

**Pre-Service Teachers' Use of Instructional Strategies when Comprehending and Instructing using Contextually Challenging Text**

by

Hannah Dupre Szatkowski

A dissertation submitted to the Graduate Faculty of  
Auburn University  
in partial fulfillment of the  
requirements for the Degree of  
Doctor of Philosophy

Auburn, Alabama  
August 3, 2019

Keywords: pre-service teachers, literacy methods course, contextually challenging text, comprehension, cognitive load theory, metacognition

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Approved by

Dr. Victoria Cardullo, Chair, Associate Professor of Elementary Education  
Dr. Hannah Baggett, Assistant Professor of Research Methods  
Dr. Michael Cook, Assistant Professor of English Education  
Dr. Mary Jane McIlwain, Assistant Professor of Reading Education & Early Childhood Education

## **Abstract**

This qualitative case study explores the processes that occurred when pre-service teachers in an undergraduate elementary education literacy methods course were asked to interact with contextually challenging texts in a comprehension module and implement comprehension instruction in a tutoring field experience placement. The goal was to understand the participants' metacognition and cognitive load as they explored the texts in the comprehension module. Findings indicate that pre-service teachers were more inclined to consult with other individuals, rather than relying on their own interpretations, when they needed help clarifying and determining meaning within the texts. Additionally, pre-service teachers metacognitively reflected on the strategic use of multiple reading comprehension strategies when exploring texts based on in-class discussion, journal entries, comprehension question responses, and a pre- and post-Metacognitive Awareness of Reading Strategies Inventory. During tutoring sessions, the pre-service teachers implemented instructional strategies using multiple comprehension strategies. When they were asked to reflect on how best to teach K-6 readers to use instructional strategies with contextually challenging texts, they recommended providing guidance (by peers and teachers) and purposefully selecting texts. Overall, findings reveal how pre-service teachers strategically planned, applied, and reflected on instructional and comprehension strategies through tutoring sessions and the comprehension module.

## **Acknowledgments**

I would like to thank my committee members, Dr. Victoria Cardullo, Dr. Hannah Baggett, Dr. Michael Cook, and Dr. Mary Jane McIlwain, who continually pushed me to dig deeper into the literature and data in order to strength my role as a researcher and educator. Additional recognition and thanks to my dissertation chair, Dr. Victoria Cardullo, who pushed me to discuss, explore, and evaluate my own research practices and provided me with guidance throughout my doctoral program. Dr. Hannah Baggett, thank you for your methodological guidance and expertise, which provided me with the opportunity to learn and grow as a qualitative researcher. Additionally, I want to thank Dr. Paris Strom for his perspective and guidance as an outside reviewer.

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## **List of Abbreviations**

CCT	Contextually Challenging Text
CLT	Cognitive Load Theory
GRR	Gradual Release of Responsibility
K-6	Kindergarten – 6 <sup>th</sup> grade
MARSI	Metacognitive Awareness of Reading Strategy Inventory

## **Chapter 1: Introduction**

### **Background of the Problem**

While an undergraduate student working toward my degree in elementary education, I was exposed to a plethora of research-based practices for literacy instruction. During one of my literacy methods courses, I was also asked to tutor a Kindergarten – 6<sup>th</sup> grader (K-6) reader. The tutoring lesson plan, format, and sequence were predetermined by the professor, so I had little opportunity to independently develop, adapt, and apply instructional strategies into the tutoring sessions. As a result, I learned one method of instruction but not how to plan and adapt instruction based on the multiple research-based practices I had learned about in my literacy methods course. As a result, I gained little experience with diverse instructional strategies as a pre-service teacher.

The summer after I completed my undergraduate degree in elementary education, I found myself sitting in a kindergarten classroom with aspirations to be the best teacher I could be, but unsure how to accomplish such a lofty goal. As I looked out from the kidney-shaped small-group table in front of me, I saw the year-long reading series provided by the district, which nearly covered the table. It felt like my life line. At that point, I decided to use the reading series in the hopes that my unconditional commitment would produce success.

As the ensuing months transpired, I began to notice that students were not mastering, or even understanding, all of the skills that were neatly laid out in the teacher's editions. I questioned why my undying loyalty to the program wasn't producing the results I had hoped for. In those moments, it didn't cross my mind to refer back to the strategies I had learned in my

undergraduate literacy methods courses. Instead, I began looking to other teachers and to resources online to meet my student's needs. This resulted in a hodge-podge collection of resources I implemented with good intentions but with little supported by research-based practices. Armed with these newfound "solutions," I got to work trying to meet students' academic needs. By the end of the year, students' growth, although limited, was evident. As I reflected back on the year, I felt that I had persevered but I had not met all of my student's needs. Although I would learn in years to come that my lofty goals were challenging to achieve, I continued to look back at my first-year teaching and reflect on what I could or should have done differently.

My desire to learn more about meeting student's needs led me to a graduate degree in reading education. During that experience, I began to see more of a connection between the knowledge I was gaining as a graduate student and my instructional practices as a teacher. With that being said, however, I didn't always make the connection between what I was learning and how I was actually taught in the classroom. I particularly struggled with this when I felt that I already knew the content or it seemed like just another article I had to read and summarize. My desire to grow as an educator was evident, but to be truly motivated, I needed to see value in what I was learning and how it connected to my teaching practices. This desire drove me to conduct research into the connection between theory and practice among pre-service teachers.

### **Statement of the Problem**

The problem I explored in this study was if and how pre-service teachers implement their previous and/or newly acquired knowledge of instructional practices while teaching. As I previously indicated, I sometimes felt a disconnect between my knowledge as a student and my instructional practices as a teacher. The topic of transference between methods courses and

instructional practices of pre-service teachers has been researched, but the results have varied significantly (Dawkins, Ritz, & London, 2009; Leland, 2013; Lipp & Helfrich, 2016; Robertson, 2013). In addition, based on my extensive analysis of literature, I have been unable to locate research that specifically analyzes the processes that occur when pre-service teachers explore contextually challenging text (CCT) in a literacy methods course, and their subsequent instruction when tutoring a K-6 readers.

My research explored the processes that occurred when pre-service teachers participated in a comprehension module in their elementary education literacy methods course, and then what thinking, planning, and instruction occurred when they were asked to plan and teach comprehension instruction to K-6 readers. Grisham, Lenski, and Wold (2006) indicate that pre-service teachers develop their knowledge of teaching literacy and learning from a plethora of experiences they have encountered during their time in school. Unfortunately, research also indicates that pre-service literacy teachers are not consistently provided engaging instruction they can use to develop their students' comprehension skills (Robertson, 2013). Due to this predicament, I felt it was necessary to explore the processes that occurred when a specific instructional design, in my study's case the Gradual Release of Responsibility (GRR) model (Pearson & Gallagher, 1983), was implemented in a literacy methods course. My goal was to better understand how the pre-service teachers experienced this instruction. In addition, I explored the planning and instruction that occurred when pre-service teachers taught comprehension strategies to K-6 readers.

According to Barnyak and Paquette's (2010) findings, literacy methods course instructors should instruct pre-service teachers how to teach literacy practices to their students, and they should challenge previous misconceptions about such instruction. In the study I conducted, the

instructor challenged and clarified misconceptions and prior understanding that occurred when the pre-service teachers were asked to explore text without support and then taught literacy practices specifically related to comprehension instruction.

Evidence suggests that literacy method instruction is most effective when it activates pre-service teachers' prior knowledge and engages them in the content (Shaw & Dvorak, 2013). I believe additional research in this area could provide more robust insight about the way that pre-service teachers explore literacy instruction in their own course work and how they apply strategies in their own teaching practices. I was specifically interested in the processes that occurred when pre-service teachers completed a three-week comprehension module. In this study, pre-service teachers were asked to interact with CCT in order to reflect on what they experienced as they struggled to comprehend the text. Subsequently, the pre-service teachers were asked to interact with the texts with the guidance of a literacy methods course instructor, in order to resolve misconceptions and clarify their understanding. In addition, my study explored what occurred when the pre-service teachers planned, implemented, and reflected on their comprehension instruction as they tutored K-6 readers.

### **Purpose of the Study**

The goal of this study was to better understand what occurred when pre-service teachers (i.e., participants) explored CCTs and the comprehension instructional practices they used when tutoring K-6 readers. I accomplished this by observing the experiences that occurred in the literacy methods course during the comprehension module. In addition, I conducted interviews with pre-service teachers and observed tutoring sessions in which they taught comprehension. I hoped to further understand the processes that occurred as these pre-service teachers developed as educators.

## **Research Questions**

This study was guided by the following research questions:

1. What metacognitive processes occurred when pre-service teachers interacted with contextually challenging text?
  - a. How did cognitive load influence pre-service teachers' interaction with contextually challenging text?
2. What processes occurred when pre-service teachers responded and interacted with instructional strategies to support comprehension of contextually challenging text?
3. What processes occurred when pre-service teachers planned and executed instructional strategies to support student comprehension of contextually challenging text?
  - a. How did pre-service teachers' interaction with contextually challenging literacy experiences influence the pre-service teachers' planning and execution of lessons?

## **Significance of the Study**

According to current research, we cannot assume that literacy course methods and field experience reliably transfer to instructional practices (Dawkins, Ritz, & London, 2009; Leland, 2013; Lipp & Helfrich, 2016; Robertson, 2013). Based on the inconsistent results of previous research and my own experience struggling to connect methods courses to instructional practices, I sought to further understand how others experienced the pre-service stage in their teaching careers. My goal was to build upon prior research in order to provide additional insight into the evolving processes that occurred when pre-service teachers interacted with comprehension instruction content in a literacy methods course. In addition, my research provides insight into the evolution of planning, implementing, and reflecting that occurred when the pre-service teachers taught comprehension instruction in the field.

## Study Design

This study analyzed the processes that occurred when pre-service teachers explored CCTs in a literacy methods course and the instructional practices they used when they taught comprehension instruction themselves. I adopted the GRR (Pearson & Gallagher, 1983) model, in an elementary education literacy methods course, to delve into CCTs. Each of the texts were selected based on qualitative analysis of structure, language conventionality and clarity, knowledge demands, and levels of meaning using Common Core State Standards Initiative's (2010) *Text Complexity: Qualitative Measures Rubric*. Based on these indices, Passages 1, 2, and 3 were classified as exceedingly complex in text structure, language features, meaning, and knowledge demands. *The House* was identified as exceedingly complex in text structure and meaning and moderately complex in regards to language demands and knowledge demands. Overall, the texts could be expected to perplexing adult readers, giving them an opportunity to explore the processes they experienced while trying to understand them.

During the three weeks of instruction in the literacy methods course setting, I observed class and team discussions and collected additional data sources [i.e., Metacognitive Awareness of Reading Strategy Inventory (MARSİ) (Mokhtari & Reichard, 2002), comprehension question results, class discussions, and journal entries] that assessed the participants' experiences during the comprehension module. This means of data collection allowed me to further understand how the pre-service teachers responded and explored the comprehension module. The MARSİ (Mokhtari & Reichard, 2002) was administered to the pre-service teachers during phase two and the final week of phase three of the study. Additional pre- and post-comprehension questions were administered prior to and following exploration of each of the texts in the literacy methods course. Journal entries were collected at the end of each of the methods course instructional

weeks of the study. The class discussions, which I described in field notes, occurred during phase three of the study.

During the entire eight weeks of the study, I collected documents related to the participants' planning and reflections related to their comprehension instruction in the field. It is important to note that the focus of this portion of the study was related to further understanding the processes that occurred when the pre-service teachers implemented comprehension instruction in the field, rather than the pre-service teachers' classification of the complexity of texts they used when tutoring.

Data from all of the data sources were used to examine the processes that occurred when the pre-service teachers explored CCTs, in coursework, and planned and implemented comprehension instruction in their tutoring sessions. Each of the research questions primarily corresponded to at least one of the phases of the study in order to document processes that occurred as the research study progressed. The study's findings were analyzed and presented using case study methodology. As a result, I strove to create rich, in-depth descriptions of what participant experienced while they were enrolled in the literacy methods course (Merriam, 1998).

### **Assumptions**

This study is based on a series of assumptions. The university methods course was required to follow the core teaching standards set forth by the state. This course was the first literacy education course that was taken by the pre-service teachers. All the instruction that occurred in the literacy methods course was completed by every student regardless of their participation in the study. In addition, every participant's assignment submission was analyzed in order to provide additional depth and triangulation of data. Furthermore, the pre-service teachers had little to no field experience teaching K-6 students.



Although this study was specific to the participants' experiences, there could be a transfer of knowledge across other literacy methods courses with field experience, based on the overall experiences that occurred when the pre-service teachers explored literacy method course content and taught in the field. This study aligned itself with case study methodology by providing extensive data and in-depth analysis of the participants' experiences in the literacy course in order to provide more insight into the processes that occurred during literacy instruction (Merriam, 1998).

### **Definition of Terms**

**Cognitive Load:** This term is used to explain the demands that are imposed on an individual's learning (Moreno & Park, 2010). The level of demands is based on a learners' level of learning expertise and the guidance provided by others. As a result, instruction should be specifically tailor to an individual's changing needs (Sweller, Ayres, & Kalyuga, 2011). When an individual learner is acquiring new information, they use either the process of borrowing and reorganizing information or creating novel information through randomness. In order to maximize the process of borrowing and reorganizing information, there is value in worked examples, or in the case of this study, use of the GRR model to interact with CCT in a literacy methods course. As a result of this theoretical framework, I looked at the demands imposed on pre-service teachers and the processes (i.e., self, instructor, or peers) that were used to help reduce the cognitive load. I also looked at the steps the pre-service teachers plan to use to reduce K-6 tutoring students' cognitive load.

**Contextually Challenging Text:** The term challenging text can be categorized by the degree of "structure, language conventionality and clarity, knowledge demands, and levels of meaning or purpose" (Council of Chief State School Officers & National Governors Association,

2017, p. 5). In addition, the term contextually refers to “classroom learning-environment” in which the text is used (RAND Reading Study Group, 2002, p. 17). Texts used in the literacy methods course comprehension module were analyzed based on four categories of challenging content to determine their complexity.

**Comprehension:** Based on the transactional view of reading comprehension, an individuals’ construction of meaning (comprehension) occurs as a result of the interaction between the text and the reader (Rosenblatt, 1978). Pivotal to this study was exploration of the processes that occurred when the pre-service teachers interacted with text for the purpose of comprehending, and their planning, implementation, and reflection on comprehension instruction for use with K-6 students.

**Comprehension Module:** This term refers to the three weeks of literacy coursework related to comprehension instruction that occurred during this study. Throughout the three weeks, pre-service teachers were asked to interact with contextually challenging texts in order to decipher meaning. On the first week of the module, the preservice teachers were asked to explore two texts without instructional support. The remaining two weeks of the module were spent exploring a total of four texts (including the two from the first week of the module) with instructional support meant to help them comprehend the text and reflect on the usefulness of different reading comprehension strategies.

**Explicit Instruction:** This type of instruction, also referred to as direct instruction, is systematic, engaging, and overtly presented by educators to students (Archer & Hughes, 2011). Explicit instruction was employed during the literacy methods course comprehension module.

**Global Reading Strategies:** This umbrella term refers to analyzing and evaluating, accessing background knowledge, guessing content in a text, checking a guess on content,

checking understanding, determining importance, previewing, setting a purpose for reading, and using text aids when reading a text. This term is one of three overarching categories included in the Metacognitive Awareness of Reading Strategy Inventory (Mokhtari & Reichard, 2002). I used the inventory to organize the findings and discussion related to this study.

**Gradual Release of Responsibility:** This model provides learners with an opportunity to observe a teacher, practice with support from peers and a teacher, and independently practice (Pearson & Gallagher, 1983). Week two and three of the comprehension module, in the literacy methods course, was designed around this method of instruction.

**Metacognition:** This refers to “the ability to reflect on one’s own cognitive processes, to be aware of one’s own activities” (Baker & Brown, 1984, p. 353). I documented and analyzed pre-service teachers’ thinking about their thinking to further understand the processes that occurred, including how they worked to comprehend texts and reflect on instructional practices related to comprehension.

**Metacognitive Awareness of Reading Strategy Inventory:** A reading strategies inventory designed to assess participants’ metacognitive strategies when reading academic or school-related materials (Mokhtari & Reichard, 2002). This inventory was completed by participants prior to the literacy methods course comprehension module and immediately following the module.

**Problem-Solving Reading Strategies:** According to the Metacognitive Awareness of Reading Strategy Inventory (Mokhtari & Reichard, 2002), this broad term refers to reading strategies related to adjusting reading speed, getting back on track, guessing meaning of unknown words, re-reading, stopping and thinking, and visualizing. In order to cohesively

classify reading strategies throughout the study, I have organized the reading strategies in this manner.

**Support Reading Strategies.** The reading strategies that fit in this category include paraphrasing, summarizing, finding relationships within the text, taking notes, underlining and circling, and using reference materials. This categorization was defined by Mokhtari and Reichard (2002) to analyze the findings from the Metacognitive Awareness of Reading Strategy Inventory that was used as a data source in this study.

### **Organization of Dissertation**

This study explored the processes that occurred when pre-service teachers explored CCTs in a literacy methods course comprehension module. Additional research was done on the planning, execution, and reflection that occurred when the pre-service teachers helped K-6 readers comprehend a text. Chapter Two reviews the extensive literature about the topics of instruction and teacher education relevant to this study. The methods used to answer all of the research questions are presented in Chapter Three of this dissertation. Chapter Four describes the findings from the study. The final chapter provides a discussion based on the research findings by discussing conclusions, implications, limitations, and recommendations for further research.

## **Chapter 2: Literature Review**

### **Introduction**

A review of literature was necessary to understand previous findings related to the way pre-service teacher learn and apply knowledge in literacy methods courses and field experiences. In addition, it was vital to analyze literature in regards to comprehension instruction to identify research-based practices about implementing comprehension instruction in the field and in literacy methods courses. Additional literature concerning instructional strategies in education provided insight into research-based practices that support instructional decisions about comprehension instruction.

After an extensive exploration of literature, I have been unable to locate research that specifically aligns with my study. However there is research surrounding personal and professional pre-service practices, comprehension instruction, the relationship between field experience and methods courses, and instructional strategies in the field of education. Literature in each of these areas was carefully reviewed to present a comprehensive understanding of pre-service teachers and literacy instruction.

The layout of this literature review corresponds with the layout of the research questions. I begin the literature review by focusing on the research that aligns comprehension instruction and instructional practices, particularly in regard to literacy methods courses and elementary education, which are the focus of the first two research questions. I chose to place these categories at the beginning of the literature review because they are the initial steps in the theory and experiences section of my study. The final component of the literature review connects

theory and experience to practice by exploring research about literacy methods courses, pre-service teachers' experience in the field, and their belief systems about the connection between what they learn and what they apply as teachers. I took careful consideration to include literature that was relevant to the purpose of this research study.

### **Experiences with Comprehension**

Literature about cognitive load, metacognition, thinking aloud, and comprehension strategies instruction is reviewed below. These topics address the notion that comprehension instruction should be strategic and based on the process of cognition. It is important to note that the focus of this research study was not on the effectiveness of comprehension strategies, but rather on the processes that occurred when pre-service teachers interacted, planned, instructed, and reflected on comprehension instruction with CCT. Therefore, the following literature primarily focuses on the thought processes and actions that occur as a result of exploring comprehension rather than the effectiveness of the reading comprehension strategies.

**Cognitive Load.** The cognitive load theoretical framework, which is fundamental to my research, explains the demands that are imposed on a person's learning (Moreno & Park, 2010). Although this topic does not always relate to comprehension of a text, it does relate to the idea that an individual uses varying degrees of cognition in order to understand or, in the case of my research study, comprehend in order to acquire knowledge. The following studies provide insight about cognitive load in relation to metacognition, collegiate coursework, and complex learning scenarios. Each of these studies in one way or another aligns with a concept directly related to my research.

Bolkan (2015) studied 253 undergraduate students' perceptions of the impact of clarity on learning by asking participants to recall any instructor that they had and then answer a series

of questions about their experiences in the instructor's class. The results support the cognitive load framework in that, if participants felt that an instructor was unclear, they reported spending more time cognitively trying to understand material, resulting in extraordinarily high cognitive demand. "The conclusions from cognitive load theory (CLT) indicate that instruction would do well to consider the design of their communication to reduce students' extraneous load" (Bolkan, p. 160). In my study, I designed a literacy methods course comprehension module that provided explicit, systematic instruction that gradually released the responsibility of learning onto the pre-service teachers to simultaneously reduce the time they spent processing multiple unfamiliar and complex concepts and explanations from the instructor.

Seufert, Wagner, and Westphal (2017) investigated disfluency to learn more about the impact of increasingly challenging texts and the depth of students' understanding of them. The disfluency effect indicates that "in some cases difficult-to-read learning materials lead to better performance than easy to-read materials" (Seufert et al., p. 221). Participants were asked to read a text and then answer a test about "learning outcomes" (Seufert et al., p. 225). The results indicate that slightly disfluent texts (i.e., same words and charts as fluent texts but in a different font and a 25% gray scale) resulted in greater recall (i.e., mean score of 73.83%) than when students studied fluent texts (mean score of 63.93%). Intrinsic cognitive load was lower with slightly disfluent text (i.e., mean score of 4.18) than with fluent text (i.e., mean score of 4.70). Extraneous load was also lower among participants who read the slightly disfluent text (i.e., mean score of 3.07) than the fluent text readers (i.e. 3.12). Although disfluency is not explored in my study, the results of this study do bring to light the potential increase in learning, and decrease in the cognitive load imposed on participants, as texts become slightly harder to decipher. Since my study explored CCT, the idea that participants could be more apt to recall

challenging text is intriguing. As a result, the degree of complexity of text could have a positive effect on the pre-service teachers' exploration of CCT in the literacy coursework. For further clarification, CCT is classified as a text that is classified as very complex to exceedingly complex based on "structure, language conventionality and clarity, knowledge demands, and levels of meaning or purpose" (Council of Chief State School Officers & National Governors Association, 2017, p. 5) in the context in which it is used.

To examine the relationship between metacognitive scaffolding and cognitive load Lopez-Vargas, Ibanez-Ibanez, and Racines-Prada (2016) studied 54 high school students. In some cases, instructors used a scaffold that included a lesson module selection menu and a browsing menu as the participants explored the text. In other cases, no scaffolding was used. Each participant, whether exposed to scaffolding or not, explored a text and completed reflection questions, a cognitive load questionnaire, and a self-evaluation. The researchers found that students who were exposed to scaffolding displayed significantly higher achievement (i.e., scaffolding mean scores of 74.41, 80.19, and 76.48) than those without scaffolding (mean score 60.07, 63.19, and 61.44), and students with scaffolding experienced lower total cognitive load (i.e., scaffolding mean scores of 17.92, 20.65, and 20.64) than those without it (i.e., mean scores of 22.14, 22.89, and 22.34). My study's literacy coursework was designed to provide participants the experience of diminishing scaffolding and increasing personal experience with similar types of CCTs over time, as they applied metacognitive reading comprehensions strategies. Lopez-Vargas et al.'s results support the idea that cognitive load is decreased when students use metacognition. The relationship between metacognition and cognitive load were extensively explored in my study.



**Metacognition.** The topic of metacognition lends itself well to the notion that individuals can reflect on their own thinking while learning (Baker & Brown, 1984). The theoretical perspective of cognitive load provides insight into the demands imposed on individuals and the way that they but think about thinking, also known as metacognition. For example, 10-year-olds who were taught and used metacognitive strategies were able to comprehend text significantly better than students who were not taught the strategies, according to Houtveen and van de Grift's (2007) quantitative study. Even a year later, the students who were taught metacognitive reading strategies were significantly more likely to comprehend texts than those who had been in the control group.

