DEVELOPING ADAPTIVE PRACTICE IN PRESERVICE TEACHERS DURING A STUDENT TEACHING PRACTICUM

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CHERYL A. THE, B.S., M.A.

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DEDICATION

For my husband, James, the love of my life,
generous, kind and supportive in every way.
To my children and their spouses, Janelle and Kyle, Jordan and Nathalie,
you are my constant inspiration.

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ABSTRACT

CHERYL A. THE

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The purpose of this study was to understand how an instructional intervention with preservice teachers promoted adaptive teaching practices during a student teaching practicum. The study focused on teaching interactions during literacy instruction. The theoretical framework for this study included the following theoretical perspectives: Cultural-Historical Theory (Vygotsky, 1978), Reflective Practice (Dewey, 1933, Schon, 1983, 1987; Zeichner & Liston, 1996), and Adaptive Expertise and Adaptive Practice (Hatano & Inagaki, 1986; Hatano & Oura, 2003; Parsons, 2012). The participants were preservice teachers in their final semester of an undergraduate teacher preparation program.

This qualitative study was designed as a formative experiment for the purpose of developing adaptive practice through the interactions of an instructional intervention designed to accomplish pedagogical goals (Reinking & Bradley, 2008). The six participants of the study were completing a 14 week student teaching practicum during the instructional intervention. The instructional intervention had multiple components

including self and peer-analysis of videotaped teaching episodes of each participant, participation in cohort sessions that included discussions and debriefing, observations by the researcher, debriefings with the researcher, written reflections, and participation in an exit interview and Google survey at the conclusion of the study.

The findings from this study showed increased knowledge of reflective and adaptive practice as reported by the participants. Participants identified times when they made adaptations to their teaching, either before, during or after a teaching episode. The descriptions of teaching adaptations ranged in quality from minimally thoughtful to considerably thoughtful. Participants reported an increased use of reflective practice and attributed deeper thinking about their teaching to the written reflections, debriefings with the researcher and cohort session discussions. The participants demonstrated different levels of adaptive practice; however, all participants reported an increase in their ability to be reflective and adaptive in their thinking and their ability to analyze their teaching.

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CHAPTER I

INTRODUCTION

As a student teaching supervisor, I have observed preservice teachers engage in their student teaching practicum with enthusiasm and commitment. They apply their emerging theoretical and practical knowledge of teaching to their experiences and put a concerted effort into meeting the needs of their students. A recurring challenge appears when they face novel problems in their teaching, and they either do not recognize there is a problem at all or they do not know how to adapt their teaching to solve a problem. A lack of problem-solving ability can be especially problematic during literacy instruction. The literacy backgrounds and experiences of individual students, coupled with differing skills and abilities in reading, writing, listening and speaking may present a wide range of challenges for a preservice student teacher. The development of adaptive teaching in preservice teachers is a promising practice that may prove to promote effective literacy teaching. The focus of this formative experiment is to understand how to develop adaptive teaching practices during a student teaching practicum for the purpose of improved teacher effectiveness during literacy instruction (Reinking & Bradley, 2008).

Background and Context

Teachers entering their first teaching assignments face complex challenges in the classroom (Cochran-Smith, 2003). High-quality teacher preparation programs with goals

of preparing inductees for the complexity of the classroom are more relevant than in previous times (Cochran-Smith, 2003; Darling-Hammond & Baratz-Snowden, 2007). A range in the quality of preparation has produced a range in the quality of teachers (Bransford, Derry, Berliner, Hammerness, & Beckett, 2005; Darling-Hammond, 2000, 2006).

Research indicates the most effective teacher preparation programs include authentic school-based field experiences under the guidance of expert teachers (Darling-Hammond, Hammerness, Grossman, Rust, & Schulman, 2005; Hoffman et al., 2005; Risko et al., 2008); however, many programs lack authentic field experiences. Preservice teachers need opportunities to teach under the guidance of teaching experts (Mason-Williams, Frederick, & Mulcahy, 2015). Other essential elements of teacher preparation include mastery of subject area content, strong pedagogy and assessment skills (Darling-Hammond & Baratz-Snowden, 2007; Lacina & Block, 2011; Risko et al., 2008; Shulman & Shulman, 2004). The variance of quality in teacher preparation is a factor in a teacher's level of preparedness for the classroom (Bransford et al., 2005; Darling-Hammond, 2006).

Relevant preparation and field experience are essential elements of teacher preparation; however, research suggests additional knowledge and practice are needed to address the complexity of teaching (Cochran-Smith, 2003; Darling-Hammond, 2011; Duffy, 2006). Current research shows many inductees entering the teaching force are placed in some of the most challenging schools as they begin their careers (Darling-Hammond & Baratz-Snowden, 2007; Peske & Haycock, 2006). Those with the least

experience are often called upon to teach those with the most challenges, requiring novices to solve problems ranging from simple to complex (Cochran-Smith, 2003; Darling-Hammond, 2006).

One promising approach to solving novel problems is through the development of adaptive expertise (Carbonell, Stalmeijer, Konings, Segers, & van Merrienboer, 2014). Adaptive expertise, as defined by Hatano and Inagaki (1986), occurs after the mastery of routine expertise and in response to novel problems needing novel solutions. Adaptive expertise is recognized as a critical component of high-quality teaching (Anders, Hoffman, & Duffy, 2000; Bransford et al., 2005; Hatano & Oura, 2003; Sawyer, 2004). Other studies use the terms adaptive teaching and adaptive practice to describe adaptive decision-making related to adaptive practice (Parsons, 2012; Vaughn, Parsons, & Gallagher, 2016). The terms adaptive teaching and adaptive practice are used interchangeably throughout this study.

Several studies have been conducted on adaptive expertise, and they represent multiple teaching disciplines: early childhood education (Graue, Whyte, & Karabon, 2015), literacy (Anthanses, Bennett, & Wahleithner, 2015; Duffy, 2006; Hayden, Rundell, & Smyntek-Gworek, 2012; Parsons, Davis, Scales, Williams, & Kear, 2010; Vaughn & Parsons, 2013), mathematics (Borko, Roberts, & Shavelson, 2008), science (Allen, Matthews, & Parsons, 2013; Crawford, Schlager, Toyama, Riel & Vahey, 2005; Yoon, Koehler, Wang, Anderson, & Street, 2015), and special education (DeArment, Wetzel, & Reed, 2013; Mason-Williams et al., 2015). However, one area missing from the research is the study of preservice teachers and the development of adaptive practice.

In addition to more research on preservice teachers, the current research shows a need for the improved preparation of literacy teachers (Fitzharris, Jones, & Crawford, 2008; Hoffman, et al., 2005; Hoffman & Pearson, 2000; Kent, Giles, & Hibberts, 2013). The combination of improving literacy teaching practices and exploring adaptive practices in preservice teachers form the basis for this study.

Research Problem

Well-prepared teachers are essential for providing meaningful and relevant literacy instruction for all learners (Hoffman & Pearson, 2000; Pearson & Hoffman, 2011; Snow, Griffin, & Burns, 2006). Teacher preparation programs strive to prepare teachers for the complexities of the classroom through a variety of approaches and experiences (Berliner, 2004; Cochran-Smith & Zeichner, 2005; Darling-Hammond, 2006; Hoffman et al., 2005; Timperley, 2013). Teachers who are well-prepared in the theories and practice of literacy are better equipped to provide relevant literacy instruction for all learners (Hoffman & Pearson, 2000; Pearson & Hoffman, 2011; Snow, et al., 2006). The combination of strong teacher preparation and knowledge of literacy theory and practice is necessary for effective literacy instruction.

Many student teachers are skilled at developing and implementing detailed literacy lesson plans and engaging with students; however, they may not know how to improve or adapt their teaching when novel problems arise. One study found student teachers were confident in their planning and teaching ability but were unable to recognize when their teaching was ineffective (Fairbanks et al., 2010).

A cluster of studies sheds light on what qualifies as adaptive teaching. The studies explore how teachers adapt and why they adapt (Duffy et al., 2008; Parsons, 2012, Vaughn, Parsons, Gallagher, & Branen, 2015); however, there is limited knowledge of how adaptive practice develops in preservice teachers. The purpose of this study is to understand how an instructional intervention during a student teaching practicum will promote the development of emerging adaptive practice. The research question guiding this study is: *How will an instructional intervention with pre-service teachers promote adaptive teaching practices?*

Significance of the Study

This study is significant because it addresses an essential feature of preparing teachers for the complexity of teaching. The emphasis of this study is on learning to be adaptive to the specific needs of individuals and groups. Other research has considered adaptive expertise and adaptive practice with teachers in full-time teaching positions; however, there are few studies focusing on adaptive practice in preservice teachers. This study is unique in that it focused on preservice teachers, and how they develop dispositions of adaptive practice, during a student teaching practicum. This goal of this study is to add knowledge related to the development of adaptive teaching in preservice teachers during a student teaching practicum.

Formative Experimental Design

This study was designed as a formative experiment of regular educational practices. Newman (1990) defined a formative experiment as research based on a valued pedagogical goal with specific interventions designed to obtain the stated goal. The

identification of a pedagogical goal includes clarifying what materials, contexts, and changes might be necessary to obtain that goal and then designing an instructional intervention to reach the goal (Newman, 1990). The term *intervention* is specific to the formative experiment design (Reinking & Bradley, 2008). It refers to the actions and processes intended for the implementation in the enactment of this study. This definition differs from other uses of the term in literature related to literacy.

Formative experiments are designed to assess specific interventions through an iterative process. This design allows for the modification of the intervention if necessary, based on rigorous data collection and careful consideration of the pedagogical goal (Reinking & Bradley, 2008). Allowing for the modification of the intervention during the study provides a unique feature that differs from other types of research design. This design provides the flexibility needed to address the subtleties and intricacies of this instructional intervention.

Examples of literacy research using a formative experiment design have focused on several areas. Research includes literacy acceleration in summer school (Duffy, 2002), multimedia book reviews (Reinking & Watkins, 1996), reading instruction for low-literacy Latina/o students (Jimenez, 1997), and teacher-child language interactions in preschool (Bradley & Reinking, 2011). This design has proven to be valid for understanding to what extent specific interventions meet desired pedagogical goals.

This qualitative study shares the core design features of other formative experiments, but differs from the examples listed above in the types of participants in the study. The previous studies looked at the interventions between elementary children and

their teachers. This study focused on the instructional intervention used with a student teaching cohort.

The researcher for this study had a dual role as both researcher and student teaching supervisor for the student teaching cohort. The student teachers participated in several experiences: 1) learning activities during bi-weekly cohort sessions that involved selected readings, modeling, and video demonstrations related to adaptive expertise and adaptive practice, 2) self- and peer-analysis of video segments of their teaching, 3) discussions, 4) debriefing, 5) problem-solving, and 6) goal setting related to their literacy lessons. The instructional intervention took place with the student teaching cohort on the university campus in the evenings. Regular sessions met a total of ten times. Chapter Three contains additional details of the study.

Current research needs related to adaptive practice and adaptive teaching found in the literature informed the development of the pedagogical goals. Additionally, collaboration with the researcher's colleagues provided other areas of consideration when identifying pedagogical goals.

The pedagogical goals of this study were as follows:

1. Preservice teachers will develop their ability to know when and how to adapt their teaching to meet individual students needs during a literacy lesson.
2. Preservice teachers will develop their ability to assess the effectiveness of their teaching adaptations through reflection and self-analysis.

3. Preservice teachers will justify their decision-making process when making teaching adaptations, connecting their understanding to effective literacy practices.

The methods used to address the pedagogical goals were designed to provide relevant and authentic teaching experiences. Opportunities to reflect, collaborate, problem-solve, and apply new ways of thinking were central to the study. The interventions are listed here briefly and described in greater detail in Chapter 3.

1. Student teachers viewed representative teaching examples of adaptive teaching via video and live demonstrations. The cohort, with guidance from the researcher, developed awareness for recognizing adaptive teaching during literacy lessons. The cohort identified ways to apply new knowledge and understanding of adaptive teaching into their teaching.
2. Student teachers read relevant literature on adaptive expertise and adaptive teaching to develop a theoretical foundation about this subject.
3. The student teaching cohort participated in regular sessions that included analyzing transcripts of selected portions of videotaped teaching episodes of each member of the cohort. Each student teacher provided two to three transcripts from selected portions of videotaped literacy lessons throughout the intervention.
4. Student teachers participated in discussions to identify personal strengths and weaknesses in their teaching. Teaching goals were established based on peer- and self-analysis.

5. Observations and field notes were collected by the researcher while observing members of the cohort during teaching episodes. Post-observation debriefings were conducted with each student teacher a minimum of three times throughout the study. They provided an opportunity for the student teacher to review his/her teaching.
6. On-going assessment of the instructional intervention informed any necessary adjustments to the intervention. The student teaching cohort was asked to provide feedback on the usefulness of the intervention throughout the study.

Participants employed rigorous and extensive data collection methods. Multiple types of data were collected and included in the dataset. They included observational field notes, interviews with STs, video transcripts, self-analysis, peer-analysis, written reflections, transcripts of exit interviews, and post-study surveys.

Summary

Preservice teachers participate in teacher preparation programs to prepare for their first full-time teaching experiences. This chapter reviewed the strengths of high-quality preparation programs and the needs of preservice teachers. The work of Cochran-Smith (2003) on the complexity of teaching highlighted the need for preservice teachers to learn to be adaptive in their teaching. Preparing for novel problems and unexpected situations is central to the development of adaptive expertise and adaptive practice. The current research shows a need for the development of teachers who can respond to unique challenges through adaptive decision-making. The research also shows a need for

improved literacy teaching. This study focused on understanding how adaptive practice is developed in preservice teachers participating in literacy lessons during a student teaching practicum.

CHAPTER II

REVIEW OF THE LITERATURE

This formative experiment of regular educational practices is a qualitative study designed to understand how preservice teachers develop the ability to adapt their teaching during literacy instruction. This study focuses on the preservice student teaching experience as it relates to the ability to make in-the-moment teaching decisions that promote optimal student learning. In-the-moment decisions require an understanding of adaptive practice. The literature present throughout the field of education includes theoretical approaches and empirical research around three areas that relate to preservice teacher preparation and student teaching experiences. The areas are 1) teacher knowledge, 2) teacher preparation, and 3) adaptive expertise/adaptive teaching.

Educational research reveals multiple ways of thinking about teacher knowledge. Pre-service teachers require a broad base of knowledge as they encounter extensive teaching experiences during their student teaching practicum. The second area for consideration is teacher preparation. Teacher preparation is the formal experience that equips pre-service teachers to enter the teaching workforce (Darling-Hammond, 2006). The literature on teacher preparation programs, teaching methods, and teacher preparation outcomes informs this study. The third major area covered in this review are the concepts and educational applications of adaptive expertise and adaptive teaching.

The literature on both adaptive expertise and adaptive teaching provides a theoretical foundation as well as multiple empirical studies related to this topic.

This study used a formative experiment of regular educational practices (Reinking & Bradley, 2008). This approach identifies relevant pedagogical goals and then creates instructional interventions to address the goals specifically. This study sought to develop preservice teachers in their ability to use adaptive practice during literacy lessons.

Theoretical Framework

Theoretical perspectives shape this research and provide the framework for understanding how preservice teachers begin to develop as adaptive experts. First, Vygotsky's (1978) cultural-historical theory connects the role of social interaction and the use of language in developing cognition. Second, Dewey (1933) and Schön's (1983, 1987) influential theories on reflective practice and the role of reflection illuminate the thinking and decision-making processes that occur within a teaching moment. Finally, Hatano and Inagaki's (1986) theory of adaptive expertise explain the development of the thinking processes that influence decision-making. Hatano and Inagaki's seminal work was based in workplace settings and later applied to teaching in the work of Hatano and Oura (2003). Additionally, Bransford et al. (2005), Darling-Hammond (2006), and Schwartz, Bransford and Sears (2005) describe adaptive expertise in teaching as innovation in response to novel problems. Parsons et al. (2011) used the term adaptive teaching to indicate adaptive ways of approaching problems while still developing expertise.

Cultural-Historical Theory

Vygotsky's (1978) cultural-historical theory informs the learning experiences of the preservice teacher in several ways. The four central tenets of Vygotsky's theory inform the development of cognition. First, Vygotsky posited the central role of social interaction and the use of language to mediate learning. The interaction of individuals is necessary and consequential in the development of cognition. The language used within social interactions mediates thinking. Language is a tool for developing thoughts and exploring and expressing thought. Language interactions serve to revise, expand, and create thought. Social interactions promote development individually and collectively. Vygotsky described interaction with a community of others as "meaning making." Shared experiences and individual experiences that are talked about create meaning.

The second tenet of Vygotsky's (1978) theory posits the vital role of culture. Vygotsky believed culture influences learning, and different cultural experiences promote different learning. For this study, there are several considerations of culture. The context of the learning environment provides one aspect of culture. The elementary campuses and the university classroom each represent different cultural settings. The culture of each participant creates a unique interaction that influences learning. The formation of individuals into a group provide a culture unique to the group (Vygotsky, 1978).

The third tenet of Vygotsky's (1978) theory is the role of a *more knowledgeable other.* Vygotsky described a social interaction, situated within a cultural context, that occurs between two individuals. Vygotsky explained how one individual is the *more knowledgeable other* and their joint interactions promote the development of cognition

through their language. Central to Vygotsky's theory, language serves as a tool to mediate thinking between individuals and within individuals. This is especially relevant for student teachers as they work within the social and cultural context of a given classroom and interact with their mentors. Student teachers are often engaged in conversation with a *more knowledgeable other*, and then often switch roles to become the *more knowledgeable other* to their students.

The fourth tenet of Vygotsky's (1978) theory is the *zone of proximal development.* Vygotsky described the zone of proximal development as the limits of one's understanding that could be mitigated with the help of a *more knowledgeable other*. According to Vygotsky, problem solving and analysis that require little or no help from others are considered to be in the lower limit of an individual's zone of proximal development. Vygotsky described areas of difficulty requiring the assistance of a more knowledgeable other as the zone of proximal development. Relevant to this study, student teachers may encounter situations and problems they are unable to resolve; however, with the interaction of a *more knowledgeable other* they can resolve the problem. The language interaction that occurs between individuals promotes new ways of thinking and problem solving that would not have been achieved individually (Vygotsky, 1978).

A central feature of this formative experiment was the opportunity for conversations to occur with student teachers, their classroom mentors, the researcher, and their peers. The dialogue and use of language to express, revise, shape, and form ideas are examples of language used to mediate thinking. The participants of this study were

encouraged to learn together in a social context, with each member contributing to the social interaction.

Reflective Practice

A second theoretical perspective, reflective thought and practice, comes from Dewey (1933, 2007) and Schön (1983 and 1987). Dewey (1933, 2007) attributed reflective thought to deep understanding and considered it essential to practical learning experiences. Schön (1983, 1987), expanding on the work of Dewey, described reflection as a recursive process, necessary for continuous learning. Schön (1983, 1987) described two aspects of reflection: *reflection-on-practice* and *reflection-in-practice* (Schön, 1983, 1987). Schön described *reflection-on-practice* as the thinking and planning that teachers do before and after a teaching event. It involves advanced preparation, lesson development, and planning ways to connect a lesson to previous learning. Schön described *reflection-in-practice* as the in-the-moment decisions that occur during a teaching episode. In-the-moment decisions include thinking about and assessing student understanding, lesson effectiveness, or teaching methods. The recursive and ongoing nature of reflection can be summed up in Schön's description: "framing and reframing problems" (1987). Both the practice of reflection *on-practice* and *in-practice* connect deeply to the purpose of this study in the development of adaptive expertise.

Building upon Dewey's (1933, 1938) central ideas of reflection, Zeichner and Liston (1996) added three descriptors of reflective practice: open-mindedness, responsibility, and wholeheartedness. Zeichner and Liston (1996) described open-mindedness as the willingness to evaluate one's views as well as the views of others.

Responsibility was described by Zeichner and Liston (1996) as consideration for the outcomes of specific actions related to personal, academic, and social consequences (p.10). Wholeheartedness refers to balancing reflective practice with routine practice while including both open-mindedness and responsibility (Zeichner & Liston, 1996). They also note limitations of reflective practice, citing ineffectiveness if reflection only occurs as a solitary endeavor. Zeichner and Liston (1996) propose the greatest benefit occurs when reflective practice includes collaboration with mentors and experts who can provide feedback, ask probing questions, and request justification for decision-making.

Adaptive Expertise and Adaptive Practice

Hatano and Inagaki's (1986) theory of adaptive expertise includes the dual roles of routine expertise and adaptive expertise. Hatano and Inagaki described routine expertise as efficient and effective implementation of necessary actions to obtain a reliable result. Routine expertise requires mastery of skills and knowledge that are relevant to the task (Hatano & Inagaki, 1986). Adaptive expertise represents the processing that takes place that includes deep thinking, analysis, and problem-solving and informs adaptive decision-making (Hatano & Inagaki, 1986). Hatano and Oura (2003) applied the theory of adaptive expertise to teaching, showing how novices move towards becoming experts when they are able to develop adaptive expertise. Schwartz et al. (2005) added the terms *innovation* and *efficiency* to describe the process of adaptive expertise applied to teaching. Others in the field use the terms adaptive teaching and adaptive practice to describe adaptive decision-making (Parsons, 2012; Vaughn, Parsons,

Gallagher and Branen, 2016). Additional ways of describing adaptive teaching include macro and micro adaptations (Corno, 2008; Randi & Corno, 2005).

Review of the Literature

Teacher Knowledge

The complexity of teaching in the 21st century necessitates that teachers possess a wide range of knowledge, skills, and dispositions. Teachers must also be able to generate knowledge to solve novel problems and address the diverse needs of the classroom (Cochran-Smith & Lytle, 1999). The overarching theme of the literature shows a consensus that teacher knowledge, although defined in several different ways, serves as a foundation to teacher practice (Bransford, Brown, & Cocking, 2000; Cochran-Smith & Lytle, 1999; Shulman, 1986). The descriptions and development of teacher knowledge, as well as the role of knowledge in teacher decision making in the midst of a teaching episode, are central to this study.

A historical view of teacher knowledge reveals the changes that have taken place over time. Elbaz (1981) provided a framework of practical knowledge related to teaching. Elbaz's retrospective case study identified five types of teacher knowledge that relate to teacher practice: situational, personal, social, experiential, and theoretical. Field experience in classroom situations generates practical knowledge. Relevant field experience during teacher preparation is a hallmark of a quality program (Grisham, Yoder, & Smetana, 2014; Lacina & Block, 2011). Elbaz's approach influenced a shift in research relating to the practical knowledge of teaching (Pearson & Hoffman, 2011).

Shulman's (1986) views shaped the understanding of teacher knowledge in

significant ways. Shulman outlined three categories of knowledge necessary for teachers entering the profession. The first category, *content knowledge*, was defined as an in-depth knowledge of specific content areas such as mathematics, science, and literacy.

Shulman's (1986) second category, titled *pedagogical content knowledge*, made the case that, in addition to strong content knowledge, teachers need a pedagogy that fits with specific content. Shulman acknowledged that specific subjects require specific ways of teaching and that subject mastery is not a guarantee of quality teaching. In light of the movement to allow content area specialists to teach without having a deep understanding of pedagogy or participating in relevant field experiences before teaching, strong pedagogy is necessary (Darling-Hammond, 2000). Shulman's conceptions of pedagogical content knowledge have resonated with other researchers and serve as a springboard for many other studies, especially in math and science (Gess-Newsome & Lederman, 1999; Magnussen, Krajcik, & Borko, 1999).

The third area that Shulman (1986) identified is *curricular knowledge*. Shulman claimed that teachers need to have a wide range of knowledge related to specific types of curriculum to analyze and assess strengths and weaknesses of any given program. All three types of knowledge as outlined by Shulman are requisite for the development of what he calls "teacher capacities."

Bransford et al. (2000) provided a useful framework titled How People Learn (HPL). It provides a lens for thinking about the development of teacher knowledge and its application to classroom practice. Bransford et al. (2000) described the role of knowledge as "people's abilities to become active learners who seek to understand

complex subject matter and are better prepared to transfer what they have learned to new problems and settings" (p. 13). Preparing teachers to transfer what they know to solve problems is at the core of adaptive teaching practices.

Cochran-Smith and Lytle (1999) laid out a detailed description of three conceptions of teacher knowledge, identified as 1) *knowledge-for-practice*, 2) *knowledge-in-practice* and 3) *knowledge-of-practice*. The three categories of teacher knowledge defined by Cochran-Smith and Lytle provide a helpful framework for comparing theories of teacher knowledge.

Knowledge for Practice

Knowledge for practice is described as the formal knowledge of teaching. Frequently taught in university-based teacher preparation programs, it provides a foundation. A deep understanding of how children think and learn is a necessary component of formal knowledge (Bruner, 1960; Dewey, 1933, Vygotsky, 1978; Wood, 1998).

Cochran-Smith & Lytle (1999) included in their definition of formal knowledge, "content or subject matter knowledge … human development … classroom organization, pedagogy, assessment, the social and cultural contexts of teaching … and knowledge of teaching as a profession" (p. 254). This broad range of knowledge is considered a base of knowledge necessary for use in the teaching profession.

Cochran-Smith and Lytle's (1999) conceptions of formal knowledge overlap with portions of Shulman's (1986) content, pedagogical content, and curricular knowledge. They both promote a broad base of knowledge for practice. The HPL framework also

identifies the critical role of content knowledge and uses the term *knowledge-centered* to describe high-quality teachers (Bransford et al., 2000).

Knowledge in Practice

The second conception of Cochran-Smith and Lytle (1999) is defined as *knowledge in practice* and described as "artistry of practice" (p. 262). This type of knowledge exceeds the parameters of content knowledge and includes a teacher's ability for reflective practice and self-analysis. Competent teachers collaborate with peers and experts in proactive ways to create high-quality teaching experiences. Self-reflection in connection with peer and expert collaboration inform teacher decisions.

Schön's (1983, 1987) work is integral to understanding how to develop reflective practice. His work informs the concepts of reflection in and on practice and overlaps with Cochran-Smith and Lytle's (1999) *knowledge in practice*. He suggested that teaching is dynamic, and it requires the development of reflective practices to make in-the-moment decisions. Those decisions rely on the combination of expertise and experience. Reflective practice can lead to a teaching practice that moves beyond rote or automatic responses. It is teaching that is nuanced and responsive to the interactions between teacher and student.

The HPL framework includes three additional areas of teacher knowledge: knowledge of the learner, knowledge of assessment, and knowledge related to the social context of the learner (Bransford et al., 2000). The HPL framework relates to Cochran-Smith and Lytle's (1999) conceptions of *knowledge in practice and* are related to the development of adaptive expertise addressed later in this study.

Knowledge of Practice

Cochran-Smith and Lytle's third conception, *knowledge of practice*, is not a synthesis of the first two types of knowledge, instead it provides a very different way of framing teacher knowledge. The first two conceptions of knowledge describe teachers as users of knowledge but not generators of knowledge (Cochran-Smith & Lytle, 1999). The third conception of teacher knowledge is defined as "knowledge making … as a pedagogic act constructed in the context of use, intimately connected to the knower, and, although relevant to immediate situations, also inevitably a process of theorizing" (Cochran-Smith & Lytle, 1999, p. 272-273). The hallmark of this concept is *inquiry as a stance*. Teachers, both novice and experienced, collaborate to generate knowledge for the unique needs of a given situation. They seek to understand the learner, the context, and the content; the combination of attitude and action coalesce through inquiry as a stance.

Collaboration is central to responsive teaching, the expert and the novice share equal voice, without a hierarchy of roles, to contribute to the knowledge needed at a given time and place. Classrooms are regarded as places of learning and discovery for teachers as well as students. Teaching is situated within the broader context of the school community and the larger society. Providing space for openness to new solutions and shared problem-solving is central this approach. This type of knowledge is authentic and generative and is not bound to prescribed content. It is responsive to the needs of the school community and individual students. This conception of knowledge provides a dynamic description of teaching driven by inquiry. Reflective practice is essential to this

conception of teacher knowledge and teacher learning (Schön, 1983, 1987; Zeichner & Liston, 1987).

Aitken, Sinnema, and Meyer's (2013) *Teaching for Better Learning Model* recognized the role of inquiry and metacognitive practice as necessary to develop adaptive teachers. Aitken et al.'s model illustrates the recursive patterns of dynamic teaching. Aitken et al. purported a cycle of identifying learning priorities and teaching strategies, enacting those strategies and then examining their impact. This cycle is repeated again and again, emphasizing the importance of an ongoing examination of teaching and learning.

Knowledge Continuum

Teacher knowledge formally begins pre-service, but ideally continues to develop throughout the career (Farnan & Grisham, 2006; Feiman-Nemser, 2001). Snow, Griffin, and Burns (2005) described development over time as *progressive differentiation* and they have identified five areas of teacher knowledge: declarative (also known as formal knowledge), situated (can-do, procedural knowledge), stable procedural knowledge, expert or adaptive knowledge, and reflective practice (organized and analyzed knowledge). Snow's model features a progression of the stages of teacher development: preservice, novice, and master teacher. All stages of teacher growth use all five types of knowledge, but each stage utilizes the knowledge in very different ways. In this model, preservice teachers rely heavily on declarative (formal) knowledge, and they often do not learn to become predominantly reflective until the status of the master teacher. This model represents the need for preservice teachers to move from using mostly declarative

knowledge and move towards higher reflective practice at earlier stages of the career.

In consideration of various conceptions of teacher knowledge, there are some relevant features across theories that are useful for novice teachers. Snow et al. (2005) described preservice teachers as evolving and in need of formal knowledge and knowledge that will develop in practice. Formal knowledge, as described by Cochran-Smith and Lytle (1999) and Cochran-Smith and Zeichner (2005), provides a background for preservice teachers but is inadequate to address the complexities of the knowledge society that teachers are preparing to enter. The HPL framework reiterates the importance of knowledge connected to learners and the learning outcomes. Schön's (1983) conceptions of reflective practice provide a method for assessing and responding to learners in relevant ways and thus increasing their knowledge. Pedagogical content knowledge, as described by Shulman (1986), is relevant for this study as it relates to preparation for literacy instruction. Preservice teachers need strong pedagogical knowledge for effective classroom teaching.

In summary, across the research it is clear that multiple types of teacher knowledge are needed to prepare preservice teachers for the complexity of the classroom (Duffy, Miller, Parsons & Meloth, 2009). At the initial stages of teacher development, formal knowledge provides a foundation upon which to build professional knowledge, skills and dispositions (Snow et al., 2005). Specific content knowledge as well as pedagogical content knowledge are both necessary to inform and justify instructional decision-making (Aitken et al., 2013; Darling-Hammond & Bransford, 2005; Pearson & Hoffman, 2011; Shulman, 1986; Snow et al., 2005*).* Teacher knowledge continues to

develop over time throughout a teaching career (Franam & Grisham, 2006). Theories of teacher knowledge reveal the necessity for teachers to possess in-depth knowledge across several domains built upon a strong theoretical foundation for effective teaching to take place (Cochran-Smith & Lytle, 1999; Fairbanks et al., 2010). Preservice student teachers will rely on their knowledge accumulated in their preparation program. They will blend their knowledge with their authentic classroom experiences and begin to refine their understanding of teaching and learning. The development of reflective practice will help teachers to consolidate their knowledge and apply it to meet the needs of individual learners.

Teacher Preparation

Research related to teacher preparation highlights the need for rigorous standards, high-quality expectations for teacher certification, and relevant field experiences during preservice (Darling-Hammond, 2000). Many factors may influence a child's success in school; however, the most critical factor influencing student achievement is the quality of the teacher (Barbour & Mourshed, 2007; Cochran-Smith & Zeichner, 2005; Darling-Hammond, 2006; Darling-Hammond & Rothman, 2011; Farnan & Grisham, 2005; National Research Council, 2010). The Blue-Ribbon Panel created by the National Council for Accreditation of Teacher Education (NCATE, 2010) confirmed that the single most important "in-school intervention" that impacts student learning is the teacher. Well-prepared teachers impact student achievement.

There are opposing views regarding teacher preparation; some purport that teacher preparation is over-rated and does little good to prepare teachers while others

proclaim the benefits of high-quality preparation (Franan & Grisham, 2005; Darling-Hammond, 2006). Those who share a negative view of teacher preparation tend to place a higher value on content knowledge (e.g., math and science) and life experience versus pedagogy, theoretical foundations, and other aspects of teacher knowledge.

Teacher Preparation and Programs of Distinction

Teacher preparation ranges from abbreviated summer alternative programs for non-educators to four-year undergraduate programs or postgraduate master's degree programs that specialize in many areas of education (Darling-Hammond, 2006). Evidence supports that certified teachers produce better outcomes in student achievement than uncertified teachers (Darling-Hammond et al., 2005). Some believe the best scenario for improving student outcomes is to produce fully certified teachers from high-quality teacher preparation programs (Grisham et al., 2014).

Several studies look at teacher preparation programs; one such study identified six programs recognized for their effectiveness (Darling-Hammond, 2006). The six programs serve to inform the development and professionalization of other programs. Salient features of the six programs include the following:

1. Theory connected to practice and field experiences
2. Instruction connected to professional teaching standards
3. Awareness of socio-cultural contexts of students and school settings
4. Preservice teachers who are required to provide extensive reflections, presentations, and demonstrations of teaching skills

5. Preservice teachers who are required to give extensive feedback, receive suggestions for improvement and are provided opportunities for revision
6. Preservice teachers who are required to provide evidence as the basis for their judgment and teaching decisions (Darling-Hammond, 2006, p. 98)

Darling-Hammond looked at teacher preparation in general; other studies have addressed teacher preparation as it relates to literacy instruction (Hoffman et al., 2005; Grisham et al, 2014; International Reading Association (IRA), 2007; Risko et al., 2008). Several findings listed below reflect similarities across studies.

Hoffman et al. (2005), in their longitudinal study, looked across a three-year span of time and across multiple programs to identify the benefits of teacher preparation on the first years of teaching. Hoffman et al. identified a positive relationship between high-quality preparation and a successful transition into service. Four major themes emerged from their study. The first idea recognized teachers as learners and the need for learning to be ongoing throughout the teaching career. Second, Hoffman, et al. established that a knowledge base is necessary before teachers can be "flexible, adaptive, and responsive to students' needs in reading" (Hoffman et al., 2005, p. 269). The third idea resonates across multiple studies: field-based clinical experiences are necessary for optimal learning (Lacina & Block, 2011; Williams & Bauman, 2008). In contrast to a popular myth that teachers are born not made, the Hoffman et al. (2005) study confirmed that teachers could learn how to teach well, and they need to be provided with relevant learning experiences to develop as professional teachers fully.

Similar to study by Hoffman et al., Grisham et al. (2014) reported on the first phase of a longitudinal study that looked across ten teacher preparation programs to determine if STs learned the intended information taught in each program. High-quality programs include professional, personal, and practical knowledge. The study by Grisham et al. (2014) is beneficial in that it reviews multiple programs and provides a broad view of recognized programs across the country. The study revealed a relatively high level of congruence in the content taught and the content learned by preservice teachers; however, the study also revealed that teacher learning must continue to develop in practice. Both Hoffman et al. (2005) and Grisham et al. (2014) have contributed much needed longitudinal research that sheds light on how STs move into their induction years in the classroom.

An International Reading Association (IRA) study (2007) selected eight programs that were recognized for their excellence and identified six key features of high-quality programs. Those six features are similar in many ways to the findings of Darling-Hammond (2006), emphasizing the following features of high quality: robust content, competent faculty, relevant field experiences, awareness of diversity and unique needs of students, program assessment, and accountability of the program. A more extensive study by Risko et al. (2008) took an even broader view of teacher preparation for literacy teachers. The review and critique of 82 empirical studies relied on STs self-reporting through questionnaires, interviews, journals, surveys, reflections, and other written responses to assess the effectiveness of teacher preparation. This extensive study is useful for comparing programs and the meaningfulness of each program as interpreted by STs.

