just you know…saw it the first time I could see 'oh yeah she did do that...or this is how it helped type thing' so it kind of just kind of just tied it together rather then just separate things.

Like Kimberly or Deborah, Jennifer's misnomer about balanced literacy was dispelled because they learned that balanced literacy involves all four language skills, including speaking and listening: "At first right when I heard that I thought that's probably a little intimidating to a teacher. But it's all the forms of reading and writing. It's…the guided reading, it's the shared reading, it's the shared writing, the guided writing. So that makes it…once I've seen this it makes it less intimidating to try to fill three hours worth of time."

Process of Cognitive Development

Jennifer made few remarks on environment but was able to focus her comments mainly on student-teacher interaction, teaching approaches and procedures, etc. She was thorough in her think-aloud and was able to make several comparisons and identify her

own problems through watching Jean's modeled examples. It was a treat to see her experiencing so many discoveries, some of which would help eradicate her pedagogical problems. Jennifer shared more insights than any other teachers—constantly reflecting on her experiences and explaining other rationale, or advantages to an approach. Like Kimberly, Jennifer went through a similar cognitive process that would lead to personal application. First, they would make some advanced noticing, then they would reflect upon it, comparing it with their own experiences (which at times may cause them to identify pedagogical loophole or concerns), at times, they may consider the rationale behind an approach and after understanding them, would feel excited and wanted to implement the master teacher's approach in to their own classroom teaching. Hence, cognitive process has taken place, which basically is this: after teachers understood what's happening by making advanced noticing or interpreting, they would need to analyze or compare it in order to come up with questions or enthusiasm for application (see Kimberly and Jennifer's learning/application sections).

The Case of Heidi

Background Information

Heidi is 32 years old and she has been teaching for two years. Her school is located in a university town and she also received her education from this state university.

Beliefs

Beliefs in Effective Teaching in General

Heidi's beliefs comprised of three short statements representing three educational ideas.

Classroom Management: Her first belief related to the importance of management in the classroom, "[Effective teaching requires] effective classroom management so that the children have the ability to learn there."

Knowledgeable: Heidi's next belief statement stressed what teachers should know, "Teachers need to be knowledgeable in the subject areas and know the curriculum so that those kids can get what they need to."

Enthusiasm in Teaching: Heidi believed in the relationship between a teacher's and the students' enthusiasm in learning, "If the teacher is enthusiastic and knows what she's teaching, the kids will become enthusiastic in what they're learning."

Beliefs in Effective Literacy Teaching

Heidi did not make any complete statement of belief in literacy teaching. Rather, she provided pieces of ideas that were not supported by experience nor explained in detail. Heidi said, "[Teaching] a lot by examples, having a well-rounded approach, not just focusing on one way of teaching it…[but] hit all the different learning types. So, being well-rounded and flexible."

Salient Cognitive Patterns

Heidi's oral responses were usually noticing and agreeing statement. She seldom shared her classroom experiences nor mentioned things related to personal application of the newly learned concepts shown in the multimedia case.

Looking for Things Relating To Teaching Beliefs

Interestingly, Heidi's first comment of the video in Probe 1 coincided with her first belief in effective teaching—classroom management—Jean had "got [a] good control of the

classroom." Incidentally, most of Heidi's subsequent comments were also somehow related to classroom management. She noticed that students were "working hard", and Jean was "very positive with them…She's got them working independently on their spelling words." As such, Heidi observed, "all of them were busy" because Jean had been "keeping them going." Furthermore, Heidi discovered another classroom management technique, "I like how she goes around the room, letting kids know that she's there. Keeps the kids on task, rather than just standing in the corner or working on the computer." Besides commenting on teacher and student interaction, Heidi also wondered about the environment and how it relates to management, "what it would be like to teach with kids at tables." When Heidi noticed the music playing, she said she had done "it during art and things like that" but had "never tried that while they were trying to study spelling words [or]…conferencing."

In addition, when reading commentary one, Heidi's agreement related to management. Heidi remarked how Jean was "very positive with the students and how she's trying to keep school to go right along with the real world so they can make that connection. These words that she's chosen for her spelling help them in their writing because they can relate to the words that they're using." Also, Heidi agreed that "it is easier on the teacher if each student has their own individual list, organize that and figure out where each one is at" because, as Heidi rationalized, "it's hard for just one person to do it or for a parent/volunteer to do that."

Later, Heidi made a salient observation when she read Jean's commentaries on why and how she approached independent spelling. Heidi exclaimed, "I think it's an awesome idea…I like how she goes up and checks up on them and they are held accountable for all

these words that they're learning, that they become responsible for them and they have to use them in their writing and every-day school work." Heidi felt that "it is important to be held accountable to learn to spell the words that they use. It's hard to give the kid a word they've never seen before and they're never going to use again. And so, I like how she gives credit to the traditional spelling lists, but she also says they need to go beyond that and learn to spell the words that they use normally."

After watching the video in Probe 3 (Writing Workshop), Heidi noted that Jean is "very organized. They know exactly what they need to be doing. They get where they need to be. She transitions them all, and they seem excited about this writing." Heidi's salient observation about student accountability surfaced again in Probe 2, "It's very interesting how she has it set up and the kids really know what they need to be doing, and it really does give them a chance to show accountability and to be able to be productive while they're working." Commenting on Jean's management techniques, Heidi reflected, "She's explaining why she's doing it this way, that she gives a new lesson and instructs them into the process before she set them out on their own, that they understand what is expected of them and what they need to be doing. I think she's very effective for these kids." As such, Heidi perceived the enthusiasm of the children of the students, "they were all wanting to get to work and get to the different parts of their writing where they're at.

In short, Heidi felt that this approach "is a great idea. It's got to take a lot of planning and a lot of input from the kids to figure out what she needs to be Teach and what they need to be learning and what they need more help on."

Moreover, in Probe 4, Heidi began to use higher level of thinking, she noted that Jean is an "amazing teacher" and wondered "what I could do differently." Heidi noticed that Jean "engages the students, she has them with her… She's modeling her own life and how she's doing it, and it's probably very effective with these kids" because "they see that it's something they can be doing and it's easy to do and that they can be comprehending a little bit more out of their reading just by how she shows them what they're doing."

Again some notable comments that Heidi made in Probe 9 other than statements of what's happening were her remarks on classroom management, " I like how she has all the paper work. She's got all their names. She knows what they need to be doing." In this Probe, Heidi also observe more student behavior details, "Little boy picking his nose…Cute little boy, very excited about it…That kid likes to tell what he thinks. Some definite leaders in this group." Out of the blue, Heidi mentioned her difficulty in think-aloud, It's hard to keep talking, thinking out loud." Then Heidi commented that she "like[d] that "Window of Discussion". Keeps kids honest…Like how she steps in when she's needed." Then Heidi confided, "I have a hard time with poetry."