Pre-service teachers tend to gain awareness of their metacognition after learning about the concept in a literacy methods course and implementing metacognitive strategies while reading for comprehension (Cubukcu, 2008). In addition, Cubukcu found that pre-service teachers who were in the experimental group (in with they learned specifically about metacognition) had significantly better comprehension than those in the control group. Additional research on this topic was done by Pedro, Abodeeb-Gentile, and Courtney (2012-2013). Their investigated undergraduate pre-service teachers' reflections on their experience reading texts that challenged their thinking in a literacy methods course. The participants were asked to converse, through online discussions, about their experiences with the text. These discussions led to increased comprehension and greater use of comprehension instruction. Like Cubukcu (2008), Pedro et al. (2012-2013) noted a rise in students' metacognitive awareness in regards to literacy instruction.

In a qualitative study using constant comparative methods Theurer (2006) promoted pre-service teachers self-reflection of instruction on comprehending texts. Self-reflection, also

known as reflection, is the “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and further conclusion to which it lends” (Dewey, 1991, p. 9). Reflection is important because it allows individuals (such as pre-service teachers) to explore comprehension-related concepts such as their prior understanding, personal abilities, and their perceived need for additional knowledge. Theurer focused on 40 elementary pre-service teachers’ awareness, attitudes, and beliefs about comprehension instruction in the classroom. The findings suggest that pre-service teachers did not refer to specific comprehension instruction when reflecting on their time as students. However, they did indicate memories of comprehending text outside of the school setting. For example, a pre-service teacher specifically referred to comprehension when she was listening to her parents read aloud to her as a child. In constant, the pre-service teachers did identify comprehension as a valuable component of instruction when completing the post-Literacy Belief’s Profile.

A case study by Asikcan, Pilten, and Kuralbayeva (2017) provides insight about pre-service teachers’ comprehension strategy instruction. The research team sampled 140 undergraduate pre-service teachers on their use of pre-reading, during reading, and post-reading strategies. They found that the participants used nearly half of the pre-reading strategies, relying guessing using visuals and prior knowledge activation more than other strategies. The pre-service teachers also used numerous post-reading strategies, such as finding the main idea and visualizing the text. As indicated by Asikcan et al., only a small number of during-reading comprehension strategies were used by pre-service teachers. When analyzing Asikcan et al.’s (2017) findings, it is evident that not only do pre-service teachers use pre- and post-reading strategies more than during-reading strategies, when reading, but they also plan instruction based on this emphasis.

As supported in the studies just mentioned, implementation and exploration of purposeful, strategic comprehension strategies seem to provide readers with a stronger understanding of the message presented in a text. However, findings are ambiguous in some respects. For example, research by Asikcan et al. (2017) about the lack of pre-service teachers' emphasis on during-reading strategies runs counter to findings by Davey and McBride (1986) about the positive impact of during-reading question generating on elementary school students. My study aimed to further understand the evolving perspective that pre-service teachers have in regards to comprehension instruction. Based on Theurer's (2006) qualitative analysis, using constant comparative method in order to explore patterns that emerged when pre-service teachers explored their evolving perspective with explicit instruction, I felt this method of constant comparative data analysis aligned well with my study.

**Thinking aloud.** One method of encouraging student engagement in comprehension is to provide students with opportunities to think aloud while reading. Thinking aloud is described as vocalizing the thoughts that occur within your mind as when you, for instance, attempt to comprehend a text (Duke & Pearson, 2002). Sonmez and Sulak (2018) conducted a quasi-experimental study involving 26 students in the second semester of their fourth-grade academic year. They found that the students performed significantly higher (with an average comprehension ranking of 16.6 using the Wilcoxon Signed Ranks Test) if they participated in a thinking-aloud strategy than if they didn't (9.79 average comprehension ranking). Research conducted by Baumann, Jones, and Kessel (1993) indicates that students who think aloud about complex texts display more self-regulation (e.g., rereading and/or slowing the pace) than similar students who don't. The implication, overall, is that students who think aloud have a better understanding of how to comprehend and how to verbally discuss texts with others, which can

provide opportunities for them to teach others about the process of deciphering the message of a text.

Additionally, Ness (2015) studied prepare pre-service teachers, using think alouds to encourage them to implement that strategy in their future classrooms. Ness found that it was useful for students to watch effective thinking aloud sessions to instill a well-developed understanding of the process. “It also appears that the GRR gave preservice teachers far more than mere procedural knowledge of think alouds. The modeling, guided practice, and multiple rounds of independent practice, coupled with reflection, were essential steps in preparing preservice teachers to think aloud” (Ness, 2015, p. 267).

The literature suggests that, not only do students have a better understanding of how to comprehend, but they also know how to verbally discuss text with others (Baumann et al., 1993; Nessm 2015; Sonmez & Sulak, 2018). Moreover, the process of thinking aloud provides opportunities for readers to in turn teach others about the process. The impact of the GRR model on pre-service teachers, as concluded in Ness’ (2015) findings, also provides insight into the positive impact of explicit instruction in a pre-service methods course. Based on these findings, the design of my study about literacy methods comprehension module included think alouds using the GRR model while participants explored the text throughout weeks two and three of instruction.

**Comprehension strategy instruction.** According to RAND Reading Study Group (2002), comprehension consists of three elements: the reader, the activity of comprehension, and the text that they are comprehending. Van Keer & Verhaeghe (2005) found that, when teachers provided explicit comprehension instruction to second and fifth graders, the students experienced significantly higher learning gains (i.e., .25 SD for second grade and .32-.39 SD for fifth grade)

then when no explicit instruction was provided. Additionally, tutoring played a significant role in increasing reading comprehension if tutors specifically focused on the needs of the tutee, monitored their understanding, and enhanced their comprehension through the use of strategically relevant comprehension strategies. This process is evident in the design of my study. Furthermore, my study also explores explicit comprehension instruction in the form of a literacy course comprehension module and analyzed and the use of tutoring.

In a qualitative study on tutoring, Robertson (2013) found that tutors often focused primarily on the content of a text rather than the use of comprehension strategies a tutee might use to decipher it. Relative to findings by Van Keer & Verhaeghe (2005), this indicate a potential disconnect between what is effective for tutees and what is being taught by tutors. I chose to explore this relationship in my study in order to learn more about the processes that occurred when pre-service teachers experienced explicit instruction about comprehension strategies in their coursework and what the occurred when they implemented comprehension instruction as tutors.

In a meta-analysis, Almasi, Garas-York, & Shanahan (2006) compared 12 qualitative research studies to quantitative studies previously analyzed by the National Reading Panel (NRP, 2000). In this way, their findings provide a bridge between quantitative and qualitative explorations of comprehension instruction. The overall findings of the meta-analysis indicate that, if the twelve quantitative research studies had been incorporated into the NRP report, they would have been a beneficial extension and expansion on the quantitative findings that were reported. The result would have provided more of a “theoretical orientation other than the hierarchy-of skills model” that was presented by the NRP (Almasi et al., 2006). More specifically, the value of prior knowledge and application of multiple comprehension strategies

would have been further reinforced by the incorporation of the qualitative research findings. In practical terms, this suggests that educators would do well to apply multiple comprehension strategies. As a result, my study about comprehension module design implemented strategic comprehension using multiple strategies, such as re-reading, inference, and background knowledge, in order to interact with multiple texts. Additionally, my study explored the planning, implementation, and reflection about comprehension strategy use to learn more about the processes that occurred during the tutoring field experience in order to provide a theoretical orientation about the findings.

When using the term “questioning” in the context of comprehension, it is important to note the differences between question answering and question generation. In the question answering format, students are asked to answer questions posed by teachers. In contrast, generating questions requires students to ask themselves and/or others questions in order to comprehend the text. Based on Davey and McBride’s (1986) study, question generation increases student’s reading comprehension particularly while reading. For example, Davey and McBride explored the influence of training sixth-grade students on question generation while comprehending. They found that students who are trained in question generation are able to perform better on comprehension assessments than students who are given no-question control, question-response practice, or question-generation response practice. In addition, students who are trained in question generation are better able to answer inference comprehension questions. Davey and McBride propose that students who are provided instruction on question-generation are better able to comprehend, based on all components measured, than those who receive no questions. This study supports that, when readers learn how to generate questions and employ question generation while reading a text, they are typically able to explore the text with enough

depth to comprehend it. As a result of these findings, in my study, the instructor in the literacy methods course comprehension module modeled question generation and asked pre-service teachers to explore the texts using the strategy. In addition, I documented and analyzed instances when the pre-service teachers explored question generation with their K-6 readers.

Nevertheless, Ness (2011) found that, for every hour of the language arts block taught in a 20 first- through fifth-grade classrooms, only 15 minutes is usually spent on explicit reading comprehension instruction. Students spent an average of only three minutes generating questions about the text. Furthermore, Ness found no evidence of question generation in grades one, two, and five in the classrooms she studied. The predominant comprehension strategy used was teacher-direct questioning, and the second most common was activating prior knowledge and prediction. In spite of negligible time spent having students generate questions, Ness did note an increase in primary grade comprehension strategy instruction over time—a conclusion similar to that of Block and Pressley (2007) and Pressley et al. (1992). Ness' study presents questions about the link between time spent on instructional strategies and comprehension instruction and academic gains. There is a need to further understand what drives educators to implement some comprehension strategies rather than others. Consequently, a portion of my study purposefully focused on the processes that occurred when pre-service teachers were asked to plan, implement, and reflect on their practices while teaching comprehension instruction to K-6 students.

Additionally, Ness (2011) proposed, “we must address the relatively limited scope of reading comprehension strategies, and the reliance upon single-strategy instruction” (p. 110). Based on the findings presented above, increasing time spent teaching and guiding students using multiple strategies (such as questioning and question generation) can promote increased comprehension. In my study, I address the need for teachers and pre-service teachers to

understand how to instruct students using a variety of comprehension strategies. The literacy methods course comprehension module I used was designed to explore and model multiple comprehension strategies (i.e., making connections, determining importance, visualization, generating questions, and inference) while the pre-service teachers interacted with the CCT.

### **Methods of Instruction**

In order to provide students with adequate support for learning, educators need a strong understanding of how to deliver instruction. The following section discusses research on instructional design methods such as explicit instruction, the GRR model, and problem solving as they relate to my research.

**Explicit instruction.** An educator who is properly providing explicit instruction (also referred to as direct instruction) is systematic, engaging, and overtly focused on content (Archer & Hughes, 2011). Research suggests explicit instruction is useful in terms of helping pre-service teachers develop metacognitive awareness of teaching strategies and literacy strategies. For example, when Iwai (2016) engaged 18 pre-service teachers in writing quick notes, creating lesson plans, and reflecting on the process, she found they were significantly more likely to increase metacognitive awareness and positive attitudes related to learning about and planning of metacognitive strategies than students who were not given explicit instruction in metacognitive awareness. Prior to and after providing the participants with weekly explicit instruction on the metacognitive strategies, Iwai assessed students' metacognitive awareness using the Metacognitive Awareness of Reading Strategies Inventory (MARSI). When Iwai analyzed the results of the MARSI, she concluded that the participants indicated a higher likelihood of using global and support reading strategies after the explicit metacognitive awareness instruction.



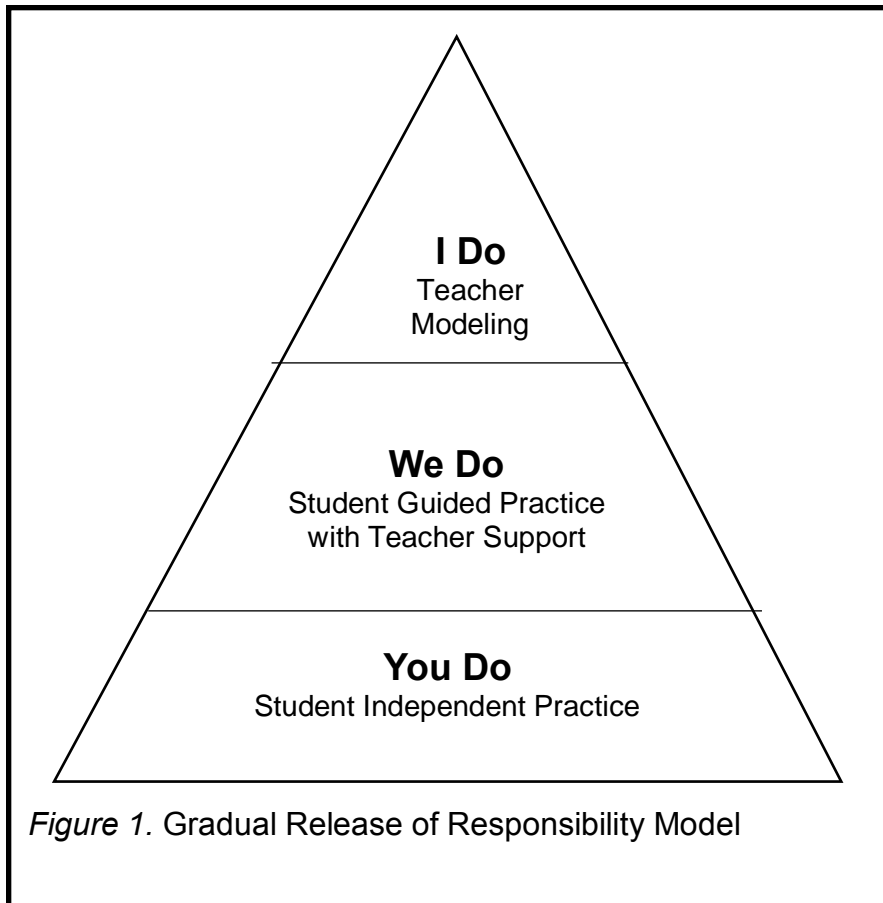
Wosley et al. (2013) used a mixed-methods case study design to 10 teacher preparation programs. The goal was to identify unique elements of the programs and to compare pre-service teachers' perceptions of learning from coursework in literacy instruction. Subsequently, pre-service teachers' perceptions of learning indicate the use of strategies in literacy instruction. They found that the participants, on average, reported a high level of confidence in the areas of curriculum and instruction. For example, one pre-service teacher stated that, after completing literacy coursework, they felt comfortable teaching “strategies such as guided reading, literature circles, daily writing, journals, blogs, class discussions, oral reading, and read alouds” (p. 211). In addition, Wosley et al.'s results indicate the importance of applying concepts in practice and having teacher educators “show them ‘how’ something was to be done” rather than tell them (p. 216). This notion that educators should be actively engaged in students' learning aligns well with the components of explicit instruction that were present in my study.

Not only did explicit instruction have positive impacts on pre-service teachers' value of the instruction (Wosley et al., 2013), it also increased their metacognitive awareness related to reading (Iwai, 2006). The intentional use of the MARSII survey in Iwai's study, to document how the pre-service teachers changed, indicates the ability to pin-point the evolution of pre-service teacher's decision-making processes and connection between theory and practice. My study emphasized the processes that occurred when pre-service teachers explored CCT, analyzed their own metacognition, and their instructional practices when they tutored and its corresponding alignment with the use of the pre- and post-MARSII.

Equally important, the case study design in Wosley et al.'s (2013) research provided in-depth findings about multiple perspectives related to the new acquired knowledge that occurred

in the literacy methods course. The researchers effective use of case study analysis inspired me to implement this method while studying the influences between theory and practice.

**Gradual release of responsibility.** According to Pearson and Gallagher (1983), there are essential features in instruction that are needed for students to be successful learners. At one end of a continuum, the teacher takes all or majority of the responsibility of completing a task in order to model or demonstrate how to apply a strategy. At the other end, students are asked to take all or most of the responsibility for applying or practicing the strategy. In between these two roles is an opportunity for students to apply a skill through guided practice. This stage is critical because it requires the teacher to gradually release responsibility to the student while still providing guidance or support. “The hope in the model (see Figure 1) is that every student gets to the point where [they are] able to accept total responsibility for the task, including responsibility for determining whether or not [they are] applying the strategy appropriately” (Pearson & Gallaher, 1983, p. 35).



Kong (2002) conducted a year-long case study to analyze use of the GRR model in a fourth and fifth grade classroom based in observations and student self-evaluations. The study indicates that the GRR occurred throughout the year as the teacher reduced the amount of time she spent scaffolding student's learning and discussions. Kong found that students were able to improve their literacy knowledge and skills through varying degrees of support from the teacher.

As a result of Pearson and Gallagher's (1983) well defined model and Kong's (2002) case study analysis of the GRR implementation, special consideration should be given to determining a student's level of expertise and how to appropriately reduce scaffolding throughout instruction. Similar to Kong's analysis, my study employed the GRR model to provide opportunities for participants to receive modeling, guided, and independent practice. Kong's research indicates that participants were given opportunities, as a result of scaffolding, to

cultivate and apply their knowledge of literacy. In order to process and develop skills related to comprehension instruction, my study also created varying degrees of scaffolding in order to provide numerous opportunities, throughout the three weeks of the literacy methods course module, for student to interact with comprehension instruction. In addition, by using a case study design similar to Kong's, I produced documentation of an in-depth account of the GRR instruction that occurred in a classroom setting.

**Problem solving.** The notion of problem solving is described as working through a problem in order to determine the best mode of action to resolve or answer it. In a study about students' ability to solve problems, Chi, Bassok, Lewis, Reimann, and Glaser (1989) concluded that students are less likely to see value if they have little to no interaction with problems themselves (i.e., through lecturing or only being told how to complete the problem). However, evidence suggests that a portion of problem-solving learning occurs when students instruct themselves and teach others (Chi et al., 1989). As a result, "self-instruction is mediated by self-explanation" (Chi et al., 1989, p. 53). Griffith, Bauml, and Quebec-Fuentes (2016) support this notion when stating, "a guided practice approach allows us to coach novice teachers about effective teaching practices while being able to control the speed at which they are being asked to problem solve" (p. 245). This method of problem solving and guided practice is consistent with the CLT (Chapter 3), the one of the bases of my theoretical foundation.

The implication of these studies is that there may be a connection between pre-service teachers' conscious awareness of methods and their increased application of them. This is relevant to my study in that it seeks to explore if using the instructional strategy GRR in coursework leads to increased familiarity with the processes of working through this design when comprehending texts. The literacy methods course comprehension module asked

participants to problem solve, independently and collaboratively, as supported by Chi et al.'s (1989) and Griffith et al. (2016)'s research, in order to determine the meaning of the text. This is also supported by the notion that pre-service teachers should be exposed to a variety of instructional strategies in order to meet the needs of a diverse group of students (Pressley, Rankin, & Yokoi, 1996).

### **From Methods and Experiences to Practice**

When considering the practices of pre-service teachers, it is important to analyze the research-based instructional practices (methods), application in the field (experience), and their own understanding of the practice of teaching (belief systems). All of these components are interrelated and impact pre-service teachers' perspectives, as is evident in the following literature.

**Methods.** With a strong knowledge of research-based practices, pre-service teachers are more apt to understand how to meet students' varying needs. The following review of literature specifically refers to methods as university coursework, in this case in elementary and early childhood literacy courses, in the field of education. In Unver's (2014) study of a literacy methods course and lesson planning preparation, direct instruction by the instructors played a factor in pre-service teachers' connection between theory and instructional practice. This case study took place in two literacy courses taken by elementary pre-service teachers and the location of their field experience. Unver also students pre-service teacher's discussions with their peer on about how to instruct students using theory-based practices.

The relationship between pre-service teachers' knowledge of instructional strategies and their ability to conduct tutoring sessions "offer[s] an ideal opportunity to restore the balance between theory and practice and affords preservice teachers a comprehensive experience in

teaching early reading skills while providing effective support as trained tutors” (Dawkins, Ritz, & Loudon, 2009, p. 47). Moreover, participation in authentic field experience, specifically tutoring, in correlation with undergraduate methods coursework, helps pre-service teachers become more prepared, effective teachers (Dawkins et al., 2009; Leland, 2013).

Leland (2013) asked 106 preservice teachers to complete an open-ended survey at the end of an early literacy methods course. In addition to the methods course, all preservice teachers were required to complete 12 hours of field experience during which they implemented a reading lesson and observed a veteran teacher’s literacy instructional practices. According to Leland’s findings, a majority of the participants felt the methods course influenced their perceptions of literacy instruction. There is clearly a demand for high-quality clinical experiences that relate to the content taught in methods courses (Darling-Hammond, 2010). A significant component of teacher preparation is preparing pre-service teachers to design instruction that meets the needs of students (Darling-Hammond, 2010). The tutoring field experience in my was study provided an opportunity for participants to accomplish this with K-6 readers. Additionally, the importance of understanding how people learn is considered a vital component of teacher education, according to Darling-Hammond (2006). The comprehension module of this research studies literacy course provided multiple opportunities for pre-service teachers to explore, apply, and reflect on how individuals learn to comprehend texts.

The case study conducted by Unver (2014) connects theory and practice, much as my study was aligned to do. Unver’s findings are presented in short, concise themes found in the data. I used analysis based on the literacy course as a whole in order to provide more in-depth descriptions of the findings in my study (Merriam, 1998). The style in which Unver (2014)

presents her findings provides insight into the goal of my research, which is to learn about the process that occurred within the literacy course rather than the individual participants accounts.

In regards to the theory-to-practice connection, Leland (2013) and Dawkins et al. (2009) found that purposeful application of pre-service teachers' knowledge from literacy coursework, along with associated field experience, helped prepare them for teaching. These two studies indicate the need for theory to transfer to practice but don't specifically indicate how exploration of challenging content, using research-based instructional practices, transfers to practice—a process that my study explored.

**Experiences.** The experiences that pre-service teachers have in the field provide opportunities for them to apply their knowledge of instruction. When Helfrich and Bean (2011) interviewed 10 pre-service teachers about field experiences that occurred preceding students' enrollment in a literacy course, only two students remained consistent in implementing the strategy they had chosen during the field experience associated with the literacy methods course. In addition, 80% of the pre-service teachers who were interviewed indicated that they used literacy strategies taught in the literacy methods course after the course had completed.

After analyzing the implications of “coursework, field experience, and collaboration,” two groups of pre-service teachers valued coursework and field experience above all else (Helfrich & Bean, 2011, p. 250). Components present in all six literacy teacher education programs that previously received the Certificate of Distinction of the International Reading Association include field experience that is relevant to teaching and literacy courses, training on a plethora of instructional strategies and assessment methods, and interdisciplinary integration of literacy concepts (Lacina & Block, 2011). Accordingly, Helfrich and Bean supported the necessity of pre-service exploration of literacy instruction in the field in order to first-hand

explore the effects of the strategies to real students. Lacina and Block's findings indicate purposefully sequenced and structured field experience from the first literacy methods course to the last is a critical feature of education in teaching literacy. Considering Lacina and Block's findings about pre-service teachers perceived relevance of instructional strategies, my study explored the processes that occurred when pre-service teachers were taught an instructional strategy in literacy methods course and how they planned instruction when tutoring. Additionally, the vital connection between initial literacy field experiences and connections between coursework further supports the focus of my research in an initial literacy education course and corresponding tutoring field placement.

**Belief Systems.** Not only do pre-service teachers need a theoretical foundation and field experience to apply their practices, they must also be able to reflect on their own beliefs to become more aware that they may have protentional biases, misconceptions, and strengths. Although my study did not specifically ask students to discuss their beliefs, it did ask them to reflect on their own practices and metacognitive awareness. As a result, I felt review of literature about pre-service teachers' understanding of themselves was worthy of exploration, as is discussed below.

When 11 pre-service teachers were asked to identify their beliefs about running records, guided reading, and the corresponding field experience in a K-3 setting, an increase in understanding, feeling, and definitional knowledge was evident (Lipp & Helfrich, 2016). The participants were instructed to complete a pre- and post- researcher-developed survey about understanding and beliefs in regard to running records and guided reading. Additional research was collected using written reflections. The findings indicated that students were more confident using guided reading strategies and had an increased understanding of literacy instruction as a



result of the partnership between the literacy methods course and the field experience. This intentional pairing is also evident in my research, which seeks to further understand the processes that occurred through this connection.