It has limitations in that it does not include a close analysis of individuals through direct observation or video analysis.

A study of six programs of distinction, as acknowledged by the IRA, looked at 14 programmatic features of literacy teacher education (Lacina & Block, 2011). The study used quantitative and qualitative measures and produced four significant findings. The first finding acknowledged the importance of field experience throughout the entire duration of a preparation program. Many programs do not incorporate field experience until late in the preparation process; this study suggests it should be happening from the early stages to the final phases of preparation. The second finding cited the positive value of utilizing "spiraling theoretical and practical professional experiences" (Lacina & Block, 2011, p. 343). This study promotes a recursive approach to theory and practice that is pervasive through the entire preparation experience, instead of isolated exposure to theory and practice at specified times. The third finding credits carefully selected public school teaching experiences (versus random practicum placements) as a significant factor in the development of a strong base of pedagogical knowledge. The final findings that emerged cited the decisive role of high-quality field experiences. The high-quality field experiences included opportunities for preservice teachers that include the careful construction of lesson plans, scaffolded instruction, a gradual release of responsibility, and opportunities for a graduated level of teaching difficulty.

The outcome of the Lacina and Block (2011) study emphasized the role of well-integrated field experiences. Lacina and Block's findings support field experiences that are carefully selected, provide authentic opportunities for growth, and help preservice

teachers connect theory to practice through professional experiences. This study corroborates previous studies that have identified the importance of well-planned field experiences that provide relevant learning situated in authentic classroom settings.

Teacher Development Over Time

Preservice teachers need time to develop through meaningful learning experiences situated in authentic settings (Ball & Cohen, 1999). An influential teacher preparation program strives to prepare preservice teachers for an entrance into the teaching career; however, expertise takes time (Berliner, 1994, 2004). The influence of experts working with preservice teachers and into the induction phase of the teaching career serves to develop expertise (Bransford & Schwartz, 2009). An induction phase of teacher development may last up to three years and occurs on a continuum of learning (Feiman-Nemser, 2001). Snow et al. (2005) described teacher development as "a recurrent cycle of learning, enactment, assessment and reflection" (p. 2). Teacher development takes place in practice while under the guidance of experts who can provide feedback and guidance on the spot (Darling-Hammond, 2010). STs need intentionally developed opportunities for "deliberate practice" (Ericsson, 2006) and "purposeful rehearsing" (Darling-Hammond & Baratz-Snowden, 2007). Preparation programs that strive to provide authentic practice throughout the preparation experience are more efficient at producing well-prepared teachers (Lacina & Block, 2011).

High-quality teacher preparation does make a difference in teacher development. The research reveals that integrated field experiences throughout the preparation program provide better outcomes for developing teachers. Lacina and Block's (2011) findings

support the value of thoughtfully prepared, and carefully constructed learning experiences coupled with authentic teaching experiences provide the best outcomes in teacher preparation. A goal of this research is to enhance the student teaching practicum with specific instructional interventions designed to develop adaptive practice in preservice teachers.

Adaptive Teaching

Children come from diverse backgrounds with unique learning needs and varied abilities; the full range of student needs creates challenges for effective teaching. How can teachers be prepared to face the differences represented in each child and the collective group of learners? Adaptive teaching is a construct that acknowledges the necessary role of teachers to be responsive and adaptive to learners (Schwartz et al., 2005). A recurring theme across the literature reveals that thoughtfully adaptive teachers are more efficient than those who are unable to respond to unpredictable situations and diverse student needs (Bransford et al., 2005; Duffy et al., 2009; Lin, Schwartz, & Hatano, 2005).

Adaptive teachers take into account the potential need to regularly adjust their teaching to meet student needs. Adaptations to a lesson include a change to speed up, slow down, add an analogy, develop a cultural connection, conduct a short mini-lesson, or make other adaptations not initially included in the lesson plan (Parsons et al., 2011). There is flexibility in adaptive teaching that supersedes pacing guides and scripted curriculum to teach an individual student in whatever way is needed to facilitate understanding a concept or idea (Pearson & Hoffman, 2011). Providing intentional

opportunities to develop adaptive practices is a worthwhile goal throughout teacher preparation.

Adaptive Expertise

A close look at what it means to be an adaptive teacher begins with the seminal work of Hatano & Inagaki (1986) and their theory of adaptive expertise. The term adaptive expertise emerged from Hatano & Inagaki's (1986) research with the use of the Japanese abacus in the workplace. In its original context, two kinds of expertise, routine and adaptive, were identified and defined as they related to successful business practices. Routine expertise, described as a consistent mastery of skills, produces reliable and predictable outcomes. Adaptive expertise extends routine expertise by applying the knowledge and skills of the routine to provide flexible and creative solutions to novel problems that naturally arise in learning situations. This theory applied to education, confirms the value of routine expertise for many tasks that need to be replicated repeatedly in teaching settings. It also acknowledges the influential role of adaptive expertise when there is a need to solve novel problems in unique ways (Hatano & Oura, 2003).

Adaptive expertise applied to teaching was described by Bransford et al. (2005) as a combination of efficiency (routine expertise) and innovation (adaptive expertise). Predictable results are desired in many teaching tasks, conducted efficiently and in routine ways over and over again (Sawyer, 2004). Tasks related to classroom management, procedures, and systematic behaviors are examples of routine tasks.

Teachers would waste valuable time, have difficulty with classroom management, and be ineffective in many classroom experiences without routine expertise (Bransford et al., 2005).

Routine expertise precedes the ability to be adaptive (Hatano & Inagaki, 1986). Preservice teachers, new to the field of teaching, are still learning how to implement routines and apply formal knowledge and thus will need a great deal of time to develop routine and adaptive dispositions (Cochran-Smith & Lytle, 1999). Time spent on developing routine expertise is necessary. However, routine expertise is not enough; an emphasis solely on efficiency would produce robotic and prescriptive teaching, and it would not provide for the diverse needs of individual learners. Adaptive expertise is necessary to move beyond a narrow technical view of teaching. It opens space for a shift from solely routine actions to innovative responses that seek to solve problems and create new solutions as needed (Schwartz, Bransford, & Sears, 2005).

The emphasis in recent educational practice on standardization, especially prevalent in the wake of No Child Left Behind (NCLB) legislation, has led to teaching practices that emphasize strict pacing guides and scripted curriculum implementation (Pearson & Hoffman, 2011). The use of scripted teaching materials represents an effort to teacher-proof the curriculum by providing a uniform approach to delivering a lesson (Darling-Hammond, 2006; Sawyer, 2004). The dynamic and diverse nature of learners and their varied learning needs are not well suited to strict adherence to scripted teaching. The practice of adaptive expertise creates a responsive teaching environment that emphasizes student learning over merely getting through a scripted lesson (Darling-

Hammond, 2006).

The principles of adaptive expertise in other research include adaptation as innovation (Vaughn & Parson, 2013), adaptive teaching (Duffy et al., 2008), adaptive expertise (Hatano & Inagaki 1986; Bransford et al., 2005), improvisational performance (Sawyer, 2004), macro and micro adaptations (Corno, 2008), and responsive teaching (Boyd, 2012). Although defined in somewhat different terms, each of the studies posits the same core value of promoting adaptive teaching to increase student learning.

Context of the Research

In a review of adaptive expertise and adaptive teaching, a sociocultural theoretical lens is predominantly used to frame the research, with Dewey (1933) and Vygotsky (1978) often cited. Information processing (Duffy et al., 2008), metacognitive theories (Duffy, 2006; Duffy et al., 2009; Lin et al., 2005) and situated learning theory also provide a lens across studies (Soslau, 2012). The research covers a wide variety of contexts. The origins of adaptive expertise came from studying the workplace (Hatano & Inagaki, 1986) and many subsequent workplace studies have followed (Carbonell et al., 2014).

Recent research directly related to teaching is growing in the United States, New Zealand, Finland, and Canada. Studies have looked at elementary and secondary classrooms in general and specific ways. Research conducted in multiple teaching settings include early childhood classrooms (Graue, Whyte & Karabon, 2015) with English language learners (Reeves, 2010), math teaching (Hayden, Moore-Russo, & Marino, 2013), reading and math teaching (Kiuru et al., 2015), reading clinics (Hayden et

al., 2012), science (Yoon et al., 2015), and special education classrooms (Mason-Williams et al., 2015). Two studies highlight the decisive role of teacher preparation and the specific role of student teaching supervisors supporting the development of adaptive expertise (Soslau, 2012; Anthony, Hunter, & Hunter, 2014). Additional research related to literacy and adaptive teaching include the following studies. A study by Anthanses et al. (2015) considered the impact of an inquiry-based teacher education model for fostering adaptation and innovation in preservice English language arts teachers. Anthanses et al.'s findings showed promising examples of adaptive thinking and decision making in preservice teachers. Research by Duffy et al. (2008) focused on the quantity and quality of preservice and in-service teacher adaptations and considered the impact of adaptations on student performance. A 2012 study by Hayden et al. analyzed the written reflections of two in-service teachers to consider the impact of a reflective cycle of thinking on the enactment of adaptive teaching. A case study conducted by Parsons (2012) examined the reflections and adaptations of two teachers during literacy instruction. The findings highlighted the metacognition teachers use to respond to the complexity of classroom instruction. The research represents an ongoing interest in understanding the development of adaptive teaching practices.

Developing Adaptive Expertise and Adaptive Practice

Research seeking to understand why some teachers become more adaptive than others reveals that many preservice teachers can implement technically correct lesson plans but fall short in their ability to be responsive to student needs (Fairbanks et al., 2010). One of the significant questions across the research is related to how adaptive

expertise and adaptive teaching develop. Multiple studies across disciplines reveal salient features of adaptive expertise and adaptive practices, and they include deep levels of teacher knowledge, use of reflective practices, metacognitive practices, understanding the complexity of teaching, flexibility, in-depth knowledge of the learner, and a teacher's willingness learn.

Teacher knowledge. The importance of teacher knowledge discussed in a previous section is worth noting again for the integral role of knowledge in adaptive practices. Knowledge is the foundation of what teachers understand related to content and pedagogy (Shulman, 1986) and is necessary for all forms of teaching. Beyond content knowledge, knowing the learner, the social context of the learning situation, and the role of inquiry are also essential (Cochran-Smith & Lytle, 1999). Knowing the learner includes understanding their social and linguistic experiences (Dozier & Rutten, 2005). The critical aspect of teacher knowledge is a teacher's ability to activate knowledge and use it in teaching (Tsui, 2009). The research shows a need to develop multiple types of knowledge and then use it to inform thoughtful teaching.

Reflective practice. Reflection is essential to the development and implementation of adaptive expertise (Anthanses et al., 2015; Bransford et al., 2005; Fairbanks et al., 2010; Vaughn et al., 2016; Parsons et al., 2010). The theory of reflective practice credited to Schön provided a framework for reflection (1983, 1987). Schön described reflection-on-practice as an intentional thoughtfulness occurring before or after a teaching event, encompassing the planning, preparing, and thinking of lesson development. It also includes the thinking that takes place after teaching a lesson when a teacher evaluates the

strengths and weaknesses of the teaching. Vogt and Rogalla (2009) used the term "adaptive planning competency" to describe reflection on practice. Vogt and Rogalla cited improved teaching outcomes when mentors reflect on practice with student teachers to create meaningful lessons.

A second concept, reflection-in-practice, refers to reflecting in the midst of teaching and using reflection to guide teaching. This action takes place when a teacher can efficiently summon various sources of knowledge simultaneously. Knowledge related to content, pedagogy, the context of the situation and the individual learner are all considerations when reflecting during a teaching event. Reflection-in-practice is immediate and involves thinking on the spot, making an in-the-moment decision about how to teach or how to adapt the teaching plan. It serves to justify the decision making that leads to adapting to a learner's needs.

Lin et al. (2005) cited deep reflection as essential to problem-solving. Soslau (2012) researched the role of supervisory conferences with student teachers. Soslau found that ongoing self-assessment before, during, and after teaching events helped student teachers to be more thoughtful. Reflection is the conduit for self-assessment and thinking deeply about teaching practice. Soslau's (2012) research also revealed how difficult it was for student teachers to move beyond "unquestioned familiarity" defined as teaching in the familiar ways of your own school experience. Reflective practice provides space to question what is familiar and consider other teaching possibilities.

Thoughtful reflection prepares teachers to make informed literacy decisions and to provide rationales for their decision making related to adaptive practice (Hayden et al.,

2013). Expertise in teaching requires a deliberate practice that includes motivation, focus, and repeated effort. Deliberate practice, facilitated by reflection, provides ways to solve specific problems (Yoon et al., 2015).

A potential weakness in reflective practice may result when one is reflecting on one's practice without the guidance of a *more knowledgeable other* (Timperley, 2013; Zeichner & Liston, 1996). Expertise develops with the guidance of experts, and it is bidirectional. High-quality feedback may serve to challenge inaccuracies in the thinking of novice teachers (Bransford & Schwartz, 2009).

Metacognition. Implementing adaptive expertise involves intentionally choosing how to think about novel problems and create solutions. Metacognitive practices lead teachers to regulate their thinking and teach in responsive ways (Duffy et al., 2009). Self-regulation describes the thoughtful cognitive responses that result in adaptive practice (Duffy, 2006). Similar cognitive actions include "adaptive metacognition" (Lin et al., 2005), “thoughtfully adaptive teaching” (Duffy, 2006), and “reflective adaptation” (Lin, 2001). Schwartz et al. (2005) cited innovation as a key component of adaptive expertise. "Conscious, mindful action vs. technical compliance" is the desired outcome of metacognitive practice (Duffy, 2002, p. 301).

Complexity of teaching. Beginning teachers are frequently confident in their technical skill and underestimate the complexity of teaching (DeArment, Wetzel, & Reed, 2013; Fairbanks et al., 2010). Teachers face continually changing situations and unpredictable events (Crawford et al., 2005; Lin et al., 2005; Vogt & Rogalla, 2009). Teaching is much more than following a scripted plan; it requires “improvisational

performance" (Sawyer, 2004). The complexity of teaching requires teachers to improvise and often that means in the moment (Duffy et.al., 2009). A simplistic view of teaching inhibits novice teachers from looking beyond the implementation of a lesson plan and prevents responsive and adaptive practices (Snow, Burns, & Griffin, 1998).

Flexibility. Adaptive experts must be flexible and willing to try different approaches (Assaf & Lopez, 2012). The best teachers "make adaptive decisions as they teach because the unpredictability of the classroom and the nature of students' learning means that teaching can never be entirely routine" (Duffy et al., 2008, p. 196). Darling-Hammond (2006) stated that "adaptive experts also know how to expand their expertise continuously, restructuring their knowledge and competencies to meet new challenges" (p. 11). The classroom is an unpredictable environment that is constantly changing, a willingness to be flexible is essential (Duffy, et al., 2009). Adaptive expertise develops most rapidly in environments where teachers embrace flexibility and openness in teaching tasks (Hatano & Inagaki, 1986; Parsons, 2012). Randi and Corno (2005) described flexible teachers as those "who view learner variation as an opportunity for learning from teaching rather than as obstacles to be overcome" (p. 171).

Knowledge of the learner. The central theme of adaptive teaching is to develop a responsive approach to the specific needs of learners. Teachers must know their learners very well, including their academic ability (Banks et al., 2005), as well as their cultural and linguistic background (Dozier & Rutten, 2005; Gonzalez, Moll, & Amanti, 2006). Knowing the learner as an individual with wants, needs and desires is necessary for creating positive student-teacher relationships (Assaf & Lopez, 2012).

Understanding a student's academic ability involves ongoing assessment, both formal and informal. A vital feature of the HPL framework uses assessment to inform the teaching and learning of individuals (Bransford et al., 2005). Ongoing assessment coupled with reflective practice has the potential to inform adaptive practice (Vaughn & Parsons, 2013).

A teacher's willingness to learn. Teachers are at the core of everything that happens in the classroom (Darling-Hammond, 2006). Teachers who choose to embrace the idea of lifelong learning and who are ready to learn from new situations will have the most significant potential to become adaptive experts (Lin et al., 2005). Expertise takes time and will continue to develop long after the completion of preservice field experiences. The ongoing quest to be a lifelong learner and the development of adaptive dispositions are essential in the evolution of expertise (Bransford & Schwartz, 2009). Darling-Hammond (2006) described the role of lifelong learning when she stated, "Adaptive experts also know how to continuously expand their expertise, restructuring their knowledge and competencies to meet new challenges" (p. 11). A desire to learn all about one's self as a teacher and all about one's students as learners will create opportunities for adaptive expertise and adaptive practice.

Summary of the Literature

The literature included in this chapter provides theoretical and empirical foundations for understanding what teachers need to know and how they need to use their knowledge to become thoughtfully adaptive teaching practitioners. The first area reviewed was that of the role of teacher knowledge. It is evident that teachers must

possess multiple types of knowledge related to content, pedagogy, curriculum, reflective practice, and the individual learners. The knowledge is only of value if teaching professionals know how to access the knowledge and then know when to apply it to teaching situations. Multiple studies reveal the decisive role of high-quality teacher preparation in the development of competent teachers. The salient features of the research confirm that teachers need relevant knowledge that is usable in decision making and teaching interactions. Additional evidence points to the vital role of relevant field experiences in developing teachers who can connect their theoretical and formal knowledge acquired in the university to the real-life human learners who sit before them in classrooms.

The best teacher preparation programs strive to prepare teachers who are responsive to individual learners and consider their academic progress, social context, and cultural and linguistic backgrounds when making teaching decisions. The ultimate goal of all teacher preparation is to develop effective teachers. The development of reflective practice in preservice teachers supports the ability to make in-the-moment decisions that ultimately may lead to adaptive practice. When teachers capably use multiple sources of information gained through reflective practice or other means to respond to the needs of learners, they are developing dispositions of adaptive practice.

CHAPTER III

METHODOLOGY

The Research Design

This study, designed as a formative experiment, includes an instructional intervention to achieve pedagogical goals (Reinking & Bradley, 2008). The pedagogical goals of this study are related to the development of adaptive practice in preservice teachers during a student teaching practicum. This study investigated preservice teachers, defined as university students in the final semester of a teacher preparation program. The preservice teachers were seeking certification in the state of Texas to teach in settings including early childhood through sixth-grade. The final semester of the teacher preparation program is the typical time for preservice teachers to engage in a 14 week student teaching practicum in a local elementary school. A unique aspect of the design of this study is the participants are preservice student teachers and the researcher is their student teaching supervisor. In other formative experiment studies, the participants are typically school-aged children, and the classroom teacher is implementing the intervention. The research focus of this study is on the development of preservice teachers in a university-based teacher preparation program. Aspects of this study were

conducted in elementary classrooms; however, the children in the classrooms were not the focus of this study.

Formative Experiment Design

The essential elements of a formative experiment are the identification of a pedagogical goal and the development of an instructional intervention to attain the pedagogical goal. Reinking and Bradley (2008, p. 16-20) describe seven primary defining characteristics of formative experiments. They are listed here with specific examples of how each characteristic relates to this study.

(1) Intervention centered on authentic instructional content. The instructional intervention will provide authentic opportunities in elementary classrooms for applying adaptive practice.

(2) Theoretical underpinnings guide the experiment. A theory of co-constructing knowledge while engaging in an authentic teaching experience, in collaboration with peers and mentors, is supported by three guiding theories. A social constructivist theory (Vygotsky, 1978), acknowledges the importance of collaboration, discussion, and shared experiences in constructing knowledge. A theory of reflective practice (Dewey, 1933; Schön, 1983, 1987; Zeichner & Liston, 1987, 1996) is necessary for the development of thoughtful and responsive teaching decisions. Adaptive practice is possible when the specific needs of individual learners are the focus of teacher decision making (Corno, 2005; Hatano & Inagaki,1986; Schwartz et al., 2005).

(3) Goal-oriented. The instructional intervention is focused on three pedagogical goals for the purpose of developing adaptive practice in preservice teachers.

(4) Adaptive and iterative. This study was flexible enough to allow for adaptations to the instructional intervention during the study, if needed, to increase effectiveness. An ongoing review of the intervention was the basis for adaptations to the study. This study was open to adjustment throughout the investigation.

(5) Transformative. The focus of the study was to transform preservice teachers as they develop their skills, extend their knowledge, and implement dispositions necessary for adaptive teaching

(6) Methodologically inclusive and flexible. A well-developed methodology shapes the study and provided a robust framework for research. It is also flexible, there is room for modifications, if necessary, to increase the effectiveness of the intervention.

(7) Pragmatic. This study was situated in multiple teaching contexts and includes authentic teaching experiences. It was designed to be practical and realistic for the development of preservice teachers.

Formative experiments are appropriate for literacy research (Bradley & Reinking, 2011; Ivey & Broaddus, 2007; Jimenez, 1997; Reinking & Watkins, 1996). Previous studies examined the impact of instructional interventions on students in elementary, middle, and high school classrooms. This study differs from others; the intervention studied preservice teachers during their student teaching experience. Other research has looked at the students in the elementary or high school classroom. The preservice teachers in this study were in their final phase of a teacher preparation program while they participated in a full-time 14-week student teaching practicum.

The use of qualitative research methods included a detailed description and analysis of preservice teacher development towards adaptive teaching practices in an effort to answer my research question.

Research question: *How will an instructional intervention with preservice teachers promote adaptive teaching practices?*

This study explored the use of an instructional intervention, a key feature of a formative experiment. The development of reflective and adaptive practice through multiple experiences including self- and peer-analysis were integrated into the instructional intervention (Darling-Hammond & Bransford, 2005; Snow et al., 2005).

Role of the Researcher

The role of the researcher was emic; the researcher was the student teaching supervisor for the participants of this study. The researcher attempted to engage in a continuous process of reflection and ongoing evaluation in regards to the researcher's impact on the study.

Researcher responsibilities included determining a pedagogical goal, developing the intervention for this study, contacting school administrators for the placement of student teachers, and securing participation from student teachers for the study. Additionally, responsibilities included observation of the participants in their student teaching placements. The researcher mainted a professional relationship with the participants throughout this study. The participants had previously engaged in coursework with the researcher in prior semesters during the teacher preparation program. The reseracher provided support for the mentor teachers, defined as the teacher

of record in the assigned classrooms, throughout the student teaching practicum. The researcher solicited advice and feedback on the development of the pedagogical goals from a colleague and fellow student teaching supervisor.

The researcher made every attempt to be open and transparent throughout the research and analysis process. The researcher acknowledged the potential impact of her 27 years of elementary teaching and time spent as a student teaching supervisor in influencing the analysis of the study. The research interest in this topic arose from the challenges the researcher observed in student teachers prior to this study. The researcher made every attempt to be open and transparent in order to be as objective as possible and to mitigate potential bias.

Participants

Preservice teacher participants. This study examined the teaching practices of six preservice teachers in their final semester of undergraduate teacher preparation. The participants completed their 14-week student teaching practicum during the spring semester. The preservice teachers spent the entire school day in an elementary classroom under the supervision and guidance of the teacher of record, a certified teacher, referred to as a mentor teacher. The cohort members consisted of five females and one male. All names have been changed and pseudonyms are used for each participant. A brief description of each participant follows:

Angela (AR). She is fluent in Spanish and English and spent seven weeks of the practicum in a bilingual classroom.

Denise (DR). An interest in psychology and education prompted Denise to become a teacher. Her eventual goal is to become a school counselor.

Holly (HK). An international student, she is bilingual in Korean and English.

Landon (LS). He was the only male participant. He is bilingual in Spanish and English; he spent seven weeks of the practicum in a bilingual classroom.

Tonya (TB). An Army veteran and mother of three, Tonya returned to college after a break of several years.

Veronica (VT). She has future aspirations of becoming a school counselor, she is bilingual in Spanish and English and spent seven weeks of the practicum in a bilingual classroom.

Researcher/Student teaching supervisor. I conducted the research, and I actively participated in the study in my role as student teaching supervisor to the participants of this study. My role was a participant-observer (Spradley, 1980, 2016); I supervised the participants in their student teaching roles, and I facilitated the instructional intervention for this study. I observed the participants to collect data related to the instructional intervention.

Settings

There were two types of settings in this study, the university classroom and the elementary classrooms used for student teaching placements. The student teaching program required two seven-week teaching placements on different campuses for a total of 14 weeks. The cohort members had placements in Texas public elementary schools and private, faith-based elementary schools, all recognized by the Texas Education

Agency. Typically, the first placement was in a public elementary school and the second placement was in the private school. One participant spent all 14 weeks in a public elementary school.

Public school campus. The student teaching placements were in public elementary schools within 15 miles of the university campus. The elementary campuses are located in the central part of the state. Each campus served students kindergarten through fifth grade. The student teachers spent the entire school day on the campus and participated in planning, teaching, assessing, and conducting the full duties of a classroom teacher. All teaching took place in the assigned classroom under the direction of the teacher of record. The classrooms were either self-contained or departmentalized and served the needs of a single grade of students.

Private, faith-based elementary school. The placements for the second portion of the teaching practicum were at one of three faith-based elementary schools within 15 miles of the university campus. Each campus serves students kindergarten through eighth grade. The student teacher spent the entire school day on the campus and participated in planning, teaching, assessing and conducting the full duties of a classroom teacher. All teaching took place in the assigned classroom under the direction of the teacher of record. The classrooms ranged in structure to include single grade, self-contained, or combination grade.

University classroom. The instructional intervention took place during bi-weekly sessions on the university campus. Sessions were held in the early evenings.

Procedures

This study was completed in the six major phases of a formative experiment as outlined by Reinking and Bradley (2008). The timeline for each phase is described below.

Table 3.1

General Timeline for Formative Experiment

Phase One, Fall 2016: Recruitment and Preparation • Contacted campus principals, district offices, and other necessary administrators to obtain permissions to collect data on student teachers placed on their campuses • Met with departmental colleagues to solicit feedback regarding the instructional intervention • Finalized planning and implementation of the study
Phase Two, December 2016: Understanding the Context of the Study • Solicited the participation of preservice teachers for this study at the annual student teacher orientation dinner and meeting conducted on the university campus. • Provided explanation and rationale for this study and highlighted the potential benefits of participation in this study • Clarified the roles and responsibilities of participants and the researcher. Provided additional information as requested and responded to questions and concerns related to this study
Phase Three, January/February 2017: Introducing the Concepts of Adaptive Practice • Institutional Review Board approval granted (see Appendix D) • Obtained written reflections from participants about the role of adaptive practice in student teaching, and their expectations for learning throughout the study
Phase Four, January - May 2017: Implementing the Instructional Intervention • Conducted the formative experiment as described below. The study commenced at the start of the spring semester • Made any necessary adjustments to the interventions throughout the study based on the feedback gathered from participants and researcher observation

Table continued

General Timeline for Formative Experiment
Phase Five, May 2017: Gathered Post-Intervention Data • Conducted final interviews and written reflections from participants • Organized data for analysis
Phase Six, June 2017 – June 2018: Data Analysis and Writing Up the Study • Conducted careful data analysis and compiled findings using Dedoose analysis tool • Wrote up study to include data analysis, findings, discussion, and other aspects of the study

The six phases of the timeline provide an overview of this study. Each campus administrator was contacted for permission to conduct portions of this study on the respective campuses. Written permission was granted for each campus location. The data sources were generated primarily during phases four and five when the participants were heavily involved in the instructional intervention throughout the student teaching practicum. The instructional intervention is the central feature of the formative experiment.

Instructional Intervention

High-quality practices in teacher preparation informed the development of a meaningful instructional intervention (Darling-Hammond, 2006). The teaching practices of the intervention included the following:

(a) theory connected to practice and field experiences

(b) awareness of socio-cultural contexts of students and school settings

(c) extensively written reflections by student teachers

(d) demonstrations of teaching skills

(e) the willingness of student teachers to receive feedback and support

(f) the willingness of student teachers to provide a rationale for decision-making during teaching

The instructional intervention for this formative experiment included each of the features listed above. Table 3.2 identifies the activities in the intervention related to each of the areas listed above.

Table 3.2

Interventions Connected to Effective Teacher Preparation

Effective Teacher Preparation Practice	**Structured Intervention Activities**
Theory connected to practice	• Reading relevant writing about adaptive expertise • Discussion, questions, and justifications of teaching practice related to the reading
Awareness of socio-cultural contexts of students and school settings	• Getting to know students in the classroom • Learning about their cultural and linguistic experiences
Student teachers provided written reflections	• Use of written reflections • Self- and peer-analysis requiring thoughtful reflection
Demonstrations of teaching skills	• Learn from teaching demonstrations and modeling • Teach literacy lessons and then participate in self and peer analysis
Student teachers were required to give feedback and receive suggestions	• Receive input from the researcher • Receive feedback from peers • Provide feedback to peers
Student teachers provided evidence for decision making	• Debriefing conferences with researcher • Written responses to self- and peer-analysis • Identification of teaching rationales related to adaptive teaching

Details of the Intervention

The intervention consisted of three kinds of experiences: 1) cohort session meetings in the university classroom, 2) teaching experiences in the elementary classroom, and 3) required responses and interactions of all members of the cohort

completed on their own and during the cohort sessions. Each type of experience is described in greater detail below. The intervention spanned 14 weeks; however, the exit interviews and completion of the Google survey occurred in the week after the practicum was completed.

Cohort session meetings. The instructional intervention was implemented through bi-weekly cohort sessions with the student teaching cohort. Each cohort session took place on the university campus at an agreed upon time after the end of the school day. The session dates were arranged to accommodate the schedules of the participants. At times the cohort sessions occurred in successive weeks and other times they occurred every other week. The sessions begin with a few minutes of sharing by the participants about their recent classroom experiences. The conversations were organic and never needed any prompting by the researcher. Sometimes they shared funny stories, touching experiences, or frustrating moments.

The experiences of the cohort sessions included: 1) learning activities during bi-weekly cohort sessions that involved selected readings, modeling, and video demonstrations related to adaptive expertise and adaptive practice; 2) self- and peer-analysis of video segments of their teaching; 3) discussions; 4) debriefing; 5) problem-solving; and 6) goal setting related to their literacy lessons. The instructional intervention took place with the student teaching cohort on the university campus in the evenings. Regular sessions met for a total of ten times. Chapter Three contains additional details of the study. The researcher for this study has a dual role as both researcher and student teaching supervisor for the student teaching cohort.

The cohort members were at ease with one another and enjoyed swapping teaching stories. There was often a lot of laughter, head nodding, smiling, and knowing looks of common understanding. They often shared concerns about classroom management and related anecdotes. They often gave each other suggestions, and they always gave each other encouragement. After several minutes of sharing at each session, the researcher facilitated discussions on the featured topic for the day. The participants were provided with relevant articles about reflective and adaptive practice. They were encouraged to read them prior to the cohort sessions. They read the articles in advance some of the time; at other times they did not read in advance, citing scheduling challenges. The researcher shared highlights from the literature and prompted meaningful discussions about reflective practice, adaptive expertise, and adaptive practice. Table 3.3 provides a detailed description of the topics and the resources used for cohort sessions.

Table 3.3

Outline of the Instructional Intervention for the Duration of the Study

Session 1, Week 2
Introduction and orientation to adaptive practice – 1 ½ hour session

Participants:

- Debriefing and checking in with initial impressions of first days of student teaching

Reading & Discussion guided by the researcher:

- Initial foundation for discussion on adaptive practiceVaughn, M., Parsons, S. A., Burrowbridge, S. C., Weesner, J., & Taylor, L. (2016). In their own
- words: Teachers' reflections on adaptability. *Theory into Practice*, *55*(3), 259-266.
    - Reference materials:
        - Duffy, G. G., Miller, S. D., Kear, K. A., Parsons, S. A., Davis, S. G., & Williams, J. B. (2008). Teachers' instructional adaptations during literacy
        - instruction. In *57th yearbook of the National Reading Conference* (pp. 160-171). Oak Creek, WI: National Reading Conference.
        - Hatano, G., & Inagaki, K. (1984). Two courses of expertise. *Research and Clinical Center for Children Development Annual Report, 6*, 27-36.

Table continued

Outline of the Instructional Intervention for the Duration of the Study

Session 4, Week 6
Analyzing Literacy Lessons through Reflective Practice

Peer debriefing of recent teaching
Peer analysis of selected participant's transcript

- Identification of adaptive practice
- Reflection on quality of adaptations

Spotlight: One participant (DR) shared her self-analysis of the most recent videotaped lesson. The cohort viewed the video and transcript and offered analysis to DR. The cohort set personal goals for the upcoming week.

Session 5, Week 7
Adaptive Practice and Reflective Practice Connection

Peer debriefing of recent teaching
Reading and Discussion

- Lin, X., Schwartz, D. L., & Bransford, J. (2007). Intercultural adaptive expertise: Explicit and implicit lessons from Dr. Hatano. *Human Development*, *50*(1), 65-72.

Peer analysis of selected participant transcript

- Identification of adaptive practice
- Reflection on quality of adaptations

Introduce revised written reflection journal response sheet (to replace weekly written reflection provided at onset of student teaching).

Spotlight: One participant (LS) shared his self-analysis of the most recent videotaped lesson. The cohort viewed the video and transcript and offered analysis to LS. The group set personal goals for the upcoming week.

Review and discussion of the rubric for use at the conclusion of the practicum.

Session 6, Week 9
Developing Adaptive Practice

Peer debriefing of recent teaching
Discussion: identifying examples of adaptive practice and reflective practice
Peer analysis of selected participant's transcript

Session 7, Week 11
Reflective Practice and the Analysis of Literacy Lessons

Peer debriefing of recent teaching
Peer analysis of selected participant's transcript
Read and Discuss:

- Snow, C. (2007). *Knowledge to support the teaching of reading: Preparing teachers for a changing world*. John Wiley & Sons.
- Selected reading from Snow's book and the viewing of companion PowerPoint, highlighting Snow's big ideas about teacher reflection.

Table continued

Outline of the Instructional Intervention for the Duration of the Study
Review and discussion of the rubric to for use at the conclusion of the practicumSpotlight: One participant (TB) shared his self-analysis of the most recent videotaped lesson. The cohort viewed the video and transcript and offered analysis to TB. The cohort set personal goals for the upcoming week.
Session 8, Week 13 **Analyzing Literacy Lessons** Peer debriefing of recent teaching Peer analysis of selected participant's transcript • Participant examples of adaptive practice in teaching • Participant examples of the ongoing development of reflective practice Revision of rubric previously presented. Spotlight: One participant (AR) shared his self-analysis of the most recent videotaped lesson. The cohort viewed the video and transcript and offered analysis to AR. The cohort set personal goals for the upcoming week.
Individual session 9, Week 14 & Post Practicum Exit Interviews **Reflection and Sharing of Participants**: • Written reflection of current understanding of adaptive practice • Evaluation of the usefulness of the instructional intervention • Google survey • Exit interview with researcher

Additionally, as the sessions progressed, one participant's teaching video and corresponding teaching transcript were reviewed and analyzed at most sessions. Participants were willing to have their lesson analyzed by their peers in the cohort sessions. Each participant volunteered to be reviewed by the group. The analysis began with each member receiving a transcript of the lesson, and the participant would identify strengths and weaknesses in his/her teaching. Peer comments and analysis followed. Peer support, discussion, and problem-solving naturally occurred. The group was able to consider many solutions and alternatives regarding areas of concern. They also needed some expert advice from the researcher during most discussions. The researcher posed

thoughtful questions and possible alternatives to some of the challenges identified by the participants.

The sessions usually spanned one hour and occasionally went over the allotted time. The participants willingly engaged in the conversation and sharing. They stated many times throughout the practicum how they enjoyed sharing together and felt supported by one another.

Teaching experiences and analysis. The student teachers were engaged in daily, ongoing teaching experiences in the elementary classroom over the duration of the practicum. The mentor teachers allowed them to begin teaching during their second week of the practicum. They followed pre-established lesson plans in many situations and also planned some of their own lessons, depending on the individual classroom protocol. Each participant taught the full gamut of classes available in their teaching placement.