Teacher Modeling

In Probe Two, Heidi felt that the term "interactive, modeled writing, shared writing experience" is actually "a very positive way to show kids that writing is fun and how to actually go through the steps without having to sit down and say, okay here's the first step, here's the second step. Just show them all together how she's come up with the story. . . . I think it's a great way to show kids how to start writing and how to come up with ideas and how to get kids into their own writing." Interestingly, Heidi's comments

portrays another of her teaching beliefs that the teacher needs to show enthusiasm for learning and give a lot of examples.

Furthermore, in Probe 2's Commentary Two, Heidi noted, "she's explaining what modeled writing is", but finds that it is "very technical how she explains it, using technical terms. It's hard to get through all that." Could this be a reason why Heidi's observation is short with little advanced noticing terms mentioned?

On the whole, Heidi felt that the modeled writing approach is "a very powerful tool. It shows the kids that the teacher can help the kids and the kids can help the teacher. And it shows them how to get ideas and how to build on those ideas when you're writing." Again this comment reiterated her belief that teaching show be exemplary.

Probe 5 (Independent Reading) can summarized the basic observations of Heidi: First, her observations of classroom management; second, her belief in teacher modeling; and third comments of agreements without signs of application.

First of all, Heidi observed another of Jean's classroom management technique, "I like how she has a starting point and they're all together and then they're set up on their own. She takes lots of notes to see where the students are, what they're doing." Then, Heidi agreed after reading the commentaries on teacher modeling, by sharing an experience, "that is totally true. I try to do that with my students, to show them that I love to read and I love to get lost in books and to spend a lot of time doing that silent reading." And finally, Jean expressed, "I liked her idea of having a book time where the kids discuss with each other the questions that they have or the responses to what they're reading just to help them gain more comprehension in the books that they're reading."

Again, Heidi noticed the management issue in Probe 9 (all Clips I Sequence), "It's impressive that these kids pretty much know what to do, and it seems like she's not having to do a lot of management. She's just letting them go and they know what they need to do, and they are on task and moving and how she just slips in a little mini lesson here and there to show these kids what they need to do." Finally, with regards to teacher modeling in silent reading, Heidi agreed, "And there's a lot of modeling, which I think is really important. The literacy specialist explained that usually she is reading along with them and she's engrossed in it, and I think that's really important. Kids need a lot more time in school to do the silent reading and getting into books, because I don't think they have a lot of time. Their lives are so active after school with different things like sports and the things that their parents have them involved in that they don't get that time."

A Practical Question

This workshop intrigued Heidi and she asked, "I like how they're doing this." She expressed, "I like how the kids are directing this discussion group." Heidi also noted that Jean is "starting to use some of the words she uses: inferring, predicting." Again, Jean noted the classroom management technique, "you don't just have to do one-on-one discussion. She has small groups come up and discuss it, and she doesn't direct the discussion, she lets the kids take on the discussion and talk about the questions they have, not the questions she's asked them to find out. She does a good job of just letting them talk and do what they need to do and answer the questions." Then Heidi discovered, "it sounds like they've come up with answers to questions she would have asked them to come up with." In the commentary, Jean learned, "He's talking about how effective it is to let these kids discuss it. When they get older and if they get into literature discussion

groups, it shows how they can discuss it and ways that they can get their ideas across and why certain things happen are important and why they're enjoying the book." Heidi's rationalization was, "I think it's showing them that it's okay to discuss this amongst yourselves and not just do a question and answer period with the teacher asking the questions and the kids giving the answers."

With regards to Probe 7 (Guided Reading), as Heidi observed Jean with the struggling reader, Heidi's comments were the same as Jennifer but different from all other teachers, "She does a good job giving him positive feedback. That does a lot for a kid's self-esteem." Furthermore, Heidi explained after reading the commentaries, "I think she does a good job because she asks herself questions about how effective this is for the students and she doesn't do it. It was effective for one student but not for all. She looks at each child that she listens to and patterns it for that certain child." Heidi also noted another teacher's comment on Commentary Four, "she explains how Jean does it a little bit differently than what normally has been defined in the past, and that she makes it very effective for the students, and that she lets them read. She uses what they need help teaching them and it helps these kids on an individual basis rather than what the whole group would have needed."

Nature of Video Ethnography

Heidi tried watching Probe 8 (Shared Reading) and started the probe by exclaiming regretfully, "I should have gotten more sleep last night." Later on, she mentioned out of the blue, "some of these clips are longer than others." Nevertheless, Heidi went ahead and observed a classroom detail, "Looks like a room parent decorated a door for teacher appreciation." Then her attention turned to classroom management, "Interesting way to

separate a group. Some of these kids look kind of bored." Heidi rationalized that it must

be that students "spend a lot of time on the floor." Again another observation, "Kids are

doing a good job of sharing these books." Heidi also remarked, "it's a good idea to have

it be the teacher reading so they don't get bogged down with a child trying to read

through it with a bunch of mistakes. Everyone is not frustrated, and that it's not a

learning time, not learning how to read, it's just time to go back through and look for

different things that they need to comprehend and what they can pick out of it, rather than

just correct mistakes and read words." Then in the commentaries, Heidi only noted one

thing, the commentator was "explaining why shared reading is so beneficial for students

and that it's her job to make sure that they're all participating and engaged in what's

being read and that they're following along, otherwise they're not getting anything out of

it."

Enhanced Learning through Commentaries

Heidi mentioned the benefit of the commentaries, "It's nice to see how it all works

together, how she transitions from writing skills into the reading skills and then how she

shows them how they intertwine and how they mix, which I think is very interesting. It

seems like these kids are really into it, and they're excited about it, and they're getting

more out of their reading and their writing because they can see both sides. She's

explaining why it's important to get that balance of the reading and the writing and how

we want the students to use it in their daily lives, and not just learn it in bits and pieces,

but to see that it all fits together, which is very important. I like it. I can see the pros for

it and behind it."

Summary

This chapter introduced the six participants of this study as individual cases. Each of these cases included a brief background introduction, an explanation of the participants' beliefs in teaching, and cognitive patterns that were salient in their verbal responses. These cases portrayed who the participants were and laid the foundation for the establishing the theoretical proposition in the next chapter.

Chapter 5: Cross-case Analysis

Following the grounded theory procedures in searching for embedded meanings and patterns, this chapter culminates findings reported in the last two chapters, and introduces theoretical propositions generated by cross-case studies, in which individual cases were compared and contrasted to explore probable explanations of common occurrences. A web of connections emerged from this process that discloses how learning orientation, beliefs, experiences, and video ethnography relate to teachers' cognitive development process. The first three theoretical propositions that will be introduced in this chapter explain these relationships and the fourth one explains the relationships between the various components within the cognitive development process. This chapter on Cross-case Analysis concludes with a hypothetical model that ties all four propositions together and explains how teachers learn in a multimedia case environment.

Theoretical Proposition 1: Teachers' Learning Orientation Correlates with Various Cognitive Activities When Using Video Ethnography

Before the participants interacted with the video ethnography CD, they filled out a learning orientation questionnaire (see Appendix A) that assessed their "emotional investments in learning and performance, strategic self-directedness, [and] independence or autonomy" (Martinez, 2002). Resulting scores are generally high, indicating relatively high motivation and independency to learn. One reason for such high motivation may be explained by the fact that the participants were self-selected—they voluntarily contacted me after receiving my recruitment letter. However, subtle differences in individual participants' scores reveals a pattern that correlates with frequency of the occurrences

each category of cognitive activities, as introduced in Chapter 3, except the Rejection category. This frequency was obtained by counting the number of statements coded in these categories.