Shaw and Dvorak (2007) evaluated 52 undergraduate elementary pre-service teachers at the beginning and the conclusion of a literacy methods course. Many years later, Shaw and Dvorak (2013) published additional findings on this study. Their mixed-methods approach revealed that “formal knowledge may actually affect pre-service teachers’ beliefs” (p. 236). Subsequently, purposeful activation of prior knowledge and weekly engagement in the field likely plays a factor in the preservice teachers’ evolving beliefs (Shaw & Dvorak). After studying pre-service teachers’ “beliefs, understandings, and instruction of struggling and non-struggling readers” as they progressed through two literacy education courses that included field experience, research concluded that there was evidence of personal and professional knowledge merging (Duffy & Atkinson, 2001). Furthermore, there was an increase in the pre-service teachers’ perception of their ability to evaluate and prepare instruction for struggling readers. Initially only half of the pre-service teachers felt prepared to teach struggling readers versus 82% felt they were ready to teach those readers by the conclusion of their coursework. Furthermore, 82% also felt that diagnostic assessments were needed in order to guide the instruction of a reader.

In a case study of a pre-service literacy course, Heydon and Hibbert (2009) examined critical reflection and complex thinking in regards to literacy, instruction, and personal learning. The method of analysis for this study, much like my data analysis, is a modified constant comparative analysis. Heydon and Hibbert found that the participants’ prior experience of learning strongly correlated with their beliefs of instructional practice. “Findings...also indicate

that disrupting and critiquing the beliefs candidates bring to their learning and teaching offers only a partial solution” to the notion of repositioning personal and instructional practices (Heydon & Hibbert, 2009, p. 803). Likewise, critiquing and challenging the beliefs of teacher candidates does not solve the notion of repositioning personal and instructional practices. My research study was intentionally not designed to challenge or critique the pre-service teachers’ beliefs, as supported by the Heydon and Hibbert’s (2009) findings, about comprehension instruction but rather to explore the processes that occurred when pre-service teachers’ personal interactions and their instructional practices related to comprehending challenging texts.

Analysis of instructional beliefs, as explored by Heydon and Hibbert (2009) and Barnyak and Paquette (2010), provides insight into the need to self-evaluate preconceived notions about literacy instruction. Barnyak and Paquette explored the influence of a literacy methods course on elementary education pre-service teachers’ instructional beliefs. They concluded that pre-service teachers’ believe that teaching instructional skills are a component of comprehension instruction. Based on the post-test results, 75.9% of pre-service teachers strongly or somewhat strongly agreed that literature instruction needs to be incorporated into teaching beginning readers. “Instructors and professors, who teach literacy courses, must not only teach preservice teachers how to implement exemplary literacy practices, but they must also dispel misconceptions regarding these practices” (Barnyak & Paquette, 2010, p. 7).

When evaluating pre-service teacher’s evolving beliefs, Asselin (2000) was able to identify numerous written reflections that indicated their newly acquired literacy content knowledge had changed their way of perceiving literacy instruction. Many of the 39 preservice teachers wrote about their schema when interpreting text. This notion of accessing and applying prior knowledge when learning is supported by the CLT that is one of the foundations of my

study. This also supports my study's focus on how pre-service teachers' exploration of comprehension instruction in their course work and in their instructional practices tutoring.

In additional research, teacher and student reflections are vital when developing literacy practices (Yoo, 2005). The findings indicate that pre-service teachers can change their teaching practices if learning experiences are explicitly discussed and evaluated in university coursework. However, Yoo indicates that there is a trend for educators to teach the way they have been taught unless preconceptions and prior learning experiences are explicitly discussed and evaluated in university coursework. Clark (2016) also discussed the relationship between coursework and pre-service teachers' perceptions on teaching literacy. Her findings indicate that extensive exploration of content increased pre-service teachers' perception of their own ability to teach reading, even after a year of teaching full-time. The comprehension module of my study was designed to provide opportunities for the participants to discuss and evaluate their own misunderstanding and prior knowledge of comprehending text through exploration of multiple texts much as is supported by Yoo and Clark.

Accordingly, teacher educators need to understand the content as well as the delivery method in order to continually adapt and evolve in the profession (Darling-Hammond, 2006). Darling-Hammond pinpoints that exemplary teacher education programs emphasize the importance of explicit strategies in order to assist pre-service teachers to reflect on their beliefs and assumptions about instruction and students. This relates to my study in that the comprehension module implementation follows explicit instruction of reading comprehension strategies. Additionally, reflection on the participants' interaction with the CCT and instructional strategies is also explored through comprehension assessments, in-class discussions, and journal responses.

Gomez (2009) evaluated the personal literate beliefs of teachers in order to better understand how this translated into their professional practices. “It may be that teacher education programs need to explore how to create opportunities for students to read reflectively and analytically, as a part of their course of study, beyond traditional educationally related materials” (Gomez, 2009, p. 40). Additional exploration of personal literate lives is needed in order to better understand how literate beliefs influence teachers’ instructional decisions (Gomez, 2009). Although my study does not specifically focus on the belief systems of the pre-service teachers, there was analysis of personal and instructional decisions through the lens of metacognitive awareness and cognitive load.

In order to create success in the teacher education setting, field experience needs to be extensive in nature, intensely supervised, connected to theory, expertly modeled, and designed to promote candidate learning through teaching (Ball & Cohen, 1999; Darling-Hammond, 2006). In my study, I explored the perspectives and influences that drove pre-service teachers to make personal and instructional decisions in order to comprehend text. I analyzed the pre-service teachers’ planning, implementation, and reflection, on their instruction to acquire knowledge about the potential connection between their in-the-moment and/or prior experience and their design and implementation of comprehension instruction.

## **Summary**

This review of literature, although not exhaustive, was conducted to shine light on the many dimensions present in the current research study. The first research question of this study asked for analysis of the metacognitive processes and cognitive load that occurred when pre-service teachers comprehended CCT. Although the literature does not specifically explore these experiences from the pre-service teachers’ perspective, the findings do indicate the need for

strategic and purposeful comprehension instruction (Asikcan et al., 2017; Baumann, Jones, & Kessel, 1993; Cubukcu, 2008; Davey & McBride, 1986; Houtveen & van dr Grift, 2007; Ness, 2011; Ness, 2015; Pedro, Aboddeeb-Gentile, & Courtney, 2012-2013; Sonmez & Sulak, 2018; Theurer, 2006). When reviewing the second research question, about the interaction with instructional strategies in the literacy methods course, the literature presents the conclusions that explicit, direct, and hands-on instruction provides students with multiple opportunities to solidify their knowledge of content (Chi et al., 1989; Darling-Hammond, 2006; Griffith et al., 2016; Iwai, 2016; Kong, 2002; Maloch, 2002; Pearson & Gallagher, 1983; Wosley et al., 2013). The third research question of my study explored the pre-service teacher's exploration planning, instructing, and reflection on instructional practices in the field and its relationship with theory. Literature on this topic indicates that pre-established beliefs (Asselin, 2000; Barnyak & Paquette, 2010; Duffy & Atkinson, 2001; Heydon & Hibbert, 2009; Lipp & Helfrich, 2016; Shaw & Dvorak, 2007; Yoo, 2005), experience in the field (Bean, 2010; Lacina & Block, 2011), and connections between coursework and the field (Darling-Hammond, 2010; Dawkins et al., 2009; Leland, 2013; Unver, 2014) allow teacher candidates to establish their own evolving understanding of instruction. The intent of my research was to learn more about how these factors evolve and change as pre-service teachers develop as educators. Additional information about the specific components of my research study can be found in the subsequent chapter.

## Chapter 3: Methodology

### Introduction

The foundation of qualitative research is established by the notion that individuals construct their reality based on the experiences they have in the world (Merriam, 1998). In this study, I employed a case study method in order to examine the processes that occurred when pre-service teachers interacted with CCT and the professional practices that ensued when they tutored K-6 readers. CCTs are categorized, by Common Core State Standards Initiative's (2010) *Text Complexity: Qualitative Measures Rubric*, to determine the degree of "structure, language conventionality and clarity, knowledge demands, and levels of meaning or purpose" (Council of Chief State School Officers & National Governors Association, 2017, p. 5). To gain insight into the processes that occurred when pre-service teachers initially explored comprehension instruction through the lens of an educator, I chose to conduct this research in the first of two undergraduate elementary education literacy methods courses. In the context of this study, the term comprehension refers to an individuals' construction of meaning as he/she interacts with the text (Rosenblatt, 1978).

I intentionally designed the literacy methods coursework based on the framework provided in the cognitive learning theory (CLT) and the theory of metacognition. During all three weeks of the module, participants were asked to discuss and write about their own thought process as they explored the CCTs. Weeks two and three of the comprehension module instruction was conducted using the gradual release of responsibility model in order to reduce cognitive load.

This chapter provided an overview of the study, a description of the setting and participants, and an in-depth description of each phase of the study. In addition, I outline data analysis procedures that were conducted in order to analyze all data sources.

### **Case Studies in Education**

According to Yin (2018), case studies allow researchers to provide an in-depth understanding of a multifaceted social occurrence in order to holistically provide a “case” that captures real-life perspectives. Through case study design, I analyzed multiple data sources in order to provide an in-depth analysis of the experience of learning about comprehension of CCT. Merriam (1998) concludes “that the single most defining characteristics of case study research lies in delimiting the object of study, the case” (p. 395) which in this study is the literacy methods course.

A component of my research that lends itself to the case study method is that my study was “particularistic, descriptive, and heuristic” (Merriam, 1998, p. 424). In the instance of particularistic, I looked at the specific processes that occurred with the pre-service teachers were enrolled in the literacy methods course and the corresponding field experience.

Previous research states that pre-service teachers are better prepared to teach if they participate in authentic experiences and coursework and purposefully apply their newly acquired knowledge of theory into their field experience (Dawkins et al., 2009; Leland, 2013). Therefore, preservice teachers participated in purposeful course work which allowed me to collect and analyze rich data in order to learn about what drives the pre-service teachers as they explore content in the literacy methods course and the corresponding field experience. When analyzing this data, I used the constant comparative method to understand the processes that occurred within the three weeks of the comprehension module.

In regards to the descriptive nature of case studies, my goal was to provide rich data-based descriptions of their experiences. As a result, I strove to provide an in-depth analysis of data that lead to an extensive description of the processes that occurred as the pre-service teachers grew as educators (Merriam, 1998). Analysis occurred bound within the literacy methods course in the form of an explanation of the processes that occurred among participants. I conducted an analysis of the preservice teachers' processes as they progressed through a comprehension module about CCT and their tutoring lessons with students.

The collection of data, in a case study, is a continuous, recurring process wherein exploration of a process develops understanding or leads to the need for additional data (Merriam, 1998). Several data sources [tutoring lessons and reflections, e-journals, observations, in-class discussions, pre- and post- tutoring debriefing interviews, MARS (Mokhtari & Reichard, 2002), and comprehension question responses] were used to develop an in-depth understanding of the comprehension occurrences as preservice teachers explored contextually challenging text in order to comprehend. The importance of using multiple data sources is vital, in order to get the depth needed for a case study (Merriam, 1998; Yin, 2018). Due to the value of providing findings that were bound within the course, I employed the constant comparative method when coding the data in order to analyze data across participants and data sources. I also used this method of coding to further analyze the connections between the data, the CLT, and the theory of metacognition. Each of the data sources that were collected helped to create a holistic picture of the processes that occurred in this research study (Yin, 2018).

The following questions guided this research study:

1. What metacognitive processes occurred when pre-service teachers interacted with contextually challenging text?



- a. How did cognitive load influence pre-service teachers' interaction with contextually challenging text?
2. What processes occurred when pre-service teachers responded and interacted with instructional strategies to support comprehension of contextually challenging text?
3. What processes occurred when pre-service teachers planned and executed instructional strategies to support student comprehension of contextually challenging text?
  - a. How did pre-service teachers' interaction with contextually challenging literacy experiences influence the pre-service teachers' planning and execution of lessons?

### **Pilot Study 1**

Two pilot studies informed the design of the current study, which I highlight here. The first was conducted in the fall of 2017 in my own undergraduate literacy methods course. This pilot study was developed to explore how pre-service teachers interacted with CCT in the comprehension module of the literacy methods course. Since I was both the instructor and the researcher, I informed the participants of the nature of the study as well as my role as a researcher participant. I chose to conduct the pilot study for the purpose of learning more about the research design and implementation of the data sources.

I designed the comprehension module to explore multiple texts over three weeks. The first week of the literacy course module consisted of asking participants to independently read two texts, complete comprehension assessments, complete the pre MARSII (Mokhtari & Reichard, 2002), and journal using previously determined prompts. The journal questions asked the participants to describe the successes and struggles they experienced while interacting with the texts.

Week 2 of the comprehension module introduced the GRR model (Pearson & Gallagher, 1983) to explore three riddle-based texts. It is important to note that each of the riddle-based texts (i.e. Passage 1, 2, & 3) were intentionally not named in order to create ambiguity about the message of the text. I modeled multiple comprehension strategies using Passage 1 to show how to determine the meaning of the text. Immediately following this step, participants completed a comprehension assessment and discussed the experience with their peers. Participants were then asked to independently read the second riddle-based text and complete a comprehension assessment. Immediately following they completed the guided portion of the GRR, using multiple comprehension strategies, with the second text in order to determine the meaning. Participants were asked to complete the comprehension assessment again and discussed the experience with their peers. The participants interacted with the third riddle-based text independently, completed a comprehension assessment, and journaled about their experience.

During the final week of the comprehension module, preservice teachers explored the fourth text. This text was previously explored by the participants on week one of the module. On the last week of the module, preservice teachers interacted, using the GRR model (Pearson & Gallagher, 1983) with the fourth text using a different lens based on the role of the lead character in the text. The procedures for interacting with the text were nearly identical to the second week of the module in that we strategically used multiple comprehension strategies, the participants completed a post-comprehension assessment for the first and third reading, a pre- and post-comprehension assessment for the second reading, a peer discussion following the modeling and guided portions, and a journal response following the independent portion. A difference from the second week to the third week of the module was that the participants were interacting with the text in order to determine what details may be important based on the role of the lead character

rather than deciphering a riddle. In addition, the participants completed the post MARSI (Mokhtari & Reichard, 2002).

During the comprehension module, multiple sources of data were collected during planning and reflection of the comprehension portion of the tutoring lessons preservice teachers conducted with an elementary student. This pilot study provided preliminary insight into the processes that occurred when the pre-service teachers explored comprehension instruction in their coursework and applied strategic practices in their tutoring sessions with a K-6 reader. The overall findings of this pilot study indicated additional need for research in regards to the connection between literacy methods coursework and instructional practices. Due to the complexity of the relationship between coursework and instructional practices, I felt I needed additional research to further understand this relationship.

## **Pilot Study 2**

Using the findings from pilot study 1, I conducted my second pilot study in the spring of 2018. During this pilot study, I took on the role of a researcher. I positioned myself, in a fellow colleague's classroom, as a bystander who was simply wanting to learn more about how the participants explored and evolved as educators. The rationale for making this decision was to provide ample opportunity to collect research. I received IRB approval and collected data on 10 out of the 26 pre-service teachers as they completed the comprehension module in the literacy methods course. Using the information obtained in pilot study 1, I added pre- and post- tutoring debriefing sessions and observations of tutoring sessions in order to get more in-depth data related to pre-service teacher planning, implementation, and reflection of comprehension instruction during their tutoring sessions with a K-6 reader. I conducted the debriefing sessions and observations, over three weeks, with two of the ten research participants that were enrolled

in the literacy methods course. Each of these observations occurred in a literacy center located in a university.

Based on the preliminary analysis of the data collected, the pre-service teachers initially struggled to comprehend the CCT, without support from the instructor or peers. After the pre-service teachers experienced explicit instruction, by the instructor, and opportunities to discuss the content with their peers, they began to reflect on their own thinking processes in relation to the text. The data collected on the two pre-service teachers, who completed pre- and post-debriefing and were observed during their tutoring sessions, indicated a direct, although weak, relationship between planning of comprehension instruction and the practices that were used in the coursework. For example, a participant stated “I feel like after this week of instruction [in the methods course] I should know more about how to teach comprehension” (Week 2 Pre-Lesson Debriefing) however the following week she discussed and implemented “a similar pattern for instruction that [she had done] previously.” Moreover, the pre-service teachers often used outside resources (ex. worksheets found online) to help plan comprehension instruction while purposefully including some scaffolding.

### **Context of the Current Study**

The setting of this study was an elementary education literacy course at a university located in the southeast. Students completed the course prior to admission to teacher education candidacy. Teacher education candidacy is defined as the last three semesters of an elementary education undergraduate degree coursework. The specific literacy course in which I conducted research was the first of two literacy courses present in the undergraduate elementary education and special education dual certification undergraduate program.

This course followed the Alabama Core Teaching Standards and Teaching Field Standards in order to meet the requirements for teacher certification according to the mandates by the Department of Education. The main purpose of this course, as stated in the university course catalog, was to orient students to fundamentals in the teaching of reading. The comprehension module that was documented for research purposes had objectives that were designed to identify the pre-service teachers' reading practices and experiences when they explored CCTs from the perspective of a student and as an educator (see Table 1).

Table 1

<i>Comprehension Module Objectives in Literacy Methods Course</i>				
<u>Objectives</u>	<u>Week 1</u>	<u>Week 2</u>	<u>Week 3</u>	
Given an inventory, students will identify their application of reading practices when reading for academic purposes.	X			X
Given texts, students will answer comprehension questions without instructional support.	X			
Given texts, students will apply comprehension strategies to answer comprehension questions.		X		X
Given an e-journal, students will write about the experience exploring CCT.	X	X		X
Given an e-journal, students will write about how K-6 students could explore CCTs.	X	X		X

In addition to completing the methods course comprehension module, pre-service teachers were required to complete a minimum of twelve sessions, lasting 30-45 minutes, of field experience tutoring a K-6 reader. The pre-service teachers were given the responsibility of finding a tutoring student in order to complete this field experience. The purpose of the field experience (i.e. tutoring) was for the pre-service teachers to demonstrate their ability to set reading goals, based on diagnostic assessment tools and results, to work on a given area based on the results to raise the achievement of a student in a diverse population. During their time in the field, the pre-service teachers administered diagnostic assessments, created tutoring plans aligned with the diagnostic tools, and developed reflections.

## **Participants**

Pre-service teachers were purposefully selected for the study based on time-location sampling. Patton (2015) indicates that sampling that is done purposefully allows the researcher to gain the most insight from the sample they have chosen. I chose this initial literacy methods course in order to learn more about the pre-service teachers' exploration of literacy instructional content knowledge at the initial stage of their teacher education program. I felt this particular course would provide me with the most data on the evolving processes that occurred within the course and field experience due to the fact that the participants have little, to no prior experience instructing readers in comprehension. I further narrowed participants to those who were participating in tutoring pre- and post-debriefing interviews and observations during all four phases of the study. The rationale for this was to generate rich data during the entire block of time of the study.

Of the 27 participants that were recruited, 14 consented to participate in the study. Of the 14 participants, seven expressed interest in participating in the tutoring debriefing and observations. Due to unforeseen circumstances, such as completion of the tutoring field experience prior to the fourth phase of the study, withdrawal from the course, and absenteeism, I generated data from 12 participants. Of those 12, there were four pre-service teachers that participated in tutoring debriefing and observations. All of the participants discussed their tutoring sessions with their peers during all three weeks of the comprehension module. The pre-service teachers specifically discussed what went well and how they could improve their practices in future tutoring sessions. As a result, they were able to intentionally reflect on tutoring while also participating in coursework. The twelve participants were all at slightly different stages in their undergraduate degree. For instance, S 1, S 3, S 10, and S 11 were in the

final semester proceeding admissions to teacher candidacy. Additionally, S 5, S 6, S 7, S 8, S 9, and S 12 needed an additional semester or more of pre-candidacy coursework in order to apply for candidacy. Due to the undergraduate degrees S 2 & S 4 were pursuing, they were not considered pre-candidacy students because of unique progressions within their program. Further identification of the participants is documented in Table 2 below. It is important to note here that in order to maintain confidentiality and present findings based on the case study bound in the literacy methods course rather than by individual, I have chosen to identify the participants by number rather than by name. This in no way discounts the unique experiences of each participant but rather allows the findings to be presented as a whole course rather than specific to an individual.

Table 2				
<i>Participants Profile</i>				
Participant	University Ranking	Undergraduate Degree Pursuing	Participation in Study	
			<u>Comprehension Module &amp; Tutoring</u>	<u>Tutoring Observations &amp; Debriefing</u>
S 1	Junior	K-6 & Special Education	X	
S 2	Senior	Interdisciplinary Studies	X	
S 3	Junior	K-6 & Special Education	X	
S 4	Senior	Early Childhood Education	X	X
S 5	Senior	K-6 & Special Education	X	
S 6	Junior	K-6 & Special Education	X	
S 7	Junior	K-6 & Special Education	X	X
S 8	Junior	K-6 & Special Education	X	
S 9	Junior	K-6 & Special Education	X	
S 10	Senior	K-6 & Special Education	X	X
S 11	Junior	K-6 & Special Education	X	X
S 12	Junior	K-6 & Special Education	X	

### Course Instructor

The instructor of this course had taught for a total of 26 years and had a master's degree in elementary education she has taught at this university for a total of six years. She was a previous literacy coach and the director of the literacy center housed within the university in which this study took place. At the time of the study, she was a proponent of connecting the university to the public and private school system within the community surrounding the university. Due to her desire to learn more about her pre-service teachers and the K-6 students in which the participants were tutoring, she agreed to implement the comprehension module based on lesson plans and resources provided.

### **My Roles**

The roles I fulfilled were creating the instruction for the literacy methods comprehension module, observing in class implementation of the module, collecting data sources, and interviewing and observing tutoring sessions. I originally planned and implemented the comprehension module during my initial pilot studies. The rationale for creating this comprehension module was to provide an authentic opportunity for the pre-service teachers to interact with texts that could potentially cause them to struggle to comprehend the message. Yoo's (2005) research indicates that educators tend to teach the way they were taught unless their misconceptions or prior knowledge are addressed and evaluated during coursework. As a result of these findings, I felt that in order to create an opportunity for the participants to truly engage in comprehension instruction at this depth they would need to situate themselves in challenging interaction with text. It was at that point that I located texts that would be contextually challenging for the pre-service teachers and I designed instruction that provided them opportunities to address and evaluate exploration of comprehension instruction through the course.



## **Overview of the Study**

This research study was conducted over an eight-week period. I chose to implement this study over eight-weeks in order to look at the short-term working memory of the participants as they interacted with text in the comprehension module and the long-term application of comprehension instruction across the tutoring sessions in which they taught instruction in order to explore the cognitive load of participants. The notion of short-term working memory and long-term application is a significant component of CLT (Sweller et al., 2011). Throughout the semester, pre-service teachers tutored a K-6 student for a minimum of twelve 30-45-minute tutoring sessions over the course of the semester. Data was collected related to planning, implementation, and reflection on the tutoring that occurred during the last eight tutoring sessions required for the course. The rationale for including only eight of the twelve sessions is simply because the initial tutoring sessions, not included in this study, are related to pre-assessments unrelated to comprehension instruction. Throughout the study, four of the twelve participants also participated in semi-structured interviews prior to and following tutoring session in phase two, three, and four of the study. In addition, I observed the tutoring session for these specific participants. I chose to conduct pre- and post-interviews and observations with participants in order to learn more in-depth about the processes that occurred during the tutoring sessions. This in-depth analysis, using the constant comparative method when coding, provided me with data in order to learn more about the connection between theory and practice throughout the study and across the participants as was explored in studies by Yoo (2005), Clark (2016), Gomez (2009) as well.

For the first two weeks of the study (i.e. phase one), I collected all participants lessons and reflections on their tutoring sessions of a K-6 reader. This allowed me to further understand

the processes that occurred when the pre-service teacher implemented comprehension instruction prior to the literacy course comprehension module. During the remainder of the study, I continued to collect all participants' lessons and reflections on their tutoring sessions. In these three phases I also observed tutoring sessions and conducted debriefing interviews on four of the twelve participants.

I observed all participants during the comprehension module that took place in the literacy methods course. The comprehension module classes, taught by the instructor, lasted from two - three hours over three consecutive weeks in the semester. Based on Yoo's (2005) research, pre-service teachers are more likely to grow and adapt as educators if they were asked to explicitly discuss and evaluate their own learning in coursework. Since I designed the comprehension module in order to provide opportunities for this, I felt it was critical that I was present for this portion of the study in order to learn more about the processes that occurred.