The cohort session readings and discussions on reflective and adaptive practice were designed to inform the teaching experiences in the classroom. The written reflections and self-analysis of teaching episodes were opportunities to document the influences of the reading and discussions on teaching practice.

The researcher videotaped selected teaching episodes; the video was uploaded to a private, password protected, YouTube channel. Each participant viewed his/her own teaching video and then transcribed the events of the lesson verbatim. One peer provided assistance in helping transcribe the lessons for many of the participants. The transcriptions of the teaching videos were uploaded to a designated space within the

university course management system, protected by a password. The transcripts were accessible to all particpants and the researcher.

Each participant completed a self-analysis on each of his or her teaching videos and transcripts. Four of the participants completed three self-analyses and two of the participants completed two self-analyses. Each participant completed a minimum of two peer-analyses on their peers' teaching video and transcription. A schedule for completing self- and peer-analysis was established during the cohort sessions. The researcher tracked the peer-analysis schedule, so each member would have the opportunity to conduct a peer-analysis on a minimum of two different teaching episodes. The peer-analysis was conducted outside the cohort sessions. Table 3.4 shows the tracking chart for assigning peer analysis.

Table 3.4

Tracking Chart for Peer Video Analysis

Tracking Chart for Peer Video Analysis			
Review the video of the person listed below:	Schedule to review the videotaped teaching episodes of your peers. Check the private YouTube channel once videos are posted. View them within a week of posting if possible. Thank you so much for your diligent work!		
	Video #1 assigned to:	Video #2 assigned to:	Video #3 assigned to:
Angela	*No video available*	Denise	Landon
Denise	Holly	Angela	Angela and Tifiny
Holly	Denise	Landon	Veronica
Landon	Tonya	Holly	Angela
Tonya	*No video available*	Veronica (completed by Angela)	Holly
Veronica	Angela	Tonya	Denise

Required responses and interactions. Each participant engaged in several types of responses and interactions during the intervention. Their responses served as the data sources for this study. They included self-analysis and peer-analysis, written reflections,

post-observation debriefing with the researcher, cohort session discussions and debriefing with the researcher, exit interview, Google survey, and adaptive practice rubric.

The duration of the instructional intervention coincided with the fourteen-week student teaching practicum. An orientation to student teaching occurred in December, and the first cohort session occurred during the 2nd week of the practicum. The intervention took place with the student teaching cohort in the university classroom one evening, usually occurring every other week. In the initial meetings, time was spent discussing the theories of adaptive expertise as well as reflective and adaptive practice. Participants were provided academic articles to read between sessions and then allowed time to review them during the cohort meetings. The researcher presented examples of high-quality adaptive teaching in the form of videos, role-playing, and modeling. Videos were selected from a careful search of the internet for high-quality explanations of adaptive expertise. Role-playing and modeling were experiences developed by the researcher for discussion and engagement during the cohort session. Graphics from the work of Bransford et al. (2005), Darling-Hammond (2006), and Snow et al. (2005) were used in discussion.

The participants learned how to transcribe selected short video segments of their teaching. The participants analyzed the video obtained during the researcher's observations. They analyzed video segments that represented an entire literacy teaching event. The segments varied in length from 6 to 15 minutes. Instruction and practice in analyzing their teaching and sharing feedback were components of the early cohort sessions. The participants learned how to use a two-column note taking method for

transcribing and analyzing their teaching. Each participant had opportunities to share and debrief about their teaching experiences during the cohort sessions throughout the semester. All participants provided feedback to refine a rubric designed to assess emerging adaptive practice (see Appendix A). Throughout the intervention, the participants were encouraged to share examples of adaptive teaching from their classroom experiences. They were invited to talk about their teaching and decision-making rationale during literacy lessons.

The researcher observed each participant a minimum of three times. The researcher videotaped the literacy lesson while observing the participants. There were some observations that occurred without videotaping the lesson. Field notes were created at each observation of the literacy lesson, context of the classroom, and student-teacher interactions. Most of the lessons were also captured on video. Examples of adaptive practice were noted and discussed with the participants. The researcher and the participant debriefed together during the post-observation interview. Some additional debriefing sessions took place following selected teaching episodes. At the bi-weekly meeting, a selected participant shared a teaching transcript and provided explanations and rationales for their teaching practice. The cohort members were encouraged to give feedback to each other for collaborative problem-solving and to ask for help if they needed it. Each session included time for thinking about next steps and setting goals for future teaching.

Data Methods

Multiple data sources were collected throughout this formative experiment during the instructional intervention. The data were used to develop thick descriptions of the findings of this study (Braun & Clarke, 2006; Crabtree & Miller, 1999; Lincoln & Guba, 1985). A detailed description of the data collection methods and data sources are described below.

Data collection. Both the researcher and the participants collected the data used in this study. Table 3.5 shows the areas of responsibility for the participants and the researcher. After viewing video of their teaching, the participants used two-column notes to transcribe and analyze selected teaching episodes. They each completed analysis on their own teaching at least two times and on their peer's teaching at least two times. They maintained a written reflection journal, completed a Google survey, and assessed themselves with an adaptive practice rubric at the conclusion of the student teaching practicum.

The researcher reviewed the videos and transcripts of the literacy lessons selected for self-analysis by the participants. The researcher maintained observational field notes, debriefing notes from conversations with participants, and field notes from the cohort sessions. A researcher's journal was maintained throughout the study to track meeting times, scheduling observations, and general notes. Each participant completed an exit interview with the researcher and a transcript of the conversation was created by the researcher. The researcher completed an adaptive practice rubric for each participant. A description and excerpt of each data source is provided below.

Each participant and the researcher had access to the university course management system where all data was collected and stored by name, date, and type of information. The data sources included all of the written reflections, analyses, field notes, debriefing notes, cohort session notes, etc., for both the participants and the researcher. The content was password protected and only available to the participants and the researcher. The collection of data sources in one location made it convenient to upload the carefully labeled data into Dedoose during the analysis phase.

Table 3.5

Data Collection and Individual Expectations

Data Collection and Individual Expectations						
Expectations	Viewing teaching videos and debriefing about teaching with researcher and peers	Two-column notes: *Transcriptions of literacy lessons *Self- or peer-analysis of teaching episodes	Field Notes: *Observations of teaching and videos *Debriefing and semi-structured interviews w/participant *Cohort sessions field notes	Research Journal: dates, persons met, planning, issues related to the study *Exit Interview transcripts	*Written reflections *Google survey	*Rubric
Participants	●	●			●	●
Researcher	●		●	●		●

Data collected from both the researcher and the participants provided multiple sources of information and were analyzed to understand the impact of the instructional intervention on the student teachers' development. The use of Dedoose, a digital analysis tool, provided a way to view, sort, organize, and code the separate pieces of data in an attempt

to understand the implications of this study. Table 3.6 shows an inventory of the participants' involvement in the instructional intervention.

Table 3.6

Inventory of Participant Involvement in the Instructional Intervention

Inventory of Participant Involvement in Instructional Intervention					
	Cohort sessions attended	Video-taped literacy lessons	Self-Analysis of video and transcription	Peer-Analysis of video and transcription of other cohort members	Written Reflections
Angela	10	2	2	4	12
Denise	9	3	3	3	10
Holly	10	3	3	3	12
Landon	10	3	2	2	7
Tifiny	10	2	3	2	10
Veronica	9	3	2	1	8

Data sources. The data corpus included data from both the participants and the researcher. A detailed description and example of each type of data is provided in the next section.

Two-column notes with self-analysis. The participants created two-column notes. The first column contained a verbatim transcript of a selected portion of a literacy lesson. The second column included self-analysis and comments about the lesson.

Table 3.7

Two-Column Notes with Self-Analysis

Excerpt Two-Column Notes Self-Analysis Excerpt	
Initials/Grade Level/Activity/Participants LS, 4th grade, Reading/Social Studies – 2nd segment of lesson LS seated at a grouping of desks with four children gathered around. The rest of the class is working in small groups and in centers around the room. They are reading a short literature book about the social studies topic. Key: Boy 1 (B1), Boy 2 (B2), Girl 1 (G1), Girl 2 (G2), Student Teacher (LS) # - unintelligible	
Transcription of the lesson	**Self-Analysis**
LS: Look, that man right there, that is George Childress …	They (students) had previous info about Childress, but they had never seen a photo of him.
B1: That's George Childress	
LS: Let's start reading about George Childress	
B1: (Reading aloud to group) Many of the ### George Childress, many of the, thee, set, settlers in Texas come for making a new life. This was true for George Childress. ####### and a newspaper editor.	
LS: He was a lawyer and newspaper editor, so we said a lawyer does what?	B2 was the only one who really understood what a lawyer was.
B2: (raises hand) Defends you when ###	
LS: Yes, yes, he did. Where, where was he born? Yay, where did he go? Where did he go (G1)?	
G1: ###	

Two-column notes with peer analysis. The participants analyzed their peers teaching one, two, or three times during the study. A two-column note format was used, with the transcript of a selected portion of a literacy lesson in the left column and the peer's analysis and comments in the right column.

Table 3.8

Two-Column Notes with Peer Analysis Excerpts

Peer-Analysis of DR, Kindergarten guided reading lesson on Frogs 4-11-17 Length of transcript: 11 min. 35 secs.	
Transcription of the lesson	Peer Analysis completed by AR
DR: We have some books we are going to read today. We are going to look at some vocabulary words. We also have these. Let look at our words. OK, these are words you are going to see in your story so that when you see them you will know what they mean. So, you guys know what this one is.	I liked how the teacher introduced vocabulary words that the students would encounter prior to reading the story. This would aid in their comprehension.
Girls: Frogs	
DR: What are you thinking? G1, do you agree? Is that frog or a monkey? What is this one?	The teacher ensured that every student was participating and understood what the word and image represented.
G1: Frogs, I know, Tadpoles	
DR: Tadpoles, what are tadpoles?	The teacher is checking for understanding.
G1: When they hatch out of their eggs they are called tadpoles because they are baby frogs.	
DR: Ok, there you go, good job. When the frog hatches they turn into tadpoles. We are going to read a little about that. And then	Here the teacher confirms the student's response.
G2: Baby	
G3: Frog	
DR: That is a good guess, you saw that F.	
G1: Froglet	
DR: Look at that word, Frog, frog – let, froglet	
G3: Froglet!	
DR: So, if we were to put them together (pictures with vocab words) we would have our eggs, our tadpoles, our froglet and then a frog. This is our cycle. This is what we are actually reading about today. Oh, you want to put them in a line. Does that help you a little bit better? This is what we end up with. Then a froggy has an egg.	The teacher is setting a purpose for the reading activity by exposing them to the main idea of their story.

Observational field notes. The researcher recorded field notes during and after observations of literacy lessons for each participant. The researcher observed each participant a minimum of three times for a minimum of 60 minutes.

Table 3.9

Observational Field Notes Excerpt

First grade reading lesson Observation of student teacher (DR) January 24, 2017 Whole group reading lesson 20-minute duration First-grade, whole-group reading lesson observation: There were twenty students in the classroom, two students were sent to a kindergarten classroom for their reading instruction. The remaining first-grade students completed quiet desk work at the beginning of the period. After a couple of minutes, the students were called to the front of the room to sit on the rug. The class talked about the calendar and reviewed money values. The students were dismissed to their seats and instructed to pick up their reading books from the shelf and open their books to page 40. The group of 18 students took turns reading, each child read two or three lines. The children were given short prompts if they were stuck on something ("try that again"). All of the students used their finger to track the words in the text and to maintain their place

Debriefing field notes. The researcher kept field notes from the debriefing sessions with student teachers that occurred after each observation of their literacy lessons.

Table 3.10

Debriefing Field Notes Excerpt

Debriefing notes:
3-21-17, Follow-up conversation from observation of a second-grade guided reading lesson with HK

Comments following guided reading group:

A second-grade girl in the group was an excellent reader (probably reading at 6th grade level) and she was not challenged at all with the story. I asked HK about the lesson. She mentioned the group read well and she had recognized the one student who was reading above grade level. She described how she had asked the mentor teacher about giving the student a more challenging book. The mentor teacher did not want to provide a more challenging book for the student to read.

We talked about ways to support this child with self-selected silent reading material to be challenging and finding times to read throughout the day. Another consideration was to encourage the parent to provide challenging material at home too.

Our discussion also included the following questions and considerations:

- How can you encourage fun competition without always ending up with the same student winning?
- What were your reading goals for these students?

Cohort session notes and transcripts. The researcher kept field notes from each cohort session. Some of the sessions near the end of the study were recorded using an audio memo app and transcribed.

Table 3.11

Cohort Session Field Notes Excerpt

Cohort Session Field Notes
Date: February 22, 2017
Time: 5:00 pm to 6:00 pm, university classroom
Present: All participants were present

- I talked about the modified written reflection form. We had a great discussion about their week in the classroom. Five of the PST had just started a new rotation in a private school classroom. They had a lot to share about the difference between a public and private school.
- We reviewed the big ideas of adaptive practice as presented *Adaptive Teachers as Innovators* (Vaughn & Parson, 2013).
- PSTs each identified a time they made an adjustment in the past week of their teaching. Two of the PSTs are in departmentalized grades. They both stated how they like teaching the same lesson twice because it allowed them to see what worked the first time and then make adjustment for the second lesson. The adjustment often dealt with clarity of instruction, providing more examples or analogies to teach a concept, and having certain materials more prepared for the second group.

Research journal. The researcher maintained a digital journal of research activity. It included dates and times of contact with school personnel, planning notes and other related information, and a record of conversations with administrators and mentor teachers.

Table 3.12

Research Journal Excerpt

Research Journal	
10-28-16	Personal conversation with principal at private elementary school, he expressed how much he enjoys having student teachers on his campus. He confirmed the placement of student teachers on his campus.
11-9-16	Call to elementary school, left message for principal on her voice mail.
11-9-16	Call to additional elementary school, spoke with principal He requested I resubmit the info I had emailed to him previously. The spam controls on the email system prevented him from receiving student teaching request.

Exit interviews. The researcher conducted exit interviews with each participant. The meetings were recorded, and a written transcript was created for analysis. A sample of an excerpt of one exit interview is provided in the Table 3.13

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Table 3.13

Exit Interview Excerpt with the Researcher and a Participant

Exit Interview Excerpt with the Researcher and the Participant
5-3-17 Exit interview with participant (VT) and researcher (CT) Audio recording, duration: 26 minutes Location: Education department on university campus Conversation excerpt: CT: You led the group well and the students enjoyed reading with you. VT: In the book (teacher's edition), it suggested to have everyone read a page and then the last pages they all read silently. CT: Yes, you did a mixed approach, with student reading silently and together. The students responded well. You had well-developed lesson plans. I liked how you brought in some extra visuals to extend the lesson. Do they always use the pointy fingers? VT: yes, they like it, but sometimes some of them do get distracted with them. CT: Tell me about your own self-assessment of your ability to reflect before, during and after teaching.

Written reflections from participants. The participants completed a weekly written reflection. They selected a specific lesson to write about as well as some general comments about the week. They were encouraged to be truthful and transparent in their reflections. A revision was made to the initial written reflection forms after week seven of the practicum. The participants were providing general and vague responses and by

adjusting the form and providing additional prompts it resulted in more detailed responses. Table 3.14 shows the first form and Table 3.15 shows the modified form.

Table 3.14

Written Reflection Form

Written Reflection Form
Name:
Date: School: Grade level:
Select a literacy lesson to review that you taught this week. Reflect on your teaching.
Lesson topic and objective:
Describe the lesson:
What went well in your lesson?
What would you change in the next lesson?
Describe the strengths and weaknesses of your classroom management this week:
What other challenges did you experience this week?
What are you most pleased about with this lesson?
What will you work on to improve for next week?

Table 3.15

Written Reflection Form (Modified) – Titled Self Reflection Form

SELF REFLECTION FORM

Take some time to reflect on a specific teaching episode. Try to write this reflection on the same day of the event, if possible. Be specific as you explore your own motivations and rationales.

Name _____ Date _____

Duration_____

Grade Level/ Subject area/Lesson

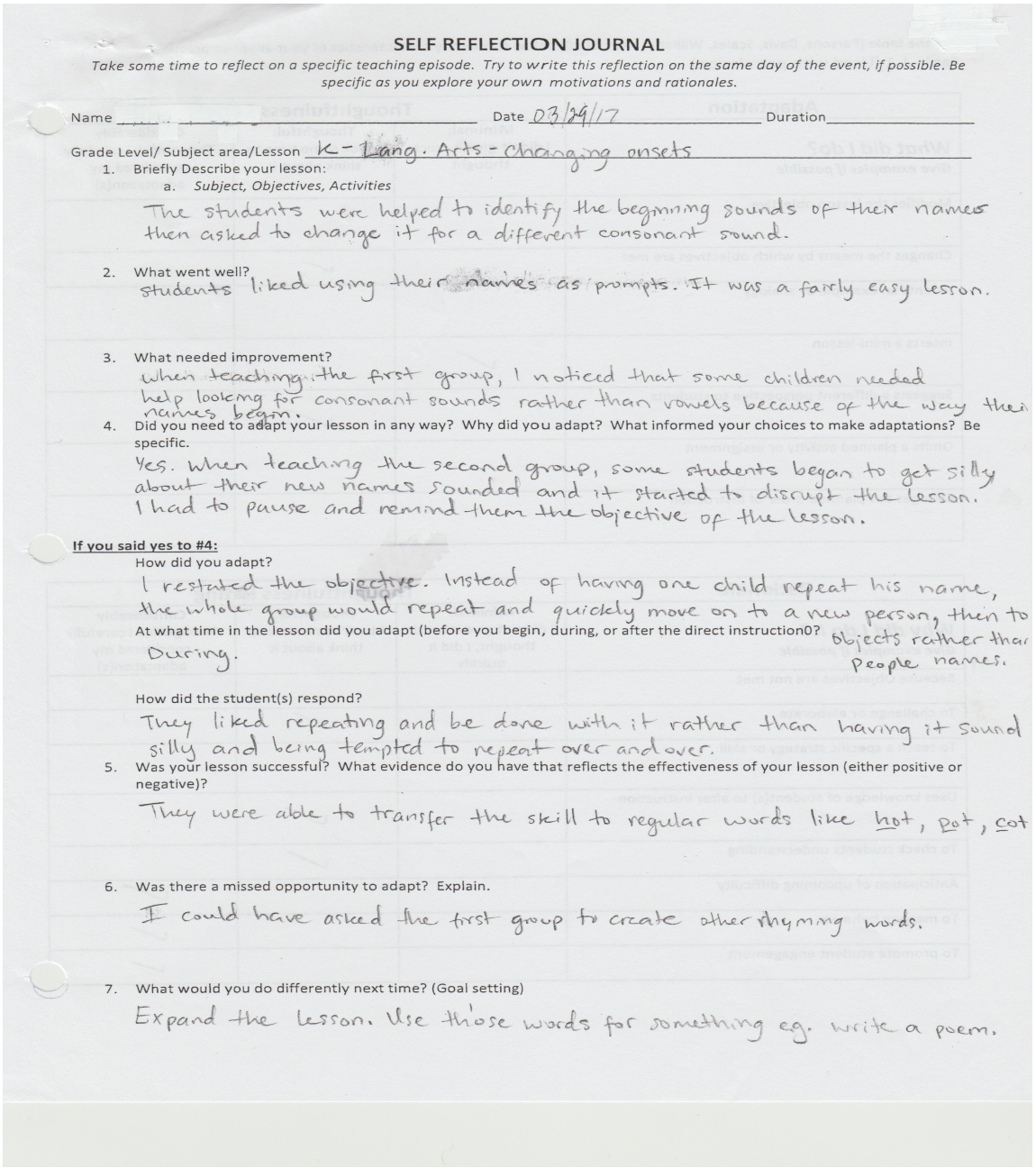
1. Briefly Describe your lesson:
    a. *Subject, Objectives, Activities*
2. What went well?
3. What needed improvement?
4. Did you need to adapt your lesson in any way? Why did you adapt? What informed your choices to make adaptations? Be specific.

If you said yes to #4:

- How did you adapt?
- At what time in the lesson did you adapt (before you began, during, or after the direct instrucn?
- How did the student(s) respond?

5. Was your lesson successful? What evidence do you have that reflects the effectiveness of your lesson (either positive or negative)?
6. Was there a missed opportunity to adapt? Explain.
7. What would you do differently next time? (Goal setting)

An example of the self-reflection form completed by one participant is in Figure 3.1



SELF REFLECTION JOURNAL

Take some time to reflect on a specific teaching episode. Try to write this reflection on the same day of the event, if possible. Be specific as you explore your own motivations and rationales.

Name _____ Date 03/29/17 Duration _____

Grade Level/ Subject area/Lesson K-1 Lang. Arts - changing onsets

1. Briefly Describe your lesson:
   a. *Subject, Objectives, Activities*

   The students were helped to identify the beginning sounds of their names then asked to change it for a different consonant sound.

2. What went well?
   students liked using their names as prompts. It was a fairly easy lesson.

3. What needed improvement?
   When teaching the first group, I noticed that some children needed help looking for consonant sounds rather than vowels because of the way their names begin.

4. Did you need to adapt your lesson in any way? Why did you adapt? What informed your choices to make adaptations? Be specific.

   Yes. When teaching the second group, some students began to get silly about their new names sounded and it started to disrupt the lesson. I had to pause and remind them the objective of the lesson.

If you said yes to #4:

How did you adapt?

I restated the objective. Instead of having one child repeat his name, the whole group would repeat and quickly move on to a new person, then to objects rather than people names.

At what time in the lesson did you adapt (before you begin, during, or after the direct instruction0?

During.

How did the student(s) respond?

They liked repeating and be done with it rather than having it sound silly and being tempted to repeat over and over.

5. Was your lesson successful? What evidence do you have that reflects the effectiveness of your lesson (either positive or negative)?

   They were able to transfer the skill to regular words like hot, pot, cot

6. Was there a missed opportunity to adapt? Explain.

   I could have asked the first group to create other rhyming words.

7. What would you do differently next time? (Goal setting)

   Expand the lesson. Use those words for something eg. write a poem.

Figure 3.1 Self-reflection form sample completed by participant

Google survey. Each participant completed a Google survey at the conclusion of the student teaching practicum. The survey asked for information about how they had

learned to be reflective and adaptive. They were asked to identify the most helpful and the least helpful aspects of the instructional intervention. A link to the final survey is provided below (see Figure 3.2).

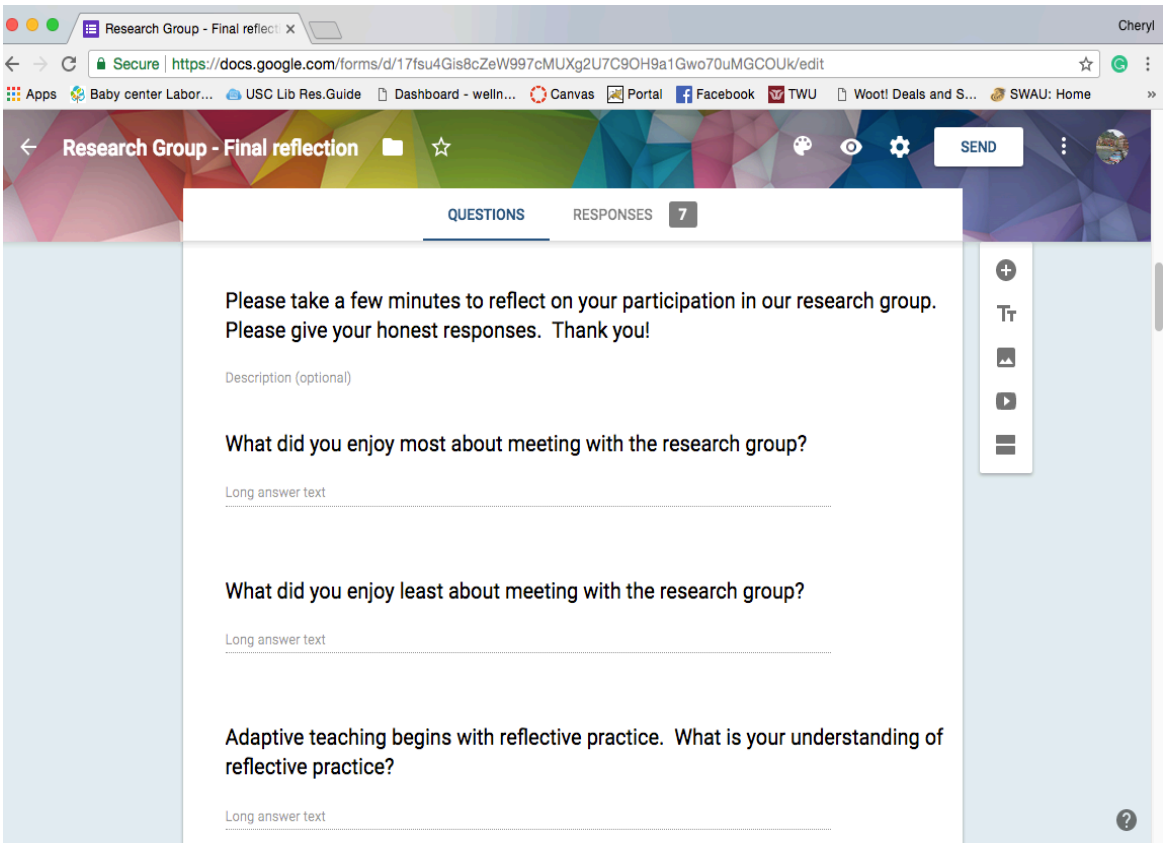


Figure 3.2 Screen shot of Google survey completed at conclusion of the study https://docs.google.com/forms/d/17fsu4Gis8cZeW997cMUXg2U7C9OH9a1Gwo70uMGCOUk/edit

Adaptive Teaching/Adaptive Practice Rubric. Each participant completed a self-assessment rubric at the conclusion of the study. The researcher also completed a rubric for each participant, and the rubrics were shared at the exit interviews (see Appendix A).

The rich descriptions of the individual and collective experiences of the participants revealed in the data served to tell the story of the student teacher development towards adaptive practice (Attride-Stirling, 2001, Braun & Clarke, 2006). Trustworthiness was achieved in this formative experiment by the use of multiple data sources and is discussed in depth later in this chapter (Reinking & Bradley, 2008).

Data Analysis

The qualitative data were analyzed using a deductive method of thematic analysis (Attride-Sterling, 2001; Nowell, Norris, White & Moules, 2017). The analysis included the careful reading and rereading of the data. The analysis took place during four phases. Each phase was designed to ensure an accurate analysis and representation of data collected during the instructional intervention (Guba & Lincoln, 1994). The goal of the analysis was to understand the impact of this formative experiment on the development of adaptive practice in student teachers during their student teaching practicum (Reinking & Bradley, 2008).

The first phase involved reading the hard copies of the data as one continuous process to gain an overview of the content. The researcher attempted read quickly and not go deep during the first phase. The research question: *How will an instructional intervention with preservice teachers promote the development of adaptive practice?* Was considered throughout the reading, It was difficult at times to keep moving through the data and not get bogged down with the details. After an initial reading, the data was reread and general comments were noted on some of the big ideas.

Following the initial readings, a digital analysis tool, Dedoose, was employed to help manage the data. The data was uploaded to Dedoose. The data corpus included typed transcriptions of teaching episodes, self- and peer-analysis, hand-written reflections from the participants, researcher's field notes (observations, debriefing, cohort session), exit interview transcripts, Google survey results, and rubrics. Care was given to label each data source with pertinent information including initials of participant, date, type of activity and location. Figure 3.3 shows a screenshot of one page of the data uploaded to Dedoose.

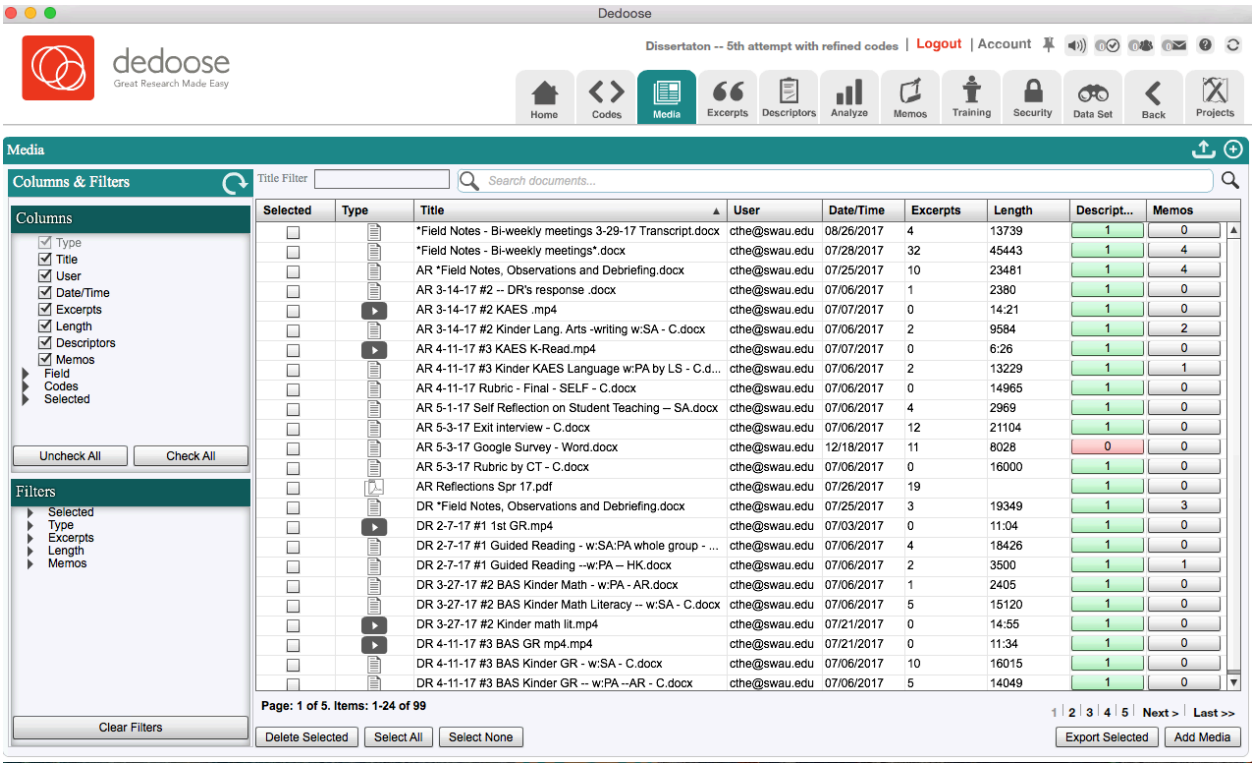


Figure 3.3 Screenshot from Dedoose showing data sources

The researcher was immersed in the data again, during the second step. Deductive and emergent coding approaches were used in the reading and rereading of the data

(Boyatzis, 1998; Crabtree & Miller, 1999). A selection of *a priori* codes created by the researcher were used initially. (Darling-Hammond & Bransford, 2005; Parsons et al., 2010; Parsons et al., 2011; Parsons, 2012; Snow et al., 2005). The researcher worked systematically through the data. All data sources were carefully read and reread with consideration for related data sets (i.e., weekly reflections, self-analysis and peer-analysis, and all data related to one participant) (Braun & Clark, 2006). Codes were initially applied in a general way, with additional codes being added as needed. The use of Dedoose provided a way to view, sort, organize, and code the separate pieces of data. The researcher looked for patterns in the data and related language.

As the second phase progressed, emergent codes were added where greater detail or different descriptions were needed. Parent and child codes were applied to the data. The researcher realized too many codes had been created, and they were difficult to manage. The researcher conferred with a her advisor, and received valuable feedback and help to refine the coding process. Some codes were collapsed, others were eliminated and a few new codes were added. The process was recursive and time intensive, spanning several months. The process included the reading, rereading and onging analysis of patterns and broad themes in the data. Figure 3.4 shows a list of parent codes and child codes.

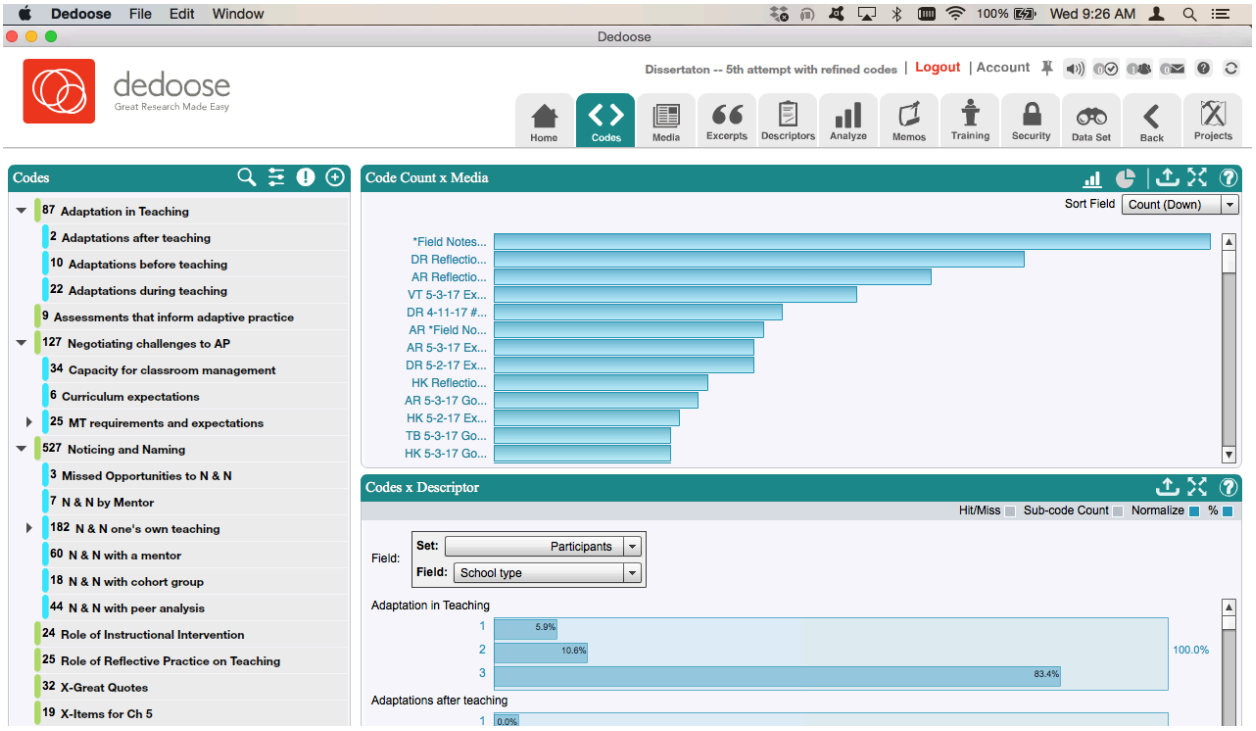


Figure 3.4 Screenshot of Dedoose showing parent and child code counts

The third phase was a time for further refining of codes and looking deeper into patterns and the development of themes in the data. The research question was used to constantly guide the analysis process. One data set included the verbatim transcript of teaching episodes and the self- and peer-analysis provided by the participants. Great care was taken to look for shifts in thinking, use of language, and changes in lesson implementation. Evidence of decision-making and teaching rationales through written plans, teaching transcripts, teaching observations, group discussions, individual interviews, and self-analysis were carefully analyzed. In consultation with the researcher's advisor, the four major themes were identified by reviewing the codes, discussing the patterns, and looking carefully at the coding process. The coding provided

access to relevant excerpts from that data that were used to define and describe the four major themes.

Finally, the fourth step was a time for looking deeply into the four main themes and identifying the subthemes. The subthemes added nuance and rich descriptions to the overarching themes. An ongoing comparing and contrasting of the written reflections, self-analysis, and peer-analysis was necessary to uncover instances of growth and development. In collaboration with the researcher's advisor, a diagram was created (See Chapter 4, Figure 4.1) to reveal the relationships between the themes and the subthemes (Crabtree & Miller, 1999). The reading and rereading of coded excerpts helped to shape the thematic analysis into a cohesive explication in response to the research question.