Table 4 shows the learning orientation scores of the participants. Table 5 shows the frequency count of participants' statements in the six categories of cognitive activity. It also includes some individual cognitive activities represented by particular words (e.g. "Assume" is represented by the words assume, suppose, and guess). Thus, the frequency of these activities can be calculated easily by counting the number of these words. Table 6 shows the correlation between learning orientation and these cognitive activities. Note that all cognitive activities have high (over 0.6) correlation with learning orientation except the cognitive activities in the rejection category in general and disagreeing in particular. Awareness, comprehension, acceptance, desire to act, liking, and working have especially high correlations of over 0.8 with comprehension, acceptance, and liking having the highest (over 0.9).

Participants (In order of years of teaching)	Learning Orientation Scores (Scale: 1 to 7)
Carolyn	5.54
Elizabeth	6.08
Kimberly	5.64
Deborah	5.2
Heidi	5.12
Jennifer	5.8

Table 4. Participants' learning orientation scores

	Cognitive activity categories	Individual cognitive activities

	Aware	Comprehend	Accept	Reject	Connect	Desire	Assume	Like	Agree	Disagree	Dislike	Work
Carolyn	77	66	65	39	157	5	19	10	12	8	1	11
Elizabeth	215	154	128	14	140	58	28	86	23	4	1	46
Kimberly	107	76	78	0	82	19	4	48	4	0	0	13
Deborah	119	45	28	2	80	2	13	1	7	0	0	14
Heidi	63	24	34	0	23	0	2	13	2	0	0	10
Jennifer	151	75	62	1	86	16	11	50	6	0	1	26

Table 5. Frequency count of participants' statements in cognitive activity categories and certain individual cognitive activities that were represented by particular words

Cognitive Activities Categories	Correlation
Awareness	0.820
Comprehension	0.929
Acceptance	0.920
Rejection	0.208
Connection	0.644
Desire to Act	0.875
Individual Cognitive Activities	
Assuming	0.646
Liking	0.911
Agreeing	0.714
Disagreeing	0.310
Working	0.833

Table 6. Correlation between learning orientation scores and frequency count of various cognitive activities

Such correlation indicates that if a participant is more motivated to learn and prefers learning independently, as denoted by higher learning orientation scores, she is more aware of the happenings in the video ethnography, more able to comprehend the content, more willing to accept the new ideas, more connected with the contents, and more desirous to act on what she has learned. Among these categories, connection (sharing beliefs, comparing, and sharing experiences) has a relatively weaker correlation because as we shall see in the next section, connection is affected by a combination of the participants' learning orientation and their years of experience. Rejection does not show significant relationship with learning orientation, but as reveal in the next section, it has a near perfect correlation with participants' years of experience.

The correlations between learning orientation and some of the individual cognitive activities (assuming, liking, agreeing, and disagreeing) affirm the correlations between learning orientation and the cognitive activity categories. These activities were measured objectively by counting the number of the respective words. The idea of "work" was introduced because the use of the word could be a way of showing a teacher's motivation. In short, the first theoretical proposition suggests that teachers' learning orientation correlates positively with all categories of cognitive activities, except rejection, when using video ethnography. Therefore, if a teacher is motivated to learn and prefers learning independently, she can be more active in her thinking in multiple ways while interacting with video ethnography.

Theoretical Proposition 2: Teachers' Experiences and Beliefs Have Profound Influences on Participants' Cognitive Activities When Using Video Ethnography

As partly demonstrated in participants' case reports, experiences and beliefs have profound influences on their awareness and reflection of the things they see and hear in video ethnography. Unlike learning orientation, which relates to participants' frequency in having different types of cognitive activities, experiences and beliefs not only relate to the frequency of certain cognitive activities, they also affect what participants are aware of and how they reflect on them. Therefore, this section will first explore the correlation between teachers' years of experience and the frequency of certain cognitive activities, and then explain how experiences and beliefs affect participants' awareness and reflection.

Correlation between Teachers' Years of Teaching and the Frequency of Certain Cognitive Activities

Participants' years of teaching correlated with the frequency of their statements on connection and rejection, the number of words they used in sharing their beliefs in the beginning of the study, and the number of examples they shared in stating their beliefs and throughout the study. Table 7 shows participants' years of teaching. Table 8 restated the frequency of statements in the connection and rejection categories of cognitive activities. It also shows the number of words that participants used in sharing their beliefs in the beginning of the study, and the number of examples they used in sharing these beliefs and throughout the study. Table 9 shows the positive correlation between participants' years of teaching and these cognitive activities.

	Years of Teaching
Carolyn	36
Elizabeth	11
Kimberly	4
Deborah	3
Heidi	2
Jennifer	2

Table 7. Participants' years of teaching

	Cognitive Activities		Number of Words Used in Sharing Beliefs		
Participants	Reject	Connect	Beliefs about Effective Teaching	Beliefs about Literature Teaching	Number of Examples Used
Carolyn	39	157	1080	1951	14
Elizabeth	14	140	303	174	3
Kimberly	0	82	52	72	2
Deborah	2	80	141	105	4
Heidi	0	23	65	35	0
Jennifer	1	86	175	189	4

Table 8. Number of words that participants used in sharing their beliefs, and number of examples they shared

	Correlation
Connection	0.777
Rejection	0.992
Beliefs in Teaching	0.987
Beliefs in Literacy Teaching	0.973
Examples Used	0.933

Table 9. Correlation between learning orientation and various cognitive activities

Note that participants' years of teaching have strong positive correlation with their connection and rejection statements, words used in sharing beliefs, and examples used. The correlation between years of teaching and connection category is relatively weaker (0.77). As indicated in the last section, connection also correlates with learning orientation (0.64), which implies a possible three-way relationship between participants' learning orientation, years of experience, and their frequency in making connection with what they learn in video ethnography.