For the remainder of the research study (i.e. phase four), I conducted pre- and post-debriefing interviews and observed tutoring sessions for the previously selected participants. In addition, during the entire eight weeks of the study, I collected lessons and reflections for all participants in the literacy methods course. It is important to note that, in this research study, each of the main research questions primarily focused on at least one phase in the research study in order to document the processes of the pre-service teachers' experiences as bound in the literacy course (see Table 3).

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Table 3

*Phases of Data Collection, Corresponding Data Sources, & Research Question Alignment*

<u>Phase</u>	<u>Experience Format</u>	<u>Data Sources</u>	<u>Research Question</u>	<u>Data Collection</u>	<u>Evaluation</u>
1	Tutoring	Lessons & Reflections	3	Electronic Submission	All Participants

2	Week 1 Comprehension Module	Pre-MARSI Comprehension Question Responses Journal Entries	1 & 2  1, 2, & 3		
	Tutoring	Lesson & Reflection Pre- & Post- Debriefing Observations	3	Field Notes	Participants S 2, S 4, S 7, & S 11
3	Week 2 & 3 Comprehension Module	In-Class Discussion Comprehension Question Responses Post-MARSI Journal Entries	1, 2, & 3 1 & 2  1, 2, & 3	Field Notes Electronic Submission	All Participants
	Tutoring	Lessons & Reflections Pre- & Post- Debriefing Observations	3	Field Notes	Participants S 2, S 4, S 7, & S 11
4		Pre- & Post Debriefing Observations Lessons & Reflections		Electronic Submission	All Participants

### Study Phases & Data Sources

In this study, multiple data sources allowed for explanation of pre-service teachers' experiences when they explored CCTs in a comprehension module in the literacy methods coursework and their literacy tutoring of a K-6 student. The process of collecting and analyzing data throughout the study, as suggested by Merriam (1998), is visually presented in Figure 2. A description of each week of the study and the corresponding data sources is included below in Table 4.

Location in Study	Tutoring Data Sources				Comprehension Module Data Sources			
	<u>Tutoring Lesson &amp; Reflection</u>	<u>Pre- Tutoring Debriefing</u>	<u>Post- Tutoring Debriefing</u>	<u>Tutoring Observations</u>	<u>MARSI</u>	<u>Comprehension Questions Responses</u>	<u>e- Journal Entry</u>	<u>In-Class Discussion</u>
Week 1	X							

Week 2	X							
Week 3	X	X	X	X	X- pre	X- unsupported	X	
Week 4	X	X	X	X		X- guided & independent	X	X- whole class & small group
Week 5	X	X	X	X	X- post	X- guided & independent	X	X- whole class & small group
Week 6	X	X	X	X				
Week 7	X	X	X	X				
Week 8	X	X	X	X				

**Phase 1.** During the two initial weeks of the study, known as phase one of the study (see Table 3), I collected tutoring lessons and reflections in order to establish their initial decisions when planning, implementing, and reflection on their comprehension instruction. At this time in the study, the participants were primarily conducting high frequency words, nonsense word test, and running record pre-assessments in their tutoring sessions.

The purpose of these assessments was to further understand the strengths and weaknesses of the K-6 reader that was being tutored. I chose to collect this data source in order to further understand the processes that occurred when the pre-service teachers planned and reflected on comprehension instruction prior to the literacy methods course comprehension module. I employed the constant comparative method when coding the data to compare data from multiple participants, phases of the study, and data sources.

***Phase 1 data sources.***

*Lessons & reflections.* The participants were asked to write lessons and reflections of the assessments and teaching for each tutoring session (see Appendix F). These lessons and reflections were collected in order to explore pre-service teachers' plans for implementation of

comprehension in their instruction. In order to provide more depth, additional data sources, such as observations and interviews, were used to triangulate data in the research study.

**Phase 2 & 3.** From weeks three through five (i.e. phases two and three), the participants completed a comprehension module in the literacy methods course. Also, during this time, the pre-service teachers planned instruction outside of the literacy methods course, based on assessment data, and implemented their planned lessons during tutoring sessions.

The third week of the research study, known as phase two (see Table 3), began when the pre-service teachers, in the literacy methods course, were asked to silently read Passage 1 and *The House* and answer comprehension questions in regards to these texts, using a questionnaire (see Appendix B). Following this process, the preservice teachers were asked to retrospectively reflect, using an e-journal (see Appendix C), about their experiences reading and answering questions about a CCT without instructional support. The journal provided descriptive documentation, through open-ended response questions (see Appendix C), that allowed me to answer all research questions. I compared and coded the data across multiple phases of the study using multiple participants in order to create a more holistic picture of the findings that were bound within the literacy methods course. At the end of this week's class, all of the pre-service teachers completed the Metacognitive Awareness of Reading Strategy Inventory (MARSİ) (Mokhtari & Reichard, 2002) in order to learn about their self-perception of reading strategy use when reading a text for academic purposes (see Appendix D). The MARSİ has been evaluated for reliability and validity in relation to quantitative research but due to the nature of my qualitative data analysis, I have chosen to focus on the qualitative findings that emerged from the inventory responses. I used this data to support overarching themes that related instructional strategies research (Pearson & Gallagher, 1983), theory of metacognition (Flavell, 1979) and

CLT (Sweller et al., 2011) to data collected during the observations, the comprehension questions responses, and the e-journal reflective response that occur during the literacy methods comprehension module coursework.

In order to answer research questions two and three, I employed the constant comparative method while analyzing the data across all participants' tutoring lesson plans and reflections throughout the eight weeks of the study. I also used this method when analyzing the data from the tutoring debriefing and observations that occurred during phases 2, 3, and 4.

During the fourth and five weeks of the study, known as phase three (see Table 3), the university instructor used CCTs to introduce and teach comprehension strategies (i.e. making connections, determining importance, visualization, generating questions, and inference) to build background knowledge and generate questions to clarify meaning. The instructor followed the GRR (Pearson & Gallagher, 1983) model in order to teach the comprehension strategies. The rationale for implementation of this instructional design is supported by the CLT design. "CLT is concerned with how information held in the long-term memory of instructors can be borrowed for use by learners via schema acquisition" (Sweller, 2010, p. 35). The GRR (Pearson & Gallagher, 1983) model indicates that explicit and direct instruction involves the teacher initially modeling a concept, then asking students to apply the concept through guided practice with others, and then the students display their acquired knowledge through a task done individually (Pearson & Gallagher, 1983).

Following the direct, explicit instruction, the pre-service teachers were asked to complete the comprehension questions and the MARSII (Mokhtari & Reichard, 2002) again in order to document the pre-service teachers evolving knowledge. The results of the comprehension

questions and the MARSII (Mokhtari & Reichard, 2002) provided data to answer research question two.

The pre-service teachers were also asked to retrospectively write, in the e-journal, about their experience applying strategic comprehension strategies in order to comprehend a CCT. In addition, they were asked to reflect on how K-6 student may interact with these texts and what they could do to help guide their learning. As a result, I was able to use the responses on the e-journals to answer all research questions (see Appendix C). It is important to note that the team and class discussion were also collected, via field notes collected by me (see Appendix E). These discussion responses were used to answer research questions one, two, and three. All of this data was coded and compared to other data sources for the purpose of further analysis of the processes that occurred within the module. As a result, I was also able to compare the findings with the CLT and theory of metacognition.

*Phase 2 & 3 data sources.*

*MARSII.* A self-report instrument, known as the Metacognitive Awareness of Reading Strategies Inventory (MARSII), was created by Mokhtari and Reichard (2002) in order to assess adolescents, young adults, and adults' metacognitive awareness when reading texts for school and academic purposes was used for this study (see Appendix D). There are three overarching classifications of the 30 items included on the survey, these overarching categories include global reading strategies, problem solving strategies, and support reading strategies. The overarching categories allowed me to determine a participant's tendency to apply a specific type of strategy when reading. Although MARSII was originally designed to produce quantitative data, the purpose of implementation of this inventory in this research study was to further understand and support the findings that are present when the pre-service teachers reflect, through team and

class discussions and journal entries, and on the experience exploring the CCTs in the literacy methods course comprehension module.

This MARSII instrument was completed, by all participants, immediately following week one (i.e. week three of the research study) of the comprehension module and at the conclusion of week three of the module (i.e. week five of the research study). I chose these two points in the research study to implement the pre-inventory and post-inventory because it allowed me to further understand the participants evolving tendency to use specific comprehension strategies, when reading, prior to and immediately following the methods course instruction on comprehension. After each participant completed the pre-MARSII and post-MARSII (Mokhtari & Reichard, 2002), I analyzed the results in order to provide richer exploration into the evolving pre-service teachers perspective that occurred as a result of the comprehension module experience. I also employed the constant comparative method of coding in order to compare the findings from this data source with all other data sources to provide a holistic picture of the findings bound within the course.

*Pre- & post-tutor debriefing interviews.* Data sources, such as interviewing, are seen as significant sources that are needed in order to provide in-depth understanding of the phenomenon that is studied (Merriam, 1998). In order to further understand the experience, I conducted interviews during (see Appendix A) this phase of the study in order to explore the processes that occurred when pre-service teachers' completed literacy pre-assessments and began planning instruction. Of the 12 participants in this study, four were interviewed prior to and immediately following their tutoring sessions. The four participants that were interviewed were initial selected based on their own preference and /or ability to participate in debriefing and observations of their tutoring sessions. Each interview consisted of three to four questions in a semi-structured format.



Initially, the questions during this phase of the study were specifically designed to understand more about the pre-service teachers' prior experience and potential decision-making processes when planning comprehension instruction. For the remainder of the study, the questions that I asked during the post interview sessions provided opportunities for the pre-service teachers to reflect and propose a plan for comprehension instruction during tutoring sessions. I strove to implement "case study interviews [that] resemble guided conversations rather than structured queries" (Yin, 2018, p. 118). These questions were created and adjusted based on pilot study two findings that indicated that guided conversations lead the participant to focus on what was truly relevant in their experience. I guided this conversation by referring back to the decisions and thought processes revolving around comprehension instruction. The initial interviewing questions directly related to theoretical discussion of comprehension instruction since the participants primarily assessed their tutoring student during the first sessions of tutoring that I observed. For the remaining tutoring debriefing sessions, data was collected on comprehension instruction that was planned or occurred during the sessions. The debriefing responses were collected, using field notes. Consideration was given to the notion that interview protocol is a guide rather than a definitive script during interviews (Yin, 2018). Conscious consideration was given to presenting the questions in an unbiased format so that the participant could provide as authentic information as possible (Yin, 2018).

*Tutoring observations.* The observations that were collected provided a firsthand account of the phenomenon being studied (Merriam, 1998). As a result, this form of data provided additional insight that cannot be found from secondhand accounts that occurred during interviewing. Since these observations were used in conjunction with interviews, the observations "provide[d] some knowledge of context or...provide[d] specific incidents,

behaviors, and so on that can be used as reference points for subsequent interviews” (Merriam, 1998, p. 1202). The participants who were interviewed were observed using a tutoring observation protocol (see Appendix G). These initial observations consisted of simply collecting field notes on implementation of pre-assessments during the tutoring session. The field notes were coded using constant comparative analysis for further analysis of the processes. Multiple iterations with the data were completed in order to analyze the themes across all data sources and specifically identify key connections that relate to the theory of metacognition and CLT.

*Lesson & reflections.* The pre-service teachers continued to plan and reflect on each tutoring session as a portion of their required field experience associated with the literacy methods course (see Appendix F). These lessons and reflections were collected in order to explore pre-service teachers’ plans for implementation of comprehension in their instruction. In order to provide more depth, additional data sources, such as observations and interviews, were used to triangulate data in the research study.

*Discussions.* During the comprehension module, pre-service teachers discussed their experiences exploring CCTs. The discussions occurred throughout weeks four and five of the research study (see Appendix E). Using an observation protocol (see Appendix H), I collected field notes on the discussions that occurred throughout this period of the study in order to document the processes and evolving knowledge of the participants.

*E-journal reflections.* Pre-service teachers responded, via e-journals, to five to six open-ended questions (see Appendix C). Opportunities for pre-service teachers to respond to these questions occurred at the end of each of the three weeks of the comprehension module in the literacy methods course. Through the use of the constant comparative methods of coding, I

analyzed the responses were used to further document the processes and evolving knowledge of the participants within the course.

*Comprehension question responses.* According to CLT's "first-step method: learners are presented with a task for a limited time and asked to indicate rapidly their first steps towards solution of the task" (Kalyuga, 2010, p. 49). This method was used during the first week of the comprehension module in the literacy methods course. Participants were asked to silently read a passage and answer comprehension questions (see Appendix B). The results of this were needed in order to understand what prior knowledge participants had already acquired in relation to the text content and message. According to CLT first-step method, Kalyuga (2010) states "an expert may immediately provide the final answer; whereas a novice may start attempting some random solution search" (p. 49). Following the university instructor's comprehension instruction on each text, the participants were then asked to complete the comprehension questions again. Using the constant comparative method of coding, the responses to the pre- and post-comprehension questions were analyzed in order to further understand the participants cognitive load, metacognition, and use of reading comprehension strategies. The findings from this data source were compared to other data sources (i.e. pre- & post-MARSI, journal entries, discussions) to provide additional depth when answering research questions 1 & 2.

**Phase 4.** On their own, the preservice teachers applied their knowledge by creating and conducting tutoring lessons for a K-6 reader. After these lessons were taught, the pre-service teachers were asked to individually write retrospectively about their experience planning and implementing the lesson. Since the preservice teachers had no scaffolds for comprehension for the initial three lessons and reflection, the results of the initial lessons versus the remaining lessons and reflections, that occurred during and after the in-class methods course

comprehension module, allowed me to document the pre-service teachers' evolving implementation of comprehension instruction in order to answer research question three. In accordance with CLT, the more knowledge that pre-service teachers used from their long-term memory of comprehension instruction and the less knowledge that needed to be generated about this instruction, by the individual, the more effective they were at instructing their tutoring student (Kirschner, Sweller, & Clark, 2006).

***Phase 4 data sources.***

*Pre- & post-tutor debriefing interviews.* I continued to conduct interviews during this final phase of the study in order to explore the processes that occurred when pre-service teachers continued to plan and implement comprehension instruction after the comprehension module in their coursework has been completed. The same participants that were interviewed in the previous phases of the study were interviewed during this phase. Each interview consisted of three to four questions in a semi-structured format. The questions (see Appendix A) that were asked during these interview sessions provided opportunities for the pre-service teachers to reflect and propose a plan for comprehension instruction during tutoring sessions. The debriefing session interview questions during this phase were specifically related to the comprehension instruction planned or occurred within the tutoring sessions.

*Tutoring observations.* The participants who were interviewed were also observed, during the corresponding tutoring sessions that occur between the end of the comprehension module in coursework and the conclusion of the tutoring sessions for the semester. I collected field notes and used observation protocol (see Appendix G), to collect data on the pre-service teachers' instructional practices, during the comprehension portion of the tutoring sessions. This data guided the understanding of the long-term decisions that occurred following the comprehension

coursework in the literacy methods course. The field notes were coded using the constant comparative method for further analysis of the processes across participants, data sources, and phases of the study. I chose to constantly compare data source findings to each other in order to find patterns in the data. This also allowed the exploration of themes in order to classify findings based on codes within each theme.

*Lesson & reflections.* The participants continued to complete and submit lessons and reflections for each tutoring session (see Appendix F). These lessons and reflections were collected in order to explore pre-service teachers' plans for implementation of comprehension in their instruction after being taught comprehension instruction and exploring CCT in the literacy methods course.

## **Theoretical Framework**

**Cognitive Load.** This study used CLT in order to analyze the short- and long-term processes that occurred when pre-service teachers explored CCT in their class and then taught comprehension to a K-6 reader. CLT was used to analyze the design of the comprehension module that took place in the literacy methods course as well. CLT is documented as a psychological theory, “concerned with the possible relationships among psychological constructs or between a psychological construct and an observable phenomenon of practical consequence” (Moreno & Park, 2010, p. 9). This theory is used to evaluate the demands and characteristics of a task on a person and its effect on learning.

The notion of working memory hinges on the idea that individuals are affected by inside and outside forces that coexist and provide or hinder acquisition of knowledge. Sweller, Ayres, and Kalyuga (2011) indicate the following:

The cognitive load imposed by the intrinsic nature of material (intrinsic cognitive load) and the manner in which the material is presented (extraneous cognitive load) both must be dealt with by working memory with resources allocated to both of these two sources of cognitive load. (p. 936)

The combination of intrinsic and extraneous cognitive loads determines the overall cognitive load imposed on an individual. Sweller et al. (2011) also indicate that tasks may still be difficult even if there is low intrinsic cognitive load. In this study, I examined the cognitive load that was present when pre-service teachers explored a text, specifically when watching the instructor model comprehending the passage through a think aloud. While overall cognitive load may be low, the text itself poses a challenge because pre-service teachers could struggle to activate their prior knowledge. Learning more about how these processes influenced pre-service teachers' personal and instructional practices was explored in this study.

Additionally, Sweller et al. (2011) indicates that instruction should be tailored to meet the changing needs of an individual's learning. Furthermore, when an individual is working to acquire new information, they are inclined to use the process of either borrowing and reorganizing information or creating novel information through random acquisition.

Implementation of the GRR model (Pearson & Gallagher, 1983) allowed for tailored instruction to occur and also provided various support systems for the pre-service teachers as they acquired new information. Data was collected on the varying degrees of instructional support during the instructor led modeling referred to above, the guidance of the instructor and peers during the second phase of the model, and independent practice at the conclusion. Exploration of the influences on reducing cognitive load in order to acquire new information was analyzed in this study in order to determine what the pre-service teacher's decision process was in order to help

them acquire new information and reduce their cognitive load. The data that was used for this portion of the study included the in-class discussion, pre- & post-comprehension question responses, and e-journal responses.

CLT also places a large emphasis on prior knowledge, frequently referred to as schema (Moreno & Park, 2010). They, along with Cooper and Sweller (1987), Sweller et al. (1990), and Sweller and Cooper (1985) indicate that prior knowledge is the foundation for performance of skills and requires conscious effort directed towards the problem and corresponding solution. In addition, in order to enhance learning, individuals need to be aware of their development of schema. This research study analyzed a variety of data sources in order to explore pre-service teachers' prior knowledge, as it influenced cognitive load, about literacy instruction. I used the pre-MARSI (Mokhtari & Reichard, 2002), the pre-lesson and reflection, and the pre-comprehension questions in order to evaluate the pre-service teacher's use of schema to explore solutions to the personal and instructional problems that guide learning.

**Metacognition.** In order to further understand the processes that occurred when pre-service teachers interacted with CCT, I also used the theory of metacognition to ground my research. According to Flavell (1979), metacognition is the “cognitive enterprises [that] occur through the actions and interactions among four classes of phenomena: (a) metacognitive knowledge, (b) metacognitive experiences, (c) goals (or tasks), and (d) actions (or strategies)” (p. 906). Metacognitive knowledge is an individual's cognitive understanding that people are intellectual beings and they have assorted occurrences that relate to cognitive experiences, goals, and actions. In order for an experience to be metacognitive it must be either “conscious cognitive or affective experiences” that relates to “cognitive enterprises” (p. 906). The term goal refers to these enterprises. Whereas, actions are the behaviors or cognitions that drive the goals. The

understanding that individuals can be cognitively aware of their own knowledge helped guide my research. Due to this understanding, my research study explored the processes that occurred when pre-service teachers were asked to think about their own acquisition of knowledge while accessing CCT. In addition, they were also asked to write about the experiences that occurred when they were interacting with the text as a student and as pre-service teacher.

To further understand the metacognitive influences as it relates to reading, I also chose to explore Baker and Brown's (1984) work related to the theory of metacognition in the field of literacy. They state that in order to be metacognitively aware you must be aware of cognitive knowledge and how to regulate it. Cognitive knowledge refers to an individual's understanding of their own capabilities cognitively and as a learner. Regulation of your own cognition is described as the ability to actively engage in regulating your own thinking in order to work towards solving a problem.

Baker and Brown (1984) indicate that in order to be effective readers an individual must have some degree of cognitive awareness and control as they read. As a result, effective readers will apply skills in order to metacognitively engage in the reading. During my study, I chose to look at the pre-service teachers' metacognitive awareness of their own reading strategies prior to and immediately following the literacy course comprehension module (i.e. the pre- and post-MARSI) in order to explore their own understanding of the skills they were cognitively aware of applying. I also strategically aligned their metacognitive awareness of the reading strategies inventory results with the actual events that occurred when the participants interacted with CCT. The data that was collected and analyzed for this purpose included the pre- and post-MARSI (Mokhtari & Reichard, 2002), pre- and post-comprehension question responses, in-class discussions, and e-journal entries.



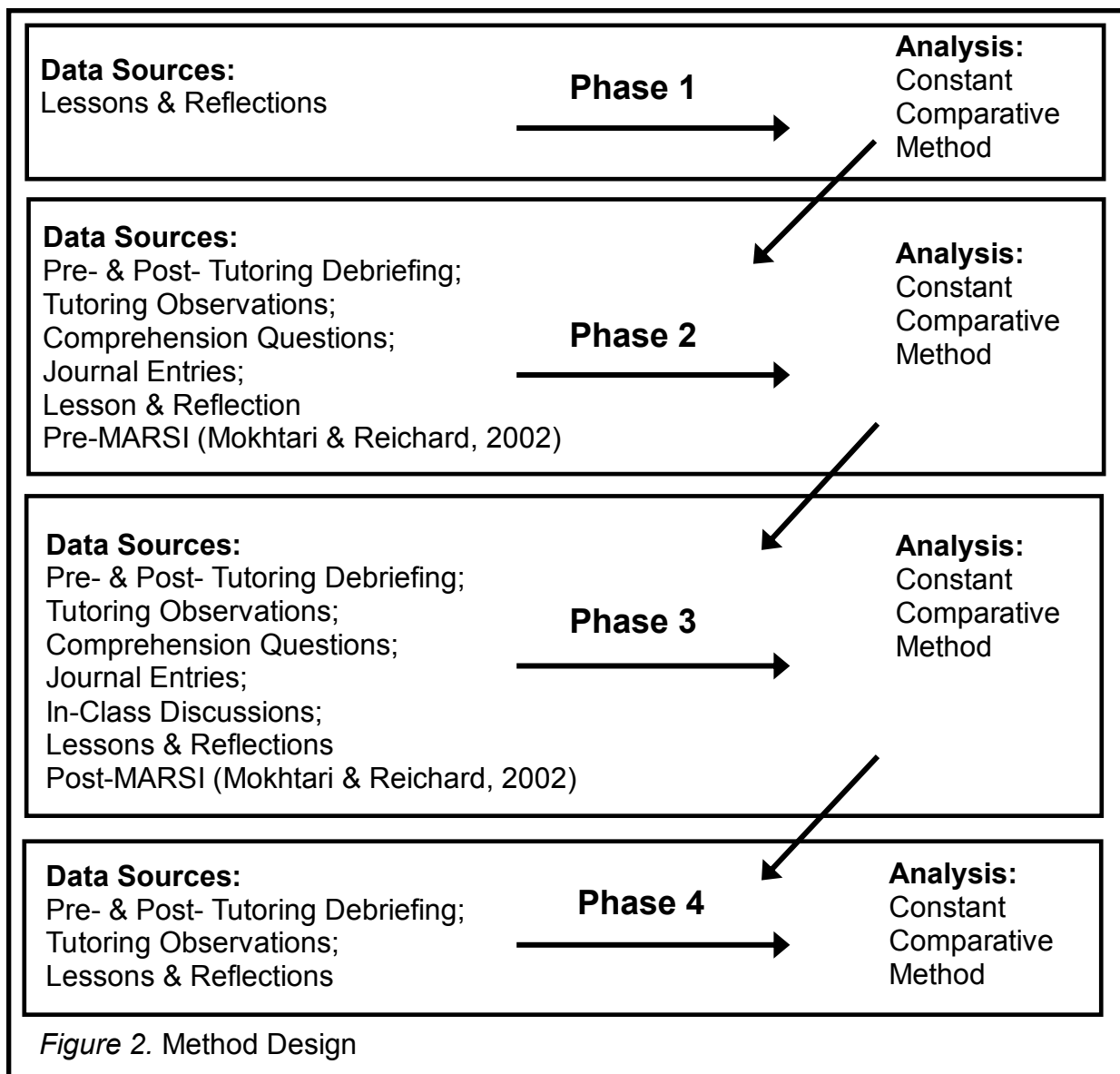
In addition, theory of metacognition was also used to analyze the pre-service teachers' instructional influences when reflecting on potential and actual processes that occurred when planning to teach comprehension instruction. Data for this included the in-class discussion, e-journal entries, tutoring lessons & reflections, and tutoring pre- & post-debriefing.