Trustworthiness

Trustworthiness is essential for high-quality qualitative research and occurs by establishing credibility, dependability, transferability, and confirmability (Lincoln & Guba, 1985). I made every attempt to develop trustworthiness for this study through the established procedures recognized in exemplary qualitative research.

Credibility is obtained through multiple experiences including extensive time spent in the field, careful and persistent observation, rich and robust descriptions through field notes, post-observation debriefing and interviews, member checking, data collection triangulation, and researcher triangulation (Braun & Clarke, 2006; Creswell, 1998; Reinking & Bradley, 2008). Multiple sources of data contributed to the credibility of this study (Braun & Clarke, 2006).

This study included extensive time in elementary classrooms, conducting careful observations and debriefing sessions with each of the six student teachers over the course of 14 weeks. In addition, bi-weekly cohort sessions in the university classroom provided time for discussion, reflections, and knowledge-building with all participants. Field notes were created during observations, following debriefings and cohort sessions, and throughout every phase of this study.

Member checks were conducted during post-observation debriefings and cohort session meetings. These occurred most frequently immediately after I had observed a teaching episode and created field notes of the same. I asked questions, clarified what took place within the lesson and requested feedback or corrections on my impressions. I checked with the participants to ensure the observational field notes, cohort session notes, and written reflections were an accurate representation of their thoughts, attitudes, and practices (Nowell et al., 2017). I invited feedback and questions from participants and encouraged them to be open and honest in their responses.

Triangulation of the multiple data sources provided a multi-dimensional view and rich comparison of the data. Observations by the researcher, self-analysis by the participants, peer analyses as well as field notes, exit interviews and transcriptions of the same or similar teaching episodes comprised the data sources. Researcher triangulation occurred through multiple discussions with my advisor, serving as a critical friend (Costa & Kallich, 1993; Patton, 2005). The essential role of critical friend included reviewing initial and subsequent coding schemes and challenging me to clarify, justify, and verify the coding process. Multiple conversations over the course of several months served to

facilitate a thoughtful and careful reviewing and refining of codes. Additionally, thoughtful discussions occurred about analysis methods and identifying significant themes in the data.

Dependability occurs with the precise documentation of the research process (Lincoln & Guba, 1985). Explicit descriptions of the research process with excerpts and samples of data are provided. The role of the participants and the researcher in this study are clearly outlined for ease in understanding the research process.

Rich descriptions in the data and clearly defined methods provide transferability. A clear delineation of the systematic implementation of the methodology is provided, allowing for potential use by additional researchers. The thematic analysis is explicitly explained and could be potentially duplicated as needed in future studies. Those seeking to transfer the findings are provided adequate detailed information to aid in determining how transferability might apply to their unique situation (Lincoln & Guba, 1985; Tobin & Begley, 2004).

The combination of credibility, dependability, and transferability provide confirmability, and this study strives to provide all of these elements to create trustworthiness (Lincoln & Guba, 1985; Nowell et al., 2017). The careful recording of accurate field notes, transcripts of discussions and debriefings, self- and peer-analyses and a researcher's journal served to provide an audit trail (Koch, 1996). Reflexivity throughout the research process was essential (Nowell et al., 2017). The researcher is the *human instrument* in qualitative research, thus making the researcher's rationales, insights, and reflections especially significant (Lincoln & Guba, 1985). The researcher

attempted to be transparent in the documentation and interactions throughout the study. Care was given to consider the role of the researcher and the impact the reactions of student teachers, mentor teachers, and classroom experiences on the analysis. The researcher conferred with a colleague, who also supervises student teachers, to help identify potential bias on decision making while observing student teachers. The researcher made attempted to create and implement a trustworthy study.

Summary

The methodology for this study followed the guidelines of a formative experiment as established by Reinking and Bradley (2008). The pedagogical goals identified for this study informed cohort session activities. The pedagogical goals were selected to facilitate opportunities through the instructional intervention for reflective and adaptive practice. Bi-weekly cohort sessions were conducted to develop conceptual knowledge and theory, debrief about teaching, provide and receive cohort support, learn to analyze teaching, and develop reflective and adaptive practice.

This intervention was designed to develop a deep understanding of reflection by encouraging the use of reflective practice in everyday teaching. Participants were encouraged to notice when they used reflective practice. This intervention encouraged participants to look for opportunities to learn about assessment and to use assessment tools to inform their teaching. The researcher's role served to facilitate interventions, serve as a mentor to student teachers, provide challenges and interactions, and help participants identify their rationale and decision-making processes towards adaptive practice.

The researcher was responsible for observing participants and creating accurate descriptions in field notes, journals, and narrative accounts of teaching interactions. The researcher provided support in the development of transcriptions of videotaped instruction and the analysis of teacher interactions. The multiple sources of data were gathered and carefully analyzed for the identification of patterns in teaching behaviors, shifts in the language associated with teaching, and other evidence of the development of adaptive practice. Multiple sources of information provided a triangulation of the data to create accurate and trustworthy findings. At the conclusion of the study, some of the strengths and weaknesses of this instructional intervention were evident. The researcher desires to inform others in the field of education who are interested in the development of adaptive expertise and adaptive teaching practices.

CHAPTER IV

DATA ANALYSIS AND RESULTS

I used qualitative data analysis methods that were appropriate for this formative experiment (Reinking & Bradley, 2008). It was essential that I was immersed in the data and used a recursive process to read and reread the data on multiple occasions across a span of time. I used deductive and emergent coding to understand the impact and results of this formative experiment. The coding process was essential for identifying similar and contrasting responses and experiences across the data. A thematic analysis provided a careful and thoughtful way to analyze the multiple sources of data and provide a structure for describing the results of this study (Attride-Stirling, 2001; Braun & Clarke, 2006). The research question shaped the analysis at every step of the process. Every attempt was made to provide accurate and clear examples of the participants' responses and behaviors that revealed their development in this section. Excerpts from the data were selected as evidence of emerging adaptive practice.

Many teacher preparation programs include debriefing and support for student teachers; however, this study differed by emphasizing specific pedagogical goals for the development of adaptive practice. It would be impossible to attribute all professional development to this instructional intervention alone; after all, the student teaching practicum is explicitly designed to provide teaching practice and to develop teaching dispositions. However, through the careful analysis of the data, there are specific

examples of the impact of this intervention on improving the emergence of adaptive practice.

Thematic Analysis

As the data were read and reread, four significant themes were identified that show the results of this formative experiment. Subsequently, subthemes were identified; they captured the nuances of the participants' responses. A coding table was created and revised in the recursive process of reading and re-reading the data (see Appendix B). Careful consideration of the themes resulted in further reviewing and refining. This thematic analysis provides a response to the research question:

> *How will an instructional intervention with pre-service teachers promote adaptive teaching practices?*

The data will show how the participants learned to define and implement emerging reflective and adaptive practice. It will show how the participants began to use specific language to identify times they adapted their teaching in ways that were not included in their original plans. The adaptive practice recognized by the participants is often at the emergent level and is not fully developed; this is also evident in the data.

The overarching theme found in the data, *emerging adaptive practice,* frames the four major themes. The four themes are identified as 1) noticing and naming, 2) adaptation in teaching, 3) negotiating challenges, and 4) attribution of growth. The four themes are briefly described here with in-depth explanations and examples in the following sections.

The first major theme, *noticing and naming,* refers to a student teacher's recognition (notice) and description (name) of what took place within a teaching moment. It includes the ability to consider the effectiveness of a lesson and then make a decision to adapt the lesson or leave it as is. It is not assumed that all student teachers will automatically be able to describe their teaching or even to justify why they are teaching in a specific way or with a particular approach.

A second major theme refers to *adaptations in teaching,* as self-reported by participants. There are instances when student teachers report adapting their literacy lessons, either before teaching, in the midst of a lesson, or after a lesson. Self-reporting through written reflections and self-analysis of teaching videos and transcripts provide a view into the student teachers' thinking about what counts as an adaptation in their teaching. At times, the rationale used in making decisions was noted. The student teachers' self-perceptions did not always align with the researcher's perceptions of the same event.

Instances of student teachers *negotiating challenges* provide the third major theme. The difficulties that impeded or prevented adaptive practice included issues related to classroom management, mentor-teacher expectations, and mandated curriculum expectations. The written reflections, self-analysis, peer analyses, and field notes from cohort session discussions revealed the student teachers' perceptions of challenges.

The final theme, *attribution of growth*, refers to the student teachers' perceptions of their growth. Participants identified the aspects of the instructional intervention they deemed as useful in their personal development towards adaptive practice. The role of the

cohort sessions and the development of reflective methods are central to this theme. The participants identified what was helpful to their growth in learning to think about adaptive practice. The exit interview and final survey provided abundant examples of their attribution of growth.

Figure 4.1 below illustrates the overarching theme and four major themes and subthemes found in the analysis of the data. Each theme is discussed in greater detail in the following sections.

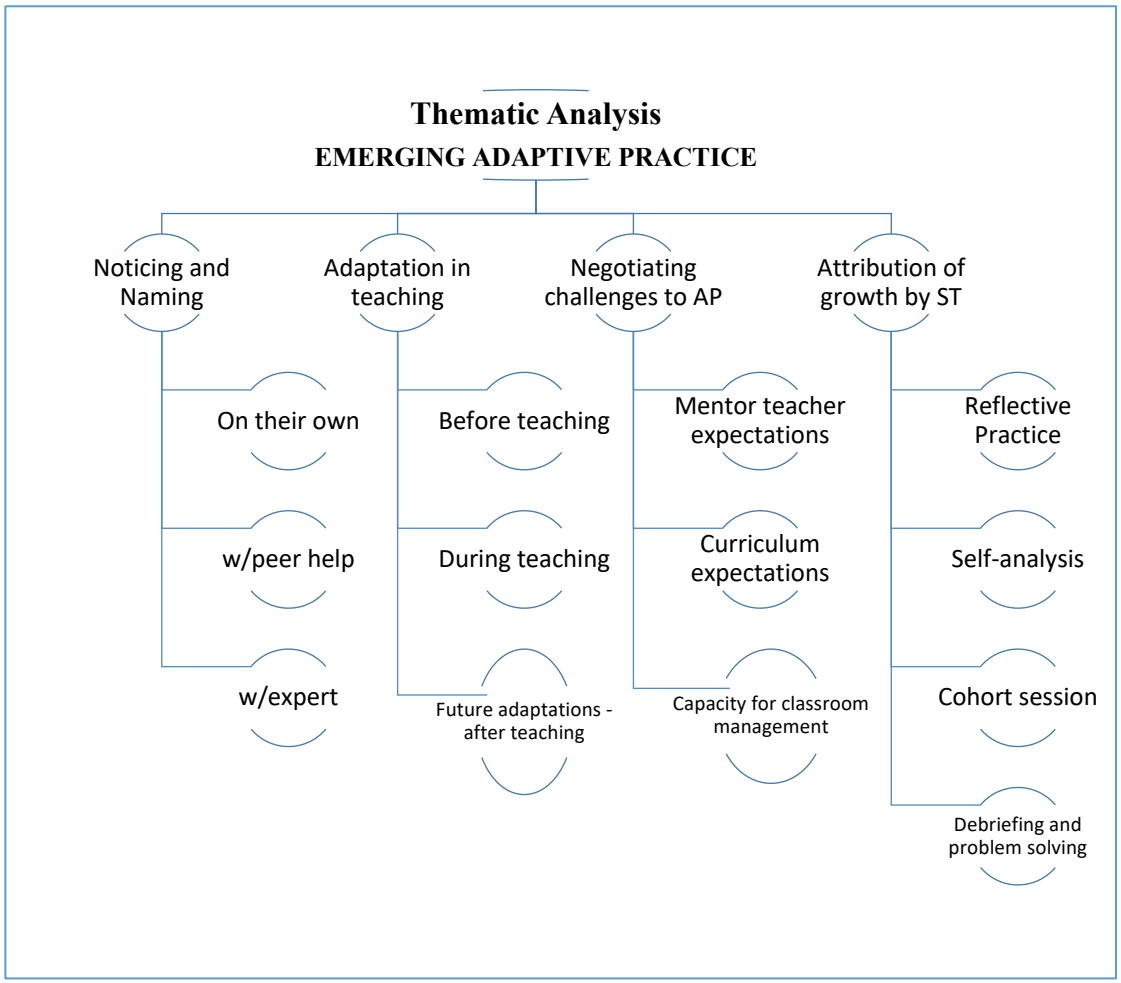


Figure 4.1 Thematic analysis: emerging adaptive practice

Noticing and Naming

The ability to recognize when and how a literacy lesson is successful is essential to implementing adaptive practice. The concept of noticing refers to the ability to recognize what took place within a teaching moment. Naming is describing the teaching action that took place during a literacy lesson. This theme answers the research question in part by providing evidence for emerging dispositions of adaptive practice as a result of the instructional intervention. As I read the data and applied the codes, it became clear that over and over again noticing and naming appeared in various contexts of the intervention. Participants wrote and talked about their teaching in somewhat different ways depending on if it was solely on their own or if it was in response to the analysis of their peers, cohort session discussions, or conversations with the researcher. Simple descriptions appeared most frequently in their self-analysis, and more complex conversations about their teaching took place within the cohort sessions and with the researcher. Descriptions and examples of noticing and naming across three central experiences are discussed in this section. The three sections are discussed individually, with teaching examples and selected excerpts from written reflections, self- and peer-analysis and field notes. The three sections are 1) noticing and naming on their own, 2) noticing and naming with peers, and 3) noticing and naming with the researcher.

Noticing and Naming: On Their Own

This section includes the participants' independent activities of writing reflections and analyzing video and transcripts of their teaching (see Figure 4.2). A close look at the responses revealed the ways student teachers were thinking about their teaching.

Participant responses fell into three main areas: *identifying literacy practices, determining next steps, and developing confidence.*

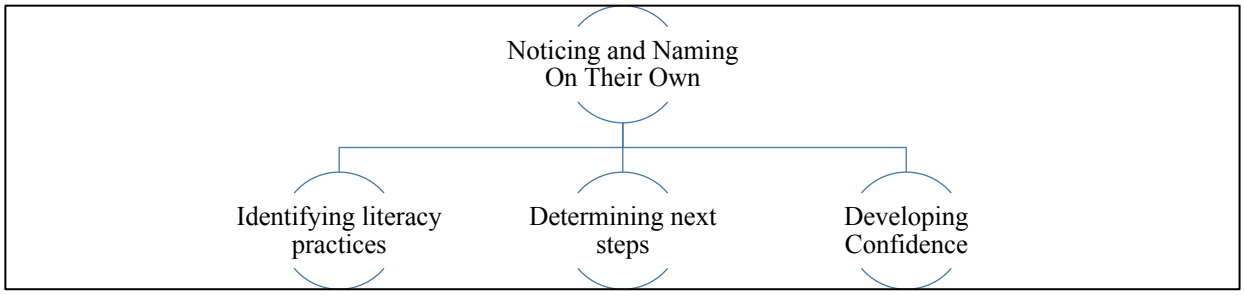


Figure 4.2 Noticing and naming: On their own

The student teachers wrote weekly reflections following a semi-structured format. They selected a specific lesson and wrote about their experiences, responding to general prompts. The six participants completed a total of 60 written reflections. After week seven, the reflection form was modified. A formative experiment allows for modifications to the intervention as deemed necessary by the participants and the researcher. The participants were giving general and vague responses in their written reflections; altering the reflection form helped the participants to be more specific about what took place in their lessons. All participants completed video and transcript self-analysis; three participants completed two self-analyses, and three of the participants finished three self-analyses.

The cohort session discussions challenged the student teachers to look at their teaching via video and then describe what took place. The reading of articles and examples of reflective practice during the cohort sessions served as a foundation for noticing and naming. The participants talked about learning to become more reflective

throughout the practicum. This process resulted in noticing what literacy practices were occurring and naming the actions and often providing a rationale. Albeit, some of their descriptions are brief and simplistic, however, the activities did facilitate talk that would not have been taking place without the structure of the intervention. The written reflections and self-analysis of video and transcripts provided a window into what the student teachers were noticing and naming on their own.

Identifying literacy practices. Self-analysis took place when student teachers viewed a segment of video from their teaching and transcribed the episode. After transcribing the lesson, the participants analyzed their teaching using the two-column notes to document their analysis. The student teachers noticed and named several components of literacy practice in their self-analysis: alphabetic principle, comprehension, engagement, fluency, phonics, and vocabulary development. Comprehension was noted more frequently than the other literacy components. The term "problem solving" was never used in the written reflections or self-analysis. The literacy practices mentioned less frequently are discussed first, and then examples of the most cited literacy practice, comprehension, is discussed. Selected excerpts of the written reflections and self-analysis are provided as examples.

The terms *alphabetic principle* and *phonics* were mentioned together, and they were only referenced in kindergarten classroom examples. One classroom implemented Reading Mastery (a scripted reading program) and the use of literature books during reading instruction. The lesson selected for self-analysis was a Reading Mastery lesson. The student teacher wrote, "By sounding out the letters phonetically, the students

reaffirmed the letter sound relationship." Later she wrote, “I wanted students … to connect with the alphabetic principle of seeing the letters and matching them to the sounds...” (TB, Reading Mastery lesson, Kinder, March 6, 2017).

Engagement in reading was cited as evidence the students enjoyed reading. The first example shows teacher engagement, “I like (teaching) guided reading. It is fun to ask many questions to kids and interact with them.” (HK, written reflection, January 29, 2017). A second example references student engagement, “My lesson was successful because they (students) wanted to keep reading their books … students enjoyed reading by themselves and with a partner” (HK, written reflection, March 13, 2017). This student teacher identified positive student engagement as an indicator of a successful lesson.

The ability to read smoothly and with intonation and prosody are elements of fluency. Student teachers identified the development of fluency in several examples. The first example comes from a kindergarten guided reading lesson:

> The students didn’t need to use pointer fingers… they were beyond that, and so I felt that was a good reflection to make … the next reading group I did with these girls, we didn’t use pointer fingers and that made fluency a LOT better (DR, March 6, 2017)

Providing ample reading time for the promotion of fluency is represented in another reflection. It stated, "I want to have extended reading time for kids' fluency of reading" (HK, written reflection, April 7, 2017). A third example highlights the value of reading continuous text. The student teacher observed that students read more fluently when they were reading a passage instead of a list of words. “Kindergarten students reading word

lists vs. reading short passages – engagement and fluency were greatly improved in reading a passage" (Field Notes, TB).

The development of vocabulary was identified as a necessary component of a successful lesson. An example comes from a third-grade guided reading lesson about molecules: "In this passage, it had a lot of vocabulary the students needed to understand before reading. It was important for the teacher to go over the vocabulary words in advance" (VT, March 30, 2017). After teaching vocabulary, the student teacher assessed her lesson, "I think during this lesson I accomplished a lot because my students understood the vocabulary words and also the passage" (VT, March 30, 2017).

The most frequently mentioned literacy component was comprehension. Student teachers cited making connections, questioning, developing background knowledge and retelling as essential factors in promoting reading comprehension in their lessons. The next example connected the reading content to life experiences: "Real-world or self-to-text connections are important when trying to comprehend reading" (TB, group literacy lesson, kinder). The use of questions is highlighted in this example: "Providing comprehension questions helps the students by modeling how good readers read… they think, ask questions, make predictions … metacognitive" (TB, self-analysis, whole group literacy lesson, kinder).

A link between background knowledge and comprehension is identified in this example: "I was trying to gather prior knowledge here to see what they knew about the topic" (DR, guided reading, kinder, April 11, 2017). One example identified visuals as integral to comprehension. "I think (it) is always important for students to have visuals.

Having visuals would help the students understand the concept" (VT, self-analysis, guided reading lesson, 3rd grade). One student teacher noted, "It is important to pause when reading to see if the students are following along and comprehending the reading." Additionally, one student teacher showed self-awareness when, upon self-analysis, she realized she was not incorporating literacy practices as she had hoped: "Through analysis of my lessons, I realized that even though I had learned and believed in those principles (literacy practices), I did not put them into practice to the maximum" (AR, literacy lesson, kinder). The process of writing weekly reflections allowed the participants to try out reflective practice. Analyzing literacy lessons was useful for learning to notice and name what was taking place within a given lesson. A list of the examples described above is displayed in Table 4.1.

Table 4.1

Identifying Literacy Practices through Self-Analysis and Reflection

Identifying Literacy Practices through Self-Analysis and Reflection	
Literacy Practice	Noticing and Naming Student teachers' descriptions of what took place within their literacy teaching
Alphabetic principle/Phonics	"I wanted students … to connect with the alphabetic principle of seeing the letters and matching it to the sounds, especially when we stretched the sounds out." (TB, self-analysis, small group, kinder)
	"By sounding out the letters phonetically, the students are reaffirmed in the letter sound relationship." (TB, Reading Mastery lesson, Kinder, March 6, 2017)
Comprehension	"I think is always important for the student to have visuals. Having visuals would help the students understand the concept." (VT, self-analysis, guided reading lesson, 3rd grade)
	"Real-world or self-to-text connections are important when trying to comprehend reading." (TB, self-analysis, whole group literacy lesson, kinder)
	"Providing comprehension questions helps the students by modeling how good readers read… they think, ask questions, make predictions … metacognitive." (TB, self-analysis, whole group literacy lesson, kinder)

Table continued

	"I wanted to make a connection to their real-world lives. Doing this aid in their ability to retain what they've learned and related it to the world around them." (TB, self-analysis, guided reading group, kinder)
	"It is important to pause when reading to see if the students are following the reading and comprehending the reading." (VT, self-analysis, guided reading lesson, 3rd grade)
	"I was trying to gather prior knowledge here to see what they knew about the topic." (DR, guided reading, kinder, April 11, 2017)
Engagement	"I like guided reading. It is fun to ask many questions to kids and interact with them." (HK, written reflection, January 29, 2017)
	"Students enjoyed reading by themselves and with a partner." (HK, written reflection, March 13, 2017)
	"My lesson was successful because they (students) wanted to keep reading their books." (HK, written reflection, March 13, 2017)
Fluency	"I want to have extended reading time for kids' fluency of reading." (HK, written reflection, April 7, 2017
	"The students didn't need to use pointer fingers… they were well beyond that point, and so I felt that was a good reflection to make considering the next reading group I did with these girls, we didn't use pointer fingers and that made fluency a LOT better." (DR, written reflection, March 6, 2017)
	TB – "Kinder students reading word lists vs. reading short passages – engagement and fluency greatly improved in reading a passage." (Field Notes, TB)
Self-Awareness	"Through analysis of my lessons, I realized that even though I learned and believe in those principles (literacy practices), I did not put them into practice to the maximum." (AR, self-analysis, March 14, 2017)
Vocabulary	"I think that students always need to understand the concept before moving on to the next step. For example, this passage had a lot of vocabulary which students needed to understand before reading the passage, that's why it is important for the teacher to go over the vocabulary words." (VT, self-analysis, March 30, 2017)
	"I think during this lesson I accomplished a lot because my students understood the vocabulary words and also the passage." (VT, self-analysis, March 30, 2017)

The participants noted that being required to write reflections and analyze their own teaching prompted them to become more reflective. They mentioned in the cohort session how the requirement to write reflections helped them to be intentional about what they were doing in their lessons and to be more specific in describing what occurred in their lessons. One participant stated she felt "like a teacher" when she could identify literacy practices in their lessons (DR, written reflection, 2-10-17).

Determining next steps. Student teachers identified the *"next steps*" they wanted to take on multiple occasions through their written reflections and self-analysis. Five

significant areas emerged as next steps: anticipating problems, clarifying teaching, managing behavior, managing time, and the need for preparation. Setting goals and determining “next steps” is a component of emerging adaptive practice and aligns with the research question.

Learning how to anticipate problems was identified on several occasions by student teachers. In the first example, determining what did not work helped this student teacher predict what she might want to do in the future. Her reflection, “Use the manipulatives AFTER explaining the rules,” shows a clear goal for the future (DR, written reflection, March 20, 2017). Another similar reflection mentioned, “I learned to give instructions BEFORE giving the activity” (AR, written reflections, February 5, 2017).

The need to clarify instructions and explanations was the most often cited *next step*. The selected excerpts are representative of many similar comments from all participants. The first example comes from a second-grade guided reading lesson, “Next week I want to improve on better explanations and clearer instructions” (AR, written reflections, February 5, 2017). Reflections from a first-grade lesson stated, “I need to figure out how to slow down with instructions and be thorough” (DR, written reflections, January 27, 2017). After kindergarten students were confused by a guided reading lesson the student teacher wrote, "I did not give specific instructions and sped through, so I had to repeat directions to almost every student" (DR, written reflection, March 20, 2017). The need for clarity connected to other goals in this example, “I want to give more

positive praise … work on clear directions … keep students on task." (DR, written reflection, February 3, 2017).

Many student teachers commented on learning to be flexible in their teaching. One excerpt represents the statement of many. This one comes from a first-grade classroom: "I want to work on more flexibility with teaching." (DR, written reflection, February 17, 2017). Additional examples come from cohort session discussions; one member stated to the researcher, "you always tell us to be flexible, and I really saw it in the classroom" (field notes, cohort sessions). Other participants mentioned the need to be flexible multiple times over the course of this study (field notes, cohort sessions).

Managing behavior and managing time were areas of concern. The student teachers quickly recognized the need for effective classroom management. Without a clear management approach, they cited they were getting through the lessons; however, they could not be responsive or adaptive when students were off task or out of control (cohort session notes). A kindergarten example stated, "I want to try to manage time for each lesson and to be firm with students" (HK, written reflection, February 17, 2017). An example from second-grade classroom stated, "Next week I want to work on discipline and ways to manage the class other than calling their names," (AR, written reflection, February 1, 2017). A third example comes from a first-grade guided reading lesson. The student teacher stated,

> I noticed I sort of did a lot of talking … I was a little rushed. I think maybe we could have spent more time on certain ideas … these would have helped add to

the lesson instead of sticking to a script with what I had and rushing through it. (DR, self-analysis, April 11, 2017)

Another reflection identified a lack of time spent on actual reading as a problem. After viewing her teaching video, a student teacher realized the students did not read continuous text during the guided reading lesson. She was surprised to see in the video how the lesson lasted 11 minutes, and eight of those minutes were spent completing a worksheet with the students. The student teacher spent the next three minutes prepping the group for a reading they would do on the following day. The students did not read any new text during the lesson. If a self-analysis of the lesson had not been completed, the student teacher would not have recognized the lack of reading during the lesson. The student teacher noted, "The students completed the worksheet, but there was little time for reading during this lesson…I want to increase the reading time for the group," (DR, self-analysis, February 7, 2017). She went on to describe the challenge of increasing the reading time when the mentor teacher had a tightly controlled schedule (this will be explored more deeply in the section on *negotiating challenges*).

Student teachers noticed the role of preparation in the success of their teaching. They connected a need to be prepared with the ability to be responsive and adaptive to students. A lack of preparation can result in management issues as stated here, "I want to be over-prepared to teach because kids finish early and sometimes start bothering others" (AR, written reflection, January 22, 2017). A second excerpt cited a lack of preparation. "I want to be more prepared for the phonics song because I had not memorized it and I did not know how to do it" (HK, written reflection, January 20, 2017). Other references

showed how a lack of preparedness impacted a lesson, “I would like to have read the book to myself before so that I could have read with more feeling…next time I will not do a cold read” (AR, written reflection, February 24, 2017). Adding content to a lesson is also related to preparation. An example from a first-grade lesson reveals a need for additional content when it was stated, “Next time I want to have a (reading) lesson that correlates with writing” (HK, written reflection, April 7, 2017).

Preparation is necessary to create meaningful lessons as stated in this reflection: “Next time, I would make more meaningful lessons (by planning ahead) … I would connect the story in real life and make a very interesting story” (HK, self-analysis, March 6, 2017). Another statement that reinforced the idea that teachers must be prepared stated, “If a teacher doesn’t know clearly what s/he is doing, children get confused” (HK, written reflection, February 10, 2017). All participants mentioned that they feel a need to be more prepared. The excerpts mentioned above are outlined in table 4.2.

Table 4.2

Determining Next Steps through Self-Analysis and Reflection

Determining Next Steps through Self-Analysis and Reflection	
Next Steps	Noticing and Naming on their Own
Anticipate problems	“Use the manipulatives AFTER explaining the rules.” (DR, written reflection, March 20, 2017)
	“I learned to give instructions BEFORE giving the activity.” (AR, written reflections, February 5, 2017)
Clarity	“Next week I want to improve on better explanations and clearer instructions.” (AR, written reflections, February 10, 2017)
	“I need to figure out how to slow down with instructions and be thorough.” (DR, written reflections, January 27, 2017)
	"I did not give specific instructions and sped through, so I had to repeat directions to almost every student." (DR, written reflection, March 20, 2017)

Table continued

	“I want to give more positive praise … work on clear directions … keep students on task.” (DR, written reflection, February 3, 2017)
Flexibility	“I want to work on more flexibility with teaching.” (DR, written reflection, February 17, 2017)
Lesson Content	“Next time I want to have a (reading) lesson that correlates with writing.” (HK, written reflection, April 7, 2017)
Managing Behavior	“Next week I want to work on discipline and ways to manage the class other than calling their names.” (AR, written reflection, February 1, 2017)
	“I want to try to manage time for each lesson and to be firm with students.” (HK, written reflection, February 17, 2017)
Managing Time	“I noticed I sort of did a lot of talking … I was a little rushed. I think maybe we could have spent more time on certain ideas … these would have helped add to the lesson instead of only sticking to a script and rushing through it.” (DR, self-analysis, April 11, 2017)
	"The students completed the worksheet, but there was little time for reading during this lesson…I want to increase the reading time for the group," (DR, self-analysis, February 7, 2017)
Preparation	"I want to be more prepared for the phonics song because I had not memorized it." (HK, written reflection, January 20, 2017)
	“I want to be over-prepared to teach because kids finish early and sometimes start bothering others.” (AR, written reflection, January 22, 2017)
	I would like to have read the book to myself before I could have read with more feeling...next time I will not do a cold read.” (AR, written reflection, February 24, 2017)
	Next time, I would make more meaningful lessons… I would connect the story in real life and make them feel a very interesting story. (HK, self-analysis, March 6, 2017)
	“Next time I want to have a (reading) lesson that correlates with writing.” (HK, written reflection, April 7, 2017)
	"If a teacher doesn't know clearly what s/he is doing; children get confused." (HK, written reflection, February 10, 2017)

The ability to identify literacy practices was evident in the student teacher’s written reflections and self-analysis. The comments are straightforward and at times may appear simple; however, they do represent a burgeoning thoughtfulness that is necessary for adaptive practice. The hope is that over time, and with more experience and expert support, the reflections would convey more complexity.

Developing confidence. Participants revealed a sense of evolving confidence in their responses. Confidence in teaching and decision making is necessary for the development of adaptive practice. Self-analysis provided an opportunity to identify

feelings of confidence. An example comes from a second-grade classroom: "I had more confidence to teach my students this week" (AR, written reflections, January 22, 2017). Confidence in communication led this participant to write, "I am happy I have been able to communicate well and feel more in control; I actually feel like a teacher!" (DR, written reflection, February 10, 2017). Two additional examples from kindergarten show confidence in teaching: "I am fully capable of teaching a lesson" (DR, written reflection, February 24, 2017) and "I was most pleased that I was able to teach the kids a new concept and they grasped it; that was awesome" (DR, written reflection, February 17, 2017. Positive emotion came through when the student teachers identified times they felt confident. Table 4.3 lists excerpts related to confidence.

Table 4.3

Developing Confidence in Self as Identified in Written Reflections and Self-Analysis

Developing Confidence in Self as Identified in Written Reflections and Self-Analysis	
Developing confidence	Noticing and Naming on their Own
Confidence	"I am happy I have been able to communicate well and feel more in control. I actually feel like a teacher!" (DR, written reflection, February 10, 2017)
	"I was most pleased that I was able to teach the kids a new concept and they grasped it. That was awesome." (DR, written reflection, February 17, 2017)
	"I am fully capable of teaching a lesson." (DR, written reflection, February 24, 2017)
	"I had more confidence to teach my students this week." (AR, written reflections, January 22, 2017)

The three areas discussed above appeared most frequently in the written reflections and self-analysis, and they exemplify how the student teachers were noticing and naming on their own. The self-analysis and written reflections revealed how the student teachers were identifying literacy practices. The examples revealed their general

ability to talk about literacy lessons. A deeper understanding is necessary as the participants move into full-time teaching. Their ability to determine next steps is connected to their ability to assess their effectiveness. When a student teacher can set a goal, it involves either formal or informal assessment of the effectiveness of their current lesson. The excerpts show an emerging ability to think about effectiveness and then decide an action to take in the future. Confidence in one's own teaching can empower decision-making, and the examples of confidence were articulated through the self-analysis and written reflections. The instructional intervention provided the expectation for each participant to be analytical and reflective, those experiences serve to develop emerging adaptive practice.

Noticing and Naming with Peers

This section describes how the cohort was able to notice and name what took place within the literacy lessons of their peers. It also looks at the impact of a peer's analysis on another participant. A close look at peer-analysis and self-analysis for the same teaching episode provided a useful comparison. The comparison offered a view into how a student teacher's self-reflection and analysis differed from the analysis provided by their peers. In response to the research question, the comparison shows the ability to assess teaching (at least informally) and to identify at least some of the literacy practices taking place. The skills demonstrated in the comparison are the skills necessary for implementing adaptive practice. Figure 4.3 displays the topics covered in this section.

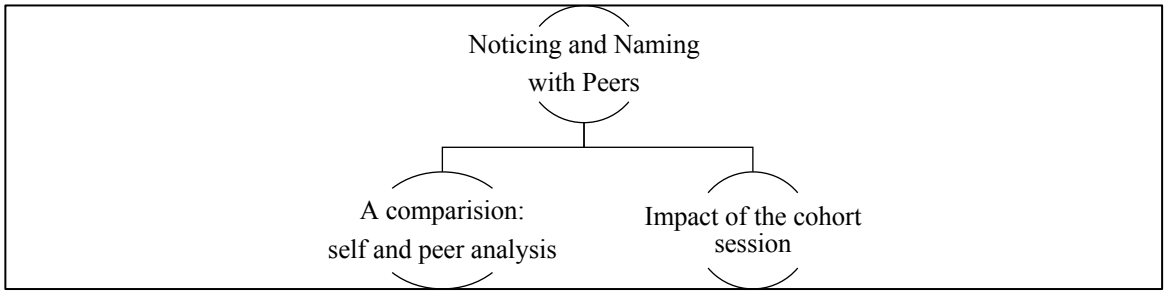


Figure 4.3 Noticing and naming: With peers

The instructional intervention established a protocol for videoing and transcribing literacy lessons. The first videotaping took place in the third week of the 14-week student teaching practicum. Each student teacher provided his/her analysis of their video and transcript of the lesson, and a peer was assigned commentary on the same teaching. During the bi-weekly cohort sessions, members reviewed some of the video lessons and transcripts. An analysis of peer comments revealed evidence of noticing and naming by the cohort members. The comments ranged from acknowledging teaching actions and identifying specific literacy practices to identifying problems with classroom management.

A comparison of self-analysis and peer analysis. A side-by-side comparison of the student teacher's self-analysis comments and the analyses of peers provided insight into what the participants noticed and named within their lessons and the lessons of their peers. An example was selected that illustrates the way the participants were thinking about literacy lessons. Four kindergarten students were seated around a teaching table for a guided reading lesson on the topic of frogs. The peer-analysis is compared here with the student teacher's self-analysis; each was completed independently. There were

similarities in what they each noticed and named in the lesson as well as differences. A careful look at the transcripts and comments provided insight into the participants' thinking. The subsequent tables show each interaction during the lesson listed separately, with a comparison by peers. The literacy terms used by the participants are highlighted and bolded in the tables. Table 4.4 displays the first comparison of the self- and peer-analysis.