The correlation between participants' years of teaching and the number of their rejection statements is near perfect (0.99). It means that as teachers become more seasoned, they tend to be more critical of the classroom instructions that they had observed in video ethnography. Although such correlation is subjected to variations in individual personalities and experiences, it reminds multimedia case producers to be mindful of their audiences' seniority when producing new titles. Figure 5 provides a visual representation of the relationship between rejection statements and years of teaching in a bar chart.
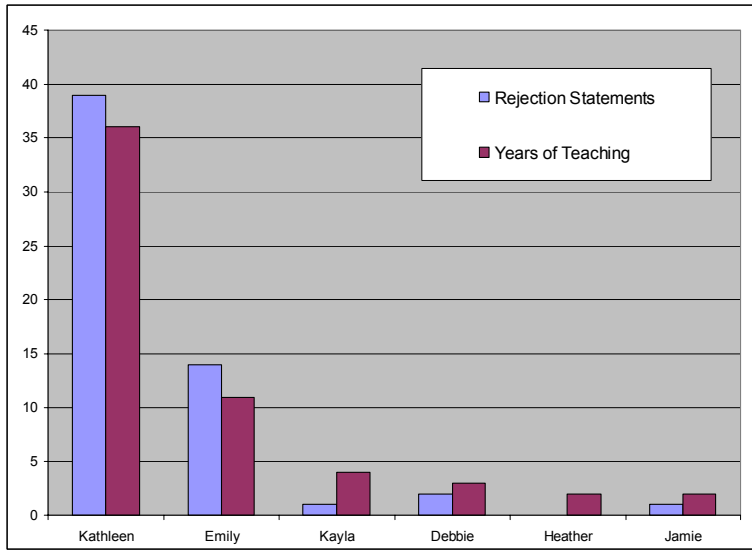
Figure 5. Participants' number of rejection statements and years of teaching

A strong correlation also exists between participants' years of teaching and the number of words they use in sharing their beliefs as well as the number of examples they gave (see Table 9), which means that when a participant is more experienced, she has more to share about her beliefs and tends to use more examples. It is understandable that as teachers get seasoned, they develop more established beliefs; they become more capable of finding personal examples in supporting their beliefs.

These correlations reveal the importance of teachers' years of teaching experience in influencing their cognitive activities. As teachers become more experienced, they are more willing and able to connect and criticize what they have learned, and they have more to say about their beliefs and classroom examples.

Experiences and Beliefs Affect Teachers' Awareness and Reflection

If we consider participants' years of teaching as the quantity of experience, we shall now consider how their quality of experience affects their beliefs; and how such beliefs and

experiences affect the quality of the cognitive activities. As indicated in participant's individual case reports, their experiences and beliefs have profound influence on their awareness and reflection of the things they see and hear in video ethnography. These influences may be summed up into the following points:

Experiences affect the breadth of a teacher's awareness. A teacher can notice more details of an instructional presentation if she has relevant experience relating to what is presented. For example, Elizabeth had training with the "Strategies that Work" program, so she was aware of its application in the video. Carolyn had training in gifted and talented education, so she was aware of the "clean wall" as it related to a principle in G/T education. Also, both Elizabeth and Carolyn noticed the rocking chair because they have rocking chairs in their classrooms. Hence, background experience does provide a schema or foundation to incite detail noticing.

Experiences affect the depth of a teacher's awareness. If a teacher has experience in a certain area, she will be able to examine it more deeply than others. The typical example is the use of music in Jean's writing lesson. All of the participants were aware of the music playing in the background in the video when students were engaged in their spelling exercise, but none talked about the practice as extensively as Carolyn did. Carolyn's training in writing children's music made her more sensitive to the kind of music use in the classroom. She criticized using the song "Starry, Starry Night." Carolyn said, "I don't like [the] song [that] she was playing….To me, the words were not uplifting, so I think that's putting bad thoughts into kids minds." Similar situations could be found in other teachers' responses, such as Elizabeth and Deborah's in-depth noticing of the book "Strategies That Work" and of spelling lists. Thus, the teachers' prior

experiences work as scaffolds for their new learning allowing them to make connections--generate thorough awareness and new insight of materials.

Experiences affect a teacher's comprehension. When a teacher has experienced related to a certain action, she can interpret the action as it relates to that experience. For example, when Kimberly watched Jean's instruction in independent spelling, she thought-aloud, "She's talking about it's Tuesday and they're doing well on their spelling." Then, based on what she saw and her experience in this area, she interpreted, "so they must have a linear spelling program where they move from point to another."

Again, in another example, Elizabeth was reflecting on Probe 8's Shared Reading and connected it with her own professional development training, "I feel like she's done a lot of ITI training with this. I think that she's gotten into that brain research and knows what kids are comfortable with." Thus, to Elizabeth, good instruction in this video did not just happen. It was connected with teacher training. On the other hand, a teacher's inexperience in a certain technique may cause her to feel uncertain and even be oblivious to that technique.

Experience is the key factor in forming one's beliefs, knowledge, and other cognitive traits. In the example of Carolyn, she revealed her own experience with spelling list—a substitute teacher gave her students two spelling lists when she was sick. Carolyn did not like those lists and thought they "stifle and stultify" the students. We were reminded that one of Carolyn's beliefs was that learning had to be meaningful to students. Past experiences do shape one's perception, which in turn, determined one's present beliefs and behavior.

Teachers tend to identify evidences that are supportive of their beliefs. For instance, Deborah, Elizabeth, and Carolyn had distinctive beliefs in classroom organization, yet they all seemed to be able to find different aspects of the video that were supportive of their beliefs: Elizabeth liked tables where students could sit around in groups, so she enjoyed seeing Jean used tables in her classroom.; however, Deborah called those tables as desks because she used desks in her classroom. Deborah also found Jean's classroom to be very organized—an important belief exemplified in her meticulous classroom setup. On the other hand, Carolyn was very conscientious about giving students freedom, so she found the classroom setup to facilitate students moving around. The concepts of using tables (often associated with group work), using desks (often associated with independent work), being organized, and having the freedom to moving around all seem to be very distinctive or contrastive, yet participants were able to find evidences in the case study to support their individual teaching beliefs.

Furthermore, when participants perceived some information as contrary to their beliefs, they might either reject the information or modify their beliefs; for example, Kimberly changed her beliefs about individualized spelling. She initially reacted, "Trying to plan a total, individualized spelling program is time-consuming and would be a huge task…[that] would be unreasonable." After reading Jean's rationale and approach, Kimberly's concern was resolved. She remarked, "That's clever. She's got a way to make an individualized spelling program which is doable." Later, as Kimberly analyzed further and reiterated Jean's approach, Kimberly excitedly exclaimed, "That's an awesome spelling program. I'd like to try something like that." Hence, if a teacher's need is met or her concern is resolved, the teacher may modify her belief.

Beliefs and experiences affect a teacher's judgment. Beliefs and experiences impact both the positive and negative judgment of what she heard and saw. For instance, the video in Probe 7 showed Jean helping a student who was struggling with a reading. Carolyn found it in direct contrast to her unstated belief of being protective of a child, and called such activity as "painful, painful, painful." She thought the teacher had made a "poor choice" of book. However, Jennifer's response was entirely opposite from Carolyn's due to differences in perception and experiences. Jennifer noticed:

The kid's kind of struggling with reading but she's listening not marking. He's doing a lot of phonics but she's just letting him struggle through it. He seems to very focused on his book. She's commenting on things that he did really well on self-correction and encouraging him to keep going even though he may be a little frustrated. She asked him to read two more sentences at the end.

Jennifer then revealed her rationale and related an experience:

She doesn't step in when he's struggling and she doesn't make any comments. She just really listens until the bottom of the page it seemed. Then she'd again said positive first. She talked about self-correction. She talked about things he was doing really well and then giving him a challenge for the next time. I have students like in this class but to build them up on telling them what they do right. They may not be perfect, they may really struggle with the reading but the telling them what they do right and the self-corrections and not butting in is probably going to help this kid ten times more then a million ideas on how to fix things.