### **Data Analysis**

The data analysis was an iterative process in which I continually compared data sources across participants, phases of the study, and data sources in order to answer all research questions in-depth. With regards to the cognitive load theoretical framework that my study hinges upon, I analyzed my data in order to see how working memory, acquisition of new information, and schema were used to explore CCT in the pre-service teacher's coursework, as influenced by Davey and McBride's (1986) seminal work in this field. I specifically used the discussion observations (see Appendix H) and e-journal reflections (see Appendix C) to collect data on the concepts of schema, working memory, and acquisition of new information in regards to the pre-service teachers' experiences interacting with the CCTs. In addition, analysis of the application of short-term knowledge that emerged in the methods course class sessions and the long-term implications that were evident when tutoring a K-6 reader provided me with additional insight into the cognitive load that was present and evolving as the processes unfolds. I used the data (i.e. MARSII, comprehension questions, e-journal reflections, and discussions) collected in the literacy methods coursework and the initial lessons and reflections for tutoring in order to establish the short-term memory related to the knowledge acquired during the coursework. The remaining lessons and reflections, pre- and post-debriefing, and tutoring observations allowed me to collect data on the long-term impact of the coursework on the pre-service teachers' instructional practices.

I also used the theory of metacognition when I analyzed the data so that I could identify the pre-service teachers' metacognitive awareness during the comprehension module and when thinking about instruction of K-6 readers. The understanding of metacognitive knowledge and experiences allowed me to look through these lenses to analyze data in order to determine if the pre-service teacher intertwine the pre-service teacher's knowledge of applying metacognitive reading strategies and the actual experiences and actions that occurred when using the reading comprehension strategies. For this portion of the study, I used the pre- & post-MARSI results, the in-class discussion responses, the e-journal responses, and the pre- & post-comprehension questions data sources to provide depth on the overall processes that occurred within the literacy methods course. I also looked at the goals and actions that the pre-service teachers used when planning, instructing, and reflecting on teaching a K-6 reader to implement reading comprehension strategies when interacting with texts.

Throughout the study, multiple data sources were collected in order provide insight into the processes that occurred when pre-service teachers participated in a literacy methods course comprehension module and their instructional practices in tutoring sessions that ensued (see Figure 2). Additionally, each data source was collected at least twice throughout the study in order to document evolving knowledge and practices (see Table 4).



In order to answer the first research question, phase two and three sources of data (i.e. comprehension questions, journal entries, pre and post MARSI, and discussions) were analyzed using constant comparative method. Each data source was constantly compared to other data source in order to discover and support emerging themes and/or categories. In order to answer research question two, data from phase three was used. Much the same as for the first research question, constant comparative coding occurred. Multiple iterations with the data were completed in order to analyze the themes across all data sources and specifically identify key

connections that relate to research on instructional strategies (Pearson & Gallagher, 1983), the theory of metacognition (Flavell, 1979), and CLT (Sweller, 2010). In addition, research question three used all phases of data collection and sources for analysis (see Table 3). All qualitative data was analyzed using the constant comparative method. A sample of the codebook can be found in Table 5. The codebook allowed me to discover reoccurring findings, across multiple data sources (i.e. in-class discussions, journal entries, tutoring lessons and reflections, tutoring debriefing, and tutoring observations), related to instructional support which was further categorized into the codes model, guide, and independent based on the support indicated in the data.

The results of the pre- and post-MARSI (Mokhtari & Reichard, 2002) and the pre- and post-comprehension test response differences and similarities were analyzed in order to support the discussion observations and e-journal reflective response data. The results of the post-MARSI and the post-comprehension test responses were used to triangulate and support the data derived from the discussions and e-journals in order to document the participants evolving knowledge and implementation of self-reported strategies usage and comprehension, respectively, after explicit direct instruction occurred during the comprehension module.

The evaluation of the pre-service teacher's lessons and reflections were analyzed to provided more information about the pre-service teachers' evolving experience implementing comprehension instruction (see Appendix F). In addition, data was analyzed to locate examples of comprehension strategies that were planned and implemented for instruction.

The final data sources (i.e. pre-service teachers written e-journal reflections and field notes) were coded in order to identify emerging and reoccurring themes and/or categories, support other data source findings, and used to provide additional insight in order to answer all research questions. The codebook allowed me to identify a particular incident that occurred in a

data source and compare it to other data sources (Merriam, 1998). Following each week of the study, I analyzed the data in order to locate themes related to research on instructional strategies (Pearson & Gallagher, 1983), the theory of metacognition (Flavell, 1979), and CLT (Sweller, 2010). I constantly compared data sources based on the major themes, as indicated above, in order to further refine the codes as determined by data, theory, and literature. As the weeks progressed, I referred back to previous data in order to classify and refine the themes that were supported by theory and research. I looked at data overall (i.e. all participants in the literacy methods course) in regard to the literacy methods comprehension module findings. I then analyzed the data of the participants that I conducted tutoring debriefing and observations in order to support the themes and/or categories that had previously been identified by the entire case. I chose to constantly compare and analyze the remaining data to other data sources for more in-depth descriptions of my findings as supported by Merriam (1998). These conclusions offered additional information about the experience that occurred during the comprehension module and the tutoring sessions.

### **Validity**

In order to make sure this research study held value, I needed to pay careful attention to the internal validity (Merriam, 1998). In the case of my research, I explored multiple pre-service teacher's processes in order to produce findings that were supported and/or refuted by other perspectives in order to shine light on the multidimensionality of each individual's experiences. I also triangulated data to support findings that were present throughout the data. This was accomplished by analyzing data across multiple phases of the study and data sources (i.e. pre- & post-tutoring debriefing, tutoring observations, tutoring lessons and reflections, journal entries, comprehension question responses, in-class discussions, and pre- & post-MARSI) as they pertain

to each research question. Since I conducted interviews and observations over six weeks of the study, I was able to providing a long-term analysis of phenomenon. In addition, the basis of understanding the theory to practice connection that drove this research was also supported by other research studies on this principle (Bean, 1997; Darling-Hammond, 2010; Dawkins et al., 2009; Duffy & Atkinson, 2001; Gomez, 2009; Helfrich & Bean, 2011; Leland, 2013; Lipp & Helfrich, 2016; Robertson, 2013; Shaw & Dvorak, 2007; Unver, 2014).

Findings from this study are unique to each experience and therefore were not analyzed for their validity relative to other experiences outside of this literacy course. In regards to the comprehension questions assessments, the goal of the questions was to learn more about the participants thought process (i.e., cognitive load and metacognition) while interacting with the text rather than if they were correctly able to identify the meaning of the text. With that being said, the instructor of the course in which I conducted my study provided an outside perspective by evaluating the questions for clarity and validity. Additionally, data was collected directly from student's responses and all findings were presented verbatim other than deletions of extraneous information unrelated to comprehension instruction.

Although my qualitative study was only reflective of the experiences that occur during that time, it was important for me to consider the generalization of the study in order to discover the applicability of the findings on the field of education (Merriam, 1998). In regards to external validity, I attempted to provide rich description of my findings and provide multiple pre-service teacher's perspectives and experiences in order to make comparisons of their experiences.

### **Reliability**

The research conducted in this study strove to provide findings that were consistent and dependable. I assumed that not all experiences would be the same but I attempted to provide

depth in my data analysis in order to exemplify the rationale for my discovery. I worked toward this goal by triangulating my data and using the CLT and the theory of metacognition to drive my research and support my findings.

Due to that fact that this research study was initially designed and implemented two times prior to its final implementation in this study, I was able to confirm and tweak the design in order to provide ample opportunities to collect data that aligned with my research questions. As a result, the comprehension module contained comprehension assessments, journal prompts, MARSİ (Mokhtari & Reichard, 2002), and in-class discussion questions had been reliably implemented in a total of three research studies conducted by me. As a result, the data sources that were used in the literacy methods course were vetted numerous times.

### **Ethical Considerations**

Since my role was as researcher rather than an instructor, I was not providing grades for the documents collected; thus, this study did not impact participants' grades. With that being said, the lessons and reflection plans did receive grades by the instructor. As a result, the participants may be more likely to feel pressure to complete the assignment to the best of their ability and based on the expectations of the instructor. If a pre-service teacher did not perform well, they could have been more resistant to me collecting data on their practices. In order to attempt to reduce potential discomfort, I was transparent with all participants that I was not evaluating their data to identify right and wrong practices but rather to learn more about their decisions when planning, implementing, and reflecting on their instruction during tutoring sessions.

The same method course instruction was provided to all students regardless of their participation in the study. As a result, pre-service teachers who chose to participate in the study

were not overtly identified as a participant by their peers and/or instructor. This was done in an attempt to safe guard them from possible judgment from others. In addition, my role, as a researcher, was clearly identified prior to observations of the literacy methods coursework in order to create transparency with the participants. I also informed all of the participants of my intent to document the processes that is occurred rather than evaluate the participant choices.

Since I used field notes during the study, participants could have felt uncomfortable with me writing down information as I observed or interviewed them. In an effort to reduce this discomfort, I reminded students that my intent was to document the processes that occurred and not judge the participants decision making. In addition, I indicated that my findings would be presented using pseudonyms in order to create anonymity.

In regards to tutoring session observations, I considered that even though I was not collecting data on the K-6 reader I was present while the K-6 student was working through content that was potential challenging. As a result, these K-6 students and/or their parents could have been uneasy with my presence. I worked to mitigate this as much as possible by providing an opportunity for the K-6 students and/or parents to meet with me, prior to the study, to discuss the focus of the research study. In addition, I purposefully communicated with K-6 readers prior to and immediately following tutoring sessions in order to build rapport and ease anxiety. In regards to my data collection, I did not write down any identifiable information about the K-6 students. The data I collected during the observations was strictly related to the pre-service teacher's actions.

During pre- and post-debriefing, participants answered my questions in a semi-structured format. Due to the nature of interviews, the pre-service teachers could have felt their privacy was invaded or embarrassed to discuss concepts with me or others around. In order to reduce



potential discomforts, I located, prior to interviewing, a meeting in a private space where the pre-service teacher did not have to discuss their responses in front of their peers, tutoring students, tutoring parents, and/or instructor of the methods course.

I also let participants know that if at any point they don't feel comfortable with the interview, such as content or their responses, they could withdraw from the study, chose not to respond to a question(s), and/or remove a portion of the interview from my data. I also notified them of the nature of dissemination of the results of my study. Specifically, I informed them that all the results of the study will be presented under a pseudonym.

As Merriam (1998) indicates, it is important to be responsive, as a researcher, to issues that may arise and, when deemed necessary, provide information on resources that could help them resolve the participants' problems. If a participant indicated distress when speaking about a component of the tutoring process, I was open to referring to resources that might help assist the participant if they were struggling with a component of the tutoring process. With that being said, my role is a researcher rather than a coach so when distress is not evident, I provided encouragement such as nodding and restating what has been said in order to promote a positive and encouraging environment while consciously being mindful of my influence tailoring a participant's response.

It is important to note that even though I am not the instructor for this course, I am a literacy instructor at the university where this study took place. I am aware that, as a literacy instructor and the developer of the comprehension module taught in the literacy methods course, I have potential biases when I analyzed instructional decisions made during the literacy methods course comprehension module and participant tutoring sessions. These include the fact that I have taught this course previously and as a result I have preconceived notions based on how I

have taught the class. Because I have a designed and taught this comprehension module in my own classroom, I have set expectations for what I felt would be beneficial for the students. Although many of these expectations I discussed with the instructor prior implementation of the module, there were inevitably differences in how she chose to interact with students and discuss the texts from how I would have taught the content. With that being said, my data collection is related to the processes that occurred when pre-service teachers interacted with the text rather than the instructional decisions of the literacy course teacher.

As a literacy educator myself, I am also aware of research-based practices and my own experience teaching K-6 readers. This perspective came with a set of notions of how I felt instruction should be implemented. For instance, research indicates that repeated, strategic, and extensive use of multiple comprehension strategies increases an individual's ability to comprehend (Almasi et al., 2007; Cubukcu, 2008; Pedro et al, 2012-2013; NRP, 2000). As a result of this, prior to teaching I planned strategic use of comprehension strategies. Furthermore, Davey & McBride's (1986) research indicates that student generated questioning is a valuable tool for comprehension. My experience teaching K-6 students has also taught me the importance of this comprehension strategy. Although these factors influenced my understanding of instruction, my goal in this research was to further understand the processes that occurred as the pre-service teacher applied theory to practice. As the researcher, I focused on this goal rather than my own ideas of what is right or wrong. To the best of my ability, I considered and implemented decisions that were reflective of my previously stated desire to reduce potential discomfort and promote ethical behavior.

## **Summary**

This chapter described the case study methodology that was used to conduct the research study. The methods for this study, as supported by CLT and the theory of metacognition, as well as the data analysis procedures were also provided in detail. The ultimate goal of this research was to further understand the processes that occurred when pre-service teachers were asked to explore CCT, in a literacy methods course comprehension module, and their experiences planning and implementing comprehension instruction when tutoring a K-6 reader. The collection of all of the data sources (i.e. MARSII, tutoring lessons and reflections, pre- and post-tutoring debriefing, tutoring observations, comprehension questions, reflective e-journal entries, and in-class team discussion) described in this chapter were used in order to explore these processes.

## Chapter 4: Findings

### **Introduction**

A case study, bound in an elementary education literacy methods course, was used to further understand the evolving processes that occurred when pre-service teachers interacted with CCT in their coursework and their planning, implementation, and reflection on instruction of CCT. In order to understand the evolving processes that occurred among the collective case of 12 pre-service teachers in this study, I strove to learn about the how, why, and what that drove the pre-service teachers' decisions as a student and an educator.

This chapter summarizes the analysis of the data and presents the findings with regard to each research question. Since this case study is bound within the literacy methods course, experiences from a variety of participants were included. The data was coded using a constant comparative method to identify and test categories that emerged across participants, phases of the study, and data sources.

Multiple data sources were used to capture and code the information using this method. Through multiple iterations of all of the data sources (i.e. in-class discussion, journal entry responses, comprehension question responses, pre- & post-MARSI results, tutoring lessons & reflections, tutoring pre- & post-debriefings, and tutoring observations), patterns were established to identify themes and additional codes to answer each of the research questions in this study. The development of a code book was necessary to support this qualitative research and provide insight into the many layers of analysis that occurred in order to answer the research questions. Operational definitions and examples are given to support each theme and subsequent

code (see Table 5). Initially, I scoured through data in order to identify all findings that related to the major themes (i.e. metacognitive processes, reading comprehension strategies, cognitive load, instructional strategies). Following this initial stage, I went back through the data and identified codes that further described the findings. At that point, I chose to separate all of the data that related to each individual code. I sifted through this data in order to locate findings that were rich in description, unique, and/or similar to other findings. When the data was classified under multiple codes, I presented it within the category that was most salient. The development of the codebook corresponded with the theory of metacognition, CLT, and literature. Additional explanation of my process of categorizing the findings can be found in my codebook (Table 5).

Table 5

<i>Codebook</i>			
<u>Theme</u>	<u>Code</u>	<u>Operational Definition</u>	<u>Example</u>
Metacognitive Processes		The verbal or written reflection on one own's thoughts and decisions related to <ul style="list-style-type: none"> <li>• Comprehension</li> <li>• Instruction</li> </ul>	"I learned many different techniques and skills that I can use on my students in the future" (S 9).
Reading Comprehension Strategies	Global Reading Strategies	The use of these strategies provides an individual to think about the text as a whole or in relation to influences outside of the text. According to Mokhtari & Reichard (2002), this includes <ul style="list-style-type: none"> <li>• Context clues</li> <li>• Analyzing and evaluation the text</li> <li>• Accessing background knowledge</li> <li>• Guessing text content</li> <li>• Checking guess of text content</li> <li>• Checking understanding of text</li> <li>• Determining importance in the text</li> <li>• Previewing</li> <li>• Setting a purpose for reading</li> <li>• Using text aids</li> </ul>	"I use prior knowledge to guess what I believed the subject of the passage [was]" (S 4).
Reading Comprehension Strategies	Problem-Solving Reading Strategies	The use of these strategies allows an individual to problem-solve in order to decipher meaning. According to Mokhtari & Reichard (2002), this includes <ul style="list-style-type: none"> <li>• Adjusting reading speed</li> <li>• Getting back on track</li> <li>• Guessing meaning of unknown words</li> <li>• Re-reading</li> <li>• Stopping and thinking about the text</li> <li>• Visualizing</li> </ul>	"I reread the text and connect[ed] different things in the passages" (S 1).
Reading Comprehension Strategies	Support Reading Strategies	An individual's use these strategies helps to support or assist an individual's understanding in order to comprehend the text. According to Mokhtari & Reichard (2002), this includes <ul style="list-style-type: none"> <li>• Asking questions</li> </ul>	"Asking questions throughout the passage gave me something to think about while reading" (S 4).

		<ul style="list-style-type: none"> <li>• Discussing</li> <li>• Finding relationships in the text</li> <li>• Paraphrasing</li> <li>• Summarizing</li> <li>• Reading the text aloud</li> <li>• Using reference materials</li> <li>• Taking notes</li> <li>• Underlining or circling information in the text.</li> </ul>	
Cognitive Load	Schema	An individual's attempt to use their own knowledge in order to comprehend text.	"I was not sure if the way I was inferring the passage was the correct answers" (S 8).
Cognitive Load	Instructor	In an effort to reduce cognitive load, an individual uses the instructor's knowledge to decipher meaning within a text.	"My comprehension strategies didn't help me but now I get it after watching the instructor show me" (S 7).
Cognitive Load	Peer	An individual's use of peers' knowledge in order to reduce cognitive load in order to comprehend text.	"My friend has to explain the importance even after watching [the instructor]" (S 5).
Cognitive Load	Schema, Instructor, & Peer	The use of an individual's own knowledge as well as other's knowledge in order to decipher meaning from a text.	"I didn't realize that there were parts of the story that could actually make all three perspectives work until we did them together" (S 8).
Cognitive Load	Pre-Service Teacher Cognitive Load Influences	An individual's use of resources in order to plan and/or make instructional decisions.	
Cognitive Load	K-6 Student Cognitive Load Influences	The participants perception of K-6's academic and instructional needs related to the content and instruction that was present in the literacy method course comprehension module.	"The I do, we do, you do model would be tremendously effective in supporting students' success with a difficult text" (S 2).
Instructional Strategy	Model	When an instructor is describing/exploring content while an individual is observing.	"The teacher starts with all of the responsibility" (S 2).
Instructional Strategy	Guide	The process in which an individual is given instructional support from their peers and/or the instructor.	"We just read it together and [wrote] down different inferences, visualizations, and making connection clues on the board" (S 1).
Instructional Strategy	Independent	After watching an instructor model exploring/describing the content, explore the content with guided support from others, the individual partakes in exploring the content on their own.	"I was able to make connections in each passage" (S 1).

Exploration of the themes was primarily focused on the collective case of the literacy methods course. In order to provide an authentic voice of the participants written and oral exploration of comprehension instruction, I chose to present the findings verbatim. However, additions and clarifications have been included within brackets as needed.

In this chapter, the findings are organized by the research questions that guided the research and are presented in two specific findings: comprehension findings derived from the literature module and instructional tutoring strategies. Data was collected on the processes that occurred when 12 pre-service teachers, as a collective group, were faced with responding to, interacting with, planning, executing, and reflecting on experiences with CCT comprehension.

Prior to exploring the findings, it is important to clarify a few key aspects that are prevalent throughout the data. Findings from the three-week literacy course comprehension module contain the titles of the pre-service teachers explored four texts (i.e. *The House*, Passage 1, Passage 2, and Passage 3) in order to keep the data unedited and directly related to the participants specific experience with a text. It is also important to note that Passage 1, 2, & 3, riddle-based texts, were intentionally not named due to the purpose of exploring the text in order to decipher it's meaning. Another key component of the findings provided below is the time in which the data was collected. The rationale for including the phase and/or week in the comprehension module was strictly for the purpose of relating it back to the pre-service teacher's completion of the comprehension module. Therefore, phase one of the study occurred prior to the comprehension module and lasted for a total of two weeks. Phase two of the study is the initial week of the comprehension module in which the participants were asked to explore CCTs without instructional support. Phase three of the study occurred during weeks two and three of the comprehension module and consisted of exploration of CCTs with instructional support. Phase four was the final two weeks following the comprehension module.

### **Descriptive Data on Metacognitive Processes and Cognitive Load**

The influences on the metacognitive processes theory and cognitive load theory played a critical role in the practices of the pre-service teachers' during this study. The influences on cognitive load and metacognitive process data were used to answer research question one: What metacognitive processes occurred when pre-service teachers interacted with contextually challenging text? and sub-question one: How did cognitive load influence pre-service teachers' interaction with contextually challenging text? The data used to answer this research sub-question was found in the literacy course comprehension module (i.e. comprehension

assessments, journal entries, and in-class discussions). For an overview of the findings related to question 1, refer to Table 6.

Table 6

Findings	Metacognitive Processes	Cognitive Load		
		<u>Schema</u>	<u>Instructor</u>	<u>Peers</u>
• Value of experiencing technique (S 2)	X			
• Learning about techniques & skills to apply in teaching (S 9)	X			
• Gain experience teaching (S 9)	X			
• Challenging to decipher meaning (S 1, S 2, S 3, S 4, S 6, S 7, S 10, S 11)		X		
• Randomness (S 16)		X		
• Closed to other interpretations (S 4, S 10)		X		
• Probing for questions to be answered (S 10)			X	
• Informed (S 3, S 7)			X	
• Clarified (S 5)				X
• Collaboration to decipher meaning & apply strategies (S 1, S 2, S 6, S 8, S 9)		X	X	X

**Metacognitive processes.** Based on the theory of metacognition (Flavell, 1979; Baker & Brown, 1984), data was coded using the major theme of metacognitive process in order to locate instances in which participants reflected on their own thinking related to instruction. The following findings are significant in relation to metacognition however, the intention in this section of the findings is to simply present them as a broad overview prior to the more extensive exploration of data presented in subsequent categories. For instance, when responding to journal prompts the theme of metacognitive process occurred frequently in the literacy methods course comprehension module, as noted by a participant:

I believe I am more equipped to help illustrate the point that the importance of details in the story is determined by the perspectives from which it is read. Experiencing this for myself was more effective than merely reading about this technique (S 2).



In addition, “[A tutoring participant] learned many different techniques and skills that [she] can use on [her] students in the future” (S 9). She also indicated the comprehension module showed her determining meaning from riddles, the focus of week two comprehension module, is more challenging than she had originally thought. As a result, her reflection on her own understanding and prior knowledge of riddles was altered based on this experience.

A participant reflected on her tutoring of a K-6 student, noting, “[this experience] helped me to get some well needed experience in my field” (S 9). Participants also expressed thoughts of how they progressed through the course’s required field experience (tutoring lesson reflections). Quite a few participants expressed internal thoughts about the growth they experienced while in the field. According to another participant’s final reflection on tutoring, “I have learned so much about assessment data, adapting to meet the student’s particular needs, and how to make learning fun as well as effective (S 2).” She also indicated she grew as an educator because she was adapting her instruction based on her purposeful observation of her tutoring student. She indicated, “the most challenging part of the tutoring project for [her] was the comprehension portion” yet she continued to stop, even in the middle of a lesson, in order to look for ways to help her student. A participant also wrote in her final reflection on tutoring, “there is a lot more that goes into teaching than just showing up and presenting new information to students” (S 1)

“I learned through this project that all children are different and they have different backgrounds. So, because of this some kids tend to be more advanced while others need more time to get a concept down and [there] is nothing wrong with it” reflected a participant at the conclusion of her tutoring field experience (S 6). She also acknowledged even when something does not work she needed to find a different way of teaching until her student succeeded. In

contrast, another participant noticed there was a need to challenge her tutoring student's reading more but by the end of the tutoring project she still felt she had not achieved that goal (S 12). In summary, participants metacognitively indicated the significance of the experiences that occurred during this study. They intentionally spoke of their own thinking in order to process and/or explore what occurred.