All three analyses represented in Table 4.4 included comments about the role of vocabulary in the lesson. The student teacher (referred to in this section as the teacher) introduced new words at the start. She called the vocabulary words "sight words." Peer #1 noted that vocabulary development connected to background knowledge, and it helped students to decode words. Peer #2 indicated that vocabulary is helpful in developing comprehension. All three described the role of vocabulary in slightly different ways, and they all noted vocabulary instruction as a matter of importance.

Table 4.4

Noticing and Naming: Self-Analysis (SA) and Peer-Analysis (PA) in Kindergarten Guided Reading Lesson #1

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student teacher's Self-analysis	Peer Analysis #1	Peer Analysis #2
19 (transcript line number) T: "We are going to look at some vocabulary words…Let look at our words. OK, these are words you are going to see in your story so that when you see them, you will know what they mean."	"I was introducing **sight words** here."	"Reviewing **vocabulary** words before reading helps **build and activate background knowledge**. It also builds in success for the students while reading and **decoding** words."	"I liked how the teacher introduced **vocabulary** words that the students would encounter before reading the story to aid in their **comprehension."**

The next comments were related to asking the students a question (see Table 4.5). The teacher noted the purpose of the question was to determine her students' prior knowledge of tadpoles. Peer #1 did not comment on this section; however, Peer #2 noted that by asking a question the teacher was checking understanding. Both comments are related to comprehension.

Table 4.5

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #2

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
28 – 30 T: "Tadpoles, what are tadpoles?" G1: "When they hatch out of their eggs they are called tadpoles because they are baby frogs."	"I was trying to gather **prior knowledge** here and understand what they already know about the main topic of the book."		"The teacher ensured that every student was **participating** and **understood** what the word and image represented."

The third time the teacher made a note of her teaching actions she mentioned that showing pictures of the life cycle was used to help students "formulate meaning" (see Table 4.6). Peer #2 did not comment on the pictures but notes that the teacher is confirming a student response with, "Ok, there you go, good job."

Table 4.6

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #3

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
32 – 36 T: "Ok, there you go, good job. When the frog hatches they turn into tadpoles. (Shows pictures of the lifecycle of frog) We are going to read a little about that."	"Here I am showing them pictures of frogs, tadpoles, froglets, and eggs and they are, hopefully, using the words and pictures to **formulate meaning**. That is why I didn't tell them what is on the card. I wanted them to think."		"The teacher confirms the students' responses."

In the fourth comment, the teacher noticed that she had talked a lot and considered that it might have been too much teacher talk (see Table 4.7). In contrast, Peer #1 saw the teacher's talking as a way to develop more background knowledge of the topic and noted that it could aid in comprehension. Peer #2 saw the teacher talk as identifying the main idea of the story and setting a reading purpose.

Table 4.7

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #4

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
48 – 49 T: "So if we were to put them together (pictures with vocab words) we would have our eggs, our tadpoles, our froglet and then a frog. This is our cycle. This is what we are reading about today…"	"I'm doing a lot of the talking here ... Maybe I should have had them do a little bit more of the talking."	"The teacher is creating **background knowledge** for the students before reading. Background knowledge helps in **comprehending** the text rather than just **decoding** words."	"The teacher is **setting a purpose** for the reading activity by exposing them to the **main idea of their story.**"

As the lesson continued, the teacher noticed when a student corrected her (G1: "not egg, eggs!) and she viewed the correction as evidence that the student was listening carefully to the lesson and she could identify sounds (see Table 4.8). The teacher went on to ask the student to predict the story. She noted that this was intentional to help with comprehension. Peer #1 viewed the teacher's instruction to "look at the cover" as evidence that she was helping the students know what to expect in the story. Peer #2 noted that when the teacher said, "What do you think our story is about?" she was asking for a prediction. This was as an attempt on the part of the teacher to activate the students' prior knowledge about the topic.

Table 4.8

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #5

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
50 – 56 G1: "not egg, eggs!" T: "You are right, there is an S at the end… What I want you to do is to look at the cover. What do you think our story is about?"	"I love how she corrected me here because she was right, and this shows her attention, as well as, it progresses her learning about the **sounds and letter identification**. Here, I wanted them to **make predictions** about their learning to **increase comprehension** during reading."	"Students now know what to expect while reading."	"The teacher is asking the kids to make a **prediction** …I like how this **activates their prior knowledge** and also allows them to use the information they were discussing."

The teacher challenged the students to stretch out sounds in specific words (see Table 4.9). This is the first time in the analysis of this lesson that an adaptive teaching behavior is mentioned. The teacher noted that students were familiar with this activity.

She also stated that she was not initially planning to have the students stretch words but made that quick adaptation because she thought it was valuable to help with phonemic awareness. Peer #2 also noted that stretching words was a "great phonetic technique" and that it helped students to recognize sounds.

Table 4.9

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #6

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
76 – 81 T: "So if I say BATH, how do we stretch that out?" B-A-TH, Other words to stretch, ship, dance, cloud (*Stretched out several words and girls repeated words.)* Good job!	"The students understood from prior instruction what it meant to '**stretch' words .**.. this was an 'in the moment' adaptation. The literacy lesson connection was **phonemic awareness.**		"The use of "stretching" the words are a great **phonetic technique** and allows the teacher to assess who can **recognize the sound**s in each of the words."

The next example shows a portion of the lesson that both Peer #1 and Peer #2 noted as something of importance, but the teacher did not mention it (see Table 4.10). The title was located in an unusual place (at the bottom of the page), pointing out this feature was noted as helpful to the students. Peer #1 also stated that prompting students to use "pointer fingers" was helpful with letter/sound correspondence

Table 4.10

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #7

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
97-107 T: "Let's look at our title. Look, the title is at the bottom. Pointer fingers? Pointer fingers? We are going to read together. Ok, ready, pointer finger at the first word, reading together."		"Teacher tells the students the location of the title because it's at an unusual place. Now the students know that titles can be in different places." "Pointing with fingers helps the tracking of words and reinforces **letter/sound correspondence**."	"The teacher is quick to point out that the **print concept** is different with this text (title located at the bottom), then helps to set the pace for reading."

After having the students do a choral reading, the teacher wondered if choral reading was the best option (see Table 4.11). She considered the possibility of reading independently as a better choice. She also modeled a portion of the text to the students, showing expression and fluency. Peer #1 noted the effectiveness of modeling expressive reading. Peer #2 stated the role of affirming the students' use of new vocabulary.

Table 4.11

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #8

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
124 – 129 (Choral reading altogether and then teacher pauses the group.) T: How do we read that sentence? G1, can you read it for me?" (Teacher pauses and then models the sentence with expression.)	"We were reading altogether here, but I felt maybe this was a little bit elementary for this group too. I might have been able to listen to them read aloud separately just as well."	"During **choral reading**, all children are involved and engaged in the lesson. I like how the teacher models the right way to read and points out how the whole sentence must be read with **expression**."	"The teacher reaffirms the students' good work of reading the vocabulary before moving on to the next page."

The teacher emphasized the role of punctuation and showed how it gives the reader information about how to read the passage (see Table 4.12). Peer #2 also noted the modeling of the punctuation and praised the action.

Table 4.12

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #*9*

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
132 - 133 T: How does that read? There is an exclamation point at the end. Remember that exclamation point gives excitement to your sentence.	"Here I wanted the students to remember and recognize how to read a sentence with the right **punctuation** at the end such as an **exclamation mark**."		"The **punctuation** is emphasized. Great modeling!"

In the next excerpt, Peer #2 is the only participant to comment on the use of a question by the teacher (see Table 4.13). She noted that it was an excellent way to connect the story and to check for understanding.

Table 4.13

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #10

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
136-137 T: I have a question for you. Can you retell me each stage of the frog cycle? Where did we start?			"The teacher did a great job connecting the story and checking for their **comprehension**."

Each student teacher completed the analysis independently; however, all three participants commented on many similar parts of the lesson with some minor exceptions

(see Table 4.14). One noted difference occurred when the student teacher thought she was talking too much and the peers both noted that the teacher talk was a positive for the students. The comments revealed how each of the three participants described the literacy activity in the lesson. Positive teaching actions were identified in several of the excerpts. The self-assessment of the student teacher who presented the lesson identified needed improvement. The student teacher indicated four areas for potential improvement. She noted how she had talked too much, ("I did a lot of talking"), she felt rushed ("I was a little rushed"), she thought stretching out more words would have been useful, and she needed to improvise more often ("instead of sticking with the script"). The peer analyses included a very positive general assessment of the lesson. Peer #1 was very brief, and she stated, "it was an awesome lesson." Peer #2 noted specific positive parts of the lesson. She mentioned the following affirmative actions: setting a reading purpose, managing of student behavior, checking for understanding, and modeling expressive reading. Both of the peers' analyses of the lesson were positive, and they served as validation to the teacher. Reading the peer-analyses had a positive impact on the student teacher (cohort session field notes).

Table 4.14

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #11

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
Assessment of the teaching in general	"I noticed I sort of did a lot of talking and that via my response, **I was a little rushed**. I think maybe we could have spent more time on certain ideas, such as the stretching strategy… Methods like these would have helped add to the lesson **instead of sticking to script and rushing through it**."	"It was an awesome lesson."	"I feel the teacher did a **great job setting the purpose for reading**, **managing student behavior**, and classroom interruptions, **checking for comprehension**, and ensuring that the students were inflecting the proper tone when **reading with expressiveness**."

At the conclusion of the analyses, both peers outlined some specific next steps for future lessons (see Table 4.15). Their suggestions were clear and constructive. The student teacher also identified a next step goal of her own. She noticed that one of the students needed more opportunity to respond to the lesson. Peer #1 suggested a strategy for increasing the reading time for each student. Silent reading of the entire story following choral reading. Peer #2 suggested reviewing words that had posed a problem for the students. She also encouraged extra time in the lesson for students to reread the story as well as allowing students to solve difficult words on their own before being told the word.

Table 4.15

Noticing and Naming: SA and PA in Kindergarten Guided Reading Lesson #12

Noticing and Naming: Self-analysis and peer analysis in a kindergarten guided reading lesson			
Excerpt	Student Teacher	Peer Analysis #1	Peer Analysis #2
Next Steps:	"I barely got any responses from G1 and had to get her attention a few times, so I think that maybe **I could have included her more** by asking her questions and having her respond more often."	"Some things can be added, for example, having students **read the story silently on their own** after choral reading. You can ask all students to **track their words while they read** so you know where they're at and how they're doing. For students who are not advanced readers, **you could point out the pattern in the text, so they feel more successful** while reading."	"Focus on reviewing th**e words or sentences** that trip up the students during choral reading. Re**read before** moving forward. Additionally, when students have a difficult word, **have them try it independently** … before just saying the word."

The comparison of self-analysis with the analysis of two independent peers provided insight into the way each student teacher noticed and named the teaching actions with the same lesson. The three individuals shared similar views on what occurred during the lesson. They all revealed an ability to talk about the literacy practices, and they identified examples of sound literacy theory in their analyses. The comparison shows an ability to connect theory to practice in their analyses.

In looking across all of the written peer analyses, the participants did not specifically talk about adaptive practice except for one mention. What is clear is that all participants were noticing what took place within a lesson, and they were naming the

value of specific literacy practices, event though some of their observations are somewhat general. The analyses do show the thinking taking place while analyzing a lesson. A vital aspect of the instructional intervention was the development of reflective practice. All participants engaged in reflection, either for their teaching or their peers' teaching, and mentioned it during cohort sessions (cohort session notes). The analyses demonstrated intentional and thoughtful reflection. The ability to identify strengths in a lesson and then make some general recommendations for improvement showed the ability to notice and name. Reflective practice appears to support the development of emerging adaptive practice.

Impact of the cohort session. The cohort sessions were held regularly throughout the practicum. The activities of the cohort session served to facilitate discussion and analysis. Some of the meetings included group analysis of a teaching video and transcript. The participants were very positive and encouraging to each other during the cohort sessions. The cohort session discussions and peer analyses, as noted in the field notes recorded by the researcher, had a two-fold benefit. First, the participants stated how analyzing their peer's teaching during cohort sessions helped to raise their awareness on their own teaching. Second, those receiving the feedback articulated an appreciation for the validation they received from their peers. They indicated hearing suggestions and "next steps" from their peers as valid and helpful. Additionally, they agreed to give the recommendations a try in their future teaching (cohort session field notes).

Excerpts from the Google survey, completed on May 3, 2017, highlight the impact of the cohort sessions discussions. One participant stated, "Being able to reflect

on teaching, evaluating our instructions and seeing what our peers noticed provided a different viewpoint." Another noted, "I loved the reflections, being able to hear the honest mistakes of others and how they found ways to turn those situations into a moment of growth and improvement." A third participant mentioned how the cohort sessions helped her, "I could see my strengths and weaknesses in student teaching." A final examples states, "I was able to improve much from the feedback of my peers (during cohort sessions)." The participants responses reveal an appreciation for become more aware of their own teaching through the comments (noticing and naming) of their peers.

Noticing and Naming with an Expert

The final section under noticing and naming identifies the role of expert support in the development of adaptive practice in student teachers (see Figure 4.4). The first segment of this theme looks closely at three student teachers and their interactions with an expert. The expert, in this case, is the researcher and the interactions take place after the researcher had observed each of the three student teachers deliver a literacy lesson. The purpose of the following examples is to show the reflective process and the development of thoughtful analysis through interaction with the researcher also considered the expert in this context. A comparison of the three student teachers revealed the similarities and differences in their development through their interaction with the researcher.

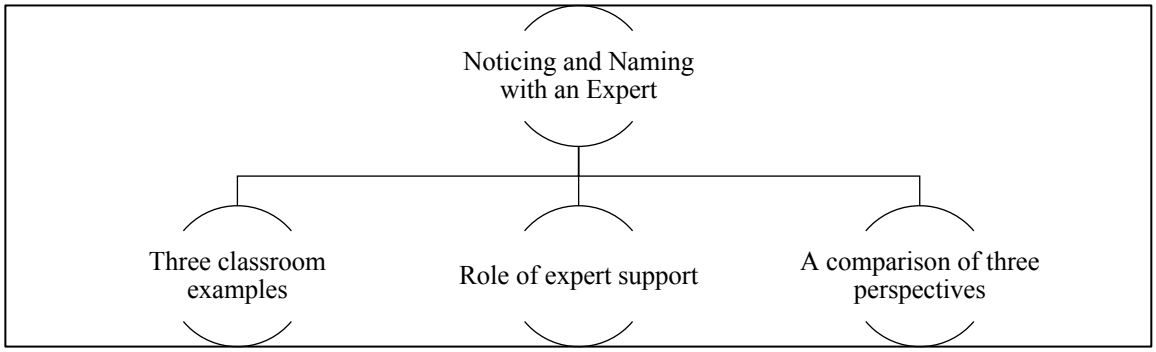


Figure 4.4 Noticing and naming: With an expert

A feature of the instructional intervention included a debriefing between the student teacher and the researcher after each teaching observation. Debriefings often took place shortly after a teaching observation, usually on the same day or within a day. Additionally, after viewing the video and analyzing the teaching transcript, each participant met with the researcher for a more in-depth discussion of selected observations. The debriefing process provided a structured approach to viewing, discussing and analyzing a lesson, it also promoted rich conversations around individual experiences. A comparison of a student teacher self-analysis to the researcher's field notes, transcripts from debriefings, and exit interviews demonstrates the developing professional dispositions facilitated through conversations and debriefing with the researcher.

The nature of writing a reflection or self-analysis is a solitary experience. Debriefing with others provided an opportunity for a dialogue that has the potential to challenge or expand the thinking around a teaching episode. The strength of this instructional intervention was to offer a range of thoughtful experiences to promote

individual and collaborative reflection. An intentional effort was made to provide an open conversation prompted by open-ended questions between the student teacher and researcher during post-observation interviews. The goal was to promote self-awareness and discovery for the student teacher with the intention of fostering adaptive ways of thinking. The results of this section show the benefits of expert support.

The six participants had multiple conversations with the researcher individually as well as in a group with the cohort. Each participant was willing to talk about his/her teaching, and they each sought ways to improve their effectiveness. Initially, they most often cited that the lesson “went well," and they were able to identify aspects of the teaching they liked. Their written reflections and self-analysis documented their thoughts. Extended conversations between the student teacher and researcher occurred when the lesson could be evaluated together, by viewing the video and the transcript in a meeting back on the university campus. The extended conversations were often a catalyst for the participant to expand the way he or she described the effectiveness of the lesson. These conversations proved to be crucial in developing dispositions of adaptive practice.

Three classroom examples. Three examples are used to show the kinds of the interactions that took place between the participants and the researcher during in-depth conversations and analyses of specific teaching episodes. These three examples are viewed individually; however, their significance is within the context of all cohort member experiences.

Angela (AR). The first example is from a group literacy lesson that took place in late spring in a kindergarten classroom. I observed and videotaped the experience. The

class had 20 students, 10 students were out for recess while the remaining ten students gathered on the teaching rug for a literacy lesson. The student teacher, AR, followed a pre-established format and lesson plan that was created by the mentor teacher. It involved reviewing alphabet sounds with corresponding sign language, listening for syllables, supplying missing letter sounds, and naming letters in words. The lesson lasted close to 20 minutes; much of the teaching involved calling on children to respond individually to word cards or sentences and to identify sounds or syllables. The day following the lesson the student teacher and researcher met to debrief. The first impressions provided by the student teacher stated the experience "went ok, not an outstanding lesson but ok" (field notes, March 13, 2017).

We viewed the video together, and AR was surprised to see what was going on during the lesson that she had not previously noticed. During her small group instruction, she had held a small whiteboard and showed words to the group and would call on one student at a time to respond. She moved around the group to interact with each student individually. While one student was answering, the other nine became increasingly restless throughout the lesson. At one point, two boys were playfully wrestling on the floor at the outside of the group for at least two minutes. Viewing the video was the first time AR realized the wrestling had taken place. She was embarrassed that she had not noticed it while she was teaching. She noted her intent focus on the child directly in front of her. She was very conflicted in viewing the video and talking about the lesson. She had followed the lesson plan of the mentor teacher and implemented it carefully. She had even felt the lesson was "ok." She was aware of students getting very restless but had not

realized the level of disconnect. She recognized an issue with her management of the group. She also realized that the lesson was very repetitive and very easy for the students. The students had been doing similar types of activities for several weeks (if not months), and they had already mastered identifying sounds and syllables. The entire literacy lesson was listening for sounds, identifying sounds, repeating sounds, and there was no new challenge or any meaningful literacy activity for the students. Her initial comments from her written reflection stated the following:

> *What went well in the lesson?*
>
> "Students had a pencil for tapping out syllables. They liked having an object to tap out syllables."
>
> *What needed improvement?*
>
> "I could have expanded the lesson to more than just tapping out a few words." (AR, written reflection April 11, 2017)

Upon review, AR identified that a significant adaptation to the structure of the lesson needed to take place. Initially, her brief response about improving the lesson did not address significant problems. She recognized the children were very bored, and she needed to be more aware of the entire group and position herself differently to be able to see everyone at once. She had not considered why they were having trouble prior to viewing the video. After analyzing the lesson, with the help of the researcher, she determined the lesson format and content had impacted the student behavior. She stated the following after debriefing with the researcher:

> Now when I think back on it, I think most of the kids did not see why what we were doing in the lesson was useful, because we never really got to practice it. The lesson was “let's do this activity on phonics," then “let's do a writing activity and then go to recess.” There was no time for them to actually practice what they just learned in a meaningful literacy lesson. It was like just a game, it wasn't useful, and there was no real-life connection. (Field notes transcription, April 13, 2017)

In comparing her initial written reflections to the in-depth discussion with the researcher, it was clear that the student teacher had expanded her thinking. She moved from a superficial analysis of her lesson to a deeper understanding of the repetitive nature of the lesson. Minimal student involvement had resulted in distracted and disinterested students. Although the student teacher had been frustrated with her teaching, she had not been aware of why it had not worked well. She did not know how to improve her lesson on her own. When she sat down with me, she was relieved to get some help and to have an honest discussion about the problems with the lesson. After the conversation, she was able to provide ideas for future actions. Viewing the video and debriefing with the researcher proved to be helpful in unpacking the lesson and beginning to think about setting goals.

Initially, she thought the problems in the lesson were only behavioral. She first believed having the students repeat alphabet sounds was good literacy practice, but, after thoughtful review, she changed her mind. She realized she had not assessed the students’ knowledge of the alphabet and most likely they all knew it well. Her lesson did not

include listening to stories, reading stories on their own, or other literacy experiences. She stated that the process of debriefing with the researcher provided her with insight and ideas for ways to improve the lesson (field notes, April 13, 2017).

Upon viewing the video, she also noticed how one of the students had left the group during the lesson to go to his desk to pick up a small booklet that he had been reading. AR told him to put it away and come back and sit with the group. An excerpt from the debriefing transcript reveals what took place.

> Near the end of the lesson (about minute 16), one boy left the group and went to his desk to pick up a paper booklet he had completed in science class. It had some easy sentences across several pages, and he wanted to read it. AR asked him to put the booklet back and come back to sit down. (Field notes, April 13, 2017)

In the debriefing session, AR recognized the irony of this situation when she realized that a disengaged student was seeking something to read and she prevented him from reading. Instead of allowing him to read quietly, she required him to sit and listen while others identified letters and sounds. This was a powerful revelation for AR, and it prompted a conversation on what adaptations needed to take place in the future, as recorded in this debriefing excerpt:

> We (researcher and student teacher) talked about having some simple books available for children to read while she was working with one child at a time. Maybe everyone could have brought their booklets to practice reading while they waited their turn with her. AR also wanted to consider revamping the entire lesson and not doing the alphabet recitation or the writing on the whiteboard at

> all, but instead conduct small guided reading groups and give children independent literacy activities related to their guided reading to do at their table while they were on their own. (Field notes, April 13, 2017)

It was a transformational moment for AR when she was able to state the kind of literacy lesson that she desired to create. She was able to articulate what she viewed as essential literacy teaching. This discussion raised other concerns about a significant underlying issue with the lesson. The student teacher felt constrained to follow the mentor teacher's plans, even if the methods proved to be ineffective. The mentor teacher's expectations limited the student teacher's ability to adapt her lesson. Further discussion on this topic is covered in the section on negotiating challenges.

Holly (HK). A second example comes from a first-grade reading lesson from March 2017. I observed and videotaped language arts instruction. The student teacher, HK, called three first-grade boys to the teaching table for a reading lesson. She followed a lesson plan that was provided in the teacher's edition of the reading textbook. The reading group began by repeating easy rhyming words (pig, wig, etc.), and time was spent reading and reciting the rhyming words. Immediately, after the rhyming activity, the three students were instructed to begin reading. The rhyming words were an isolated activity that did not relate to the story. They took turns reading around the table, with each boy taking turns, reading one page at a time.

Immediately following the lesson, the researcher and HK had a short debriefing. The field notes (March 22, 2017) revealed the contents of the conversation. HK had stated that she thought the lesson "went well" and the "boys read well." She did not

recognize any significant concerns except that she mentioned that she should have allowed more time for a student to figure out a word on two occasions. A portion of the conversation is recorded here. (R: Researcher; HK: Student teacher)

R: How do you know that students need to practice rhyming or that they are ready to move on from the rhyming words?

HK: I am just following the book (teacher's edition).

HK did not recognize a need to assess the use of time spent on easy rhyming words. She was following the lesson plan in the teacher's edition that justified her teaching actions.

R: When students encounter a problem with a word or sound how do you help them solve it?

HK: I usually tell them what it is.

HK did not consider that value of allowing students to problem solve as they were reading. Her emphasis on getting through the story quickly prevented her from understanding her readers.

R: Is there a way that you can allow everyone at the table to read the entire story? Consider the amount of reading for each child when they are reading round-robin style.

HK: They need more practice, but I feel rushed, so I hurry through the lesson.

HK was focused on finishing the lesson and had not considered the short amount of text each student was reading in the round-robin reading format. At the conclusion of the brief meeting, HK agreed to watch her teaching video and provide a self-analysis of the transcription within two days of the observation. Following the completion of her self-

analysis, she met with the researcher again for another conversation about this lesson. The follow-up provided an opportunity for further analysis and collaboration with the researcher.

In a follow-up conversation, HK and the researcher reviewed the self-analysis (March 22, 2017). It consisted mostly of comments that described what she was doing in the lesson. For example, HK wrote “I asked for rhyming words from the book,” “I prepared extra rhyming cards to practice,” “I praised to encourage them,” and “I asked them to find a clue from the picture.” Two comments showed that she realized she had rushed to correct student errors: “I read the word to him, but I should have given him more time to read and try again” and “The kid was hesitating to read the word, so I told him the word.” In additional comments she wrote, “I should wait for kids to read by themselves and be patient.” The general nature of her comments revealed that she noticed that some of the students needed more time to figure out words, but she considered the rest of the lesson to be effective.

After allowing HK to describe what she noticed in her teaching, the researcher facilitated a conversation about the lesson. HK was asked if the simple rhyming activity was appropriate for first-grade students in the middle of the spring semester. She mentioned that it was "just in the book," so she did the activity. Another observation was a description of the transition from the rhyming activity directly to reading the story aloud. HK did not take time to mention any background information about the story, set a reading purpose, or introduce the characters. She had not considered that it might be helpful to introduce the story to the students to enhance their understanding.

A review of the teaching transcript showed that as the students read aloud, HK had corrected their miscues 13 times during the five-minute reading of the story. The first boy received four corrections, the second boy received one, and the third boy was corrected eight times. The corrections were provided instantly without any prompting to try again, take some extra time, or use some other problem-solving approach. HK was very surprised when she realized she had made so many corrections. A final observation related to time spent reading; each boy had very little reading time with the round-robin format (Field notes, 3-22-17).

HK shifted from feeling like the lesson had gone “very well” to realizing areas for improvement and adaptation. She was diligent and eager to do her best; she transcribed and analyzed her lesson in earnest; however, she did not recognize some of the problem areas in her lesson on her own. Collaboration with the researcher served to develop her ability to notice and name literacy practices. At the conclusion of the conversation, she was looking for ways to adapt her guided reading lessons to make them more meaningful. She described the debriefing session, "It was eye-opening when you (researcher) explained things to me” (field notes, 5-2-17).

In collaboration with the researcher, HK outlined four steps that she wanted to pursue to make her reading lessons more effective. Her *next steps* as noted in the researcher’s field notes included:

1. Set a reading purpose before reading
2. Allow every student to read the entire story on their own

3. Allow time for students to figure out unknown words and employ problem-solving strategies
4. Assess the need for time spent on easy rhyming words, previously mastered

In the case of HK, she was very open to learning and genuinely tried her best to learn as much as possible in her student teaching. She was developing analysis skills but still needed the support of *a more knowledgeable other* to help her think through the reading lesson.

Landon (LS). The third example comes from the only male teacher in the cohort. He conducted a reading lesson with a group of 13 fifth and sixth-grade students. I observed and videotaped the lesson. The students were reading a factual book about dinosaurs and had 15 minutes to read the selected chapter. LS was eager to make the reading engaging, so he introduced a word counting activity to the students. He challenged the students to tally how many times they read or heard the words *dinosaur, scientist,* and *bones*. He passed out sticky notes to the students and answered several questions about which words they should tally ("Can I tally words from the title?" "How about hipbone, does that count for bones?") (Lesson transcript, March 6, 2017). The students were eager to get as many tally marks as possible and to win a prize. The lesson began with LS introducing the tally game for a total of three minutes and thirty seconds. LS spent another 45 seconds reviewing the previous reading about dinosaurs. He started the class, asking for a volunteer to begin reading aloud, using a round-robin format.

As the students took turns reading, they began to write on their sticky notes and tallied the words they heard. The students were quiet during the reading, many with their head buried in the book, looking ahead for the three words to mark on their sticky note. After completing the chapter, LS asked the students to tell how many words they had tallied after the reading, and he offered a prize to all students who had the correct number of tallies. The students were instructed to leave their sticky notes on their desks at the conclusion of the lesson and go to physical education class.

At the close of the lesson, LS had a free period, so he met with the researcher to debrief. When asked what he thought of the teaching, he indicated that it was a bit rushed, but he was, "moderately content with the results." LS was very eager to try the tally game; he stated, “I wanted to do something different other than standard reading, so I thought this was a good activity to get them motivated.”

When asked to cite examples of evidence of student learning, he stated, “Although not as much learning occurred as I hoped would happen, there were some instances. I had several students ask questions after we read, they were curious about dinosaurs…some of the students were eager to learn and wanted to keep reading” (debriefing transcript, March 6, 2017). We agreed to meet the next day to have an extended debriefing about the lesson.

We met the following day after the transcript was complete, and we watched the video together and reviewed the transcript. In reflecting on the lesson, LS remembered an instance where some students seemed to be losing interest. He stated, “I noticed that students become more interested in actually counting the words than in what is going on

(in the book). I had to bring them back to the main topic" (debriefing notes). He went on to say, "I probably should have made the chapter more of the focus of the lesson, not the game. Students took the game more seriously than the book." He also noticed that as the lesson went on, some students were only looking for words to write on their tally sheets and were not following along during the chapter read aloud. He stated, "A problem I encountered was that not a lot of the students were interested in the book, perhaps I could have made it more interesting and relevant to them" (debriefing notes).

In viewing the video, LS noticed that one of the boys sitting to the side of the class was quietly playing for the last two minutes of the reading. The student had stopped reading and was playing with his sticky note. He placed the sticky note on his forehead, moved it around on his face, removed his glasses, then put it back on his forehead and then was doing a chair dance, moving his arms and legs all around. He eventually removed the sticky note and finally put it on the desk. The student had been silent throughout his activities. LS was very surprised by the student's actions when he viewed the video. He had not noticed the student being off task, despite the fact that this was a small group of students, and he was sitting in a such a way to easily see everyone. LS realized he had been buried in his copy of the book as he listened to students read, instead of occasionally scanning the room. LS mentioned that "even though most of the students were reading, being aware of what was going would have been helpful" (debriefing transcript).

A more significant part of the debriefing was a discussion about the literacy goals for the lesson. LS stated that he wanted the students to "have fun" so he added the word

tally game because he remembered doing the activity at church as a child. He did not identify any areas of literacy that he hoped to develop with this lesson. His reading purpose for the chapter had been tallying words instead of thinking deeply about the topic. He did not ask any follow-up questions at the end of the reading. The transcript showed which students read aloud and for how long. He was surprised that in the 15-minute lesson only 6 minutes were spent on reading. Due to the round-robin reading format, some students did not read at all, and others only read for a short time. The time spent on reading per student ranged from 22 seconds to 80 seconds. Table 4.16 shows how much time each student read during the lesson.

Table 4.16

5th and 6th Grade Reading Lesson: Time Spent Reading Aloud

5th/6th Grade Reading Lesson Actual time spent on reading by individual students G/B: girl/boy students
G1: 4:18 – 4:57 = 39 secs
B1: 5:30 – 6:24 = 54 secs
B2: 7:14 – 7:36 = 22 secs
B3: 7:55 – 8:22 = 27 secs
B4: 8:32 – 9:26 = 66 secs
B5: 9:36 – 10:22 = 46 secs
B6: 10:40 – 12:00 = 80 secs

LS was very surprised at how little reading took place overall and for each student. He was also concerned that not everyone had a chance to read. While discussing this lesson with the researcher, LS realized he had missed some significant aspects of the teaching.

The debriefing ended with a discussion about how to increase student engagement, comprehension, and reading time. LS was not satisfied with his lesson after viewing the video, reading the transcript, and debriefing with the researcher. He stated how he needed to adapt his teaching during the next lesson. He said that his *next step goals* included:

1. Increase his awareness of the group behavior
2. Develop a stronger reading lesson to include
    a. setting a reading purpose with the students
    b. focusing on comprehension
    c. allowing every student to read the entire text independently or with a partner.
3. Incorporate meaningful experiences centered around reading instead of an unrelated game and for students to develop skills while enjoying reading. (Debriefing notes, March 6, 2017)

LS stated that debriefing with the researcher helped him to think differently about the lesson and to recognize where he needed to make changes. Even though the students were cooperative, the class was quiet, and the book was read aloud, LS realized the lesson was not effective in developing literacy skills or extending content knowledge about dinosaurs (debriefing notes, March 6, 2017).

LS recognized on his own that the lesson did not go as well as he hoped, however, he needed the guidance of a *more knowledgeable other* to help him recognize how to improve his lesson. He was initially focused on allowing the children to have fun instead

of developing their reading skill and knowledge of dinosaurs. Other student teachers have expressed a similar thought regarding creating "fun" lessons. At times the desire to have fun superseded deep thought about literacy practices. In debriefing with HK, this came up on several occasions when she stated "I want to make guided reading more fun" and "I want to make hands-on activities and make reading more fun for kids" (written reflections, January, February 2017). In debriefing with LS, he realized that enjoyment could be achieved by reading interesting material. We also talked about more effective ways to use sticky notes, such as noting key ideas, talking back to the author, or marking areas for later discussion. I challenged him to consider that every reading assignment does not need an activity; reading, questioning, and sharing with peers provide meaningful interaction with the text and promotes comprehension. In this case, LS was not sure how to adapt his lesson to make it more effective until we reviewed the lesson together. The debriefing with the researcher was integral to extending LS's reflection on and his thinking about how to adapt his teaching.

Role of expert support. The three scenarios highlight the role of expert support in developing thoughtful practice, a vital feature of this instructional intervention. The examples of Angela, Holly, and Landon reveal three student teachers implementing lessons that appeared to be generally successful on the surface in their initial self-analysis. None of them described their lesson as ineffective; however, they did know there was room for improvement. Their mentor teachers had not objected to their lessons, and, in all three cases, the mentors did not intervene to correct or modify their teaching.

They had not received any negative feedback from their mentors on these lessons. The lack of input from the mentors implied the teaching was acceptable.

The need for expert support is evident in these three examples. A lack of experience in developing and implementing literacy lessons was a limitation for the student teachers in their ability to assess their teaching. Each of the participants expressed surprise when they had failed to notice significant student behavioral problems and weaknesses in their literacy teaching. It had been difficult to recognize some of the problems or know how to improve the lesson until they sat with the researcher to talk and think deeply about their literacy teaching. The careful review of each experience and the collaboration between student teacher and researcher facilitated meaningful analysis and goal setting. The analysis of these three lessons connects to the research question. The instructional intervention included debriefing and analysis with the researcher. The expert support provided by the researcher proved useful in promoting the kind of thoughtful reflection that leads to making adaptations in teaching.

A comparison of three perspectives. Noticing and naming is exemplified in a comparison of one teaching episode from three perspectives: 1) student teacher conducting the lesson, 2) peer reviewer, and 3) the researcher. The three perspectives highlight the richness that is gained through collaboration and debriefing. Selected excerpts from the self-analysis, peer-analysis, and researcher comments on the same literacy lesson listed side-by-side provide a comparison in Table 4.17. A detailed explanation of the comparison is provided below.