Another example is from Deborah when she viewed the video case for the first time. Deborah noticed something intriguing, "You know, the kids are all being very quiet."

Then, she confided about her class and made a judgment, "That is not my classroom. They must know they are being video taped and they're being very good because my kids would not be that quiet. Number one, they couldn't sit across from somebody without wanting to talk to them." Through this think-aloud session, we caught a glimpse of Deborah's classroom. What caught Deborah's attention was the student behavior, "Just that they obviously know what they are supposed to be doing, and they're all busy."

Unstated beliefs may have overwhelming influence on a teacher's perception. Such influence is obvious in Carolyn's unstated belief of not criticizing students. She seemed to see implications of this belief in every probe, and she voiced her strong objection whenever she saw the slightest suggestion of passing judgment on the students. Other participants--Deborah's unstated belief of modeling and Elizabeth's unstated belief of student-centered instruction—also showed similar sentiments, but less mordant. The teachers might not be aware of these salient beliefs because they did not outwardly express them. Yet, these ideas are important integral components of the teachers' overall belief system. Therefore, the teachers subconsciously looked for opportunities to reveal them.

In summary, a teacher's beliefs and experiences have great influence on her cognitive activities and the cognitive development process in general. Constructing learning in a way that is conducive to these beliefs and experiences may have great impact on the learning experience.

Theoretical Proposition 3: Teachers' Cognitive Development Process Is Scaffold by Video Ethnography

The first two theoretical propositions have suggested how teachers' learning orientation, experiences, and beliefs affect their cognitive activities. This proposition suggests that video ethnography provides a learning framework that makes these cognitive activities possible.

The digital videos in video ethnography allowed participants to become aware of the happenings in an authentic classroom. They comprehended, judged, and connected these videos according to their own beliefs and experiences. Each of the participants engaged in the various types of cognitive activities throughout her interaction with the CD-ROM, which led to a learning process that was reflective of the teacher's own practice. However, because of the multi-faceted nature of an authentic classroom, teacher-viewers cannot possibly comprehend all the dynamics that go on behind the scene by just viewing the videos alone. Commentaries from various sources provide essential comprehension scaffolds for teacher-viewers to grasp a more complete portrayal of the teaching scenario. In this study, all participants showed an increased understanding from commentaries in one probe or another. For example, Elizabeth first identified the bookmark technique in the video, but she did not know its purpose. After listening to the commentaries, she then understood it as a strategy to encourage critical thinking through asking questions and making predictions about the reading. At times, commentaries help clarify misconceptions. In Probe 2, for instance, Carolyn initially rejected Jean's approach because she interpreted it as editing a student's work, but after reading the commentaries, she understood it as editing the teacher's own writing and even accepted it as a new idea

for implementation. Such increase in understanding allowed participants to engage in cognitive activities beyond the awareness and comprehension arenas, which is, nevertheless, important in a teacher's learning process to advance in complex thinking. Note that participants generally prefer the individual comments from the literacy specialist, Jean, and the other teacher than from the professional literature quotes because they found the quotes to be too theoretical, less pragmatic. This indicates that the pedagogy of video ethnography may require that teacher educators help teachers explore the connections between the probe and the literature and develop skills in linking research and practice.

 It is apparent that video ethnography has lived up to its promise in enhancing a teacher's learning experience through its many dynamic features. All of the participants expressed appreciation of its certain aspects and this learning experience as a whole. Deborah's comment at the end of the study served best in describing such learning:

I have learned a ton. I am amazed. You know, I've always wished that I could sit down and watch a master teacher. When I did my student teaching, I had a teacher that was really good, but, you know, I only saw bits and pieces of that one teacher. And so I've always thought it would be very valuable to see other classrooms. But how can you do that when you're so busy with your own class. And so I thought that was very valuable. I do, and when I walk up and down the halls, I'll kind of listen at a door and see what's going on and pick up little things here and there, things that teachers do. It's pretty hard to pick that up all by yourself. You learn from seeing others, and doing it on a computer like that is wonderful. I had no idea that there were tools like that. I enjoyed it very much. You know, if I could see something like that and then tomorrow go right in and do

something similar, wouldn't that be, and then use it, and then I would remember it, and it would be very valuable. I enjoyed it very much. But, you know, it reminded me that it's not just the reading and the writing, but it's the speaking and the listening, and I try to give my students opportunities to share what they've written, and for the students to learn to be good listeners. I think that's part of the process, if you can listen and learn from that. Yeah, it was great. I enjoyed that.

Deborah's comment not only expressed a general positive feeling about the learning experience, it also revealed how video ethnography had complimented her student teaching experience allowing her to go through a learning method that she had always wanted—seeing how others teach. This learning experience has instilled a desire to apply what she had learned. Hence, video ethnography has provided a framework that makes engaging in various cognitive activities possible. It allows teachers to move from initial awareness of the happenings in the videos to comprehension and other more complex types of cognitive activities.

Theoretical Proposition 4: Teachers Progress in Cognitive Development Process through Interaction with Video Ethnography

The previous three theoretical propositions have explored how learning orientation, beliefs, and experiences influence teachers' cognitive activities, and how video ethnography provides a framework that facilitates such activities. This last proposition suggests a model that explains how categories of cognitive activities progress and the roles of learning orientation, beliefs and experiences, and video ethnography play in this progression.

As stated in Chapter 3, users of video ethnography engaged in six categories of cognitive

activities. These activities generated distinctive patterns in each participant as

demonstrated in their individual case reports. By cross-case analysis, a mental process

appears to be repetitive in all participants, explainable of how one cognitive activity may

relate to another. The resulting proposition is a cognitive development process that

includes awareness and the five categories of reflective activities: comprehension,