**Cognitive load.** As Sweller et al. (2011) indicated new information acquisition can either be borrowed and reorganized or it can be created through randomness as novel information is acquired. Numerous iterations with the data allowed me to comb through the findings based on the theory of cognitive load (Cooper & Sweller, 1987; Moreno & Park, 2010; Sweller et al., 1990; Sweller et al., 2011; Sweller & Cooper, 1985). Based on this research study, I operationalized cognitive load as instances when individual's access and/or use their own and/or another individual's knowledge in order to understand and/or make instructional decisions. Additional iterations of data analysis allowed for further classification of documented instances based on the context and/or access and/or use of the individual's knowledge. Explanation of these codes is provided in Table 5.

As a result of this, I presented findings on what processes occurred when pre-service teacher worked to reduce their own cognitive load. The subcategories below reflect the overall patterns in the data related to external (i.e. instructor and peers) and internal (i.e. schema) factors that were used to reduce the cognitive load.

**Schema.** The code schema was derived from the theme of cognitive load to identify an individual's attempt to use their own knowledge in order to comprehend text. In the case of the following findings, participants attempted to use their own knowledge to acquire information regardless of if it provided them with enough information to understand the text. Numerous

participants reflected on the difficulty of deciphering the texts during the first week of the three-week literacy course comprehension module. During the initial week of the comprehension module, the participants were asked to explore two texts (i.e. Passage 1 & *The House*) independently in order to answer comprehension questions. Data was collected from preservice teacher responses to the comprehension questions and week one journal entries. According to a participant's journal entry, "the first passage was very difficult because I [felt] like it did not have a specific main idea. It was hard to understand what was going on" (S 1). Participant S 1 had a difficult time comprehending this text due to the lack of prior knowledge. She felt *The House* was easier to understand "even though it [did] not state the main idea." She reduced cognitive load through access of her previous acquired knowledge (i.e. schema). Another participants' journal entry response specifically referred to her struggles with Passage 1 as well when she stated "the challenges I encountered was really just on Passage 1. I had a hard time trying to figure out what the passage was talking about" (S 3). All of the participants felt the cognitive load was so challenging that they were unable to effectively comprehend the text using their schema.

One participant indicated, in her initial Passage 1 comprehension responses, a similar struggle due to the abstract nature of the passage (S 2). She also denoted that she "thought the second passage about the house was difficult as it switched between the thoughts of Pete and Mark without indicating a shift" according to her journal entry. Based on another participant's journal prompt response, she struggled with the purpose of the texts but still attempted to "gather what [she] could" (S 5). This response signified an attempt to access her background knowledge in order to understand the text. She specifically expressed frustration with the larger words contained in Passage 1 and the randomness of *The House* leading to cognitive overload.

Additionally, another individual referred to Passage 1 as being random and she was “not positive that [her] answers were correct” (S 10). Her answer included a list of quotes from the passage rather than an identification of what the text was referring to (Passage 1 pre-instructional support comprehension assessment). Additional participants expressed similar challenges determining the overall meaning of Passage 1. These participants, although they felt they were unsuccessful, attempted to use their schema in order determine the meaning.

In an effort to make sense of the passages, another participant chose to re-read (support strategy) Passage 1 in order to determine the meaning (S 8). In regards to *The House*, she “was not sure if the way [she] was inferring (global strategy) the passage was the correct answers” according to her journal entry response. Another participant similarly wrote in her journal entry that she chose to re-read when necessary and “take in as many details as possible while also noting the characters’ unstated motivation” (S 11). Her desire to take in as much information as possible indicates she struggled to decipher the important details from the extraneous.

Even after instructional support was given during weeks two and three of the comprehension module and some participants still documented only their own learning and acquisition related to comprehending the text. For instance, a participant indicated even after the instructor modeled deciphering the message of Passage 1 (i.e. the text referred to a kite) she still felt more inclined to think the text was referring to reading (S 10, Passage 1 post-instructional support comprehension assessment). In essence, the participant did not change her original identification of the text based on the instructor’s explanation. Similarly, another pre-service teacher contributed to the in-class discussion when she reflecting that “this [text] was challenging. I had to read [it] multiple times aloud to myself slower” (S 4). An additional participant indicated using comprehension strategies to decipher multiple texts but strictly

referred to her own application of the strategies and prior knowledge (S 8, weeks 1 & 2 journal entries).

**Instructor.** Due to the fact that instructional support was not given until the second and third weeks of the comprehension module, a majority of the following findings are a part of the third phase of this study. With that being said, there was evidence of a participant seeking guidance from others prior to the instructional support. This participant asked if “[the instructor could] share what the first passage was actually about” (S 10, week one journal entry)?

Once instructional support was given in phase three of the study, a participant commented on how much easier it was to understand the text after it was demonstrated by the instructor (S 7, week two journal entry). During in-class discussion on week two, a participant also commented that “my comprehension strategies didn’t help me but now I get it after watching the instructor show me” (S 7). According to participants’ in-class response to the instructor modeling of comprehending *The House*, “it was easy once she told us to find what was important” (S 3, week three in-class discussion). All of these examples indicate the instructors support was needed in order to reduce their cognitive load and acquire new information.

**Peer.** Since the instructional method of weeks two and three of the comprehension module consisted of guided practice, participants also received support from their peers when working to comprehend the challenging texts. A participant commented that “my peers all agreed that the washing clothes theory was a likely answer from the same supporting evidence” (S 4, Passage 2 comprehension assessment following instructional support, week 2). In addition, another participant indicated in the week two in-class discussion by saying, her “friend had to explain the importance even after watching [the instructor]” (S 5). Based on this statement, she

still struggled to reduce her cognitive load after the instructors worked through deciphering the text.

*Schema, Instructor, & Peer.* According to the data from the all four text pre-instructional support and post-instructional support comprehension assessments, in-class discussions, and journal entries during the three-week comprehension module, multiple factors played a significant role in reducing the cognitive load of the participants as they interacted with CCT. All of the following findings illustrate reduction of cognitive load due to using, borrowing, and reapplying strategies were explored through modeling from the instructor, guided practice with peers, and independent application.

Based on a participants week three journal entry, “reading the text from the perspective of the realtor, thief, and contractor made the text make so much more sense. It [was] cool how stories [could] be switched and changed and mean different things” (S 1). Another individual wrote it was not until the class discussed the passages for week two that she understood the message (S 8). In addition, she wrote in her week three journal, “I didn’t realize that there were parts of the story that could actually make all three perspectives work until we did them together.”

Yet another participant saw value in reading *The House* from multiple perspectives (S 2). Her week three journal entry stated:

I felt confused at first because I had read and interpreted the text from another perspective. It was neat to see how the text could fit these scenarios. Also, the point that reading a text from numerous perspectives determines which parts of the story are more important in different situations.

Additionally, she responded that even though she was initially frustrated she “started to understand how to breakdown a passage and use strategies to devise meaning.” In her case, the result lead her to also write about her newly acquired ability to teach others about the significance of details based on the perspective in which she read a text. Similar to S 2’s initial confusion about *The House*, another participant also felt unsure and perplexed about the changing perspectives until it was explored as a class (S 9). Although applicable to week two’s passages rather than *The House*, yet another person was “confused but after using the comprehension strategies [she got] a better understanding of each passage” (S 6). As she indicated in her week three’s journal response, each experience interacting with the texts was different and easier for her to “identify certain things in the text.”

### **Descriptive Data on Instructional Strategies in Comprehension Module**

In order to answer research question two: What processes occurred when pre-service teachers responded and interacted with instructional strategies to support comprehension of contextually challenging text? Participants’ journal entries, in-class discussion, and MARSII were analyzed using the constant comparative method. Based on research on the GRR model (Pearson & Gallagher, 1983; Kong, 2002) and the design of the comprehension module instruction, I initially coded findings that related to instructional strategies using the operational definition: instructional strategies refers to instances in which an individual is observing or exploring content in order to acquire knowledge. Through additional iterations with the data, data was classified based on specific types of instructional strategies based on the level of support indicated (i.e. model, guide, and independent). Instructional implementation of the GRR Model (Pearson & Gallagher, 1983) was documented in phase three of the study.

Additionally, I compared data using the constant comparative method in order to discover metacognitive awareness of reading comprehension strategy implementation in the comprehension module and the tutoring sessions. I then was able to further classify the reading comprehension strategies based on three overarching categorizes of reading strategies (i.e. global, problem-solving, and support reading strategies) (Mokhtari & Reichard, 2002).

Table 7

*Sample of Findings from Research Question 2*

Findings	Instructional Strategies			Reading Comprehension Strategies		
	<u>Model</u>	<u>Guide</u>	<u>Independent</u>	<u>Global</u>	<u>Problem-Solving</u>	<u>Support</u>
• Responsibility on teacher (S 2)	X					
• Demonstration lead to understanding (S 3, S 7)	X					
• Collaborate to decipher meaning (S 1, S 8)		X				
• Apply comprehension strategies (S 1)			X			
• Change in comprehension (S 1, S 13, S 20)			X			
• Context clues (S 6, S 8, S 12)				X		
• Background knowledge (S 3, S 4, S 7, S 9, S 10)				X		
• Purpose & determine importance (S 1, S 2, S 6, S 11)				X		
• Re-read (S 1, S 4)					X	
• Adjust pace of reading (S 4)					X	
• Visualizing (S 1, S 8, S 9, S 10, S 11)					X	
• Find relationships in text (S 1, S 8, S 9)						X
• Stop & think (S 27)						X
• Ask questions (S 3, S 4)						X

**Instructional strategies in comprehension module.** Based on coding using the codes model, guided, and independent in-class discussions and journal entries were constantly compared in order to provide depth and triangulation. Due to the nature of the comprehension module instructional method, the following participants’ voices were intentionally presented based on the level of support that was used in the specific example or interpretation given by the pre-service teacher. Data for this portion of the study was collected in phase three and the following data sources were used to further understand the processes that occurred when the pre-service teachers interacted with the texts.

**Model.** Data that aligned with this code contained reflections referring to the specific experience that occurred at the beginning of week two and three of the comprehension module



when the instructor modeled exploring one of the texts (i.e. Passage 1 and *The House*). During the week three in-class discussion, a participant discussed the need of modeling stating, “teacher starts with all the responsibility then the student” and in her eyes “the first part is very important” (S 2). Based on another individual’s week two journal response, she wrote “my comprehension strategies didn’t help me but now I get it after watching the instructor show me” (S 7). Yet another participant spoke about how much easier it was to decipher *The House* after the instructor modeled how to find important details that were relevant (S 3, week three in-class discussion).

**Guide.** There were also instances when the participants indicated guided practice when describing instructional strategies that occurred in the comprehension module. According to a participant, the GRR model is an instructional strategy that “shows students what to do” (S 10). An individual used discussion with peers in order to decipher meaning from Passage 2 (S 12). In a week three journal entry a participant wrote, “we just read it together and [wrote] down different inferences, visualizations, and making connection clues on the board” (S 1). This participant’s use of others to guide her through applying reading comprehension strategies to decipher meaning from the text is further supported by other participants. For instance, another individual indicated it was not clear to her “there were parts of [*The House*] that could actually make all three perspectives work until we did them together” (S 8, week three journal entry).

**Independent.** After the participants were given varying degrees of support, they were then asked to interact with texts on their own (independent practice). As a result, participants indicated how they independently applied the practices that were previously taught. A participant wrote in her week two journal, she “was able to make [independent] connections in each passage” and determine what the author was referring to while reading for meaning (S 1). She

also stated, “once you figure it out and make those connections you feel a sense of accomplishment.” In her week three journal she indicated using the different lenses, for the lead character in *The House*, helped her to comprehend and be able to decipher the text in a different way. Another individual wrote, in her final journal entry, that “experiencing this for [herself] was more effective than merely reading about [the] technique [of determining importance]” (S 2). Yet another person wrote about the value in the process because she was able to understand Passage 3 immediately after using making connections to prior knowledge and visualizing (S 3). Furthermore, another individual’s week two journal entry indicates that “in the beginning I was confused but after using comprehension strategies I have gotten a better understanding of each passage” (S 11). All of these participants reflected on intentional independent practice exploring text in order to determine important features within it.

**MARSI.** Based on the pre- and post-MARSI (Mokhtari & Reichard, 2002) responses, participants indicated varying self-perception of metacognitive usage related to global, problem-solving, and support reading comprehension strategies when exploring academic or school-related materials. Although the results identify mean averages the intended usage of the survey was to derive connections between the participants’ perception of reading strategy application and their application of the strategies when exploring a text. Analysis of these findings were strictly qualitative in nature due to the need to understand more about the processes and evolution that occurred, rather than the statistical significance, when the participants identified the frequency in which they metacognitively applied reading strategies. In order to gain an overall perspective of perceived strategy usage and the participants’ actual use of strategies in the comprehension module, I have included the findings throughout the three sections below. It is important to note, based on Mokhtari & Reichard’s (2002) MARSI categorization of the 30

reading strategies into three categories of reading strategies, I have also used these codes when deductively analyzing findings based on the theory of metacognition (Baker & Brown, 1984; Flavell, 1979).

***Global reading strategies in comprehension module.*** According to Mokhtari & Reichard (2002) MARSII classifies global reading strategies as context clues, analyzing and evaluating the text, accessing background knowledge, guessing text content, checking guess of text content, checking understanding of text, determine importance in the text, previewing, setting a purpose for reading, and using text aids. A variety of findings were presented below in order to show the processes that occurred when the participants applied global reading strategies in the comprehension module.

Participants reflected on their use of context clues when comprehending text in the modeling stage of analysis. A participant applied this strategy week one of the module. She wrote in her journal that she used context clues in order to “figure out” *The House* (S 8). Similarly, additional participants applied context clues in order to comprehend Passage 1. Furthermore, individuals also applied the use of context clues to both texts according to their week one journal responses. Context clues was used frequently in order to model, guide, and independently explore the texts.

There were additional participants who accessed their background knowledge in order to understand the CCTs. For instance, a participant who indicated an inclination to use global reading strategies over the other two reading strategies, wrote in her week two journal response that she accessed “prior knowledge to guess what [she] believed the subject of the passage were” (S 4). Another individual also indicated using background knowledge in order to connect with the text (S 5). Yet another participant concluded, in her journal, connecting to what she already

knew was a strategy that was effective for deciphering the messages from week two's texts this was evident in (S 3). In regards to S 3, her pre- to post-MARSI results indicate there was a shift towards global reading strategies from the other two reading strategies. This reinforces her intentional application of the strategy as indicated above. Likewise, additional participants made connections with her prior knowledge in order to comprehend the passages from week two.

During the final week of the comprehension module, multiple participants discussed the effect of setting a purpose and determining importance as they read. For instance, a participant wrote she was able to interpret *The House* from multiple perspectives by “determining which parts of the story are more important in different situations” (S 2). Her tendency to apply global comprehension strategies is also evident in her pre-MARSI results. Another person reflected:

I [felt] that as we read thinking of different concepts it gave us a lot of different insights about the character Pete and show[ed] how we all think differently [in order to determine importance]. It helped me to realize the different perspectives of every individual when reading a text, it would help to figure out the problems [or purpose] in the story even if it is not something that actually needs to be fix[ed] (S 6).

Further support of this was given by participants who noted when she set a purpose to her reading “everything seemed to come into focus” (S 11) and each perspective made “so much more sense” (S 1).

***Problem-solving strategies in comprehension module.*** According to Mokhtari & Reichard (2002) MARSI classifies problem-solving reading strategies as adjusting reading speed, getting back on track, guessing meaning of unknown words, re-reading, stopping and thinking about the text, and visualizing. The following section provides findings related to some

of the problem-solving strategies as they applied to the pre-service teachers' interaction with text in the literacy course.

Prior to the comprehension module, a participant wrote in her journal entry that she “reread the text and connect[ed] different things in the passages” (S 1). In addition, she also wrote about her need to re-read the passages from week two of the module. Her emphasis for using problem-solving strategies to explore multiple texts is also reinforced by the fact that she was more inclined to use problem-solving strategies prior to and immediately following the comprehension module, according to her pre- and post-MARSI results.

Another individual, who was originally more inclined to use problem-solving strategies based on her pre-MARSI results, commented on re-reading and adjusting her pace of reading the texts in weeks one and two of the comprehension module (S 4). A different participant indicated re-reading as a way to understand the texts she read in weeks one and two. Furthermore, her post-MARSI response indicated a shift from predominantly using global strategies to problem-solving strategies (S 2).

Visualizing is a problem-solving strategy that supports reading when an individual is struggling to understand what is occurring in the text. This strategy was applied by a variety of participants as well. Participants “tried to visualize in [her] head what was going on” (S 1, journal, week 2) whereas S 8, consistently preferred problem-solving strategies, stated “visualizing mostly to figure out what the passage was talking about” (journal, week 2). Another participant indicated visualizing specifically helped her decipher Passage 1 according to her week two journal response and her post-comprehension assessment response. Multiple participants found themselves using visualization for all three passages in week two of the module (S 9 & S 6). In regards to the second passage in week two of the module, a participant,

who was more inclined to use problem-solving strategies according to her post-MARSI responses, “visualized the piles of clothes and the sizes of them” and “the complications of me making a mistake” in order to decipher the meaning according to her pre- and post-comprehension assessment responses (S 9). Visualization was used in weeks two and three of the module by a participant who was a proponent of problem-solving strategies according to her pre- and post-MARSI results (S 11, journal entries). In all of these instances, participants reflected on their individual application of the strategy visualizing.

*Support reading strategies in comprehension module.* According to Mokhtari & Reichard (2002) support reading strategies are classified as asking questions, discussing, finding relationships in the text, paraphrasing, summarizing, reading the text aloud, using reference materials, taking notes, and underlining or circling information in the text. Based on the findings, several support reading strategies were used by the participants as indicated below.

A participant wrote in her week two journal prompt that she went through each passage and looked for relationships in the text in order to determining the author’s message (S 1). She further stated, “making connections is a big part of trying to figure out what is going on when it is not clearly stated.” The topic of finding relationships in the text was also discussed in multiple data sources (S 8, journal entry, week two; S 9, comprehension assessment responses, week two; S 9, journal entry, week two).

Other support strategies such as stopping throughout the text to think and summarizing were documented in a participant’s week one journal although they were not mentioned by her again during the comprehension module (S 7). The reading strategy of asking questions was listed by several participants across a variety of texts in weeks one, two, and three. Another person who had an initial tendency to apply support reading strategies as indicated in her pre-

MARSI response, specifically indicated use of asking questions during her week one journal prompt although there was no mention of this strategy again in her in-class discussion or other journal entries (S 3). In the instance of another participant, “asking questions throughout the passages gave [her] something to think about while reading” (S 4)

### **Descriptive Data on Instructional Strategies in Tutoring**

In order to fully answer question three: What processes occurred when pre-service teachers planned and executed instructional strategies to support student comprehension of contextually challenging text? And sub-question three: How did pre-service teachers’ interaction with contextually challenging literacy experiences influence their planning and execution of lessons. It first is important to understand how pre-service teachers’ interaction with contextually challenging literacy experiences influenced their planning and execution of lessons. Therefore, application of instructional strategies was present in the participants tutoring lessons & reflections, observations, and pre- & post- tutoring debriefing throughout all phases of the study. In order to triangulate data between the overall instructional strategies that occurred in the literacy methods course comprehension module and the instructional practices that occurred when the pre-service teacher planned, implemented, and reflected on instructional strategies when tutoring a K-6 reader on comprehension, the following findings are organized based on codes: modeling, guided practice, and independent application. Additional findings also include the influences that occurred when the pre-service teachers reflected, planned, and implemented instruction based on K-6 student’s potential cognitive load and the pre-service teachers’ outside instructional influences.

For an overview of the instructional strategies and comprehension strategies planned and/or implemented in tutoring sessions, refer to Table 8. An overview of the pre-service teachers' instructional influences when thinking reflecting on teaching can be found in Table 9.

Table 8

*Sample of Findings from Research Question 3*

Findings	Instructional Strategies			Reading Comprehension Strategies		
	<u>Model</u>	<u>Guide</u>	<u>Independent</u>	<u>Global</u>	<u>Problem-Solving</u>	<u>Support</u>
• Teach monitoring skills (S 2)	X					
• Teach good reading techniques (S 4)	X					
• Step-by-step support (S 1)		X				
• Discussion (S 2, S 5, S 6, S 7, S 12)		X				
• Apply comprehension strategies (S 1, S 8, S 12)			X			
• Teacher-lead questioning (S 2, S 3, S 4, S6, S 7, S 10)			X			
• Check understanding (S 2, S 3, S 4)				X		
• Determine importance (S 6, S 8, S 9, S 10, S 11, S 12)				X		
• Background knowledge (S 2, S 7)				X		
• Preview the text (S 2, S 7)				X		
• Guess meaning of unknown words (S 2, S 3, S 11)					X	
• Visualizing (S 4, S 11, S 12)					X	
• Adjust reading speed (S 3, S 9)					X	
• Discuss the text (S 5, S 6, S 8, S 10)						X
• Read aloud (S 3, S 6, S 7, S 8, S 9, S 11, S 12)						X
• Generate questions (S 7)						X
• Take notes (S 8)						X

**Instructional strategies in tutoring.** The following data sources were used to constantly compare findings for triangulation of data: participants tutoring lessons & reflections, tutoring observations, and tutoring pre- & post-debriefing were analyzed in order to provide data on this component of the study. It is important to note, although I did not collect data on the K-6 student, participants did indicate ways in which they purposefully implemented instruction based on what they felt would benefit their student the most as a reader. The findings I have presented in this section as well as the comprehension strategies section below are strictly from the pre-service teachers' tutoring lessons and reflections, tutoring observations, and tutoring pre- & post-debriefing.

**Model.** Modeling was noted across all of the phases, there was data that indicated participants were using modeling in order to instruct their K-6 reader. For instance, a participant



reflected, in phase one of the study, of continuing to focus on “comprehension by modeling monitoring skill(s)” in order to show how to decipher meaning within texts (S 2, lesson reflection). According to another participant’s phase one reflections on a lesson she taught, she chose to model “good reading technique[s] that [her tutoring student] followed” (S 4, lesson reflection). She went further and indicated this method of modeling reading habits first was seen as beneficial to her student. During phase three of the study, a participant was observed giving an example of formulating questions in order to clarify the procedures to her tutoring student (S 7, tutoring observation). In addition, she was also observed, in phase three of the study, modeling using context clues to determine meaning of an unknown word multiple times in a text in order to demonstrate and clarify how to use the comprehension strategy. Yet another participant “explained to [her tutoring student] that when we read you have to feel like you are in the book so that you can visualize and comprehend it better” (S 12, lesson reflection, phase 3). She then modeled how this could be done. In all of these instances, the pre-service teachers showed the tutoring student how to accomplish a task much as was done in the modeling stages of the literacy course comprehension module.

**Guide.** There were several data findings that were used in order to provide accounts of the pre-service teacher planning, implementing, and reflecting related to guiding their student through comprehending a text. An example of this was reflected on by a participant in the first phase of the study when she wrote “we took our time and I explained step by step what to do” (S 1). She also identified step by step explanation as an important tool for guiding learning. During the initial phase of the study a participant’s lesson plan referred to discussing the story and working together to answer any of the student’s lingering questions (S 12). This lesson identified both working together (scaffolding) and discourse (questioning) as important guiding practices

for student learning with CCT. In addition, several candidates identified discussion of the as an important element of guided practice.