Table 4.17

Comparing One Lesson from Three Perspectives

A Comparison: Self-Analysis, Peer-Analysis and Researcher Notes on a 2nd Grade Guided Reading Lesson			
Teaching Context: Seven second-grade students gathered around a teaching table for a guided reading lesson. The lesson included reading a story about road signs. **Lesson Duration:** 8 minutes			
On their own – a student teacher's written reflection after the lesson	**Self-Analysis of video and transcript of a guided reading lesson**	**Peer-Analysis of video**	**Researcher's observational and debriefing notes**
Self-reflection "Students really liked the props or the signs that I made. When they were reading about the different types of signs they would raise their signs." "I am really pleased with my guided reading lesson because my students really understood the props." (written reflection, February 9, 2017)	Self-analysis "I think it is really important that students use background knowledge about what they know about the subject. Therefore, I asked the students what they knew about signals." "Next time I should be more prepared. When I asked questions, I needed to be more specific and clear about what I'm asking." "I really like that my students were responding to the questions I was asking." "I paused when asking questions to get my students thinking." "After calculating (how many times each student spoke during the guided reading lesson), I realized that B1 (Boy 1) responded more than everyone else. G1 & G3 (Girl 2 & 3) rarely spoke. I think next time I need to encourage other students to answer questions." (self-analysis, February 10, 2017)	Comments from a peer: "You asked many questions to activate background knowledge. The students were engaged." "I noticed that most of the time one boy dominated the conversation. The teacher also spent a lot of time talking." "Only a couple of kids got to read. The teacher picked them." (peer-analysis, February 10, 2017)	Researcher: "The student teacher (VT) stated that she liked the way the lesson flowed. The students enjoyed the small signs she had created. VT thought that every student had read. She did wonder about one boy because he was answering a lot. She was a little concerned some of the girls were not as involved as they could have been. During the lesson, she emphasized the content of the story; however, she did not address any specific reading behaviors." "VT used a round robin reading approach. Some of the students engaged during the reading while others looked around and did not track with the lesson. VT did not appear to notice those students who were not reading." "Reading around the table did not provide an opportunity for every child to read. VT did not think about this or comment on this during the post-observation debriefing." (field Notes, February 9, 2017)

Written reflection by a student teacher. The written reflection by the female student teacher was brief and general and consisted of positive comments about the lesson. Her remarks focused on student engagement: "I am really pleased with my guided reading lesson, my students really understood the props (miniature signs)" (written reflection, February 9, 2017). She did not make any comments about the student's reading skills, abilities, or problem-solving. She felt accomplished and satisfied with her guided reading lesson.

Self-analysis by a student teacher. The video and transcript self-analysis from February 10, 2017 yielded more comments than the initial written reflection. The student teacher was pleased that she had recognized the importance of background knowledge in promoting comprehension of the text. She stated, “I think it is important that students use background knowledge." Another excerpt stated, "Next time, I should be more prepared. When I asked questions, I needed to be more specific and clear about what I was asking." She was intentional about waiting for student responses after asking questions, “I paused when asking questions to get my students thinking." She noticed the inequity of student participation, “After calculating the turn taking, I realized that Boy 1 (B1) responded more than everyone else, and Girl 2 and Girl 3 (G2 & G3) each responded only once. The turn-taking tally was surprising with B1 responding 20 times during the guided reading lesson, and the four girls responded a total of nine times. G1 spoke three times, G2 and G3, each spoke once, and G4 spoke four times. The other boy, B2, spoke five times. The student teacher did not notice or mention her own responses, totaling 29 times in the eight-minute lesson. After considering the student turn taking tally, she stated, "I think

next time I need to encourage other students to answer questions" (self-analysis, February 10, 2017).

The self-analysis did not yield any comments specifically about the reading of the text. The student teacher had assumed that every child had taken a turn to read; however, the peer-analysis and the researcher's comments both revealed that only some of the children had read aloud.

Peer-analysis. The peer-analysis was similar to the self-analysis in the recognition of the use of questions to activate background knowledge. "You asked many questions to activate background knowledge. The students were engaged" (peer-analysis, February 10, 2017). The peer also noted the conversation patterns that emerged when she stated, "I noticed that most of the time one boy dominated the conversation. The teacher also spent a lot of time talking" (peer-analysis, February 10, 2017). Noticing the quantity of teacher talk was insightful. The amount of teacher talk was likely a factor in "only a couple of kids got to read" (peer-analysis, February 10, 2017). The self-analysis had not included any comments on the teacher's amount of talking. The peer-analysis also noted that the student teacher selected the children who read aloud. The peer stated, "Only a couple of kids got to read. They were picked by the teacher" (peer-analysis, February 10, 2017).

Researcher's response. The researcher's comments reflected the conversation between the researcher and the student teacher during a post-observation debriefing. The researcher had observed some of the children reading aloud, while others did not read at all. While students were reading around the table, some were engaged and others were

quietly looking around, not following the text. The student teacher had not noticed how many students were reading or their level of engagement in the story. The researcher noted how the student teacher had emphasized the use of the small props (miniature road signs) she had created for the story. The student teacher was pleased the students enjoyed the small props, and she was very enthusiastic about talking about making the props. It was the emphasis of her self-assessment to the researcher. The experience did not include the development of any reading strategies or skills. While debriefing, the student teacher mentioned that she had not thought about talking with students about reading strategies; she focused on seeing the students enjoy the props and name the signs.

The student teacher spoke about preparing for the lesson by making the small props for the students, and she expressed excitement about teaching the lesson. She engaged with the students, making eye contact with each one and speaking to them directly. She was not aware of the amount of time she spent talking until she read the comments in the peer analysis about teacher talk time. She was also unaware that some of the children did not have a turn to read. She was aware that one boy was dominating the responses but was very surprised by the number of times the boy had spoken and how few times two of the girls had talked. She would have missed noticing the response patterns of the students without the video and transcript analysis. Additionally, she had not considered other ways to have the students read so that everyone could read the entire text. In conversation with the researcher, she expressed a desire to make a change in the next lesson by having all of the children reading the whole story, either silently or chorally (field notes, February 9, 2017).

She noted the teaching was successful in several ways: it flowed smoothly, it followed the lesson plan, it finished in the allotted time, the students enjoyed the experience, and they were engaged. Her assessment of the lesson was accurate on many levels; however, she was unable to take her assessment any deeper without the scaffolding of the researcher. She had not considered the appropriateness of the text and assumed it was right for all students. She could not assess fluency, prosody, or pronunciation for those students who did not have time to read aloud. She had not considered the minimal amount of actual reading by each student when she used the round-robin approach. She needed a *more knowledgeable other* to guide her in analyzing the reading success of the students.

A comparison of the analysis and observation of the three perspectives highlight the importance of collaboration and input from others. The peer and the researcher noticed aspects of the lesson unnoticed by the student teacher. The researcher was able to facilitate a more in-depth discussion about the literacy lesson than either the student teacher or the peer. The expertise and experience of the researcher were needed to ask clarifying questions and prompt a closer examination of the lesson. The instructional intervention provided the structured experiences that supported the development reflective and adaptive practice for this student teacher. The student teacher featured in the comparison exemplifies similar experiences with all of the cohort members and signifies the potential for growth through the instructional intervention.

Adaptation in Teaching

The recurring instances of adaptation in teaching as self-reported by the participants emerged as a significant theme in the data. The instructional intervention provided opportunities for the participants to think about their teaching and identify examples of adapting a lesson. The researcher's recursive process of reading and rereading the written reflections, self-analysis, debriefing field notes, and cohort session discussion notes informed the thematic analysis. The exit interviews and the Google surveys provided additional evidence of self-reported perceptions of adaptive practice. Figure 4.5 depicts the three main sub-themes under adaptive practice: adaptations before, during, and after a lesson.

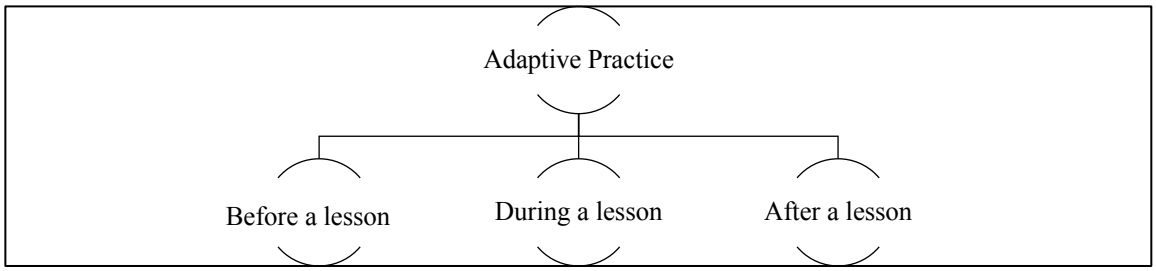


Figure 4.5 Adaptive practice

Each participant wrote about or discussed specific times they made a change in a lesson that varied from their original plan. The self-selected examples revealed emerging adaptive practice. The nature of self-reporting has limitations in that participants may deem an action as adaptive, and, upon review, may recognize it as a minor teaching or management adjustment versus an adaptation to lesson content or implementation. The

examples ranged from small changes that required minimal thought or effort to more substantial and considerably thoughtful adaptations informed by student needs.

The pre-service student teacher practicum is a time for trial and error. Decision-making and teaching abilities evolve during student teaching experiences, and initial attempts at adaptive teaching ranged from non-existent to more advanced. Identifying instances of adaptation or missed opportunities for adaptations required some knowledge and expertise, a process still developing in pre-service teachers. A primary goal of the cohort sessions included readings, discussions, analysis, and modeling to develop the concepts and dispositions of adaptive practice. The data provide examples of the participants' emerging understanding of adaptive practice.

Participants reported the frequency and timing of making adaptations during literacy lessons in a typical week. They also noted if the adaptations occurred before, during, or after a literacy lesson. Two of the participants reported adaptive teaching actions occurring about twice every week. The first participant indicated her adaptations usually occurred *before* or *during* instruction; the second participant reported making adaptations *during* or *after* teaching. Three of the participants rated themselves as adapting a lesson at least three times a week. One noticed that she made adjustments most often *during* a lesson. A second individual claimed that most of his adaptations occurred *between* presentations of the same lesson due to the fact he was teaching the same lesson twice a day. He discovered ways to improve after teaching it once. The second time around, he implemented changes before teaching the same lesson to another group of students. The third individual identified *adaptations at all stages* of her literacy lessons,

sometimes making changes before, during or after teaching. The final student-teacher reported adaptations occurred on a *daily* basis, usually during a lesson. The table 4.18 outlines the frequency and timing of the self-reported teaching adaptations.

Table 4.18

Self-Reported Frequency of Adaptations During Literacy Lessons

Self-Reported Frequency of Adaptations During Literacy Lessons		
Participant	How often did you make adaptations to a lesson	When did you most often make adaptations to a lesson?
AR	About 2x a week	Before the lesson began or during the lesson
VT	About 2x a week	During lesson and after the lesson
LS	At least 3x a week	When I had the opportunity to teach the same lesson twice, I would do it in between the first and second lesson.
DR	At least 3x a week	During a lesson
TB	At least 3x a week	Before, during, and after a lesson
HK	Daily	During a lesson

One feature of a formative experiment is the ongoing evaluation of the instructional intervention with an option to make changes, as needed, throughout the study (Reinking & Bradley, 2008). During the first half of the intervention, the written reflection format included five open-ended prompts to encourage reflection on the lesson (see Chapter 3). About midway, as the cohort continued to learn about adaptive practice, the written reflection form was modified. After reading and discussing research on adaptive teaching, the cohort group incorporated terms from a rating table of adaptive teaching actions (Parsons et al., 2010). They chose to use the information as a reference tool for thinking about what counted as adaptive practice. An alternative written reflection form was made available to the cohort (see Chapter 3).

In addition to adaptive actions, Parsons et al. (2010) outlined a rating scale for assessing the quality of adaptive decision making (see Appendix C). The rating scale included three levels of thoughtfulness related to decision making that resulted in adaptive practice. The three ratings are classified as *minimally thoughtful, thoughtful*, and *considerably thoughtful*. Some of the participants referenced Parsons et al.'s (2010) terminology in their assessment of their classroom adaptations.

The data revealed that the participants most frequently made adaptations *during a lesson*, less often *afterward* and rarely *before a lesson* began. Different types of adaptations are discussed in this section with selected excerpts from the data to exemplify student teacher thinking.

Adaptations before a lesson. Participants were least likely to indicate making an adaption before a lesson; however, there are a few examples in the written reflections and surveys. Reasons cited for adapting before teaching the lesson related to the anticipation of an upcoming difficulty, a lack of challenge in a lesson, or potential time or behavior management issues.

Anticipation of future difficulty. Some participants decided to make a change to their original plan while reviewing a lesson shortly before beginning to teach. One student teacher noted how she had considered adapting a lesson before her third-grade literacy group gathered. She wrote, "I usually reviewed a lesson plan (before teaching), and I saw that I needed more concrete examples that would make my objectives more easily attainable and to make comprehension easier for the students" (TB, survey, May 3, 2017). She looked for extra content to supplement her original plan, and in that way, she

adapted her lesson before teaching. Adding new content represented *thoughtfulness* due to the time she spent collecting other examples.

A second excerpt comes from a student teacher who read his lesson plan in advance of teaching and decided to make a change. He stated, "I noticed something was wrong (with the lesson), I noticed something I could improve" (LS, survey, May 3, 2017). He made a change in how he taught a concept; however, he did not provide a detailed explanation of that process. His comments exemplified an emerging adaptive practice. He took time to think about his lesson and then considered how it could be improved before he began to teach.

A third scenario showed consideration for group dynamics. A student teacher noted a time she had previewed a lesson and then realized that it would not work for a particular group of students. The review prompted a *thoughtful* change to the lesson when she decided to substitute some of the lesson content. “I changed the original article before the lesson began … when I reread it, I didn't think it fit well for the read aloud, so I looked for another article to share" (TB, written reflection, February 24, 2017).

Reviewing a lesson in advance with consideration for the lesson’s impact on student learning is second nature for many seasoned teachers; however, preservice teachers do not always take into account the needs of individual students or the group dynamics. The three examples above represent a thoughtfulness that is consistent with dispositions of emerging adaptive teaching.

A lack of challenge. A student teacher made adaptations to her first-grade reading lessons when she realized the lesson would not provide an appropriate challenge for her

students. She described her thinking, "I noticed something about the lesson was not challenging the students, and it was at a level the students already understood … I would lose student's attention, so before the lesson, I changed up an activity or method" (DR, survey, May 3, 2017). The reference indicates a pattern of *thoughtfulness* before a lesson.

Management. Time and behavior management were factors in decision making that resulted in change. One participant cited a lack of time as a reason for omitting lesson content. She stated, "There was not enough time (to complete the lesson)" (survey, May 3, 2017) so she omitted some of the content. During cohort session discussions, all participants mentioned their surprise at how long it took some students to complete specific parts of a lesson. They discussed the need to learn how to anticipate a reasonable amount of time for any given lesson. Over the course of the 14-week practicum, they reported improvement in anticipating the timing of a lesson. The ability to make considerations for time was dependent on how well the student teachers knew their students individually and as a group. They stated that it was not always possible to plan in advance and they often had to adapt in the moment by adding or omitting content due to a lack of time or extra time. Adding or deleting content represented *minimal thoughtfulness* because adjustments were made very quickly and in-the-moment (cohort session notes).

All participants identified issues with classroom management as a reason for making a change in a lesson (cohort session notes). As the weeks of the practicum progressed, participants gained greater ability in learning to anticipate potential issues related to classroom management before teaching a lesson. One student teacher described

her rationale after sensing the mood of the classroom. She stated, "Most of the time, I think about how my kids are behaving that day, are they feeling adventurous, or are they more relaxed?" (survey, May 3, 2017). Based on her assessment of the mood, she would decide if she needed to make any changes. A second excerpt showed a student teacher's consideration of group dynamics, classroom behavior, and student ability before teaching a lesson. She stated,

> Before the lesson … I would think about both groups that I had, and I got to know their personalities as a group. Before planning the lesson, when looking at the activities in the book (teacher's edition), I would be like, Ummm, this looks like it might get out of control for this group, or this looks like it might be too hard for that group. I got to learn their personalities as a whole group (and adjusted the lesson). (AR, exit interview, May 3, 2017)

The student teachers identified fewer adaptations before a lesson, especially in the early stages of the student teaching practicum. In the cohort session discussions, several participants talked about the need to get to know the students in the classroom and to learn the typical expectations for a given grade-level before feeling comfortable in making changes to a lesson. In other words, they would teach the lesson as stated in the lesson plan regardless of its effectiveness because they did not know what else to do. They most likely missed opportunities for adaptation in those times. However, their limited experience prevented them from attempting to make any changes and from recognizing when they needed to make changes (cohort session notes).

Some of the examples in this section are broad in nature and do not include details; they exemplify a simplified view of adaptive practice. Additional examples show specific times a teacher changed a lesson to improve it, providing evidence of intentionality and thoughtfulness. The adaptive actions identified by the student teachers ranged in quality. Both general or specific types of adaptations made to a lesson exemplified emerging dispositions of adaptive practice. The written reflections implied a growing awareness for the needs of the students in the classroom. They also revealed a concern for effective teaching. Student teachers attributed their ability to be thoughtful to aspects of the instructional intervention. Attribution of learning to be adaptive is discussed in depth in a separate section.

Adaptations during a lesson. Participants reported making adaptations most frequently during a lesson. They often provided a rationale for making a change. Their reasons included student misunderstandings, issues of management, lack of engagement, or lessons that were not challenging.

Student misunderstandings. Changes or adjustments to a lesson sometimes occurred if the students seemed to be confused or the teaching was unclear. During cohort sessions, examples of adaptive teaching were often discussed. Examples included clarifying instructions, providing clear examples, inserting a mini-lesson, or asking clarifying questions (cohort session notes, 2-8-17).

A student teacher described her rationale in this statement, "I usually look at how the kids react. If they seemed confused while I was talking, or if they did not know the answers when I was questioning them, then I would make a change to the lesson. Also, I

looked at how well they could apply their knowledge to the activity" (AR, survey, May 3, 2017).

Another example comes from a second-grade guided reading lesson. The students were confused about the vocabulary, so the student teacher did an impromptu vocabulary lesson before moving on with the group (field notes). Another example comes from a kindergarten group lesson that did not go as planned, so the student teacher made a quick adaptation. She described it in this way:

> I did need to adapt my teaching about halfway through the lesson. The lesson was about how to turn "blah" sentences into "wow" sentences, and the students had trouble understanding. I remembered there were laminated cards (that had come with the lesson) I could use. The cards said WOW and BLAH, and the students decided which sentences were 'wow' and which were 'blah.' So, literally, during the lesson, I decided to stand up and get the cards (from across the room) and to use them. The students absolutely loved it! Using the cards made the lesson more fun and more visual, and it was great! (DR, written reflection, April 17, 2017)

This adaptation required *minimal thought,* but it produced positive results. A decision to make a quick adjustment by adding additional teaching materials proved to be successful.

The next example, a third-grade literacy lesson, showed how changing materials in the middle of a lesson improved the learning. "Originally, we were to do a game with dry erase boards; however, the students had not demonstrated a clear understanding of the lesson. For this reason, I switched and incorporated manipulatives instead" (TB, written reflection, March 11, 2017). This change required *minimal thoughtfulness*, but it

increased student understanding. Awareness of student misunderstanding inspired the decision to change the materials. A fourth example comes from impromptu explanation added to a lesson. The student teacher stated, "I thought of a way to expand student understanding," and she quickly described important information the students were lacking by inserting a mini-lesson (survey, May 3, 2017). The change required *minimal thoughtfulness*, but it appeared to clarify the content and increase student understanding.

In an example from a reading lesson connected to social studies, the student teacher provided an impromptu analogy for the students when they did not understand the role of a leader "representing" a group of people. The student teacher provided local examples of leaders who represented the students and their families. He helped the students make a personal connection to the concept. It was a *minimally thoughtful* change, and it resulted in greater understanding. A final example comes from a participant reflecting on her adaptive practice throughout the practicum. She stated, "This often occurred when the students didn't seem to 'get it' during the modeling phase of instruction. I would change the strategy or method to better accommodate their learning process" (TB, survey, May 3, 2017).

Many of the adaptations required minimal thought, but they served to fine-tune the lesson and resulted in more effective teaching. The level of thoughtfulness does not determine the level of impact on student learning. Minor changes and adjustments, as well as more dramatic adaptations, can result in lesson improvement.

Management. Classroom examples revealed issues of management that were related to behavior, time, and use of materials. During a third-grade guided reading

lesson, the student teacher realized a selected reading projected on the whiteboard was difficult for students to see, so she decided to read it aloud to everyone. She stated, "I wanted them to be able to listen to two different types of text and then compare them. The group read-aloud of the chapter book went well. Reading the article (projected onto the whiteboard) was difficult for the students to see, so I ended up just reading it aloud to everyone" (TB, written reflections, 2-23-27.) The teacher assumed that everyone would see the board and had not considered the distance for the students in the back of the room; realizing the problem, she quickly adapted her plan. The content of the lesson did not change; however, the method changed. The action required minimal thoughtfulness but improved the quality of the lesson.

Managing student behavior resulted in an adaptation to the original lesson in this example from a kindergarten group literacy lesson.

> The students begin to get silly about how their names sounded …I had to pause and remind them of the objective, and then I changed how the students would respond. Instead of responding individually, I had the group repeat the name and quickly move on. (AR, written reflection, 3-29-17)

The student teacher recognized that unchecked behavior could lead to ongoing problems in presenting her lesson, so she made a minimally thoughtful adaptation. She noted that the teaching improved with this minor adjustment.

Sometimes, a student teacher did not know what to do with students who finished a lesson more quickly than expected. One participant described it this way,

> I learned how to become more adaptive because there were times in the classroom that students would finish their work faster than others and I didn't know what to do next, so this (learning about adaptive practice) helped me think about what I could do to have all my students on task. Sometimes I just had to adapt small mini-lessons into my lesson. (VT, survey, May 3, 2017)

Discussion in the cohort sessions revealed "early finishers" were a common management concern among all participants. Student behavior and management were frequent topics of discussion. Student teachers were often able to recognize a management problem, but they needed guidance in thinking through the problem before they were able to identify meaningful ways to adapt in future lessons (cohort session notes).

Engagement. An instance related to engagement comes from a second-grade guided reading lesson. The student teacher recognized a problem and made a change, "I added emphasis on rhyming words and added extra responses to engage the students; some were dozing off or looking around" (AR, written reflection, February 14, 2017). She made a minimally thoughtful adjustment to the lesson, and she felt it improved engagement; however, she did not mention if it directly enhanced learning.

Lessons that were not challenging. "Sometimes, during the lesson, I would figure out, that I had to change the way that I did the lesson. They (students) were not interested in the activity, or maybe it was too easy" (AR, exit interview, May 3, 2017). The example is not specific, but the student teacher's self-perception indicates recognition of when a lesson was not working. Adaptations during a lesson represented thinking in the moment and the informal assessment of the effectiveness of the teaching.

Adaptations after a lesson. Student teachers often made decisions on how to adapt a future lesson based on the experiences of a lesson recently completed. Post-teaching reflections proved useful for identifying what went well and what needed to change. A portion of the practicum involved half of the participants teaching in departmentalized classrooms; the others were in self-contained classrooms. The differing classroom structures provided different opportunities for making adaptations.

Participants in departmentalized classrooms taught the same literacy lesson at least twice a day. Teaching the lesson twice proved very beneficial for noticing what challenged the first group and then adapting the teaching for the second group. One student teacher stated, “When I had the opportunity to teach the same lesson twice, I could change something in between” (survey, May 3, 2017). A second example comes from a third-grade classroom, "I read an article aloud to the class that I projected on the board. The print was small and very hard to see. The students could not follow along. I had wanted to save paper, so I didn't print the article for each student, but next time I will give everyone a copy, so we can read together" (TB, written reflection, February 24, 2017).

A third example comes from a teaching setting that required the lesson to be repeated four times a day. According to cohort session notes, the student teacher noted that doing the same lesson four times a day gave her opportunity to adapt. In the first session, she had used a news article to compare and contrast with a picture book. She found the news article too challenging for her 3rd graders. On her subsequent lessons, she selected a different, non-fiction news story to use with the class. Changing the content of

the lesson showed *considerable thoughtfulness* due to the time she spent searching for new content that would fit the lesson.

In the cohort discussions, the student teachers in departmentalized classrooms mentioned how students in the first lesson were like their "guinea pigs" because they usually improved their teaching the second time around. One student teacher described it in the following way,

> The only thing I didn't like (about repeating a lesson) was I felt like I was cheating the first group … I felt like the first was an experiment group, and if it didn't go well, I would make some changes for the afternoon group (AR, exit interview, May 3, 2017).

Additional examples from the self-contained classrooms indicate how decision-making for future lessons occurred after teaching.

> After the lesson, I would look at the next day's lesson and realize that a change was needed. It's possible the strategy I taught was not the most effective, students were having difficulty with the objective. It may also have been something they picked up quickly, and they needed a more challenging curriculum. (TB, survey, May 3, 2017)

Another participant stated, "After a lesson when I realized the lesson was not effective, I would make a change (for the next lesson)" (VT, exit interview, May 3, 2017). Some of the reflections stated that something needed to change in a lesson; however, it was not always specified as to what or how of an adaptation was implemented.

In summary, adaptation in teaching occurred before, during or after teaching a literacy lesson as exemplified in the selected examples discussed in this section. A change in the original lesson plan occurred most often during a lesson. The adaptive actions ranged in thoughtfulness from minimal to considerable thoughtfulness. The self-reported examples most often revealed minimal to thoughtful changes in a lesson. The survey showed all student teachers viewed themselves as more adaptive after participating in the cohort sessions. Due to the nature of self-reporting, the written reflections and self-analysis reflect the instances when ineffective teaching was recognized; however, there are likely other experiences that went unnoticed.

The participants cited a range of reasons why they chose to make a change from their original plan. Some of their decisions were quick and required minimal thought, but they improved teaching. Small adjustments throughout a lesson may not initially seem significant but may enhance learning in profound ways.

Adaptive practice in preservice teachers tends to be more general and often relates to structure and procedure. At times, it referred to the content or student needs. The deeper and more nuanced aspects of adaptive practice are more difficult to find in the early experiences of student teachers. The challenges they identified show a developing awareness of thinking about making lessons meaningful. Student teachers do not always know how to improve their teaching or modify the input to produce different results. Their attempts at adaptive practice are emerging and developing but not yet fully achieved.

Negotiating Challenges that Impact Adaptive Practice

A third theme found in the data was the ability to negotiate challenges during the student teaching practicum (see Figure 4.6). Some of the obstacles impacted the ability to be flexible and adaptive. As novices, the participants' skills and capabilities, as well as their professional judgments are in a developmental stage. Their written reflections and conversations throughout the instructional intervention reflect their emerging perspectives. Student teachers found ways to negotiate around what they perceived as challenges to developing adaptive practice. At times, they identified problems but did not know how to solve or resolve them. In the cohort session discussions, they brought some of their challenges and asked for feedback from their peers and the researcher. The problems were not the same for each participant. Some were more comfortable with classroom management and identified difficulties with curriculum or the mentor teacher expectations. Others felt very comfortable with the mentor teacher expectations but had trouble engaging students or managing behavior.

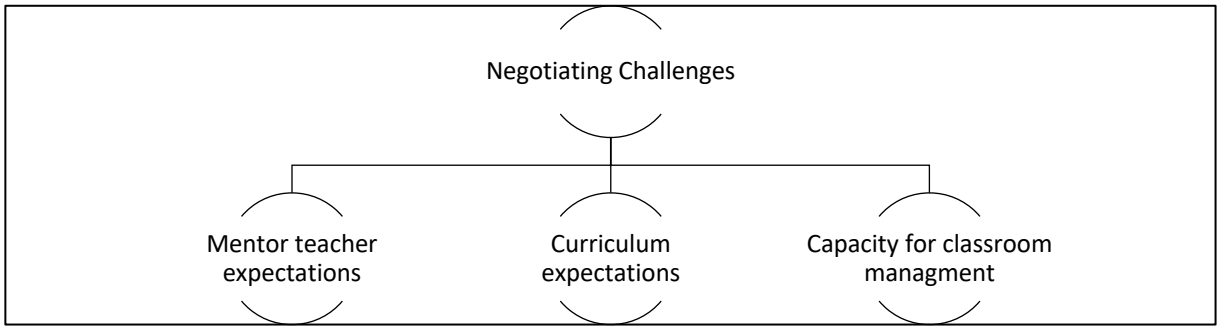


Figure 4.6 Negotiating challenges

Negotiating Challenges

The cohort members strived to be intentional about attempting adaptive practice throughout this study. The areas of concern mentioned by the participants are typical of many preservice teachers. Careful analysis revealed how the cohort viewed the challenges with consideration for adaptive practice. The student teachers identified three recurring subthemes as challenges that interfered with their ability to be adaptive. The three areas of difficulty are issues related to mentor teachers, curriculum expectations, and classroom management.

Mentor teacher expectations. The interactions between each mentor teacher and the student teachers were unique, and they varied significantly between individuals. Teaching style, personality, communication skills, and campus expectations influenced the mentor-student teacher dynamic. Written reflections, discussions, and analyses provided a view into what type of settings and experiences challenged the ability to be adaptive. The student teachers felt somewhat like temporary guests in the classroom. They did not always feel free to change or adapt lesson content, procedures, or approaches due to their limited time in the field and their brief time in a given classroom. However, the openness and attitude of the mentor teacher had a significant impact on a student teacher's confidence in making adaptations. The student teachers placed with very open and flexible mentors felt more freedom to make changes during teaching (cohort session notes, March 29, 2017).

Freedom to teach. One issue that was mentioned by several student teachers was the role of the mentor while teaching was taking place. One type of challenge occurred

when the mentor teacher constantly interrupted the learning to either tell the student teacher or the students how to do something differently. The impact on the student teacher resulted in a lack of confidence and a fear of displeasing the mentor if they made changes to the lesson. An example comes from a post-teaching reflection from a first-grade group reading lesson. The student teacher explained her lesson in the following excerpt.

> I wanted to increase the reading time for the group. It was a little difficult because the mentor teacher does not allow me to do very much. She is very specific about how the class should go and even when I am teaching, she often interjects and tells the students things to do without allowing me time to guide them. I feel I really cannot vary the lesson from what she has already been doing. It seems to be very difficult for her to allow me to teach at all." (DR, written reflections 2-7-17)

In the first-grade example above, the student teacher was looking for ways to increase individual reading opportunities for all first-graders, but she did not feel that the mentor teacher would be open to her making any changes or adaptations to the reading program. She stated, "I wanted to have them read more; however, I was following what the teacher had suggested" (DR, written reflections, 2-7-17).

A second example comes from a kindergarten classroom. A student teacher had noticed that her kindergarten children did not have any opportunities for self-selected writing throughout the day. She wanted to adapt the lesson format and include a few minutes of writing at the end of the regular lesson. The mentor had given her freedom to add to the lesson plan, so she felt comfortable making a change. She created individual

writing journals for each student on her own time and brought them to the classroom. She was very excited to use them with the students during a literacy lesson. She gave the students the journals and provided them a few minutes to write. At the conclusion of the lesson, the mentor teacher asked her what the journals were for and informed her that the children already had notebooks for copying sentences from the board. The mentor did not encourage her to continue with the self-selected writing activities. The student teacher was embarrassed and felt the journals were not wanted. In a debriefing session, she mentioned the experience and explained that she had decided to discontinue use of the journals. She later regretted that she did not engage in more conversation with the mentor. This challenge may have resulted from a combination of factors including differing communication styles and personality differences between the student teacher and mentor. The student teacher believed the mentor was unwilling to incorporate her new ideas. The student teacher felt she had missed an opportunity to adapt the content of a lesson, and she was disappointed in the outcome (debriefing notes, March 14, 2017).

A third example comes from a first-grade reading lesson with a group of three students. The student teacher was unsure about the effectiveness of her lesson, but she felt compelled to follow the mentor teacher's lesson plan. She expressed concern that the lesson did not challenge the students, but she continued with the lesson anyway. She described her experience, "I was following my teacher's suggested lesson. I really didn't know what to change or how to do something different in the lessons" (HK, written reflections, April 7, 2017).

A first-grade, bilingual reading lesson is the setting for the fourth example. The student teacher presented a reading lesson to her twenty first-graders while they sat on the floor in front of the interactive whiteboard. She guided the group of students in choral reading and a brief discussion about the story. During post-observation debriefing, she identified two problems with the lesson: children on the edges of the group could not see the whiteboard, and the children did not have any time for independent reading. She recognized potential adaptations to the structure and content of the lesson; however, she was not comfortable talking about her ideas with the mentor teacher. She stated, "that is how the teacher does the lesson, and I am just following along" (debriefing notes, February 9, 2017). She explained that the class did very little guided reading. She wanted to incorporate more guided reading opportunities; however, because the teacher did not have that in place, she did not feel that she could make changes (debriefing notes, February 9, 2017).

It is important to note that there was a general positive feeling and appreciation for each mentor teacher. Every student teacher believed they had gained knowledge and experience from their mentors, even though some of them also experienced some frustrations. Most cited a personal connection and rapport with their mentor and attributed their growth to the mentor's influence. The challenges underscore the complexity of “sharing” a classroom with a student teacher. It is evident that a delicate balance exists for mentor teachers in releasing responsibility to student teachers while maintaining their ongoing program.

The selected examples indicate the desire of the student teachers for meaningful literacy lessons and the recognition of potential improvements to their teaching. At times, the student teachers did not feel they had the power or influence to make adaptations to the lesson content, procedures, or activities. In some cases, they did not feel comfortable talking about it with their mentors, and they lacked the confidence to share their ideas (debriefing notes). All of the factors mentioned impacted the emerging adaptive practice in the preservice teacher cohort. One benefit of the instructional intervention was the support provided during the cohort sessions. The student teachers felt free to share their concerns and talk through their frustrations. The time and space to share together and support each other through their frustrations was a necessary step in negotiating the challenges that prevented some opportunities for adaptive practice (cohort session notes).

Challenges with curriculum expectations. Student teachers occasionally identified challenges with lesson planning and curriculum expectations. There are limited examples due to the few times student teachers identified curriculum as a challenge; however, it is an essential area for consideration. Under this subtheme, student teachers identified two main areas of concern. The first challenge was the implementation of the mentor teacher's lesson plans with little-to-no option to make adaptations. The second challenge was a lack of freedom to make changes to the curriculum.

The lesson planning protocol for each campus had a direct impact on the student teachers' role in lesson development and subsequently their confidence in making adaptations. All student teachers were placed in both public and private schools for seven weeks at each location. The public-school teachers usually planned lessons with their

grade-level teams, and student teachers mostly observed the planning process. In the private school settings, the student teachers generally had more freedom to plan their lessons with guidance from the mentor teachers. Student teachers felt more confident and free to make adaptations when they had created the lesson plans on their own (cohort discussion notes).

Student teachers frequently received fully completed lesson plans from their mentor teacher that had been created by grade-level team members. This occurred in public school settings where the curriculum areas were often divided up between three or four teachers, each teacher planning one subject for the grade-level team. The student teachers received the ready-to-go plans and felt compelled to implement the plans "as is," in order to keep pace with the other classrooms. There was little time or invitation to change or adjust the teaching. The student teachers did not feel they had autonomy over the lesson plans when they were developed by other grade-level team members. Additionally, it was difficult to get a broad sense of how individual lessons fit into longer-range plans due to the relatively brief time spent in a given classroom (cohort session notes).

In the private school classrooms, some student teachers faced the opposite challenge of having a great deal of freedom to create their own plans and feeling unsure of how to develop them. The private schools had a single classroom per grade or a combination classroom with two grades, and the teachers did their planning on their own. The pacing was more relaxed, and the student teachers had more freedom to plan lessons. Most of the private school teachers gave some basic guidance for lesson planning and

then turned it over to the student teacher. Student teachers liked bringing in their own ideas, but at times they were unsure of how to plan. Planning their own lessons was frustrating at times, but it also resulted in greater feelings of autonomy, confidence, and flexibility. They reported feeling more freedom to adapt when the lesson plan was their own (cohort session notes).

An example of an issue related to curriculum comes from a kindergarten classroom where a scripted reading program was a required part of the literacy lessons. The fully scripted portion of the reading program included a group of ten kindergarten students seated around a teaching table. The lessons met daily for 15 to 20 minutes. The student teacher was motivated and prepared to teach from the script. She had even borrowed the school's training videos and watched ten hours of training on the scripted reading program. At the appointed times, she conducted the reading lesson and carefully presented the lesson, not deviating from the script. The lesson called for students to read long lists of words in unison; they sometimes read nonsense words and short passages chorally. She found the lesson to be tedious and boring for the students, and it was a challenge to keep them engaged. She executed the lesson expertly, according to the script, and she maintained the students' attention; however, she did not feel the lessons were interesting or very meaningful. Her mentor and the other kindergarten teachers on the campus were invested in the scripted program. There were no opportunities to deviate from the scripted program for that portion of the literacy instruction, regardless of the student teacher's desire to adapt the teaching.