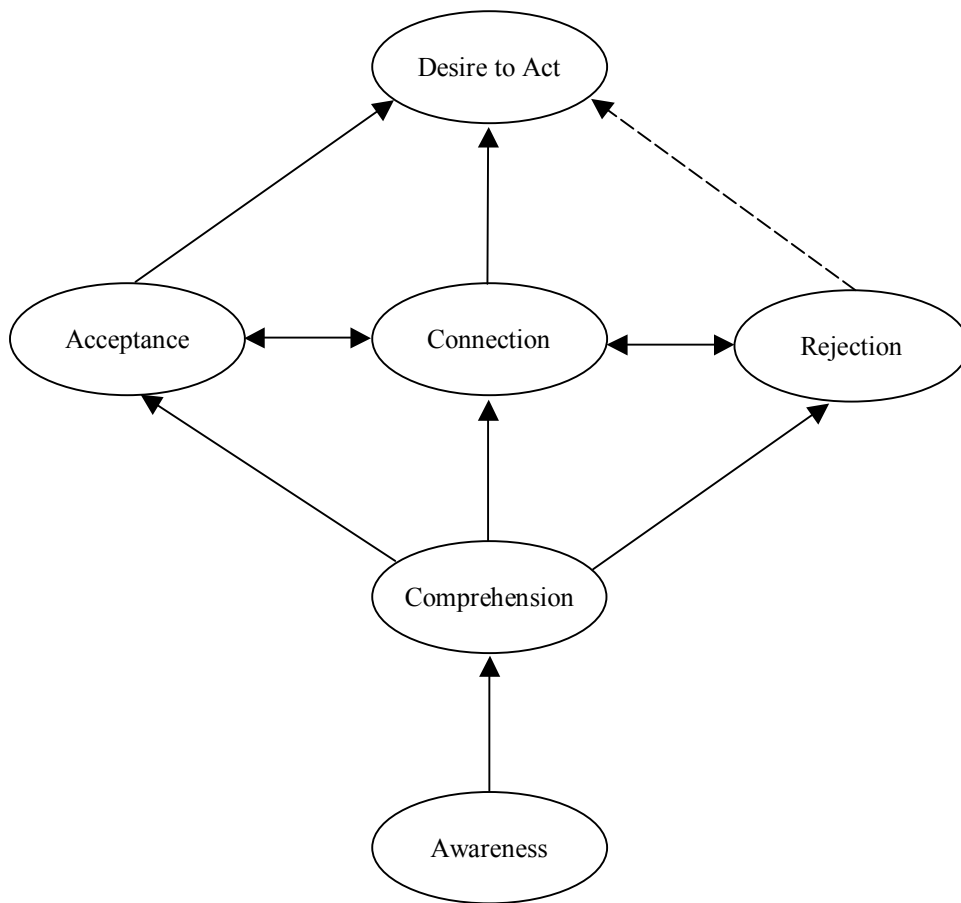acceptance, rejection, connection, and application, as represented in Figure 6.

Figure 6. Participants' cognitive development process when using video ethnography

Participants' verbal reports showed that awareness is the fundamental, essential condition

to reflection so it stays at the bottom of the graph with an arrow pointing up. Teacher-

learners must notice what is happening or has happened before reflecting on it. This noticing process goes from basic to advance. That is, it goes from superficial descriptions of the encountered to contextual accounts using eloquent terms (see definitions of basic and advanced noticing in Chapter 4). The level beyond awareness is comprehension, which is the internalization of the encountered. The result of the comprehension process is increased understanding through interpreting and assuming. At times, incomprehension occurs showing signs of uncertainty or confusion (see Chapter 4 for details). Awareness and comprehension must be present in order for a teacher-learner to reflect further into the process. Rarely did any of the participants skip these two levels in their think-aloud. Even when they did, we could assume they had gone through these steps without verbalizing them. For example, in Probe 8, Carolyn's first statement was, "I think that it was good that she had a book for everybody, for almost everybody." Although the statement was coded as "acceptance," Carolyn was aware of the class action—most of the students were having the same book, before she could make such a judgment. Therefore, awareness and comprehension were the two initial conditions leading to deeper reflection.

Beyond comprehension are three parallel categories of activities: acceptance (liking, agreeing, and judging positively), connection (sharing belief, comparing, and sharing experience), and rejection (disliking, disagreeing, and judging negatively), placed just above comprehension in Figure 6. Acceptance, connection, and rejection are parallel to one other because any one of them can happen immediately after a participant had comprehended what was happening--they might even happen in any order. For example, a participant might feel positive (acceptance) about a particular comment and then

compare it with her own teaching (connection), or she might share an experience first (connection) before stating her judgment of a clip. Such juxtaposition between a judgment (acceptance or rejection) and connection can be found in each participant. Although it is not common, acceptance and rejection also have similar back and forth relationship--all of the participants who had rejection statements (Carolyn, Elizabeth, Deborah, and Jennifer) had at one time or another accepted an idea that was initially rejected after considering it further with the help of the commentaries. On the other hand, Carolyn had rejected an original accepted idea. Therefore, a teacher-learner will do either one of or both judgment (acceptance or rejection) or/and connection.

In most cases, this trio of cognitive activities concluded a participant's reaction to a certain probe. At times, however, a participant might desire more information about the new technique, or she simply expressed a desire to apply what she had just learned. One possible cause for such development is learning orientation, which will be explained further in a later section. Such a desire to act, as place on the top level of the graph, usually follows acceptance, but it might also occur after one has made a connection implying an implicit acceptance. Although we have not seen it in this study, it is probable that a teacher-learner may desire to apply a modified form of a rejected idea. For example, a participant may reject the idea of a traditional spelling list, but want to try an individualized spelling list. Thus, this probable link is represented by a dotted line between rejection and desire to act in Figure 6. At any rates, the desire to act always follows one of these three categories. In the case when a participant expressed a desire to apply without stating a judgment or making a connection, she was making an implicit acceptance. For example, after recalling the commentary about the importance of

providing accurate support in Probe 7, Kimberly exclaimed, "I would like to try that more in my own classroom," indicating an implied acceptance of the idea.

These six categories of cognitive activities proceed from lower to higher levels representing a cognitive development process. A participant's reaction to a certain idea might stop at any of these categories. That is, she might express her observation of a certain object or her interpretation of a practice, and then never mentioned it again. In Probe 8, for instance, Heidi simply restated the professional literature quote without giving any of her own opinions.