During phase two of the study, multiple participants described ways to explore the texts in order to increase understanding. For instance, an individual wrote in her tutoring reflection she would “try to incorporate practice throughout the session” (S 2). Another person took it a step further when she discussed specific steps she would take to incorporate practice when she wrote “we will work on answering who, what, when, where, and how” (S 3, lesson, phase two). An additional participant was observed specifically telling her student to apply a reading strategy when she stated, “let’s see if we can use the context clues to find out what that word means” (S 11, phase two). Additional time was spent doing this in phase three and four of her tutoring lessons too.

Throughout the second phase, a participant was observed orally discussing and probing her student in order to answer comprehension questions designed and incorporated into a reading program text (S 4). She stated “let’s look back at the text and knock out choices that don’t work.” She was also observed following this procedure during phase three of the study as well. Another individual reflected, in one of her phase three lesson reflections of a need to go “over the main events in the story to help her [student] with comprehension” (S 8).

***Independent.*** The constant comparative method was used to deductively identify instances when participants asked their tutoring student to independently decipher the meaning of the text. In order to accomplish this, the participants’ lessons and reflections, tutoring debriefing, and tutoring observation data was analyzed. Throughout all phases of the study, participants documented and were observed asking their tutoring student to independently work to comprehend a text. In phase one of the study, a participant asked her student to “read and

retell important details from the book” on multiple occasions. She also asked her student to do this during phase two of the study as well. By the third phase of the study, she began to plan, implemented, and reflect on asking her student to visualize and specifically retell the plot of the passage (S 12). Another participant also felt asking her student to retell the events of the story were beneficial during phase one, three, and four of the study (S 8). Moreover, she asked her student to reread for better comprehension throughout all phases of the study.

Some participants applied independent practice by asking their tutoring student questions in order to gauge student understanding. For instance, one participant reflected, during phase one, of asking questions throughout and immediately following her student’s reading (S 2, lesson reflection). A different participant also felt it was important for her student to independently answer questions during phases two and three of the study based on observations conducted by me (S 4). She went further and also asked her “student to justify their answers even if it [was] correct.” Yet another participant wrote, “each time after she read a book to me I would question her over the content of the book” (S 3, lessons and reflections, phase four). A reoccurring task a participant was observed implementing immediately after her student finished reading was asking, “What happened in the book?” regardless of the phase of the study (S 10). All of these participants used questioning in order to determine if their student was comprehending the text without instructional support.

**Comprehension strategies in tutoring.** Regardless of the phase of the study, there are numerous accounts of each pre-service teacher planning, implementing, and reflecting on teaching comprehension strategies in order to guide their students’ understanding of texts. The following findings are categorized as they were in research question two’s findings in order to

further triangulate the themes and codes across the processes that occurred during the comprehension module and the tutoring sessions.

*Global reading strategies.* Mokhtari & Reichard's (2002) classification of global reading strategies include analyzing & evaluating, accessing background knowledge, guessing content in a text, checking guesses, checking understanding, using context clues, previewing the text, setting a purpose for reading, determining importance, and using text aids. I consonantly compared the findings in the participants comprehension question responses, in-class discussions, journal entries, and pre- & post-MARSI responses in order to deductively code data that aligned with the reading comprehension strategy. The findings I have included below reflect data that was discovered through multiple cycles of analysis across all of the aforementioned data sources.

There were multiple findings indicating that participants taught global reading strategies when tutoring. For instance, a participant reflected that she asked probing questions in order to show her student understood the text (S 2, phase one). Another individual planned to "use a poem, I learned about in the methods course, to determine if [she] understand[s]" (S 4, pre-observation debriefing, phase two). During all phases, a different participant was observed asked her tutoring student questions during reading in order to check her understanding (S 4). An additional participant planned for her student to "answer questions for understanding" during all phases of the study (S 3).

In regards to determining importance, many participants specified having their tutoring student identify major events and/or key details. For instance, a participant was observed asking "What was the main plot of the study? What sort of things does she do to help?" in phase three of the study (S 11). Another person was observed asking her student "So, what happened during the

book? What happened in the beginning? Middle? End? What did the kids do? Why?” during phase two of the study (S 10). Findings indicate numerous participants also planned for this during all phases of the study. One of those participants went as far as to ask her student to “draw a picture of the plot in one minute” during phase three of the study (S 12).

Findings also indicate, although not across the board, there were times when participants asked their students to access their background knowledge, preview the text, and set a purpose for reading. In order for one of the participants to meet her student’s needs, she planned “practice bringing out experiences to our reading” in phase two of the study (S 2). Another participant was observed talking about what he thinks about the story (S 7, phase three). She also had her student guess what the content would be about based on what they saw on the cover. Related to previewing the text, she planned lessons and discussed during multiple pre- and post-debriefing interviews about having her student do a book talk prior to reading the text. During a phase three post-observation debriefing interview with a participant, I learned she would like to set a purpose for reading, activating prior knowledge, and think about a main idea in her next lesson (S 7). In the following tutoring session, I observed her asking questions about the first book read. Her questions were:

What do you think the story will be about? Did you like the book? Why don’t you draw a series of pictures of the steps throughout the story? Also, can you make up what would happen next in the story?

In the same session, I also observed her asking “What is something you really like about sharks?” after reading a text on sharks.

***Problem-solving reading strategies.*** Mokhtari & Reichard’s (2002) classification of problem-solving reading strategies include adjusting reading speed, getting back on track, re-

reading, stopping & thinking about the text, and guessing meaning of unknown words. Journal entries, in-class discussions, comprehension question responses, and pre- & post-MARSI responses were all deductively coded in order to identify incorporation of the above strategies across multiple data sources. In the instance of re-reading a text for the purpose of comprehension, several participants felt this was a beneficial strategy to implement on numerous occasions. One of these participants was observed in phase two telling her student “I thought A too but let’s reread the passage to see” (S 4). Another one of these participants reflected she felt her “student needs to reread for better comprehension so she can retell events of the story on her own” (S 8).

Participants planned and reflected on what they chose to do when their student did not understand the meaning of words that were unknown. In many of these instances the participants had their students use context clues, a global reading strategy, in order to help guide their understanding. One participant stated in multiple phases’ lessons and reflections that they “will use context clues to figure out what the phrases and words mean” (S 2). Another individual had her student, according to her phase four planning, “use pictures as context clues for words unknown” (S 3). During a phase two observation of a participant, I saw her ask her student to “see if we can use the context clues to find out what the word means” (S 11).

Visualizing was a strategy that was documented by multiple participants across a range of phases of the study. A participant indicated this in a pre-observation debriefing that occurred in phase three (S 4). She said “based on the pre-assessment passage, I am thinking about using the chart, from the methods course, to document inference, making connections, asking questions, and visualizing.” However, I did not observe her implementing these strategies in her lesson. In the end she had the student use strategies such as re-reading, stopping and thinking, and

discussing important details in the lesson. During a phase three lesson one participant taught, I observed her asking her student “Why don’t you draw a picture of what the Jabberwocky looks like” (S 11)? During the same phase, another participant planned to “show [her student] how visualizing can help you comprehend your reading” (S 12).

Although there were not many accounts of stopping and thinking about a text or adjusting reading speed, there were a few instances that provided insight into the implementation of the strategies. A participant had her student, in phase three of instruction, “read a book at a slower pace” in order to prepare for discussing the major events and key details (S 9). Another participant made an indication of the importance of her student reading at a good pace in order to answer questions about the text (S 3, lesson plan, phase four). During one of her phase four lesson reflections, she indicated the benefit of having her student read a page of a text and then stop to restate what she had just read. Furthermore, another individual was observed during this final phase of the study telling her student “let’s take a pause and talk about the first couple of pages” (S 4).

***Support reading strategies.*** These strategies include asking questions, discussing the text, finding relationships within the text, paraphrasing, summarizing, reading the text aloud, taking notes, underlining or circling the text, and using reference materials. By far the most prevalent strategy that was planned by participants was discussing the text. Although a majority of the participants simply stated they would “discuss” the text, there were participants who provided more insight into this process. Following a phase one lesson, one participant reflected that they had “discussed the theme, characters, and setting” (S 5). Another participant reflected, after a phase three tutoring lesson they “read the story aloud and went over the main events of the story” (S 8). A different participant also supported her student by reading the story aloud and discussing

“the events taken place” during multiple lessons in phase one and three (S 6). In a phase four observation, I saw a participant ask her student “Can we go back and talk about this book” (S 10)?

In addition to using discussion to promote comprehension, participants also frequently asked their student to read the text aloud. One of the participant’s lesson plans specified her student will read aloud with support in phase one and without support in phase two (S 7). Participants asked their student to read aloud in order to help them identify the characters in the story (S 6) and to read aloud in order to “tell how each character responds to major events in the story” (S 9). Commonalities among these indicate a reoccurring need, according to the above participants, to read aloud in order to identify characteristics of a text.

Although there are only a few instances when the participants mentioned students asking questions and taking notes about the text related to their tutoring, they are still valuable to note. One participant discussed the implementation of having her student generate questions in a phase three pre- and post-debriefing (S 7). During the pre-tutoring debriefing she stated, “I would like to have the student write questions on a sticky note based on the example video in the methods course online module...After reading, I will ask ‘Did we find the answers?’ She asked her student to generate questions in phase four of the study as well. During the post-observation debriefing she commented, “we used before, during, and after questioning method to enhance his comprehension...After reading, we formulated the ‘after’ question and looked it up on the internet.” In the instance of note taking, S 8 indicates, in lesson reflections from phase three and four, a need to “write down” the main events and details although implementation was not noted in her plans.



**Pre-service teachers’ instructional influences.** Due to the evolving processes that occurred as the pre-service teachers interacted with, reflected on, planned, and implemented instructional strategies related to comprehension instruction, the following findings in are organized into two separate categories. The first subheading indicates the influences of planning on student cognitive load of which includes anecdotes of pre-service teachers reflecting, adapting, and planning comprehension instruction in order to the potentially reduce cognitive load imposed on K-6 readers. The final categories indicate specific reflections on influences that guided the pre-service teacher as they created instruction for their tutoring sessions. I have chosen to include these findings in order to articulate the processes that occurred when the participants transferred their knowledge of instructional practices into planning and/or implementation of comprehension instruction. Additionally, refer to Table 9 for an overview of the findings related to the pre-service teachers’ instructional influences.

Table 9

*Sample of Findings from Research Question 3a*

Findings	K-6 Student Cognitive Load Influences			Pre-Service Teacher Cognitive Load Influences
	<u>Instructional Strategies</u>	<u>Text Choice</u>	<u>Comprehension Strategies</u>	
• Model, guide, & independent application (S 10)	X			
• Teacher guidance (S 3)	X			
• Passage 3 (S 5, S 8)		X		
• <i>The House</i> (S 7)		X		
• Visualizing (S 2)			X	
• Purpose & determine importance (S 11)			X	
• Stop, think, and discuss (S 7)			X	
• Re-read & read aloud (S 12)			X	
• Prior experience (S 10)				X
• Methods course (S 10)				X
• Tutoring experience (S 9)				X
• Cooperating teacher (S 11)				X
• School resources (S 4)				X

***K-6 Student cognitive load influences.*** Through multiple iterations analyzing the participants journal prompts over the three weeks of the literacy methods course comprehension

module, I found commonalities related to instructional and comprehension strategies. These findings are included below based on the interrelation found among the pre-service teachers.

Numerous participants related on specific instructional strategies that could be used to help reduce cognitive load imposition on K-6 readers as they explored the texts that was used in the literacy methods course comprehension module. For instance, a participant specifically indicated the K-6 students “would have an extremely hard time deciphering what the passage was referring to” (S 3, comprehension module journal entry, phase one). As a result, she thought students would benefit from guidance from the teacher in order to understand Passage 1. A participant also felt support from others would be beneficial when she wrote in her week one journal prompt, “explicit instruction is always necessary when teaching reading. The I do, we do, you do model would be tremendously effective in supporting students’ success with a difficult text” (S 2). At the conclusion of week two of the comprehension module, another individual wrote in her journal about the need for student collaboration in order to decipher the message in Passage 1, Passage 2, and Passage 3 (S 10). She also reflected, in her week three’s journal entry, instruction using the GRR model would be beneficial for K-6 students as they explored *The House* from multiple perspectives.

Not only did participants suggest using the GRR model when instructing K-6 students on CCTs but they also reflected on the importance of text choice when planning instruction for students. One participant wrote, Passage 3 “would be good for them but the other [passages in week two] would be hard for a student to figure out” (S 5). Another participant wrote that the students would not understand Passage 1 or Passage 2 however “they would have an easier time with the third passage” (S 8). In regards to *The House*, a participant indicated:

I think this text would be much easier than our previous readings. I think an elementary student would read it from the perspectives of the two guys being friends and the one showing the other around his house. I do not think there would be many struggles with this passage (S 7).

Although these journal responses don't specifically indicate an instructional or comprehension strategy could be used to teach the text there was analysis of the readability of the texts related to K-6 students.

The notion of using specific comprehension strategies to support K-6 student's acquisition of knowledge as it relates to the four texts in the comprehension module were included below. In a participant's week two journal prompt, she wrote:

I think that an elementary student would still struggle with these types of passages because the main idea is not clearly stated. Once the teacher teaches the students to make those connections, I think it [would] be easier for them to figure out what [was] going on (S 1).

Other individuals indicated making connections as the students and the teacher explored the text in her final journal prompt response (S 3) and "visualizing would be a very helpful strategy to prompt students to read deeply and use their imagination" (S 2, journal entry, week 3). A different participant consciously connected with interacting with *The House* during week 3 of the module (S 9). She felt K-6 students would benefit from this method when she wrote they should try to "distinguish the different roles that he was playing and how they would fit along with the text." One participant went further with this idea when she stated "I could ask questions which will help them see the story from each point of view and guide them to make inferences" (S 11). Another individual referred to assessing the K-6 student's monitoring of their reading and asking

them to stop, reread, and discuss the text if comprehension is breaking down (S 7). Not only did a participant feel rereading would benefit K-6 students but she also thought reading aloud and reading to each other would be beneficial. According to her, doing so would help “the student comprehend[s] the text they are reading” (S 12).

*Outside influences.* Multiple participants discussed, through tutoring debriefing and/or lesson reflections, the instructional influences helped guided their tutoring instruction of comprehension. For instance, a participant indicated:

My decision-making process is driven by my prior experience being a dance instructor, intern in a Kindergarten classroom as a Senior in high school, and the content knowledge I am learning in the methods course (S 10, tutoring debriefing).

Another individual also indicated, in her final reflection of her tutoring project she had “learned many different techniques and skills that [she] can use on [her] students in the future” (S 9).

Additionally, a participant stated:

The cooperating teacher, of the tutoring student, helped my instruction throughout the tutoring sessions. In addition, the student’s increasing confidence when reading helped to shape my instruction. I used her strengths and weaknesses to plan instruction too (S 11).

Furthermore, during a tutoring debriefing an additional participant spoke about “using resources from school to help plan instruction” for her student (S 4, final tutoring debriefing).

## **Summary**

All of the findings were purposefully categorized, using the constant comparative method of deductive coding, in order to provide an in-depth analysis of the participants processes that occurred when they were asked to interact with CCT in their literacy methods course and connected tutoring field experienced. The findings indicated the multitude of experiences can be

woven together in order to paint an in-depth account of the unique processes that occurred throughout the eight-week study. In addition, indications of planning, application, implementation, and reflection on strategies that assisted or could assist the participants' comprehension were present throughout the data collected. The eight-week documentation of comprehension and instructional strategies provided a picture of the pre-service teachers' exploration in the literacy methods course comprehension module and tutoring field placement. Additionally, the metacognition and cognitive load of the pre-service teachers was documented in order to offer further documentation of the internal and external factors that influenced the participants' exploration of the CCTs. The proceeding chapter will delve into the analysis of the findings presented in this chapter.

## Chapter 5: Discussion

### **Introduction**

This case study is grounded in the theories of metacognition and cognitive load. In the following chapter, I provide a discussion of the findings that is framed by prior research and theoretical perspectives around metacognition and cognitive load. In addition, I include conclusions based on my analysis, educational implications, limitations in my research, and recommendations for future research in order to provide additional information about research in field of pre-service teacher's interaction, planning, implementation, and reflection on CCT comprehension in theory and in practice.

### **Research Questions**

This research was guided by the following research questions:

1. What metacognitive processes occurs when pre-service teachers interact with contextually challenging text?
  - a. How does cognitive load influence pre-service teachers' interaction with contextually challenging text?
2. What processes occurs when pre-service teachers respond and interact with instructional strategies to support comprehension of contextually challenging text?
3. What processes occurs when pre-service teachers' plan and execute instructional strategies to support student comprehension of contextually challenging text?
  - a. How does pre-service teachers' interaction with contextually challenging literacy experiences influence their planning and execution of lessons?

## Discussion of Findings

**Metacognition.** Findings indicated that experiencing the techniques used in the comprehension module were valuable for learning and teaching. The understanding that experiencing an action or task and being consciously aware of your metacognition is rooted in the theory of metacognition (Flavell, 1979). In addition, a participant commented on their cognitive struggle with deciphering the text even as a fluent reader (S 14). This is supported by Baker and Brown's (1984) understanding that cognitive awareness plays a factor in a readers' ability to control their own reading. Although this participant did not indicate a way to apply reading strategies there was still clear value in being metacognitively conscious of the reading task which is indicated as a characteristic of an effective reader (Baker & Brown, 1984).

In regards to metacognitive tasks, participants wrestled with applying reading comprehension strategies in order to "figure out" the message (S 8, phase one). Conscious reflection on application of strategies implied the need to use strategies in order to regulate their cognition related to a text as supported by Baker & Brown (1984). The repeated and extensive use of global, problem-solving, and support reading comprehension strategies indicated there was a drive to explore and apply strategies in order to regulate learning and acquire cognitive knowledge (Baker & Brown, 1984). In relation to my study's findings, research indicates that pre-service teacher implementation of metacognitive strategies while interacting with complex texts leads to an increase in comprehension and instruction (Cubukcu, 2008; Pedro et al., 2012-2013). Consequently, purposeful implementation of comprehension strategies and reflection on their metacognition suggests that continued use of the reading strategies throughout this study provided opportunities for the participants to acquire knowledge, therefore reduced their cognitive load, in order to comprehend subsequent texts.

The findings indicate that purposeful application of reading comprehension strategies in the comprehension module was not always directly aligned with how the participants chose to plan and implement reading comprehension strategies in their tutoring lessons. For instance, S 8 was inclined to use visualizing, a problem-solving strategy, in the comprehension module but did not indicate planning or using that strategy during any of her tutoring sessions. In fact, S 8's pre- and post-MARSI results indicated a consistent inclination to use problem solving strategies over the other two reading strategies categories when independently reading whereas during her tutoring sessions she was consistently more inclined to plan and implement global and support reading strategies. Similar findings were also evident across other participants' data. As a result, this indicates a break down or disconnect in application of short-term working memory that occurred in the literacy course comprehension module versus long-term application in tutoring sessions (Sweller et al., 2011). These specific findings conflict with Leland (2013)'s findings that indicate that pre-service teachers felt that literacy methods coursework influenced their literacy instruction practices.

Findings indicate there were strategic uses of multiple reading strategies participants across numerous texts in the comprehension module. In regards to global reading strategies, participants primarily focused on using context clues, background knowledge, setting a purpose, and determining importance within a text. Participants also interacted with texts through problem-solving reading strategies such as re-reading, adjusting pace while reading, and visualizing. Many participants used support reading strategies such as finding relationships within text, summarizing, stopping & thinking and asking themselves questions. These findings are further supported by research that indicates that use of multiple comprehension strategies enhances understanding (Almasi et al., 2007; NRP, 2000).



On the other hand, there were instances when participants did plan and apply strategies in the comprehension module and in their tutoring sessions. Although not consistent across planning and implementation, S 4 spoke about using the methods course comprehension chart in her tutoring session but did not implement the instruction strategy in practice. In the instance of planning and applying, S 7 even went as far as to indicate that due to the comprehension module resources she chose to teach and apply the strategy of student generated questioning and therefore she implemented this throughout stage four of the study. To further support her decision, Davey and McBride (1986) found that this skill lead to higher comprehension of the text. It is important to note here that S 7 was the only participant who strategically planned and implemented student generating questioning. The lack of intentional application of student generated questions by educators is supported by Ness's (2011) findings that indicate a lack of this strategy present in instruction in classrooms. The findings from S 4 and S 7 signify that although not consistent across all participants or instances, there was a triangulation between short-term working memory in the comprehension module and long-term processes that occurred in the tutoring sessions (Sweller et al., 2011).

There was also a driving force among participants that skills and techniques required application in the field. Participants indicated a significance in having experiences in the field in order to work through applying these skills and techniques. This notion is supported by numerous studies on the connection between theory and practice (Dawkins et al., 2009; Leland, 2013; Unver, 2014; Wosley et al., 2013). Additionally, there was a driving force within participants that pushed them to extensively prepare for tutoring based on their student's evolving needs and unique backgrounds. The desire to challenge and adapt instruction, based on observation and assessment, caused pre-service teachers to think about their own role in

providing instruction to meet the needs of students. Pressley et al. (1996) found that when pre-service teachers were exposed to a variety of instructional strategies they were able to meet the diverse needs of their students as supported by the findings on application of instructional strategies throughout the tutoring lessons and reflections of the participants.

**Cognitive load.** As the pre-service teachers strove to acquire new information, participants sought guidance from others or worked to access their own schema in order to decipher the text in the comprehension module. This is supported by Sweller et al.'s (2011) indication that new information is acquired either through borrowing and reorganizing others knowledge or internally acquiring information through randomness. In addition, the notion that schema plays a significant role in the demands of cognitive load on new information acquisition has long been established (Cooper & Sweller, 1987; Moreno & Park, 2010; Sweller et al., 1990; Sweller & Cooper, 1985). Data indicated that during the first week of the comprehension module, also referred to as phase two of the study, participants felt they were grasping at straws in order to determine the meaning or "point in either story" (S 5). Participants were asked to interact with CCT without instructional support and as a result they found the texts abstract, random, and challenging to decipher which in some instance specifically related to a lack of schema. Participants S 8 and S 10 went as far as stating that they were unsure if their answers to the comprehension questions truly reflected the author's intended message. It is important to note here that multiple participants specifically indicated that the text themselves were random which correlates with the notion that when no support is given and retrieval of schema is not evident individuals are inclined to acquire knowledge haphazardly and in this instance struggle to even make sense of the connections within the text (Sweller et al., 2011).

Once instructional support was given, during phase three of the study, in the comprehension module participants found solace in using others knowledge in order to acquire new information (Sweller et al., 2011). It was not until S 3 and S 7 saw the instructor demonstrate how to determine importance and meaning from the texts that they felt they understood the message. This is further supported by Bolkan's (2015) study that found that clarity through instructor support was beneficial for student's learning. Therefore, the need for acquiring new knowledge by borrowing other's knowledge is a significant factor in reducing the cognitive load of the participants (Sweller et al., 2011). Additional findings indicate that even when given instruction on deciphering the message individuals may still struggle to decipher meaning and reduce their cognitive load. Kong (2002) also found that the GRR model provided participants with varying degrees of support in order to meet the needs of the learners. S 5 wrote that clarity was needed from a fellow student in order to understand the message that was presented by the instructor. In this instance, internal factors such as prior knowledge as well as outside factors such as the text and the instructor's method of teaching were not successful in reducing cognitive load. It was not until additional support from a peer occurred that this participant was able to borrow and reorganize their knowledge in order to process the new information.

There were multiple instances when participants used a variety of external factors in order to make sense of the texts in phase three of the study. S 8's need for class discussion indicates there were times when peers and the instructor were needed simultaneously in order to grasp the content of the CCT. This short-term borrowing and reorganizing of information from multiple sources in participants working memory suggests the texts complexity imposed a high cognitive load on participants (Moreno & Park, 2010; Sweller et al., 2011). Additionally, the

notion that scaffolding and discussion helped reduce cognitive load is supported by Cubukcu (2008), Lopez-Vargas et al. (2016), & Pedro et al. (2012-2013). S 2 even indicated a need to break down the text, step-by-step, during collaborative discussions which is supported by Asikcan et al.'s (2017) research findings in that purposeful exploration of comprehension strategies increased understanding. To further support this, S 6 indicated the benefit of class collaboration through multiple exposures and interactions with the text reduced her cognitive load in order for her to decipher meaning from the text. Chi et al. (1989) & Griffith et al. (2016) also found value in exploring concepts rather than simply watching it be accomplished by someone else. Furthermore, S 2 felt that experiencing this process herself, through collaborative discussion in class, gave her the confidence to be able to teach others. Ness (2015), Bauman et al. (1993), and Sonmez and Sulak (2018) also indicate that experiencing the process of thinking aloud provides opportunities for participants to gain confidence the implementation of the method.