A second example comes from a third-grade reading lesson that also used a scripted program. The implementation was more relaxed than the kindergarten example. The student teacher did follow the suggested lesson plan, but her mentor had given her more freedom to add or delete from the script. The challenge for the student teacher occurred when she tried to follow the script. She felt less engaged with the students because she was constantly looking down to read the script instead of making eye contact and engaging in genuine conversation with the students. As she gained confidence in herself, she used the script less often and inserted her own language. She felt the script was both a challenge and a benefit. Due to her limited experience in teaching reading, she liked the idea of the script telling her what to say. However, as she moved through the weeks, she realized she could think of ways to talk about the story without following the script. Her mentor teacher's openness to being flexible allowed her to make some small adaptations in the way she taught her lesson (observation notes, March 30, 2017).

The selected examples reveal some of the challenges with lesson planning and curriculum the student teachers identified. They felt less empowered to change or adjust lesson plans that were prepared by others and handed to them. At times, they expressed a lack of confidence and ability to know how to make changes. When given the opportunity to create their lesson plans, they lacked confidence in their abilities. They often needed guidance to develop better lesson plans but were left on their own to figure it out in some classroom settings. The instructional intervention was beneficial in that it provided a way to talk about the challenges of the curriculum and to strategize together in the cohort session on ways to improve teaching in spite of the curriculum challenges.

Capacity for classroom management. Issues related to classroom management impacted the student teachers' ability to change, adjust, and adapt their teaching. Developing effective classroom management was not the goal of the instructional intervention; however, it became a consideration as student teachers expressed their inadequacies in managing their students. One of the most challenging issues identified during the practicum was classroom management. It was a recurring theme in nearly every cohort session discussion. At the beginning of each cohort session, participants were encouraged to share classroom experiences from the week, and they talked about classroom management. The supportive and problem-solving discussions during cohort sessions served to strengthen and develop ideas for improving classroom management as well as adaptive practice. Over time, the student teachers did gain confidence and skills, and their concerns over managing the classroom decreased.

In reviewing the written reflections, all of the participants mentioned concerns over management at least once, and several of them identified classroom management as an ongoing area for improvement. Student teachers experienced classroom management difficulties in individual ways. One student teacher had trouble being consistent with her students, and she stated, "I had trouble following through with disciplinary actions." Another expressed concern over losing control of the group, and she stated, "I don't want the students to get out of hand." Most of the participants indicated they wanted to improve their classroom management with statements like, "Next week, I want to improve my classroom management," and "My management needs work, I need students to respect me." One assessed her management style by saying, "I need to work on being

more consistent … I give students too many verbal chances, and I need to follow through." Landon described classroom management as his biggest challenge. He found that he needed to become “more confident and to not second guess what to do.” A final excerpt reflects the consensus of the participants, “I want to improve my management during lessons” (Written reflections and cohort session notes).

Many of the comments regarding classroom management were general, as noted in the examples above. Specific actions or changes to the management were not always identified. Notes from one cohort session, several weeks into the semester confirmed the ongoing discussion about classroom management:

> We always start with a check-in to see how everyone is doing. Today it seemed the floodgates opened, and everyone wanted to talk about some of the issues they had been facing with classroom management. We spent a little longer than usual debriefing about events of the week. Participants needed time to talk about some of their management challenges before they were ready to move on to other topics in the cohort session discussions. The participants explained that when they did not feel comfortable with managing student behavior, they were not able to be responsive to student learning needs or adaptive in their teaching. (Cohort session notes)

The influence of the mentor teacher played a substantial role in this area; student teachers placed in well-managed environments had fewer concerns over classroom management. Conversely, those in more loosely structured classrooms identified more struggles with getting the students’ attention and teaching the lesson. Many student teachers responded

to the prompt from the written reflection asked, “What will you work to improve for next week?” by noting classroom management as their goal. They used statements such as, “Learning specific ways to get their attention when I am teaching” and “Next week I will improve on classroom management” (written reflections).

As student teachers felt more comfortable with classroom management, they mentioned management less often in their weekly goals. One student teacher wrote, "I felt my management went well, overall. Students were aware of my expectations." Then she noted her goals for improving her teaching with, "Next week I want to learn better ways to address and build off of students' incorrect answers" (TB, written reflections, February 10, 2017). A second example comes from a third-grade reading lesson: "Next time I will ask more questions about the lesson to make sure students understand what they read" (VT, written reflections, February 18, 2017). When student teachers were not listing classroom management as a weekly concern, their “next step” goals were focused on improving their teaching.

Concluding thoughts on negotiating challenges. A student teaching practicum is a time to learn how to negotiate challenges in the classroom. It is not unusual that student teachers identify problem areas and unexpected challenges. The focus of this analysis was to look specifically at how student teachers negotiated difficulties when they were attempting to be adaptive. The thematic analysis revealed three areas that posed a challenge for the participants: issues with mentor teachers, classroom management, and curriculum expectations.

Issues with mentor teachers revolved around the mentors' willingness to allow the student teachers to take the lead, and to make teaching decisions on their own. Concerns related to the curriculum were mostly about implementing previously prepared lesson plans and a lack of autonomy to change or adjust plans. Programs using highly structured and scripted curriculum posed a problem in that changes to the lesson were not encouraged. There was little room for teacher decision-making or adaptive teaching in some of the classrooms. Challenges with classroom management were related to the student teachers' lack of experience, personality differences with a mentor, and existing classroom routines.

The overarching issue for student teachers to be able to negotiate challenges successfully was their ability to speak up with to their mentors and to gain experience and skill in managing the classroom. Each of the areas identified by student teachers resulted in limited decision making during literacy lessons. The importance of the instructional intervention was evident in the cohort sessions; the student teachers had the freedom to talk about their challenges and begin to think of ways to adjust or adapt their teaching. They recognized that some of their adaptations would be easier to implement when they had classrooms of their own and more autonomy over their teaching.

Attribution of Growth

Student teachers attributed their growth and development throughout the fourteen-week student teaching practicum to several factors as described in this section. The exit interviews, surveys, and final reflections elucidated the thinking and self-perceptions of the participants. They identified the crucial aspects of the instructional intervention in

developing their ability to be responsive and adaptive in their teaching. The participants attributed four types of experiences to their development of adaptive practice: *reflective practice* through written and verbal responses, *self-assessment* through video and transcript analysis, *cohort discussions* with peers, and *debriefing and problem-solving* with the researcher as shown in Figure 4.7.

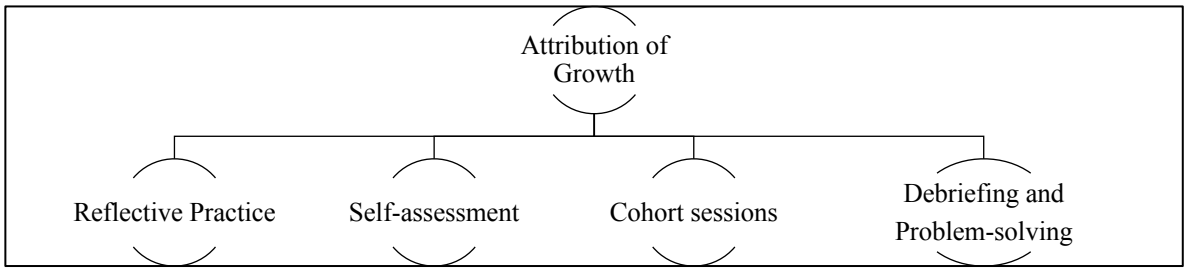


Figure 4. 7 Attribution of growth

Reflective practice. Participants identified the role of reflective practice as integral to learning to think in adaptive ways. Each participant had unique experiences; however, there were similarities across the cohort they identified as the most beneficial learning experiences.

Reflective practice was a new concept to the participants. The readings and discussions during cohort sessions coupled with intentional written and verbal responses of the instructional intervention served to develop reflective practice. Each participant was encouraged to think and write about their teaching. As the participants worked in the classrooms and tried to reflect on their teaching they initially focused on their careful implementation of written lesson plans and keeping students under control. Over time, they learned to think in broader ways about their teaching and student learning. An

example from the final survey highlighted the learning over time for this participant. She stated,

> I feel I truly have become a lot more reflective given that I started to habitually think about the before, during and after of my lessons; To begin to connect theories to my teaching, so that I understood the importance of what I was teaching. (Survey, May 3, 2017)

Defining reflective practice. Participants learned about theories of reflective practice as described by Schön (1983, 1987) and Zeichner and Liston (1987). They completed written reflections, conducted peer- and self-analyses, and participated in cohort discussions. At the conclusion of the practicum, participants were asked to describe what reflective practice meant to them. Their definitions came from the final survey. One participant stated,

> Reflective practice is looking back on the lessons you've developed and taught, then asking questions about what worked and what didn't. Was there a lesson flaw, a delivery issue, or something more? Then, using the information to adapt the lesson and future lessons. (survey, May 1, 2017)

Questioning and analyzing the teaching was central to this participant's definition of reflective practice, and improving teaching was the goal of reflective practice. Another student teacher identified her perceptions of reflection as it pertained to student learning. She stated, "Reflective practice is reflecting on teaching methods, habits, lessons to improve our instruction as well as (to improve) ourselves, to help students learn more efficiently" (survey, May 1, 2017).

Reflective practice was described as simple, and action-oriented in this excerpt, "reflect on the lesson … think about your teaching … make the lesson better" (survey, May 1, 2017). Another participant stated, "Reflective practice means we're always improving our lessons and learning from our failures and successes" (survey, May 1, 2017). The common language throughout the examples reiterated improvement. The next example describes reflective practice as looking back and looking forward:

> We can think back on what went well and what didn't during our lesson and use that information to better our practice. Seeing how the students interacted and responded to the lesson was feedback to (us) the teachers on the effectiveness of the lesson. (Survey, May 1, 2017)

A final description provided a thoughtful rationale that leads to decision making and addresses the needs of students. It links reflective practice to adaptive practice.

> Reflective practice is being mindful and thoughtful of your teaching practices. It allows a teacher to be open to the mistakes that occurred during lessons, the successes, and the needs of the students, and to think about how they can be met more appropriately by an adaptation. (Survey, May 1, 2017)

The personal definitions from the participants reveal their intentions to use reflection as a tool to improve teaching. The excerpts reflect the perceived benefits of time devoted to self-reflection during the cohort sessions.

Learning to be reflective. In response to the prompt, "How did you learn to be reflective?", each participant explained their journey. Several factors contributed to

learning to be reflective; they included viewing and transcribing teaching episodes, completing written reflections, and participating in the cohort sessions.

Viewing and transcribing a lesson. A consensus among all participants credited the video and transcript analyses as the central experience that promoted their reflective thinking and adaptive practice (cohort session notes). They acknowledged that reflective practice paved the way to thinking in adaptive ways. They concurred that reflection and analysis were precursors to knowing when and how to make a change in a lesson.

Transcription of lessons required viewing and reviewing a teaching episode, while writing down everything that had transpired. The process of watching, writing and thinking promoted thoughtful analysis and proved to be beneficial. One participant mentioned the value of viewing video and analyzing lesson transcripts. She stated, "I think transcribing (the lesson) was very helpful. I could see what I had to work on in my teaching progress. Also, observing my friends' teaching, and analyzing their work was tremendously helpful to me" (survey, May 1, 2017). She also mentioned that she had gleaned teaching and management ideas while viewing peer videos.

Watching a teaching video was eye-opening for several participants. They credited a greater awareness in the classroom to the watching of their teaching episodes (cohort session notes). One participant stated, “It was great to see some of the things I missed, (in the video) … you try to keep your eye on all of them (students), but it is impossible. Some students were doing things in the classroom; I don't know how I missed it” (LS, exit interview, May 2, 2017).

Weekly written reflection. Reflecting on teaching at the end of each week was a valuable practice. One participant noted, "I think to look at each week's lesson at the end of the week, as a whole, was the most important. Reflecting on the week as a whole, as well as the individual lesson, was most helpful" (survey, May 1, 2017). The benefits of writing a reflection are evident in the following excerpt, "The reflection journal helped me to reflect on my lessons" (survey, May 1, 2017).

One participant learned to consider a connection between multiple lessons while writing reflections. She stated, “I learned to think more specifically about what I want my students to learn. Looking beyond a specific lesson and developing lesson plans to meet the overall intended outcome" (survey, May 1, 2017). The reflections involved thinking about outcomes and connecting lessons across time by "looking beyond a specific lesson." Additional descriptions of reflective practice identified concerns over student progress as a critical factor in developing reflection. One student teacher described it in the following way:

> When I was teaching the lesson … I would always check to see if the students had learned. I was very worried about student progress … our research group had the goal of being mindful through reflection … I learned to think about how my lesson connected to a greater idea (theory) of learning and how I could have adapted it to make it more effective for student learning. (Survey, May 1, 2017)

Another participant mentioned how he intentionally took time to think. He would stop to consider if his lesson was working well, and if it was not going well, he would think about how to improve it. He described his method in this statement:

> I learned to be reflective by considering, every time I taught a lesson, about what would make it better for my students … or how to increase understanding of what they were learning in the classroom. I would sometimes pause during the lesson and think about how I could make the lesson applicable and more interesting for my students. (Survey, May 1, 2017)

The selected excerpts expressed thoughtfulness necessary for meaningful reflection.

All participants cited the value of written reflections and often discussed their reflections in the cohort sessions. They all agreed that reflection must be intentional. They identified their writing and thinking about their teaching as integral to learning to become more reflective. Challenges to writing reflections were mentioned too. At times, they felt rushed to complete their written reflections due to the demands of student teaching and university life. They admitted to wanting to avoid the written reflection during some of the weeks when they had other demands on their time. They all acknowledged that it was beneficial to their growth as a preservice teacher to be held accountable to write the reflections (cohort session notes).

Cohort sessions. The cohort sessions were beneficial for learning about reflective practice. Participation in cohort discussions facilitated the development of reflective practice by helping participants to become increasingly more mindful of their teaching. One student teacher described her experience in the following way:

> The goal of being mindful and wanting to add to the research group helped me to be reflective. At first, it was hard, but it was also so rewarding. You were helping yourself to improve so much by simply reflecting on your teaching. There are

> little ways I knew I could always improve, such as wait time (for student response) or validating correct student responses, and addressing misconceptions, instead of just calling on another student for a better, more accurate answer, etc. (Survey, May 1, 2017)

One participant described the connection between the student teaching practicum and the cohort sessions on her development. She explained it in the following way:

> I feel I learned to be reflective via the practice of it through student teaching as well as learning what the terminology meant. The idea of being reflective seems like common sense, but it's seriously not something I had ever delved deep into until the research group brought it to the forefront as a unique and important tool for effective instruction. (Survey, May 1, 2017)

During an exit interview with the researcher, another participant credited her growth to her participation in the research group. She described it as, "I felt I grew a lot considering I had no idea about reflective practice prior to the research group" (AR, exit interview, May 3, 2017). She explained her process for learning to be reflective. In her words,

> I don't think on my own I would have done it, although we talked about reflective teaching in class (before student teaching), it is not like we practiced it. Being in the research group, it pushed me. I thought I need to think about what I am teaching before, and after (a lesson). Don't just teach; there should be a reason why I am teaching certain things. It (cohort sessions) helped me a lot to be more reflective and to put things together, like the theories I learned in the classroom, it is time to apply them intentionally. (AR, exit Interview, May 3, 2017)

These comments from an exit interview (AR, May 3, 2017) reveal growing accountability when AR stated, “I don’t think I would have done it on my own” and “Being in the research group, it pushed me.” A growing sense of determination and agency are reflected in her words, “Don’t just teach, there should be a reason why I teach certain things,” and “It is time to apply (theories) intentionally” (AR, exit interview, May 3, 2017). There is a sense of urgency in her self-reflection that revealed her emerging confidence and identity as a reflective teacher.

Debriefing with the researcher. Some participants attributed their growth to debriefing with the researcher. One excerpt succinctly stated, "The researcher's insight and advice helped me to grow” (survey, May 3, 2017). One participant recounted a day when she spent extra time with the researcher analyzing a teaching episode and working through some problem areas of a lesson. Time had been arranged to meet on the university campus to talk about the teaching episode. The researcher talked through the challenges of the lesson and modeled some possible ways to improve the teaching. The participant stated, “It was eye-opening when you (speaking to the researcher) explained to me ways to improve my teaching. You took an hour and showed me how to help my students with their reading” (exit interview, May 1, 2017).

During one exit interview, a participant related the impact of talking with the researcher. She described her growth in relationship to debriefing with the researcher in the following excerpt.

> I learned to do self-analysis, and I got some advice from you (researcher). I can make better lessons from your advice, and put in some creative ideas … I have to

> let the students do it (thinking on their own), and I need to wait so that they can experience it by themselves. I don't need to schedule so much… I need patience. (Exit interview, May 1, 2017)

The participants described cohort session discussions with the researcher as "helpful" and "eye-opening" (cohort session notes). They agreed that it was beneficial for the researcher to debrief with them individually after observations. The explained how the researcher challenged them to think in ways they would not have considered on their own. They were open to researcher feedback and often requested suggestions for improvement.

Adaptive practice. The ultimate goal of this study is understanding how adaptive practice develops in preservice teachers. The emphasis on reflective practice served to improve teaching and encourage student teachers to be more thoughtful and responsive to their students. One participant attributed her growth toward adaptive practice with this excerpt:

> "Adaptive practice to me is an art … you are improving upon an important method of adapting instruction, based on reflective practice. Asking the question, 'what can I adapt here before, during, or after to make this lesson more effective?'" (Survey, May 1, 2017)

Classroom experience. One student teacher explained her journey to become more adaptive as "trial and error." She described her process as, "trying out different methods and seeing what students did well and with what activities" (survey, May 1, 2017). Others described classroom experiences as the force behind some of the teaching adaptations. One student teacher stated,

> I learned how to become more adaptive because there were times in the classroom that students would finish their work faster than others. I didn't know what to do next, so this helped me think about how I could have all my students on task. Sometimes I just had to adapt small mini-lessons into my lesson. (Survey, May 1, 2017)

The "real-world" classroom provided the necessary experience for developing reflective and adaptive practice. One student teacher explained,

> It came through the reflective process and the real-world classroom experience ... I became familiar with the ways that my students learned, and I was able to prepare an alternative form of my lesson or think about what changes I could make to be more responsive or challenging to their needs. (Survey, May 3, 2017)

Classroom experience is incomparable to other learning experiences according to the student teaching cohort (cohort session notes). One student teacher stated, "I think being in the classroom helped me to become adaptive. It is something difficult to prepare for without classroom experience. Seeing how being reflective led to needing to be adaptive helped in the process" (survey, May 3, 2017).

Getting to know the students through the classroom experience was essential as noted in this excerpt:

> As each week progressed, I became more familiar with how each student learned. Getting to know my students helped me to develop my lessons to meet their needs. Additionally, it allowed me to make on-the-fly changes that I may not have been prepared to do before beginning the semester. (Survey, May 3, 2017)

Immersion in the classroom provided the opportunity to implement the knowledge and skills learned in the cohort sessions. Adaptive practice requires decision making and attempting changes. Adaptations may or may not work as planned, and this excerpt reflects some of the complexity of adaptive practice:

> Being adaptive requires a certain amount (usually a great quantity) of being flexible in the classroom. Additionally, it requires being prepared to make some changes. If you think something may be too easy or too difficult, have an alternative method or plan ready to implement. (Survey, May 3, 2017)

Participant excerpts credited their growth to many similar experiences. The development of reflective practice influenced the ability to think in adaptive ways. The classroom experiences provided real-time opportunities to test and implement dispositions of adaptive practice.

Identifying the most significant benefits of the instructional intervention. The study set out to discover if an instructional intervention would promote the development of adaptive practice in preservice teachers. The data reveals the student teachers did develop dispositions towards emerging adaptive practice, and it occurred in varying degrees. Some of their growth was general and simplistic; other examples showed deeper thoughtfulness and effective decision-making. Student teachers attributed their development to learning to be reflective, engagement in self- and peer-analysis, cohort discussions, and debriefing with the researcher.

The participants were asked to identify the most significant benefit of their participation in the instructional intervention. The following excerpts reveal their

perceptions of their experiences. One participant stated, “I believe I have grown over the past weeks of student teaching. I have learned a lot from just reflecting on my lessons. Reflecting on my lessons helped me realize there is always space to make a lesson better” (survey, May 3, 2017).

The experiences were interconnected and cumulative over the course of the practicum as evidenced in the following excerpt: “Looking at the videos and reflecting on the lessons during the meetings provided an invaluable opportunity for self-evaluation and reflection. I learned many things during my student teaching experience and attending the research group helped me even more” (survey, May 3, 2017). Another described the benefits of participation as becoming more mindful. She stated,

> I loved the idea of being mindful of our teaching and allowing it to improve our abilities and grow our mindset that teaching is not a fixed art but something that is adaptive, flexible, and developmental. Our students deserve a teacher who is thoughtful about what is not working, what could have been improved, and to make those changes for a better outcome. (Survey, May 3, 2017)

A look back at where a student teacher started at the beginning of the practicum and then determining what growth took place is evident in the next excerpt:

> In the beginning, I felt like I didn't have to (make any adaptations) because the lesson plans were handed to me. As the cohort sessions progressed, I realized I needed to think more about what was going on in the classroom, even if they weren't my (lesson) plans. The more I thought about my lessons, the smoother

> they went because I could fix glitches before they even happened. (Survey, May 3, 2017)

Student teachers gained confidence and their growth is described in the following two excerpts from the survey (May 3, 2017): 1) “My biggest take away was that I learned how to be an adaptive teacher and not to be afraid to add or take away extra things from my lesson plans" and 2) "I am more confident in my abilities to be an effective teacher in my future classroom and school district."

Learning to be adaptive is a long-term journey that spans a teaching career. Participation in the instructional intervention provided experiences designed to promote reflective practice and emerging adaptive practice. A careful review of the participant responses verified the participants developing abilities to be self-reflective. Thoughtful reflection preceded adaptive practice in the participant responses. Time spent in the cohort sessions was necessary to promote dispositions of adaptive teaching. The combination of experiences contributed to the growth of the participants. Self- and peer-analysis, cohort session support, and debriefings with the researcher were contributing factors in the growth and development of emerging adaptive practice through reflective practice.

A final excerpt provided a thoughtful self-analysis and included broad goals for the future. One student teacher described her experience in the following way,

> Participating in this research taught me a lot. It taught me to be reflective, to think carefully before I plan, and to think again after I have taught my lesson. It is important to do this to improve every day. No teacher is born being perfect, but

> we can improve every day learning from what went well and also from our mistakes. This research also taught me to use my pedagogy more. I have learned all these practices; now I must make an effort to put them into practice. All the theories, all the research of those behind me, will help me become a better teacher, but only if I use them and tie them into my teaching. In the end, teachers never get to perfect their trade, there is always room for learning, so my goal, as I go into the real world, is to reflect and never stop learning. (AR, self-reflection, May 1, 2017)

The thoughtfulness of this response matches the intended goals of the instructional intervention. It also shows the trajectory of growth for this participant.

In conclusion, student teachers were able to identify how they learned throughout their practicum as evidenced by their comments. The selected excerpts exemplified the types of learning that took place and the benefits of the instructional intervention. Perceptions of growth by the participants confirmed the advantages of both the structured and flexible cohort experiences. At times, the participants were general or even vague about some of their descriptions of adaptive and reflective practice. However, they also were able to notice and name what took place during their teaching and decide if it was significant. Their ability to identify moments of adaptive teaching represented awareness and thoughtfulness. The participants engaged in meaningful dialogue and determined what counted as adaptive practice and when and how it should take place. They showed dispositions of emerging adaptive practice in their discussions, language, and actions.

Summary

In this chapter, I discussed the impact of the instructional intervention on the six participants in the study. The findings revealed progress towards developing dispositions of adaptive practice in preservice student teachers. The analysis compared the multiple data sources from both the participants and the researcher to provide a complex explanation of the intervention experiences.

A careful analysis using a thematic approach provided a detailed and comprehensive view of the impact of the instructional intervention. The thematic analysis resulted in four themes and several subthemes, to provide a layered and nuanced comparison of the participants responses and perceptions. The findings from the four themes are outlined here.

The first theme, noticing and naming, related to the participants ability identify the teaching actions and literacy practices they were promoting in their instruction. The second theme revealed the adaptive decision making of the participants in their self-analysis of their teaching. They identified when they made adaptations to their lesson and attempted to provide a rationale for their actions. The third theme showed the challenges, as perceived by the participants, in preventing them from engaging in adaptive teaching. The expectations of the mentor teachers, the curriculum expectations and challenges with classroom management were the areas identified as most challenging. The final theme related to the participants' identification of the most beneficial experiences that resulted in greater potential for adaptive practice. The findings showed the benefits of learning to

be reflective, engaging in self-analysis, participating in the cohort, and debriefing with the researcher as significant in developing adaptive ways of teaching.

The participants rated their experience in the instructional intervention as very beneficial for developing their ability to become more adaptive in their teaching.

CHAPTER V

DISCUSSION

This study was conducted to explore the development of adaptive practice in preservice student teachers during a student teaching practicum. The final chapter reviews the methods, results, and implications of the study. The areas of review and discussion are outlined in the following sections: a) statement of the problem, b) review of the methodology, c) summary of the results, and d) discussion of the results.

Statement of the Problem

There is a continuing need for effective teachers who are equipped to respond to the diverse needs of learners and the complexities of literacy teaching. Teacher preparation including extended time in classroom settings is essential for developing high-quality teachers. Preservice teachers often know how to create and implement lesson plans; however, they do not always know how and when they should adapt their lessons to meet the needs of all learners. The focus of this study was to explore how emerging adaptive practice is developed during a student teaching practicum. The current study was guided by the following research question: How will an instructional intervention with pre-service teachers promote adaptive teaching practices?

Review of the Methodology

This qualitative study used a formative experiment to explore how preservice teachers developed their ability to use adaptive practice in their teaching. A formative

experiment includes an instructional intervention designed to address specific pedagogical goals. Three pedagogical goals were established to promote the development of adaptive practice during literacy lessons. The three pedagogical goals for the preservice teachers were to 1) develop their ability to use reflective practice and self-analysis to inform their decision making during literacy lessons, 2) develop in their ability to know when and how to adapt their teaching, and 3) to provide a rationale for adaptations made during a literacy lesson.

The researcher and participants spent extensive time together throughout the instructional intervention in both group and individual activities. The group activities occurred during bi-weekly cohort sessions; the sessions consisted of three main parts 1) debriefing about teaching experiences, 2) reading and discussing theory and practice, and 3) analyzing literacy lessons and problem solving. Participants debriefed together about their teaching experiences and provided each other with feedback and support. Time was spent reading and discussing theoretical and practical writings related to reflective and adaptive practice. A teaching episode was selected for peer review and analysis at most cohort sessions.

The individual activities included 1) self-analysis, 2) peer-analysis, 3) debriefing with researcher, 4) written reflections, 5) exit interview with researcher, and 6) online Google survey. Each participant completed two or three self-analyses of their video-taped teaching episodes. They provided peer analysis on selected teaching episodes. Two of the participants were observed at least three times and videotaped two times by the researcher. The other four participants were observed and videotaped by the researcher a

minimum of three times. The videotaping occurred during the observations. Additional time was spent debriefing with the researcher after each teaching observation. Each participant maintained written reflections. An exit interview was conducted with the researcher and each participant at the conclusion of the study. Each participant completed a Google survey at the conclusion of the study to identify personal growth towards adaptive practice. The combination of group and individual activities were designed to meet the pedagogical goals of the instructional intervention.

Summary of the Findings

A thematic analysis was used to understand the findings of this qualitative study (Attride-Stirling, 2001). A formative experiment design was used with six preservice teachers. It included an instructional intervention intended to develop adaptive practice. The data corpus included multiple types of data collected throughout the study. The data included field notes, observations, transcriptions of teaching episodes, self- and peer-analysis of teaching episodes, written reflections, transcripts of cohort session meetings, exit interviews, and the completion of an end-of-study survey. The multiple data sources provided a multi-dimensional view of the teaching experiences, decision-making, and rationale of the participants. The analysis process involved the reading and rereading of the data and the development and application of a coding system for the purpose of identifying themes represented in the data. The thematic analysis yielded four major themes; they served to explain how the participants were developing in their dispositions of adaptive practice and revealed evidence of when they were applying their knowledge to their teaching.

The instructional intervention was designed on the premise that reflective practice is a precursor to adaptive practice. The cohort sessions included readings and discussion on reflective practice as well as adaptive practice. The findings suggest the readings and discussions, along with the self- and peer-analysis of teaching, peer and researcher support, and cohort session activities all worked together to support the development of emerging adaptive practice. The four main themes found in the analysis revealed the perceptions and teaching decisions of the participants. The themes presented a comprehensive story of the growth and development of the participants. The four themes are identified as noticing and naming, adaptations in teaching, negotiating challenges, and attribution of growth by the student teachers.

Noticing is defined as the ability to recognize what took place during a lesson and determine if it was effective. Naming refers to describing the teaching actions within a lesson. Noticing and naming is needed to determine if a lesson is effective and if individuals are learning as intended. Noticing and naming is necessary in deciding if an adaptation might be warranted. Participants showed a developing ability to notice and name their teaching in three ways.

The first and most significant way the ability to notice and name was developed occurred through debriefing with the participant and the expert (researcher). They reviewed the teaching video and transcript and debriefed about the lesson. The expert served as a coaching mentor by guiding the participant to think deeply about the lesson to notice and name the literacy actions that occurred in the lesson and to recognize what literacy actions were missed. The participants were often surprised at all they learned

about their teaching by view video, reading the transcript and debriefing with the researcher.

The second way the actions of noticing and naming occurred was during cohort sessions when individuals described their teaching and made comments to their peers about specific teaching decisions and rationales. Finally, when debriefing and discussing with the researcher, meaningful conversations occurred, and participants engaged in thoughtful discussion that included noticing and naming the details of their teaching.

Adaptive teaching was the goal of the instructional intervention. The thematic analysis revealed the times the participants self-reported their attempts to adapt their teaching. These times occurred before a lesson begin, during a lesson, or after the lesson was completed. Participants identified making adaptations most often during a lesson. Less frequently, they made adaptations after a lesson was completed. Least often, they made adaptations prior to a lesson beginning. Adaptations ranged from minor adjustments requiring very little thoughtfulness to thoughtful adaptations requiring an adjustment in language, content, or delivery.

The third theme is described as the identification of the challenges that interfered with the participants' ability to make adaptations in their teaching. The challenges fell into three areas: mentor teacher expectations, curriculum expectations, and the student teacher's individual capacity in managing the classroom. At times, the expectations of the mentor teachers constrained the participants ability to make adaptations or any changes to a prescribed lesson. Rigid curriculum expectations created a barrier to making adjustments and adaptations for some of the participants. The capacity for effective

classroom management varied among the participants. Participants found it more difficult to think about adapting their teaching if they were experiencing challenges with classroom management.

The final theme revealed how the participants viewed their own growth during the instructional intervention. They attributed their growth to their ability to become more reflective about their own teaching. Experiences in self-analysis were identified as very helpful in learning to become adaptive. Cohort session activities and support were described as beneficial in thinking in more adaptive ways. Debriefing and problem solving with the researcher were perceived as a positive influence on developing dispositions of adaptive practice. The overall impact of the instructional intervention was perceived as positive. It is understood that preservice teachers are not yet considered experts and dispositions of adaptive practice are at the emerging stage.

Discussion of the Results

The focus of this study was to increase understanding in how adaptive practice develops in preservice teachers during a student teaching practicum with emphasis on literacy instruction. The following theoretical frameworks informed this study: cultural-historical theory (Vygotsky, 1978), reflective practice (Dewey, 1933; Schön, 1983, 1987; Zeichner & Liston, 1986, 1996), teacher knowledge (Cochran-Smith & Lytle, 1999; Sawyer, 2004; Shulman, 1986; Shulman & Shulman, 2004) and adaptive expertise and practice (Bransford et al., 2000; Bransford et al., 2005; Corno, 2008; Corno & Randi, 2005; Hatano & Inagaki, 1986; Schwartz et al., 2005).

The premise of the study acknowledges the valuable role of teacher education in preparing teachers for the classroom. High-quality preparation includes opportunities for situated learning experiences in authentic classroom settings for extended periods of time (Bransford et al., 2000; Darling-Hammond, 2006; Hoffman et al., 2005). Teacher knowledge in content, pedagogy, and curriculum are influential factors in teacher effectiveness (Cochrane-Smith & Lytle, 1999; Shulman, 1996). The integration of multi-dimensional teacher knowledge with authentic teaching opportunities during a student teaching practicum for the purpose of developing adaptive practice was the focus of this study.

The areas for discussion are listed under separate headings; however, they are interconnected and overlapping. The instructional intervention designed for this formative experiment is based on the theoretical framework that teacher knowledge is co-constructed through collaboration and interaction between the participants and the researcher (Vygotsky, 1978). Teacher knowledge influences teaching actions and decisions as well as the ability to be reflective (Schön, 1983, 1987). Reflection serves to inform decision-making that can led to adaptive practice (Schön, 1983, 1987; Zeichner & Liston, 1986, 1996). The context of the classroom, the mentor, the students, and the student teacher are dynamic factors in the study and each has an impact on emerging adaptive practice. The findings from this study show the benefits of reflection, analysis, collaboration, and discussion. They also reveal the developmental nature of preservice teachers and their decision-making ability to resolve challenges during literacy lessons.

The findings for this qualitative study are discussed under the following topics:

- Teacher Knowledge and Preparation
- Reflective Practice
- Adaptive Practice
- Teacher as Learner

Teacher Knowledge and Preparation

Teaching requires a wide range of knowledge, skills, and dispositions. Educational researchers and theorists have acknowledged the importance of teacher knowledge in its many forms (Bransford & Brown, 2000; Ball & Cohen, 1999; Cochran-Smith & Lytle, 1999; Shulman, 1986). As students enter the final phase of their teacher preparation and embark on a student teaching practicum, there is an assumption they have acquired at least some content knowledge, pedagogical knowledge, and curricular knowledge (Shulman, 1986). This study is predicated on the assumption that preservice teachers have a developing body of knowledge relevant to literacy teaching.

Cochran-Smith and Lytle's (1999) theory of three types of knowledge is relevant to the experience of the participants in this study. The first level of knowledge, *formal knowledge*, was most evident in the student teachers. In the participants written reflections and analyses, they drew upon this broad "base of knowledge" referred to as formal knowledge. The participants confidence in knowing about classroom organization, lesson planning, and knowledge of content and the teaching profession. DeArment et al. (2013) and Fairbanks et al. (2010) described how teachers often underestimate the complexity of teaching; their research is supported in the findings. At times, the participants reflected a strong confidence in their formal knowledge, only to later

discover they had a limited view and scope on the complexities of teaching literacy. This occurred when they encountered students with behavioral or learning challenges. On several occasions, participants expressed confidence in their teaching and rated their lesson as good or very good. Their perceptions often changed significantly after watching videotape of their teaching, reviewing the transcript of their lesson, or conferring with the researcher. Upon review, and usually with peer or expert support, they came to recognize both strengths and weaknesses in their teaching that were previously unnoticed.

The formal or base knowledge they possessed about teaching, pedagogy and content was essential and it served as a foundation as they entered their practicum. However, it also proved to be insufficient for navigating the complexities of teaching. As the cohort met for regular sessions, they freely expressed their successes and failures and sought help in problem-solving from peers and the researcher. The debriefing conversations during cohort meetings at first glance appeared casual and free-flowing; however, the sharing and collaboration served a vital role in the co-construction of expanded knowledge related to literacy teaching as well as reflective and adaptive practice. Participants attributed their growth and development in a large part to the cohort discussions with peers and the researcher.

Cochran-Smith and Lytle's (1999) second conception of knowledge is *knowledge in practice*. It is supported in the design of the instructional intervention for this study. Based on developing *knowledge in practice* the intervention provided opportunities for moving beyond formal knowledge and develop *knowledge in practice*. This was accomplished in part by assigning the participants readings about adaptive and reflective

practice. Participants implemented reflective practice in their writing and debriefing about their teaching.

A portion of cohort discussion time was dedicated to talking about and applying principles of adaptive and reflective practice to the practicum. The use of slides, diagrams and videos enhanced the discussions. The participants expressed eagerness to learn about adaptive and reflective practice. They attempted to read assigned materials in advance and had mixed success in doing so. Engaging in a full-time teaching practicum and balancing the other aspects of their college life, including part-time jobs, additional coursework, and extra-curricular activities, left the participants feeling squeezed for time.

A formative experiment allows for alterations to the instructional intervention; adjusting the outside reading was a change that occurred to the intervention (Reinking & Bradley, 2008). I continued to provide participants with each article; however, we reviewed more of the content together. I shifted from expecting them to read it all on their own, and instead used some of the cohort session time to teach the key ideas and theories. Viewing the video tape of their own teaching and transcribing and analyzing their own teaching took a great deal of time outside of the practicum and cohort sessions. It was reasonable to adjust the reading load to encourage more time spent on self- and peer-analysis of video.

In cohort discussions, the participants begin to adopt the language related to adaptive practice in their oral reflections and comments. Darling-Hammond (2006) noted the necessity of justifying teaching decisions. The participant's ability to engage in talk about their teaching supports their ability to justify their actions. They were quick to cite

examples of making adaptations in their teaching and to provide a rationale. Their examples ranged from minor behavioral adjustments to true adaptations in method or content. In their written reflections, they identified specific times each week when they were thinking about how to improve a lesson or help a specific student.

Cochran-Smith and Lytle's (1999) third conception, *knowledge of practice,* was least evident in the findings. The preservice teachers in this study lacked the experience, confidence and depth of knowledge to fully incorporate *knowledge of practice*. Berliner (1994) described the necessity of extended time in the field to develop the kind of expertise needed for *knowledge of practice*. A 14-week practicum provides the first immersive professional experience for many student teachers and serves to prepare a foundation for emerging knowledge and practice.

Reflective Practice

This study recognizes the essential role of reflective practice as a precursor to adaptive practice as demonstrated in current research (Anthanses, et al., 2015; Bransford, et al., 2005; Fairbanks, et al., 2010; Vaughn, et al, 2016; Parsons, et al., 2010). The ability to be thoughtfully reflective impacts every aspect of this research, from noticing and naming within a lesson, learning to be adaptive, negotiating challenges and identifying what was helpful in the instructional intervention. The findings are supported by Schön's (1983, 1987) descriptive work on reflective practice.

Cycle of reflection. The cumulative experiences of developing reflective practice described as *reflection-on-practice* and *reflection-in-practice* are depicted in the cycle of reflection as shown in Figure 5.1 This table represents the integrated and recursive

experiences of the intervention that proved to be the most beneficial in developing reflective ways of thinking about literacy lessons. The experiences the intervention displayed in the table below are described in greater detail in the following sections.

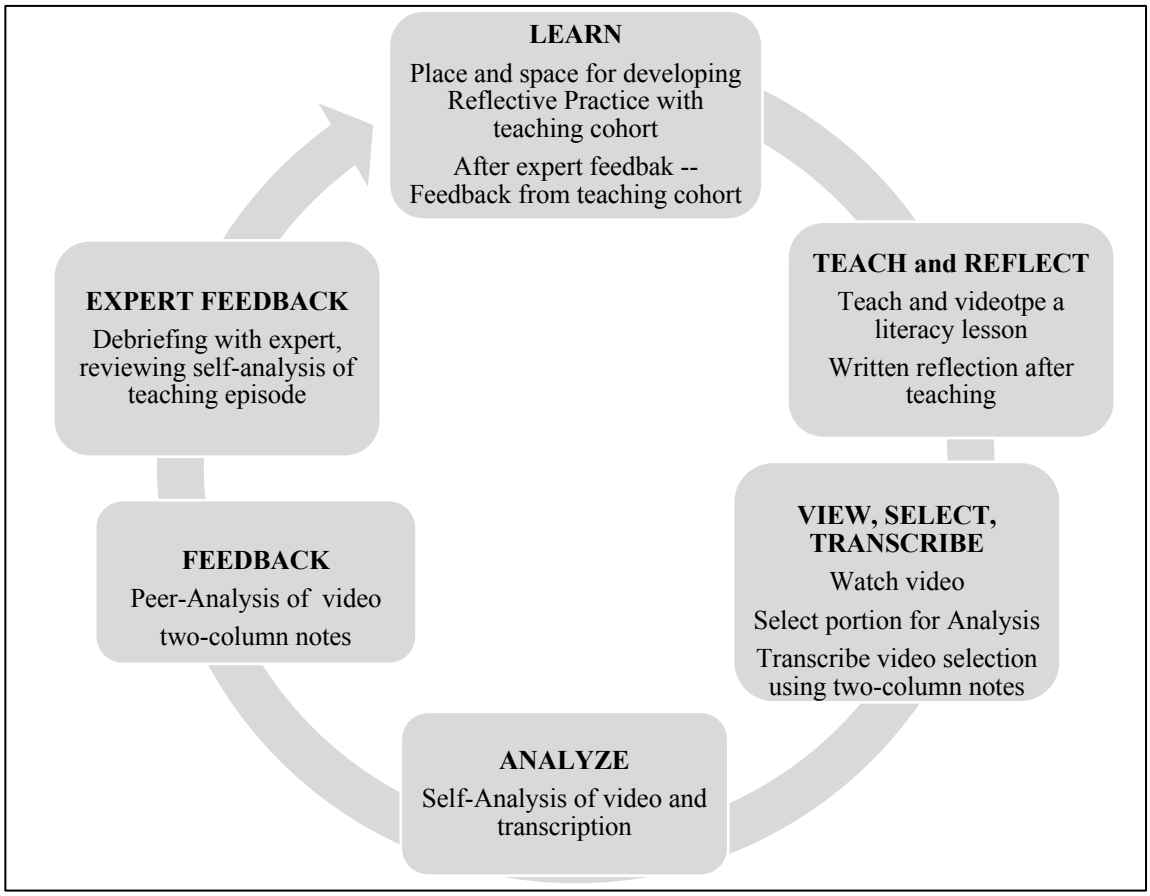


Figure 5.1 Cycle of reflection for a single teaching episode

Reflection-on-practice. Schön's (1983, 1987) described *reflection-on-practice* as an active event with a designated time for planning a lesson and considering a lesson's strengths and weaknesses. The first step in the cycle of reflection occurred during cohort sessions. The discussions provided a place to learn and explore the theories and practical applications of reflective practice as described by Schön (1983, 1987) and Zeichner and

Liston (1996; 1987). The first step provided a foundation for understanding the role of reflective practice in adaptive teaching.) Teaching and videotaping a lesson provided the means for self and peer-analysis in the cycle of reflection. An initial written reflection shortly after teaching allowed the participant to capture first impressions and responses to the lesson. Transcribing, analyzing and debriefing about the same lesson provided the participant multiple opportunities to reflect upon the strengths and weaknesses of a lesson.

Reflective practice and self-analysis. A highly significant feature of the cycle of reflection was the opportunity for self-analysis. Recording a literacy lesson using video provided a means for reviewing the lesson as many times as needed for analysis. Transcribing a teaching video was a slow and tedious process at times, it required viewing and reviewing small sections of the lesson multiple times to capture the dialogue and events. The close looking was the beginning of self-analysis, and it promoted reflection described by Schön (1983) as *reflection-on-practice*.

Providing a written analysis using a two-column note format was a new experience for the participants; it required looking again at the lesson, line-by-line review. Schön (1983) describes reflection as a recursive process, and this was evident in the participants' experience. The slow and deliberate look at the transcripts, along with the use of descriptive language to describe literacy practices, student behavior or other elements of the lesson, encouraged thoughtfulness about the teaching. The participants repeatedly stated the benefits of reflecting retrospectively on a teaching episode through video, transcription and written analysis. The participants shifted their perceptions of the

effectiveness of their lesson with the opportunity to slowly and carefully analyze their teaching.

Other opportunities for *reflection-on-practice* occurred in the written reflections each participant provided on a weekly basis. The participants were taught to maintain a written reflection journal by selecting a teaching episode during the week and taking some time to reflect on a lesson. They were prompted to consider the strengths and weaknesses of their lesson. Additionally, the debriefing at the beginning of each cohort session served as a time of reflection as experiences were shared and discussed. Some reflections were brief and vague while others were more developed and thoughtful; however, regardless of the quality, all reflections provided insight into the thought processes of each participant. In the exit interview, all of the participants described the written reflections as beneficial for promoting in-depth thoughtfulness about their teaching.

Reflective practice and peer-analysis. The peer analysis phase of the cycle of reflection benefitted all participants in that they were both the recipient of a peer's analysis and they provided a peer with analysis. Zeichner and Liston's (1987, 1996) theory of the benefits related to expert feedback was supported in the findings with examples of peers serving as quasi-experts by providing feedback in their analysis, posing questions and providing support to one another. The responses from participants to one another in the form of peer analyses required viewing the video, reading the transcripts and writing about the lesson, each action provided an opportunity for

thoughtful reflection-on-practice. Each participant recounted the benefits of peer analysis in the cohort discussion as well as the exit interviews and final survey.

Reflective practice and debriefing with an expert. The time spent debriefing with an expert during the cycle of reflection proved to be the single most helpful experience in developing reflective practice. The researcher served in the role of the expert, as described by Zeichner and Liston (1987, 1996). Their work supported the enhanced and extended conversations during debriefing between the expert, and individual participants. The debriefing with an expert promoted thoughtful analysis of the lesson. The expert guided in-depth noticing and naming of literacy actions within a lesson. The expert also prompted more profound reflections by means of thoughtful questioning, and by posing alternative perspectives. There were profound moments with each participant and the expert, underscoring the value of expert support as posited by Zeichner and Liston's (1996, 1987).

The field notes and transcripts contained both independent reflections and reflections with an expert (researcher). The independent reflections were often vague or general with comments similar to *my lesson went well*. While debriefing with the researcher, participant comments often shifted to statements similar to *I did not even notice _____ or think about _____ until you (researcher) prompted my thinking.* All participants experienced increased thoughtfulness and a more profound reflection when it was in collaboration with the researcher.

The findings support Vygotsky's (1978) theories of co-constructing knowledge and the significant role of a *more knowledgeable other* in promoting growth.

Additionally, the findings support Soslau's (2012) research on the role of supervisory conferences as well as Timperley's (2011) work on mentor conversations and professional learning. The debriefing conversations in this study were designed to be collaborative, generative and open as proposed by both Soslau and Timperley. Participants identified conversations with an expert as "very significant" in developing emerging adaptive practice.

Reflection-in-practice. Schön's (1983, 1987) second type of reflection, *reflection-in-practice,* refers to reflecting on the spot or in the moment. *Reflection-in-practice* can lead to making adjustments, changes or adaptations to a lesson in the teaching moment. The participants in this study demonstrated *reflection-in-practice* throughout the practicum. The increased ability for *reflection-in-practice* was enhanced by the experiences of the cycle of reflection. The most frequently reported adaptations occurred *during a lesson* as a result of attempting reflection-in-practice. In the written reflections and cohort session discussions, the participants often described what took place during a lesson and their decision to make a change or adjustment. At times, those changes were minor, at other times they were more significant and consequential. An evolving thoughtfulness was evident in the findings and was consistent with the development of reflective practice.

The participants were consistent in writing weekly reflections on their own; however, the quality and depth of their reflections varied. Factors such as feeling rushed or waiting too long to write a reflection after a teaching episode influenced the quality of the reflection. A formative experiment allows for modification to take place to the

intervention as necessary. The written reflection format was modified to improve the quality of the reflections the midpoint of the study. The changes in the written reflection format incorporated the work of Parsons (2012) and Parsons et al. (2010). Parsons' (2012) research included a useful template for assessing the thoughtfulness of a teacher's reflective process (see Appendix C). A change in the written reflection format prompted participants to think more deeply about their teaching actions and to provide a rationale for their decision making.

Schön's (1983,1987) influential theories on reflective practice are integrated throughout the instructional intervention and reflected in the findings. Dedicated time for reflection in the written reflections journals, the cohort discussions and the debriefings with the researcher were integral to this study.

Additionally, Snow et al. (2005) outlined the nature of reflection as teacher knowledge increases throughout a teaching career. Their work posits the emerging nature of reflection at the preservice stage in contrast to a highly developed ability to be reflective later in the teaching career. The participants' depictions of reflection through the of course of this study showed an emerging ability to engage in reflective practice.

Additionally, Zeichner and Liston's (1987, 1996) descriptions of the role of expert advice are supported by the findings. The researcher throughout the study observed each participant. Following each observation in conjunction with the video and transcript analysis, the researcher and participant debriefed about the observation of the teaching. Invariably, the researcher prompted more profound reflections by asking thoughtful questions and posing alternative perspectives. The researcher served in the

role of the expert, as described by Zeichner and Liston (1987, 1996). The field notes and transcripts contained both independent reflections and reflections with an expert (researcher). The independent reflections were often vague or general with comments similar to *"my lesson went well*." While debriefing with the researcher, participant comments often shifted to statements similar to *"I did not even notice _____ or think about _____ until you (researcher) prompted my thinking."* All participants experienced a more thoughtful and deeper reflection when it was in collaboration with the researcher.

Vygotsky's (1978) theories of co-constructing knowledge and the significant role of a *more knowledgeable other* promoting growth support the findings. Additionally, Soslau's (2012) research on the role of supervisory conferences as well as Timperley's (2011) work on mentor conversations and professional learning support by the findings. The debriefing conversations in this study were designed to be collaborative, generative and open as proposed by both Soslau and Timperley. Participants identified conversations with a mentor (researcher) as very significant in developing emerging adaptive practice.

Adaptive practice and reflective practice. The connection between reflective practice and adaptive practice has been discussed in a previous section; however, the relationship is worth mentioning again. Many of the components of this study provided opportunities for the participants to write about and talk about their reflective process. Engaging in reflection provided real-life experience in thinking deeply about teaching and then considering how to improve. The dual processes of reflection and adaptive thinking are reciprocal. Lin et al.'s (2005) work documents a connection between deep reflection and authentic problem solving that leads to adaptations; their work is supported

in the findings of this study. Reflection provided time and space for analysis and problem-solving and resulted in making adaptations.

Quality of adaptations. Examples of teaching adaptations in the findings ranged in quality from *minimally thoughtful*, *thoughtful* and *considerably thoughtful* (Parsons, 2012). The work of Schwartz et al. (2005) supports the variation of adaptive responses in the findings. One of the hallmarks of adaptive expertise as defined by Hatano and Inagaki (1986) is the differentiation between the efficiency of routine expertise and the innovation of adaptive expertise. Schwartz et al. (2005) attributed efficiency to routine tasks that needed consistency and innovation to novel problems that need creativity. The participants used the term adaptive practice to define some of their routine responses as they attempted to become more *efficient* in the teaching. At other times, their descriptions of adaptive practice were more thoughtful and responsive and related to *innovation.*

Many of the adaptations identified by the participants were considered *minimally thoughtful* or *thoughtful*. *Minimally thoughtful* actions usually took place in the moment and were quickly enacted. Some *minimally thoughtful* actions produced minor results and were related to classroom management, while others had noticeable positive consequences on learning. Deciding to expand the reading lesson on the spot or add an analogy that took minimal thought had the potential to increase understanding and improve learning. Repeating or clarifying a concept or providing support for solving reading problems were quick ways to provide a minimally thoughtful adaptation with potentially positive results. *Thoughtful adaptations* included changing content prior to a lesson or between lessons, adding a model or video to instruction, and adding content to

or omitting content from the lesson. An anticipated misunderstanding or potential confusion could be the impetus for a thoughtful adaptation. This often occurred during a lesson or directly after a lesson. *Considerably thoughtful* adaptations usually involved some type of informal or formal assessment. The preparation or substitution of materials, new content, or alternative experiences for different students are examples from the findings. This type of adaptation happened least frequently and was evident in the later stages of the practicum.

Knowing when and why to adapt. The participants were actively attempting to make their teaching more meaningful throughout the practicum as evidenced in the findings. Many examples of decision-making and attempting adaptations before, during, or after a lesson were reported. The findings revealed adaptations occurred infrequently before teaching, most often during teaching, and less frequently after teaching. The work of Hayden et al. (2013) and Yoon et al. (2015) supported a need for clear rationales in decision making prior to adaptive practice. The participants expressed a desire to provide clear rationales for their decision making; however, in practice it did not always happen. They relied on their formal knowledge (as described by Cochran-Smith & Lytle, 1999) to inform the effectiveness of their teaching, combined with their informal observations in the initial stages of the practicum.

As the practicum progressed, they talked more confidently about literacy practices connected to their teaching. These findings are supported by the work Hoffman et al. (2005) and Snow et al. (2005) related to identifying effective literacy practices. The participants were able to notice and name literacy events occurring within their lessons

and make decisions based on established literacy practices at least part of the time. They identified their reflections as helpful and attributed at least some of their decision making to their developing *knowledge in practice* as facilitated through the cohort sessions (Cochran-Smith & Lytle, 1999).

The participants were not versed in the use of formal assessments to inform their adaptive practice. Talk of assessment showed up in the data at the end of the practicum on the exit interview and Google survey and not in the written reflections and self-analysis. The participants expressed a desire to use formal assessments but did not appear to know how to incorporate them or have the materials available to do so. One disadvantage of a short practicum (each participant spent seven weeks in two different classrooms) was a limited time to learn about individual students. Additional time beyond seven weeks may have been necessary for the implementation of formal assessments. There were some instances of participants citing the use of a formal assessment, when provided by the mentor teacher, as a means for determining the need to make adaptations. Mentor teachers often left the participants to implement a lesson on their own and to assess their own effectiveness. The variation in mentor teacher involvement appeared to be based on personality, prior experience with student teachers, and the curriculum implementation expectations for the campus.

These findings reflect the experience of preservice teachers who are entering their first full-time, immersive teaching experience during the student teaching practicum. Hatano and Inagaki's (1986) seminal work explicated the development of routine expertise as the necessary predecessor to adaptive expertise. The first forays of adaptive

teaching practice likely begin with managing and mastering the routine practices of the classroom. As preservice teachers attempted to become more thoughtfully adaptive over time, they sometimes used trial and error, provided oversimplifications, or misunderstood a problem. At other times they were thoughtful and insightful on how to make adaptations. The process of stops and starts, successes and missteps worked together for the purpose of developing the necessary foundations for deeper and more meaningful teaching that will develop over time.

Missed opportunities for adaptive practice. The participants had the best of intentions to teach effectively and to the needs of all learners. Working from the base of knowledge they acquired in their undergraduate courses, they applied their formal knowledge, as defined by Cochran-Smith and Lytle (1999), to make good teaching decisions. The findings show a dependence on a basic literacy knowledge, supported in the research of Snow et al. (2005) and Pearson and Hoffman (2011), as a basis in decision-making in literacy lessons. However, a lack of depth in both knowledge and experience resulted in missed opportunities for adaptive practice.

One example comes from a first-grade literacy lesson. The student teacher was working with three boys in a guided reading lesson and was listening to each read a portion of a story. In the transcript of the lesson, it was clear to see the short amount of reading time allowed for each student. The three boys each had some miscues in their reading and one had a lot of difficulty. The student teacher quickly told each boy the words he had missed and did not take any time to prompt the students to problem solve or think about the story in any way. When the reading was completed the boys were

dismissed and the lesson was over. This short example represents missed opportunities. The missed opportunities were not apparent to the student teacher. Only after looking at the transcript of the lesson and debriefing with the researcher did she realize she could have improved her lesson. The student teacher did not recognize an opportunity to provide literacy support to her students in problem solving. She had not recognized that each student read for only one or two minutes, and there had been no conversations about the reading. This may have been due to lack of experience, lack of knowledge in literacy teaching, a lack of time in conducting the lesson, or other reasons. Franam and Grisham (2006) address this issue in their research on the ongoing development of teacher knowledge throughout the teaching career. Their work supports the findings of this study that show how extended time and experience in the field are essential for the teacher development.

Teacher as a Learner

The participants of this study showed a strong desire to maximize their practicum experience by participating in this formative experiment. They were willing participants in learning to transcribe their teaching and analyze their own teaching as well as that of their peers. They were vulnerable to one another during cohort sessions, and they asked for feedback and advice from each other. Throughout the intervention they repeatedly talked about their learning and attributed their growth to participation in the cohort sessions.

The findings support the work of Duffy et al. (2009) and Lin et al. (2005) that highlights the strong connection between metacognitive actions and thoughtfully adaptive

practices. The participants were very intentional about thinking deeply about their own teaching and incorporating reflective practice into their teaching. Duffy (2005) cites self-regulation as a factor in attempting "thoughtfully adaptive teaching." Lin's (2001) description of "reflective adaptation" is similar to the examples of adaptive practice that were highlighted by the participants. Each time a participant adapted a lesson to add an analogy, change an input method, or provide a mini-lesson when one was not originally planned, they were using "conscience, mindful action instead of technical compliance" as defined by Duffy (2002, p. 301).

Darling-Hammond (2006) defined the role of the lifelong learner: "Adaptive experts also know how to continuously expand their experience, restructuring their knowledge and competencies to meet new challenges" (p. 11). Lin et al. (2005) also spoke of the importance of ongoing learning in the process of becoming an adaptive teacher. Participation in this formative experiment resulted in each participant stating a desire to be a lifelong learner. The influence of the social connection on learning and the rich experiences in the activities of self- and peer-analysis proved to be inspiring to the participants, as noted in their written responses.

Implications for Educational Practice

Teacher preparation has the potential to influence the teaching force of the future. Responsive and reflective teachers are needed more than ever in the 2st century. The present study was designed to understand how an instructional intervention promotes adaptive teaching practices. Findings revealed that intentional efforts and thoughtful opportunities to write, talk and collaborate throughout the student teaching practicum

were worthwhile. The result was greater awareness, thoughtfulness, and adaptive ways of thinking and acting.

Expand Teacher Knowledge

The formal knowledge that is usually present in preparation programs is useful as a base knowledge but inadequate for addressing the complexities of teaching. Ongoing learning must take place during the practicum and beyond. Teacher knowledge includes content, pedagogy, and curriculum, and all types of knowledge need to be developed during the student teaching practicum. Student teachers need to be able to explain and justify their teaching decisions. They will need ongoing expert support as described by Zeichner and Liston (1996) and peer collaboration as described by Cochran-Smith and Lytle's (1999) in order to gain *knowledge of practice* for generative problem-solving.

Learn to Be Reflective

Time spent learning the art of reflective practice will serve preservice teachers in the professional and personal life. Reflective practice is essential for self-analysis and self-discovery. The study utilized video to capture the language and interactions within a teaching episode. Transcription of those lessons provided additional time to truly notice the participation structures of the group, the language of the teacher and the students, the turn taking, the overlaps and more. The practice of reviewing a video and analyzing it was useful in developing reflective practice.

Debriefing with an Expert

Debriefing with an expert proved to be especially helpful for the student teachers. They first needed the opportunity for self-analysis, and then they needed a *more*

knowledgeable other to help identify the strengths and weaknesses of their lesson. They also were able to set goals for future growth. Timperley's (2013) model of mentoring conversations provides useful guidelines to support the development of meaningful conversations.

Video and Self-Analysis

Many student teaching programs use video to record and review teaching episodes. This study went a step farther with each participant carefully transcribing selected teaching episodes. Word-by-word and line-by-line, the careful transcription of a lesson promotes close analysis. An additional step used in the present study was partnering with a peer and reviewing each other's videos and teaching transcripts. Transcription and analysis are time-consuming and can be tedious at times; however, the participants of the present studied cited significant benefits from this experience.

Keep up the Conversation

The cohort discussions, debriefing sessions, exit interviews and other conversations all served to develop thinking about teaching. It is easy to overlook the value of dialogue as a way of developing knowledge and teaching dispositions. Practicum experiences that include time for discussion and collaboration will provide more significant opportunities for developing adaptive ways of thinking.

Vygotsky's (1978) cultural-historical constructivist theory resonates throughout the instructional intervention, with multiple opportunities for collaboration, conversation, and interaction. The potential for growth within a cohort of student teachers provides

hope for better teaching through the interactions of peers and experts, student teachers, mentors, and children in the classroom.

Recommendations for Future Research

The topics of adaptive expertise and adaptive practice have been researched across several fields, including areas of education. Most of the current educational research has focused on the students in the classroom. In contrast, my research is unique in that it explores emerging adaptive practice in preservice student teachers during a student teaching practicum. High-quality teacher preparation is essential in the development of responsive teachers who are prepared to meet the needs of diverse learners. The present study provided positive findings on the benefits of developing adaptive practice; however, there are many other important considerations for research related to this topic.

First, additional studies focusing on developing a greater capacity for adaptive practice and literacy instruction during preservice preparation are needed as proposed by Vaughn et al. (2015). Minimal research has been conducted in this area. Many more studies are needed to explore these topics fully. A deeper understanding of the requisite knowledge and practical experiences that are most beneficial for developing adaptive practice are also needed.

Second, longitudinal studies that extend into the induction phase of teaching would provide important insight into teacher development. Grisham et al. (2014) have noted a need across educational research for longitudinal studies. Research related to

developing reflective and adaptive practice beginning in preservice and extending into the induction phase of teaching could serve to inform preparation.

Third, research is needed on the relationship between adaptive practice and student achievement. There are minimal studies exploring student achievement in response to adaptive teaching. Carefully conducted research to explore the most beneficial ways of adapting teaching to increase student performance would be beneficial.

Conclusion

The purpose of this study was to explore how adaptive practice develops in preservice teachers during a student teaching practicum. This formative experiment consisted of an instructional intervention with multiple components. Multiple sources of data were collected from the participants as they wrote reflections, participated in cohort sessions, analyzed their own teaching and that of their peers, and debriefed with the researcher. The data served to reveal a multi-faceted view of the student teaching practicum and the pursuit to become adaptive teachers. The participants read, discussed, wrote, talked, collaborated, viewed, analyzed, challenged and refined their thinking about adaptive practice. They learned to incorporate reflective practice as a precursor to adaptive practice. The ability to be thoughtful in reflection was useful in analyzing teaching episodes. Making adaptations before, during, and after teaching was considered more effective when completed in conjunction with reflective practice.

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APPENDIX A

Adaptive Teaching Rubric for Preservice Teacher

Adaptive Teaching Rubric for Preservice Teachers

Criteria for Adaptive Practice	Adaptive/Generative Practice	Self-Regulating / Willingness to Adapt	Automatic Teaching ~ Follows prescribed plans with some variation.	Rote Teaching ~ follows prescribed plan without making adaptations
Theory / Rationale *Knows and can explain a theory and rationale for specific literacy lessons.*	-Provides theoretical basis for literacy lessons. -Provides compelling student examples and verifiable evidence that validate rationale for literacy lessons	-Provides some theoretical basis for literacy lessons. - Provides student examples and verifiable evidence that validate rationale for literacy lessons.	-Provides generalized or vague theoretical basis for literacy lessons. - Provides student examples that support a generalized rationale for literacy lessons.	-Does not provide theoretical basis for literacy lessons. -Student examples are not provided to support rationale for literacy lessons.
Well-developed lesson plans – *appropriate literacy expectations and experiences based on individual and group needs*	-Designs literacy lessons that satisfy the required curriculum expectations and the collective and individual literacy needs of all learners. Necessitating individual and small group plans that may vary widely. -Adapts lesson plans in order to challenge or remediate individuals as needed.	-Designs literacy lessons that satisfy the required curriculum expectations and take into consideration the range of literacy needs of individuals and the group. -Adapts lesson plans to provide a range of literacy experiences as needed.	-Mostly use lesson plan provided in teacher's edition or curriculum materials. -Willing to make minor adaptations to lesson plans.	-Solely uses lesson plans provided in teacher's edition or curriculum materials. -Keeps students moving through material on predetermined schedule.
Thoughtfully Reflective Practice – *ability to reflect before, during and after a teaching episode for the purpose of assessing and improving learning.*	-Thoughtful reflection is evident before and after teaching (on-practice) as well as during (in-practice) teaching as evidence through written response and debriefing with mentor. -Seeks expert advice before, during and after teaching episodes.	-Reflection is evident before and after teaching (on-practice) as well as during (in-practice) teaching as evidence through written response and debriefing with mentor. -Seeks expert advice before, during and after teaching episodes.	-Some Reflection is evident before and/or after teaching (on-practice) as well as during (in-practice) teaching as evidence through written response and debriefing with mentor. -Sometimes seeks expert advice after teaching episodes.	-Minimal or no reflection is evident before, during or after a teaching episode. -Expert advice is not requested.

Inquiry Stance – *Demonstrates willingness to understand the learner and the impact of specific literacy teaching practices.*	-Actively seeks to understand literacy development of the learner(s) through observations, interaction and assessment. -Explicitly poses literacy-related questions that help to connect theories and research with effective teaching. -Explicitly poses questions about their own teaching. Questions may cite theories and/or research.	-Seeks to understand literacy development of the learner(s) through observations, interactions and assessment. -Poses literacy-related questions that help to connect theories and research with effective teaching. -Explicitly poses questions about their own teaching. Questions may cite theories and/or research.	-Seeks to understand the development of learner(s) through one source of information. -Occasionally poses questions about the and literacy development. -Occasionally poses questions about their own teaching. Questions may cite some teaching resources.	-Does not appear to be interested in/resists posing questions about the learner(s) literacy development. -Does not appear to be interested in/resists questioning their own teaching.
Decision making / Problem solving	-Sees errors as rich sources of information that will serve to inform decision making and problem solving -Uses multiple sources of information while seeking answers to questions (student data, observation, verifiable evidence and mentor experts)	-Sees errors as rich sources of information that will serve to inform decision making and problem solving -May use one or more sources of information while seeking answers to questions (student data, observation, verifiable evidence and mentor experts)	--Recognizes a need for making a decision or solving a problem, however, relies on limited information to inform the process -Accepts simple solutions to problems that may require more complex information for problem solving.	-Does not seek to gather information in order to solve problems or make decisions that would inform next steps -Accepts student interaction as is, without need for decision making/problem solving
Thoughtfully Adaptive *Adjusts and changes*	-Adjusts teaching language to the student's response or behavior -Makes "in the moment" teaching adaptations based on rationale related to application of theory, observations and other sources of information	-Adjusts teaching language to the student's response or behavior -Makes "in the moment" teaching adaptations based on rationale related to theory, observations and other sources of information	-Makes some adjustments to teaching based on student verbal/nonverbal response or engagement -Adaptations may be mostly related to behavior and rarely addresses student engagement and understanding	-Does not make adjustments to teaching interactions -Proceeds with lesson regardless of student engagement or response -May dominate lesson time with teacher talk

APPENDIX B

Coding Description Table

Coding Descriptions Table

Parent and child codes ST identifies a teaching moment as it relates to an understanding of literacy theory

Adaptations in teaching	Instances of reported change in teaching
• Adaptations before teaching	Student Teachers (STs) identify specific instances when a change in an original teaching plan was implemented before a lesson began. A rationale for the change was identified
• Adaptation during teaching	STs define specific instances of changing a teaching action during a lesson and providing a rationale for that change.
• Adaptation after teaching	STs define potential changes after reflecting on a teaching episode and provide a rationale for their decisions.
Assessments that inform adaptive practice	The evaluation process that was used to determine lesson success.
Noticing and literacy practices	•Noticing: identifying the effectiveness of a teaching moment •Naming: clearly stating the teaching action that took place during a literacy lesson
NN one's own teaching	After reflecting on a teaching episode through written reflection, video or transcript analysis, and stating what actions worked or did not work in that lesson.
• Confidence in teaching	STs cites a developing ability to teach a lesson well.
• Connecting theory to practice	ST identifies a teaching moment as it relates to an understanding of literacy theory
• Determining next steps following reflection on one's teaching	STs identify future teaching adaptations through written reflection or self-analysis following a teaching episode
• Evidence of improvement	ST notices when their teaching has improved.
• Evidence of problem solving	ST identifies decisions and actions taken to resolve a problem in teaching.
• Preparation for a lesson	STs cite being unprepared for a lesson as a challenge to adaptive practice, either directly or indirectly
• Time management	STs cites an issue related to time as a challenge to their teaching.
Noticing and naming with peers in cohort group	STs debrief with peers and the researcher in the cohort meeting, they identify the effectiveness of a lesson, identify successful teaching actions and decisions. They discuss possible future actions.
Noticing and naming with expert	A mentor and ST reflect together on a teaching episode. The mentor provides feedback and questions to help ST clarify the effectiveness of a lesson and determine future steps.
Noticing and naming with peers	A peer provides an analysis and recommendation(s) for improving the effectiveness of a lesson after viewing a video and transcript of a STs literacy lesson.
Missed opportunities for noticing and naming	STs perception that a lesson went will, when evidence in observational field notes identified problems within a lesson that went unnoticed.
Negotiating challenges to adaptive practice	STs identifies barriers to making changes or adjustments before, during or after a teaching episode, when upon reflection, a change could have improved the effectiveness of a lesson.
• Capacity for classroom management	STs cite the role of their own developing ability to manage a classroom as a challenge to adaptive practice.

Table continued

• Mentor Teacher (MT) requirements and expectations	STs identify the impact of implementing the mentor teacher's lesson plans as a challenge to adaptive practice.
• Recognizing support for adaptive practice from MTs	ST identifies how the mentor teacher helped to develop adaptive practice, either directly or indirectly.
• Curriculum expectations	STs cited the role of a prepared lesson plan as a challenge to adaptive practice.
Role of Instructional intervention	The STs identifies how meeting with a cohort on a regular basis contributed to the development of reflective and adaptive practice.
Role of Reflective Practice on Teaching	ST identifies when reflective practice is used. ST cites impact of reflective practice.

Appendix C

Adaptive Rating Scale

ADAPTIVE RATING SCALE

Adaptation	**Thoughtfulness Rating**		
What did I do? ***Give examples if possible***	**Minimal:** I didn't give it much thought	**Thoughtful:** I took some time to think about it	**Considerably Thoughtful:** I carefully considered my adaptation(s)
Modifies the lesson objective			
Changes the means by which objectives are met			
Invents an example or analogy			
Inserts a mini-lesson			
Suggests a different perspective to students			
Omits a planned activity or assignment			
Changes the planned order of instruction			

(Parsons, Davis, Scales, Williams, Kear, 2010)

APPENDIX D

IRB Approval Letter

Institutional Review Board
Office of Research and Sponsored Programs
P.O. Box 425619, Denton, TX 76204-5619
940-898-3378
email: IRB@twu.edu
http://www.twu.edu/irb.html

DATE: February 7, 2017

TO: Ms. Cheryl The
Reading

FROM: Institutional Review Board (IRB) - Denton

Re: Approval for Developing Adaptive Expertise in Preservice Teachers (Protocol #: 19368)

The above referenced study has been reviewed and approved by the Denton IRB (operating under FWA00000178) on 2/6/2017 using an expedited review procedure. This approval is valid for one year and expires on 2/6/2018. The IRB will send an email notification 45 days prior to the expiration date with instructions to extend or close the study. It is your responsibility to request an extension for the study if it is not yet complete, to close the protocol file when the study is complete, and to make certain that the study is not conducted beyond the expiration date.

If applicable, agency approval letters must be submitted to the IRB upon receipt prior to any data collection at that agency. A copy of the approved consent form with the IRB approval stamp is enclosed. Please use the consent form with the most recent approval date stamp when obtaining consent from your participants. A copy of the signed consent forms must be submitted with the request to close the study file at the completion of the study.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any adverse events or unanticipated problems. All forms are located on the IRB website. If you have any questions, please contact the TWU IRB.

cc. Dr. Connie Briggs, Reading
Dr. Nancy Anderson, Reading
Graduate School