The possible factors affecting a teacher's advancement in the cognitive development process are learning orientation and beliefs/experiences, within the scaffold of video ethnography. As symbolized in Figure 7, a video ethnography case is used as the bottom-line stimulus tool for unlocking the cognitive development process. Next, the circular nodes represent the various components of the cognitive development process: starting from awareness at the bottom, to comprehension, to connection or judgment (acceptance or rejection), and eventually to a desire to act. The two genres of influences--learning orientation and beliefs/experiences--are placed on the two sides of the cognitive development process. Thus, this model ties together the four theoretical propositions and explains how teachers learn when interacting with video ethnography.
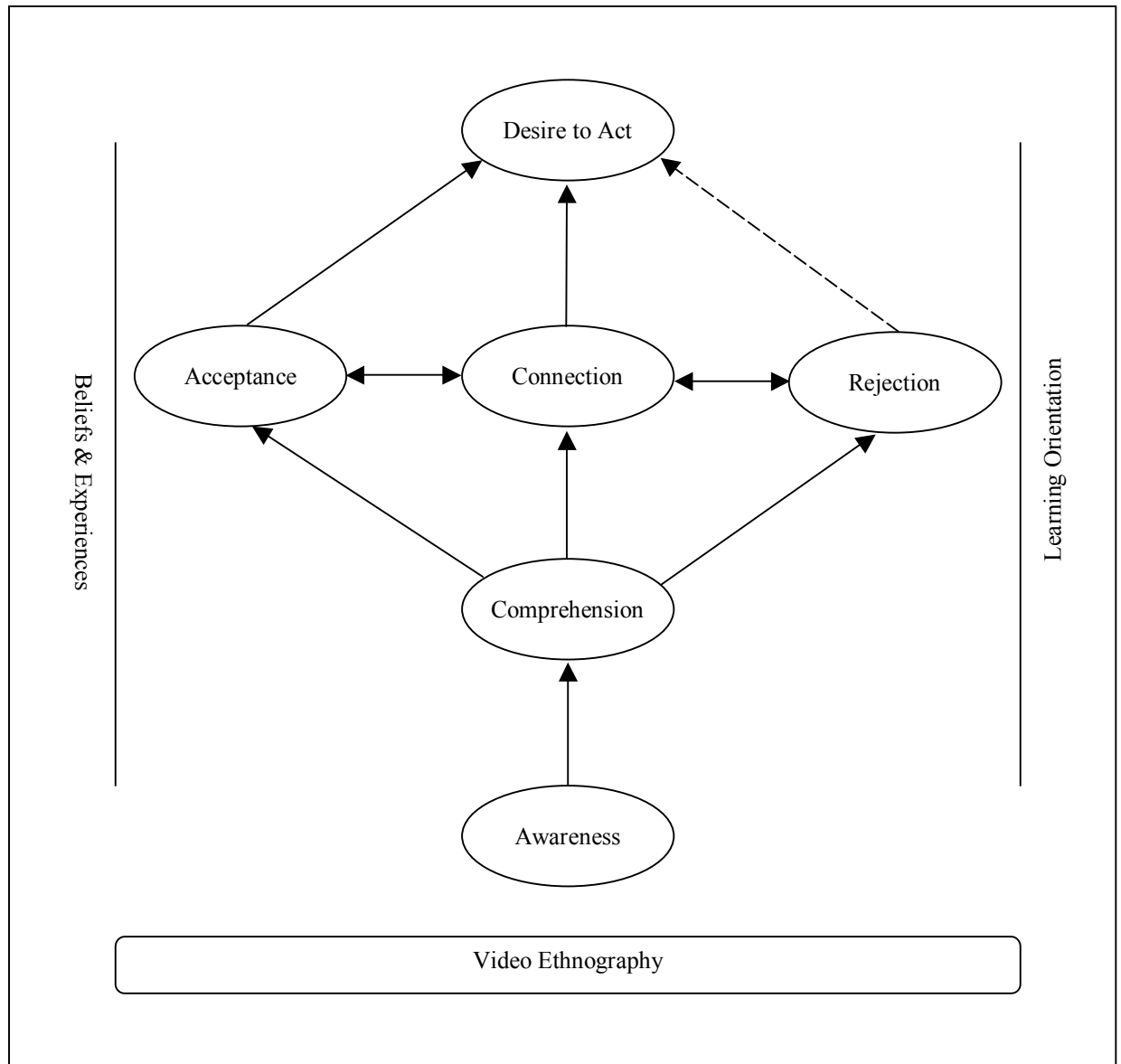
Figure 7. Video ethnography and the cognitive development process model

Summary

This chapter built upon the understandings of the categories of cognitive activities from

Chapter 3 and the cognitive patterns emerged in each participant's case and constructed

four theoretical propositions that eventually explained how video ethnography worked in

the minds of its teacher-users. The first proposition suggested a correlation between

teachers' learning orientation and various categories of cognitive activities. The second proposition explained how beliefs and experiences have influenced these activities. The third proposition identified video ethnography as a framework that supports development of these cognitive activities. The last proposition established a model that explained how teachers learn from using video ethnography and the factors that influence such learning. Reflective learning is possible in video ethnography because it allows teachers to move from awareness, the lowest level of the cognitive development process to comprehension, and from comprehension, they may advance to make a positive or negative judgment or/and to connect to the new learning. Then, some may advance to express a desire to act on what they have learned. Learning orientation affects this cognitive progression in a way that the higher the teachers' learning orientation, the more likely he/she will engage in the various types of cognitive activities except rejection, which correlates with teachers' years of teaching. In addition, as explained in Proposition 2, beliefs and experiences do significantly influence the specific content of teachers' awareness and reflection.

Chapter 6: Implications and Conclusion

The last three chapters have reported the findings of this study and proposed a model that explains the cognitive development process of a teacher when using video ethnography. This chapter builds upon this knowledge and suggests three areas of implications--pedagogical, technological, and research—before concluding this report.

Pedagogical Implications

Pedagogical implications focus on how findings and theoretical propositions may be used in enhancing future teacher development programs. As the theoretical propositions are already based on other findings, the implications here will be addressed according to these propositions.

Applying Learning Orientation Strategies

As revealed in the first theoretical proposition, learning orientation correlates with various comprehending and judging cognitive activities. As such, it is important to consider training strategies that adhere to the development of learning orientation, especially those recommended by Martinez (2002) for different types of learners. Professional developers using video ethnography may consider assessing trainees' learning orientation as a pre-assessment and cater training strategies according to the results.

Adhering to the Understanding of Learners' Beliefs and Experiences When

Using Video Ethnography

The second theoretical proposition indicated that video ethnography users' beliefs, especially their unstated beliefs, have profound influence on what they can learn. Professional developers must bear in mind such influence when designing instructions. One possible strategy is to have learners state their beliefs as participants did in this study. As they interact with various components of VE cases, have them report their reaction as a way of capturing their learning. When finished, assist them in reviewing their reaction and identify unstated beliefs to reveal the relationship between their beliefs and learning. This process may help learners reflect deeply into their own constructs preparing them to connect better with new information. And if teacher-learners have concerns that led to their rejection of a practice, a discussion should be arranged so that their concerns can be addressed and perhaps, be met because learning is situational—depending on one's positive or negative experiences.

Using Video Ethnography More Extensively In Teacher Development

Theoretical Proposition 3 indicated the importance of video ethnography as a scaffold for making reflective learning possible in this study. Thus, to help prospective and practicing teachers better understand educational principles by seeing them in action, video ethnography or multimedia cases in general should be used more extensively in teacher education and teacher development. It compliments the shortcomings of traditional theory instruction and field observation because in video ethnography, classroom teaching is broken down into smaller sequential chunks with commentaries of underlying principles, rationale, professional insights, and so on.

Scaffolding the Cognitive Development Process for Application

As demonstrated in the cognitive development model in Theoretical Proposition 4, teachers' cognition advances from superficial awareness to sophisticated reflection of personal practice. To improve the way teachers teach, professional developers must provide strategies that elicit higher level cognitive activities. Although some have suggested that "wisdom can't be told" (Bransford, 1989) meaning a teacher's teaching ability cannot be simply instructed, this study has suggested a number of factors, especially learning orientation and beliefs/experiences that cause teachers' in-depth thinking, which could lead to an increase in "wisdom." Teacher-learners should be constantly reminded to make connections between what they learn and what they do in the classroom.

Adopting Video Ethnography as an Assessment Tool

As demonstrated in this study, video ethnography may be used as an assessment tool for teacher development, for instance, assessing teachers' point of resistance and embrace. It may also be used as a guide for teachers to study their own practices.

Technological Implications

Technological implications focus on how to improve the video ethnography or multimedia case technology to enhance the learning experience.

Establishing the Precondition for Constructivist Learning to Enhance the Learning Experience

One interesting find at the end of Probe 2 was that Elizabeth was still not sure about the definition of balanced literacy—title of the video ethnography case--because she said,

"I'm assuming that the balanced literacy and workshop are similar, or the same thing." Other users also expressed uncertainty about certain key concepts of the case because they did not have the fundamental knowledge in the area. Therefore, an introductory segment is needed to define basic terms and the general idea. In the video ethnography interface, such introductory materials may be in the form of a new probe, a new commentary perspective, or simply a title screen in the beginning of a video clip. Hence, the introduction will provide the users with necessary background knowledge to understand the content as they browse through the materials in a constructivist environment.

Introducing Mechanisms for Enriching and Furthering the Inquiry Process

Since the start of this study, the video ethnography technology has continued to evolve and improve. Its current and future version has and will continue to add enhancing features. For example, the current version provides a mechanism that links additional resources to the studies to enrich their learning experience and to assist users in implementing a teaching technique, because at times, teachers may come across good ideas that they would like to adopt but do not have the experience to do so. These resources may include student and teacher's artifacts, relevant readings, photos of the instructional environment not seen in the video, and internet links to related sites. For example, Jennifer wanted to know, "how he [the literacy specialist] kind of validated the way she did things and validated the approach for teachers in general. I wonder what assignment she gave them for spelling and how they're practicing it." Alternatively, it can include a scanned copy of the bookmark for reading; this will greatly benefit viewers who are curious about how such a tool look like.

Furthermore, it should also include ways for users to further the inquiry process using collaborative technologies such as online threaded discussion board, chatroom, or a simple frequently asked questions list. It will be inspiring to the users if they have a way to ask the case teacher questions that relate to their situation. The current CD version has a mechanism for users to create their own cases using existing videos. It should expand such capacity to allow users to produce their own cases using their own video and commentaries. In addition, future internet version of the video ethnography may even allow users to upload their videos to the server so that all participants may view and discuss their contents. As technology advances, new possibilities will emerge. The only limit is really our imagination.

Video Ethnography will be more Effective with Further Explanations for Controversial Concepts.

In Probe 7 where Jean was helping a student who struggled with reading, Carolyn, Elizabeth, and Deborah responded negatively or with confusion, which revealed that terms and concepts must be clearly explained in the commentaries. If the commentary has more explanation on the term "instructional level," it may clarify some misunderstandings. These explanations from the commentaries are important because videos of unstaged classrooms are often only snapshots of a larger phenomenon. They are important in showing realism but they can be incomplete. Therefore, it is important for the commentaries to fill conceptual loopholes. In this case, the user had already developed some perception after seeing the video, it was important for her to listen to some clarifications in order to better understand the underlying principles behind the activity or approach, but the explanation was not targeted to her questions. Perhaps, one

solution is to have multiple users to pilot-test the cases for content understanding during the development process in order to address as many frequently asked questions as possible.

Research Implications

This study has explored the cognitive activities of users of video ethnography and provided some answers to the question of how learning develops through this type of multimedia cases. It had also inspired follow-up questions that required future research to further the investigation. Stated below are some of these questions with their explanations:

How do the cognitive activities link to the actual change of behavior?

The ultimate goal of any professional development program may be the change of teachers' behavior. This study has explored the fundamental process of how thinking develops when learning with multimedia cases, but it requires future studies to research on the ultimate behavioral change. This is not to suggest an expectation of dramatic alternation of practice based on a short-term exposure to any teacher development tool or program because as Richardson and Placier (2001) suggested, the process of teacher change is long and subtle. Rather, studies should consider how new insights play out in practice, the conditions required for such application, the time lap between learning and applying, the requirements for sustainable change, and so on.

How will the findings of the study change when the sample changes?

This qualitative study has provided in-depth investigation of six teachers and shared insights on their learning processes. However, what will happen when these informants

change? How will the findings of this study differ using samples of varying sizes,

locations, ethnical backgrounds, genders, trainings, grade-levels, teaching styles,

personalities, and so on? What if the participants are pre-service students? Will they

reveal similar patterns? What if the same informants use the tool differently? Future

studies using different methods or similar method but different samples will increase the

breadth of our understanding in this area.

How will the change in the technological tool influence learning?

This study has used a particular video ethnography CD-ROM title. What if a different

title is used? What if the tool is used differently? The study used only video and

commentary features of the CD. As indicated under the technological implications, this

technological tool still has many other dynamic features that can enhance a teacher's

learning. Thus, further investigation is needed to examine these features.

What are the deductive implications of the cognitive development model?

The last chapter introduced a cognitive development model as the culminating framework

for explaining the learning process of video ethnography. It was derived from examining

findings generated using a grounded theory approach. It is a new model that needs to be

deduced again to see how it can be applied to novel circumstances.

In summary, this report has suggested three areas of implications for this study: pedagogy,

technology, and research. These implications may guide future teacher development

programs, production of multimedia cases, and research efforts in this area.

Conclusion

This study responded to the need for research that examines teachers' cognitive development when using multimedia cases. It introduced the different types of video-related cases and defined multimedia case as the most encompassing term, and the object of this study--video ethnography--is a genre of such case. Methodologically, it used a grounded theory approach in examining data collected from six teachers who came from three stages of the career cycle.

The study was driven by four guiding questions that were answered in Chapter 3 to 5. The first question was, "What cognitive activities are revealed in teachers' thinking through their use of video ethnographies?" Chapter 3 answered this question by introducing six categories of cognitive activities that were used to code the transcriptions of participants' verbal responses. The second question stated, "What patterns emerge from examining participants' cognitive activities?" Chapter 4 answered it by identifying each participant as an individual case and introduced their background information, beliefs, and salient cognitive patterns in each case. The third question asked, "What theories of cognitive development in relation to video ethnography can be generated by cross-case analysis?" Chapter 5 responded with four theoretical propositions that explained the cognitive development process and some of the factors that affect this process. It concluded with a model that illuminates the relationship between cognitive activities and their influencers.

The last question inquired, "How might these theories guide future professional development research for teachers?" This chapter addressed it not only by suggesting research, but also, providing training and production implications of the study. This

study had shed light on how and why teachers learn from multimedia cases, and how to

improve future pedagogical, technological, and research development in this area.

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Appendix A: Learning Orientation Questionnaire

NOT SHOWN HERE.

Appendix B: Letter for Recruiting Teachers to Participate in the Current Study

Dear 4th Grade teachers,

I am writing to inquire if you are interested to learn about Balanced Literacy using a multimedia teacher development tool.

I am currently conducting a dissertation study for my doctorate degree in Instructional Psychology and Technology. The purpose of the study is to determine how video cases of master teachers influence teacher-viewers' thinking. Participants in the study will use multimedia/video cases in two sessions (about 5 hours each) to learn about Balanced Literacy and their feedback will be recorded for analysis.

The participants need to be fourth grade teachers with no more than two years of teaching experience who have no formal training on Balanced Literacy but are interested to learn more about it. They are expected to participate in the two learning sessions and a focus group discussion. They will receive a substantial honorarium and a free copy of the multimedia tool (CD-ROM) at the end of the study. Most importantly, they will learn a great deal about Balanced Literacy from the study.

The study can be conducted at a location that is more convenient to you and it should begin as soon as possible. Should you be interested in participating, please kindly contact me.

 Sincerely,

Signed