In the instance of reflecting on literacy course comprehension module in relation to teaching K-6 readers, findings that indicated that pre-service teachers felt the instructional strategies used during the comprehension module would also be beneficial for K-6 students as well. For instance, S 3 discussed the importance of reducing cognitive load in students by having the teacher provide guidance on decipher the meaning of the text. The need for support through modeling, guided support, and independent practice was also indicated to be a helpful way to reduce cognitive load of K-6 readers (S 10, phase three). This data further supports the need to borrow and reorganize information from outside forces in order to acquire new information (Sweller et al., 2011). Although these findings were strictly related to theoretical situations rather than actual events that occurred in the tutoring sessions, there is still value in the decision-

making processes that occurred when the participants were asked to think about instruction as educators. Research also indicates methods course instruction has influenced perceptions of literacy instruction (Leland, 2013).

Furthermore, findings indicated that participants felt there was value in selecting text and in some instance elimination of more complex texts when thinking about K-6 comprehension instruction. Some participants suggested not using *Passage 1* and *Passage 2* due to the fact that K-6 readers may not have the prior knowledge needed in order to decipher the text. Seufet et al.'s (2017) research supports the need to evaluate and choose text that is challenging but not so challenging that extraneous load impedes understanding. This is further supported by the need to access schema in order to be able to work reduce cognitive load when learning (Cooper & Sweller, 1987; Moreno & Park, 2010; Sweller et al., 1990; Sweller & Cooper, 1985).

Reflection on how to apply reading comprehension strategies to instruct K-6 readers using the comprehension module texts indicated a need for application of global, problem-solving, and support reading strategies. All of which were implemented in the actual comprehension module in the literacy methods course. This indicates an importance among participants to further apply the strategies that were implemented in the module when teaching students comprehension instruction related to CCT. These particular findings are supported by Helfrich and Bean's (2011) based on the fact that pre-service teachers were more likely to apply strategies taught in the literacy methods course in the field after being taught them.

Findings from tutoring sessions indicated a need for support in order to reduce cognitive load of their K-6 readers. The need to provide step-by-step support for a tutoring student, as discussed by S 1, shows application in the field of the importance of reducing cognitive load through a similar approach in the comprehension module. Additionally, participants indicated the

need for discussion extensively in tutoring lessons and reflections. The importance of this strategy was also repeated indicated in the findings during the comprehension module. In regards to theory, the bridge between short-term working memory of the participants during the comprehension module and long-term retrieval and application in tutoring implies the need for borrowing and reorganizing information from others in order to learn (Sweller et al., 2011). It is important to note that these instructional strategies are throughout all four phases of the study therefore the potential implications of the comprehension module on instructional strategies was unclear. However, the sheer fact that these strategies were taught in the comprehension module and also taught in the tutoring field experience does indicate value in teaching and reinforcing instructional strategies in teacher preparation programs (Lacina & Block, 2011).

In summary, the influences on cognitive load of the pre-service teachers shaped the experiences and decision-making processes that occurred when they were asked to interact and instruct using CCT. The process of metacognitively reflecting on practices as a student and educator provided valuable opportunities to explore and apply instructional practices comprehending texts. The findings also indicate the participants valued and applied multiple reading comprehension strategies as they explored CCT as students and as educators.

### **Educational Implications**

Although this study is unique to the experiences that occurred within the literacy methods course, findings indicate value to literacy method coursework and corresponding field experience tutoring a K-6 reader. Specifically, there is value in having pre-service teachers explore challenging content in literacy methods course in order to grapple with the struggles that their students may have when comprehending texts as novice readers. Additionally, when pre-service teachers were placed in challenging experiences during coursework they worked to problem

solve in order to reduce cognitive load and become more metacognitively aware of their thought process. There was value in this exploration of challenging text because it challenged their comprehension and required them to think as an educator while exploring the content. The results indicate the importance of explicit instruction and strategic use of multiple reading comprehension strategies in order to decipher meaning from challenging text. Furthermore, there is value in providing pre-service teachers opportunities to apply the practices that are in the method coursework and in concurrent field experience placements.

Pre-service teachers need to interact with challenging literacy content related to all components of reading (i.e. phonemic awareness, phonics, fluency, vocabulary, and comprehension) through the lens of a student and a teacher in order to discuss, adapt, and grow as an educator. Thus, teacher educators must create extensive opportunities for pre-service teachers to discuss, adapt, and grow through challenging literacy experiences both in coursework and in the field. Prior research supports the value in purposeful connections between coursework and field experience (Bean, 1997; Darling-Hammond, 2010; Dawkins et al., 2009; Duffey & Atkinson, 2001; Gomez, 2009; Helfrich & Bean, 2011; Leland, 2013; Lipp & Helfrich, 2016; Robertson, 2013; Shaw & Dvorak, 2007; Unver, 2014). Additionally, pre-service teachers need to discuss and be shown how to apply instructional practices within methods course in order to prepare them for the field (Darling-Hammond, 2006; Griffith et al., 2016; Iwai, 2016; Wosley et al., 2013). Even though there has been extensive research into this broad connection between coursework and field experience, there is still a need to learn more about the influences of exploration of challenging concepts in coursework on pre-service teachers and their educational practices.

### **Limitations of the Study**

Due to the nature of this research study there were several limitations. The findings in this study were specific to the participants' unique experiences. The study was also bound by the literacy methods course rather than participants so the findings focus on the processes that occurred as a class rather than the individual.

The study was also limited to education undergraduates and the specific instructional design implemented in the literacy methods course. The findings related to the specific tutoring sessions that occurred with a K-6 reader. Each tutoring experience was unique in that each tutoring student had different and unique needs. Since the findings from this study did not include data from the K-6 reader, implications on the impact of the participants' comprehension instruction on the K-6 reader was not possible.

Due to the fact that the comprehension module occurred during the second half of the semester, there was limited time to collect data following the comprehension module due to the subsequent conclusion of the course and tutoring field experience. Additionally, due to the participants' schedules some participants concluded their tutoring field experience prior to the fourth phase of the study. The data collected on these particular participants still provided in-depth exploration of the processes that did occur during their tutoring session however long-term implications were not possible to explore.

Unforeseen circumstances with scheduling and district testing prevented me from starting tutoring sessions, debriefing interviews, and observations until the second phase of the study. Subsequently, I was not able to provide extensive data on instructional practices prior to the comprehension module. With that being said, I was able to collect lessons and reflections during all phases of the study.



The goal of this study was to learn more about the processes that occurred when the participants interacted, planned, implemented, and reflected on contextually challenging comprehension instruction. As a result, the findings do not delve into the effectiveness of comprehension instruction but rather they explored the cognitive and metacognitive processes that occurred as a result of comprehension instruction. With that being said, the results of this study did provide general insight into the influence of instruction on pre-service teachers' professional practices.

### **Transferability**

The findings from this study can be transferred outside of the case in which this case study was bound. For instance, the findings indicate there is power in having educators explore challenging text in order to work through academic challenges as a student and then translate those practices when planning, implementing, and reflecting on teaching others. As a result, the findings indicate that explore challenging content in teacher prep, regardless of the program (i.e. Kindergarten through 12<sup>th</sup> grade) or content area could be beneficial for all pre-service teachers. Additionally, the value of exploring challenging content with fellow educators could also translate into valuable experiences within professional development of in-service teachers. Furthermore, the value and impact of explore challenging content with others (i.e. instructor and peers) could also be beneficial in Kindergarten -12<sup>th</sup> grade setting.

### **Recommendations for Further Research**

Based on this research studies findings, there were some indications of connections between pre-service teachers' coursework and their instructional practices while tutoring. Long-term exploration on this could shed light on the extensive nature of this connection. Additional

pre- and post-interview questions that directly relate to these factors could provide more insight as well.

This research primarily focused on comprehension instruction through the processes, rather than the specific use of reading strategies, that occurred within the comprehension module and the tutoring sessions. Further exploration of why pre-service teachers implemented specific reading comprehension strategies could lead to additional understanding of the direct connection between the comprehension strategies taught in the university coursework and what was taught in the tutoring sessions.

Since this study was primarily focused on the processes that occurred when pre-service teachers were asked to interact with CCT in a literacy methods course and tutoring, data was not collected on the tutoring student. Further research that included data on the K-6 reader could provide more opportunities for exploration of how pre-service teachers meet the evolving needs and address cognitive load impositions based on the K-6 weaknesses and strengths as a reader.

As indicated in the limitations, the comprehension module was situated in the second half of the semester of the course. This meant that data on tutoring sessions following the comprehension module was limited. Future research could be done on the processes that occurred in subsequent field experiences in order to learn more about the long-term implementation of comprehension instruction.

### **Personal Transformation**

After collecting, analyzing, and presenting data related to the comprehension module and the corresponding tutoring, I've grown as a researcher and an educator. As a teacher educator, I learned the process in which the participants interacted with CCT provided valuable to discuss and explore challenging content within a literacy methods course. I know see the value of

providing additionally opportunities for pre-service teachers to delve into challenging concepts related to other components of reading (i.e. phonemic awareness, phonics, fluency, and vocabulary). As a researcher, I plan to explore the processes that can occur when pre-service teachers are asked to explore challenging content in the four components of reading. Additionally, I feel I only scratched the surface on the pre-service teachers' connection between methods course content, prior knowledge, and field experience. As a result, I would like to further explore this through interviews and reflections.

In regards to the theoretical framework that this study hinges upon, I have learned that metacognition and cognitive load drive our decision-making when learning, applying, and reflecting on concepts. As a result, I now use both of these theories to help guide my instructional decisions when teaching pre-service teachers. I have already found myself purposefully discussing the power of metacognition within the methods course and in the field in regards to all components of readings. Furthermore, I am consciously assessing pre-service teachers cognitive load as they delve into content in literacy methods courses and the field. As a result, I am adapting my instruction in order to reduce the pre-service teachers cognitive load and asking them to think about demands they are imposing on their students when they instruct. All in all, this experience has taught me to be more reflective of my own thinking and processing in order to meet the needs of the future educators in which I teach. It has also taught me about the need for purposeful connections between method course content and field experience.

## **Summary**

In summary, this qualitative case study provided findings on the processes that occurred when the pre-service teachers, bound in an undergraduate elementary education literacy methods course, planned, implemented, explored, and reflected on comprehension related to CCT as

students and educators. The findings indicated the participants metacognitively explored texts throughout the literacy course comprehension module and instruction of their tutoring student. The findings indicate that the participants accomplished this by implementing and reflecting on strategic use of multiple reading comprehension strategies in their own reading and when instructing others. Throughout the study, participants reflected on their own practices as educators and students in order to address and/or adapt to challenges and successful experiences comprehending texts. Additionally, the participants worked through internal (i.e. schema) and external factors (i.e. instructor and/or peers) in order to reduce cognitive load when interacting with CCTs. As a result, numerous participants indicated the value of exploring texts with support in order to decipher meaning.

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## Appendix A

### Pre-Service Teacher Debriefing Questions

#### Week 1 Pre-Lesson Debriefing

1. Tell me about a specific challenging text you read as a student.
  - a. How did you grasp the meaning of the text?
  - b. What did/could you do to better understand the message presented in the text?
2. What do you plan to accomplish during this tutoring session?
3. Additional comments you would like to share

#### Week 2 Pre-Lesson Debriefing

1. Tell me about a time when your tutoring student struggled to understand a concept.
  - a. What could you have done to help them understand?
2. What do you plan to accomplish during this tutoring session?
3. Additional comments you would like to share

#### Week 3 Pre-Lesson Debriefing

1. What do you plan to accomplish during this tutoring session?
2. After completing the pre-assessments, how do you envision the rest of the tutoring sessions going?
  - a. What do you feel would be beneficial for your students as they work to comprehend a text?
  - b. How would you like to meet your student's needs, as a reader?
3. Additional comments you would like to share

#### Week 1-3 Post-Lesson Debriefing

1. During the tutoring session, what did you feel was successful?
  - a. How do you think this will help you when you begin instructing your student?
2. During the tutoring session, can you describe a time you witnessed the student struggle to understand?
  - a. How will you use this once you start instructing your student?
3. Additional comments you would like to share

#### **Week 4-8 Pre-Lesson Debriefing**

1. What instructional supports do you plan to use to scaffold your student while they are reading a text?
  - a. How will you support your student if they struggle to understand while they are reading?
2. What objectives will you be working on, with your student, during reading?
  - a. What will you work on prior to reading?
  - b. What will you work on during reading?
  - c. What will you work on following reading?
3. What do you hope your student will be able to do after reading?
4. Additional comments you would like to share

#### **Week 4-8 Post-Lesson Debriefing**

1. During the reading portion of the lesson, what successes did you celebrate today during reading instruction?
  - a. How will this affect your next tutoring session?
2. During the reading portion of the lesson, what did your student struggle to grasp?
  - a. How will this affect your next tutoring session?

3. Additional comments you would like to share



## Appendix B

### Comprehension Questions

#### Passage 1, 2, & 3 Comprehension Questions

1. Which passage did you just read?
  - a. Passage 1
  - b. Passage 2
  - c. Passage 3
2. What is this text referring to?
3. What evidence supports your claim?

#### *The House* Comprehension Questions

1. Please indicate the number of times you have read this text?
  - a. 1
  - b. 2-I Do Portion
  - c. 3-We Do Portion
  - d. 4-You Do Portion
2. Who is Pete?
3. Using inference, why is Pete in Mark's house?
4. What items/details about Mark's house would be intriguing to Pete?
5. Why are those items/details important to Pete?

## Appendix C

### Pre-Service Teacher Journal Questions/Prompts

#### Week 1 Questions/Prompts

1. What strategies did you use as you were reading each text?
2. How did you use these strategies to better understand each text?
3. What academic challenges did you encounter?
4. What academic struggles do you feel an elementary school student might have with this text?
5. Additional thoughts/comments you wish to share

#### Week 2 Questions/Prompts

1. How did you feel as you were reading Passage 1, 2, & 3?
2. What strategies did you use to comprehend and how did they help you understand each text?
3. What academic successes did you celebrate?
4. What academic struggles did you encounter?
5. What academic struggles do you feel an elementary school student might have with this text?
6. Additional thoughts /comments you wish to share

#### Week 3 Questions/Prompts

1. How did you feel as you were reading the text from the perspective of a realtor, thief, and contractor?

2. How did you feel after using various perspectives while reading the text?
3. What academic struggles do you feel an elementary school student might have with this text?
4. What instructional strategies could you use to support an elementary school student's learning while reading a challenging text?
5. Additional thoughts/comments you wish to share

## Appendix D

### MARSI

#### Metacognitive Awareness of Reading Strategies Inventory (MARSI) Version 1.0

Kouider Mokhtari and Carla Reichard © 2002

**DIRECTIONS:** Listed below are statements about what people do when they read academic or school-related materials such as textbooks, library books, etc. Five numbers follow each statement (1, 2, 3, 4, 5) and each number means the following:

- 1 means "I never or almost never do this."
- 2 means "I do this only occasionally."
- 3 means "I sometimes do this." (About 50% of the time.)
- 4 means "I usually do this."
- 5 means "I always or almost always do this."

After reading each statement, circle the number (1, 2, 3, 4, or 5) that applies to you using the scale provided. Please note that there are no right or wrong answers to the statements in this inventory.

TYPE	STRATEGIES	SCALE				
GLOB	1. I have a purpose in mind when I read.	1	2	3	4	5
SUP	2. I take notes while reading to help me understand what I read.	1	2	3	4	5
GLOB	3. I think about what I know to help me understand what I read.	1	2	3	4	5
GLOB	4. I preview the text to see what it's about before reading it.	1	2	3	4	5
SUP	5. When text becomes difficult, I read aloud to help me understand what I read.	1	2	3	4	5
SUP	6. I summarize what I read to reflect on important information in the text.	1	2	3	4	5
GLOB	7. I think about whether the content of the text fits my reading purpose.	1	2	3	4	5
PROB	8. I read slowly but carefully to be sure I understand what I'm reading.	1	2	3	4	5
SUP	9. I discuss what I read with others to check my understanding.	1	2	3	4	5
GLOB	10. I skim the text first by noting characteristics like length and organization.	1	2	3	4	5
PROB	11. I try to get back on track when I lose concentration.	1	2	3	4	5
SUP	12. I underline or circle information in the text to help me remember it.	1	2	3	4	5
PROB	13. I adjust my reading speed according to what I'm reading.	1	2	3	4	5
GLOB	14. I decide what to read closely and what to ignore.	1	2	3	4	5
SUP	15. I use reference materials such as dictionaries to help me understand what I read.	1	2	3	4	5
PROB	16. When text becomes difficult, I pay closer attention to what I'm reading.	1	2	3	4	5
GLOB	17. I use tables, figures, and pictures in text to increase my understanding.	1	2	3	4	5
PROB	18. I stop from time to time and think about what I'm reading.	1	2	3	4	5
GLOB	19. I use context clues to help me better understand what I'm reading.	1	2	3	4	5
SUP	20. I paraphrase (restate ideas in my own words) to better understand what I read.	1	2	3	4	5
PROB	21. I try to picture or visualize information to help remember what I read.	1	2	3	4	5
GLOB	22. I use typographical aids like bold face and italics to identify key information.	1	2	3	4	5
GLOB	23. I critically analyze and evaluate the information presented in the text.	1	2	3	4	5
SUP	24. I go back and forth in the text to find relationships among ideas in it.	1	2	3	4	5
GLOB	25. I check my understanding when I come across conflicting information.	1	2	3	4	5
GLOB	26. I try to guess what the material is about when I read.	1	2	3	4	5
PROB	27. When text becomes difficult, I re-read to increase my understanding.	1	2	3	4	5
SUP	28. I ask myself questions I like to have answered in the text.	1	2	3	4	5
GLOB	29. I check to see if my guesses about the text are right or wrong.	1	2	3	4	5
PROB	30. I try to guess the meaning of unknown words or phrases.	1	2	3	4	5

Reference: Mokhtari, K., & Reichard, C. (2002). Assessing students' metacognitive awareness of reading strategies. *Journal of Educational Psychology, 94* (2), 249-259.

**Metacognitive Awareness of Reading Strategies Inventory**  
**SCORING RUBRIC**

Student Name: \_\_\_\_\_ Age: \_\_\_\_\_ Date: \_\_\_\_\_

Grade in School:       6<sup>th</sup>  7<sup>th</sup>    8<sup>th</sup>  9<sup>th</sup>    10<sup>th</sup>    11<sup>th</sup>  12<sup>th</sup>    College  Other

1. Write your response to each statement (i.e., 1, 2, 3, 4, or 5) in each of the blanks.
2. Add up the scores under each column. Place the result on the line under each column.
3. Divide the score by the number of statements in each column to get the average for each subscale.
4. Calculate the average for the inventory by adding up the subscale scores and dividing by 30.
5. Compare your results to those shown below.
6. Discuss your results with your teacher or tutor.

Global Reading Strategies (GLOB Subscale)	Problem- Solving Strategies (PROB Subscale)	Support Reading Strategies (SUP Subscale)	Overall Reading Strategies
1. _____	8. _____	2. _____	GLOB _____
3. _____	11. _____	5. _____	
4. _____	13. _____	6. _____	PROB _____
7. _____	16. _____	9. _____	
10. _____	18. _____	12. _____	SUP _____
14. _____	21. _____	15. _____	
17. _____	27. _____	20. _____	
19. _____	30. _____	24. _____	
22. _____		28. _____	
23. _____			
25. _____			
26. _____			
29. _____			
_____ GLOB Score	_____ PROB Score	_____ SUP Score	_____ Overall Score
_____ GLOB Mean	_____ PROB Mean	_____ SUP Mean	_____ Overall Mean

**KEY TO AVERAGES:** 3.5 or higher = High      2.5 – 3.4 = Medium      2.4 or lower = Low

**INTERPRETING YOUR SCORES:** The overall average indicates how often you use reading strategies when reading academic materials. The average for each subscale of the inventory shows which group of strategies (i.e., global, problem-solving, and support strategies) you use most when reading. With this information, you can tell if you are very high or very low in any of these strategy groups. It is important to note, however, that the best possible use of these strategies depends on your reading ability in English, the type of material read, and your purpose for reading it. A low score on any of the subscales or parts of the inventory indicates that there may be some strategies in these parts that you might want to learn about and consider using when reading (adapted from Oxford 1990: 297-300).

## Appendix E

### Discussion Questions

#### Week 2

As a team, discuss the following, after the I do and we do portion of instruction:

1. What did you think about as you were interacting with the text?
2. How did comprehension strategies help you understand this text?
3. How did the instructional strategies, implemented by the instructor, help you understand the text?
4. How do you feel an elementary school student might feel if they are presented with this challenging text?

#### Week 3

As a team, discuss the following, after the I do and we do portion of instruction:

1. What did you think about as you were interacting with text?
2. How did comprehension strategies help you understand this text?
3. How did the instructional strategies, implemented by the instructor, help you understand the text?
4. How did you feel as you were reading the text from this perspective?
5. How did your comprehension question responses change for this perspective?

Appendix F

**Lesson & Reflection Template**

<b>Lesson Plan</b>			
<b>Lesson Session #:</b> _____		<b>Date:</b> _____	
<b>Skill/Strategy Focus:</b>			
<b>Lesson Plan/Activity</b>	<b>Materials</b>	<b>Time</b>	<b>Reflection</b>
<b>Rereading</b> (Fluency)	Book:	<b>5 min.</b>	
<b>Word Study</b> (Phonemic Awareness/Phonics/Vocabulary)	Materials:	<b>10 min.</b>	

<p align="center"><b>New Reading</b> (Comprehension/Vocabulary/Fluency)</p>	<p>Book: Level _____</p>	<p align="center"><b>10-15 min.</b></p>	
<p align="center"><b>Additional Activity</b> (optional)</p>			

<p align="center"><b>Reflection</b></p>	
<p><b>Lesson Session #:</b> _____</p>	<p><b>Date:</b> _____</p>
<p align="center"><b>Question</b></p>	<p align="center"><b>Response</b></p>
<p>1. What did you notice/observe about your student's learning today?</p>	
<p>2. Did your student meet the goals/outcomes you set for him/her? How did you know? If not, why?</p>	
<p>3. What data did you reflect on?</p>	
<p>4. What did the data tell you about your student? What are their strengths/weaknesses?</p>	
<p>5. What did you do that worked?</p>	
<p>6. What could you have done differently?</p>	
<p>7. What goal(s) have you set for the next lesson with your student?</p>	
<p>8. What next steps will you plan for your student?</p>	





Teaching aids/materials:

2. Comprehension Activity/Task	Duration:
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Context:

Content:

Activity/Task:

What teacher is doing:

Teaching aids/materials:

3. Comprehension Activity/Task	Duration:
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Context:

Content:
Activity/Task:
What teacher is doing:
Teaching aids/materials:

Appendix H

**Discussion Observation Protocol**

<b>Week #:</b>
Participant #:
Portion (circle): I Do                  We Do                  You Do
Comprehension:
Metacognition:
Cognitive Load (circle):          Working Memory          Schema          Information from Others
Other Observations:
Participant #:
Portion (circle): I Do                  We Do                  You Do
Comprehension:
Metacognition:
Cognitive Load (circle):          Working Memory          Schema          Information from Others

Other Observations:
Participant #:
Portion (circle): I Do          We Do          You Do
Comprehension:
Metacognition:
Cognitive Load (circle):      Working Memory      Schema      Information from Others
Other Observations:
Participant #:
Portion (circle): I Do          We Do          You Do
Comprehension:
Metacognition:
Cognitive Load (circle):      Working Memory      Schema      Information from Others
Other Observations:
