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EFFECTIVELY TEACHING METACOGNITIVE STRATEGIES ACROSS CONTENT
AREAS TO ENHANCE COMPREHENSION

by

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A capstone project submitted in partial fulfillment of the requirements
for the degree of Master of Arts in Education

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CHAPTER ONE

Introduction

Harvey and Goudvis (2017) affirmed the power of thinking during reading, stating:

We can't read kids' minds, but one way to open a window into their understanding is to help them bring to the surface, talk about, and write about their thinking. Having knowledge of the strategies and the language to articulate their thinking goes a long way toward creating proficient, lifelong learning. (p. 24)

The authors continued that some readers, especially those that have less experience with reading, often do not realize that they should be thinking as they read to understand a text. Pressley, Roehrig, Bogner, Raphael, and Dolezal (2002) asserted that not realizing the importance of thinking, also known as metacognition, while reading has negative consequences. Pressley et al. (2002) described how although it would seem that the more students read, the more they will understand what they are reading, this is not always the case. These authors noted that some students need to be explicitly taught comprehension strategies and self-monitoring of their reading.

Although the teaching of comprehension strategies has always been at the core of our reading instruction, educators need to begin to shift their focus to include the teaching of metacognition. According to Flavell (1979), who first used the term, metacognition is described as "thinking about thinking" (p. 906). Elaborating on Flavell's (1979) definition are H. Harris (1995), T. Harris (1995), and Hodges (1995) who described

metacognition as: “an awareness and knowledge of one’s mental processes such that one can monitor, regulate and direct them toward a desired end; self-mediation” (p. 153).

These definitions suggest the importance of using these strategies independently as one reads since they both discuss having a personal awareness of the thinking process that is involved in reading.

There is an ongoing need for students to use these metacognitive skills independently in the elementary classroom so that they will become successful readers as they progress through school. For this reason, I have chosen to explore the following research question: *Does the use of metacognitive strategies contribute to increased reading comprehension?* The first section in this chapter shares my journey as a reading teacher and current teaching context, which will explain why this particular topic was chosen for research purposes. The second section will analyze my school’s current reading curriculum and rationale for researching metacognition, which will provide the purpose for this project. Finally, the last section consists of an overview of my project and a summary of this chapter, which will reflect how this project will be organized and completed.

Personal and Professional Context

Having always been a reader growing up, checking out books at the local library and finding new and interesting stories to read was always exciting. My family encouraged my love of reading by taking time each night to read stories aloud and in providing many opportunities for me to have access to books. Reading came naturally to me, which led to me becoming a strong reader, so it was surprising to me growing up that

some students did not like to read or had difficulty understanding what they were reading. Often teachers would pair me up with a partner who was reading the same text as me and I would be able to quickly answer comprehension questions, while my partner would have difficulty. My personal reading experiences left me wanting to learn more about specific strategies for teaching reading, which eventually encouraged me to pursue a teaching degree with a minor in language arts.

My undergraduate teaching experience exposed me to the importance of reading during my coursework. This peaked my interest in learning how to teach reading, but gave me a general overview rather than specific information. My very first teaching job as a middle school language arts teacher would eventually help me understand how important teaching comprehension skills are. After my first year of teaching there was still a personal interest in teaching students that had difficulty with comprehension and specific strategies to use with them. From 2009-2013, my professional life changed, transitioning through several teaching jobs and moving from Wisconsin to Minnesota. It was during my job as a fourth grade teacher that new reading concepts would be introduced to me which would shape my professional reading journey.

Beginning a new teaching position in the fall of 2013 in fourth grade, it was surprising to find that my building would be piloting a new reading curriculum, Benchmark Literacy (2014), for the school district. Having previous experience teaching fourth grade and middle school language arts, my belief was that the program would be similar to other reading programs that were previously used in my classroom. When completing training to utilize this curriculum, a new concept was introduced that I had no

previous experience teaching: metacognitive strategies. Not only would all the teachers at my school be teaching students comprehension strategies for each unit of study, but there were metacognitive strategies that students would need to understand how to use as well.

With no prior experience teaching these strategies, it was difficult to understand how to teach them or how students could apply them to their own reading. It was a struggle getting through my pilot year, trying to follow the curriculum as closely as possible to maintain fidelity. Through implementation, it was apparent that my lessons needed to be developed further to make them more meaningful and help students understand the connections between what we were doing during our mini-lessons to their guided reading, or small group work, and independent work time.

For example, when teaching a whole group lesson on making predictions, students were not always accountable for applying this same comprehension skill to the books that they were reading independently. Many students needed to revisit this same strategy again as they were working in instructional level texts during guided reading. More evidence that students were applying these skills independently through formative assessments was also needed. The following year my school district decided to adopt the Benchmark Literacy (2014) reading curriculum and it was apparent that further development around teaching and learning in regards to literacy was needed.

Benchmark Literacy (2014) curriculum is based on a balanced literacy approach, with several components present. Fountas and Pinnell (as cited in Frey, Lee, Tollefson, Pass, & Massengill, 2005) asserted that the components of balanced literacy “include community, home, and library involvement as well as structured classroom plans and use

of activities such as read alouds, guided reading, shared reading, and independent reading and writing” (p. 272). To implement a balanced literacy approach students at my school are exposed to a 90-minute reading block, which is broken up into the following blocks of time: 10-minute interactive read-aloud/think-aloud, 20-minute mini-lesson, 60-minutes of guided reading/small group instruction with at least 20-minutes of independent reading, and a 5-10-minute closing/sharing. There is also a word study and writing component present in this curriculum in addition to the core reading lessons. All teachers are expected to complete ten units of study throughout the year in our reading curriculum, with a focus on a specific comprehension and metacognitive strategy for each unit. The specific metacognitive strategies that teachers focus on for the school year are: ask questions, determine text importance, fix-up monitoring, make connections, make inferences, summarize and synthesize, and visualize.

Although metacognitive strategies were being explicitly taught during the mini-lessons and interactive read alouds in our curriculum, it was apparent that some of my students were still not able to use these strategies independently or when working with them during guided reading. For example, if I asked them to use clues in a text to help them make inferences, they could not explain to me how to do this on their own. In 2015, I transitioned into a new teaching role in the primary grades as a second grade teacher, which is the grade level I am currently still teaching at and the intended audience for this project. Over the next several years my lessons evolved and I began introducing and including metacognitive strategies in different ways, including the use of these

strategies during additional interactive read-alouds, shared reading, and guided reading lessons.

In second grade, interactive read-alouds for students are chosen from books that are available in our book room. They are read ahead of time and then areas in the text are marked with sticky notes where thinking using the metacognitive strategy for that particular unit is intended to be shared. During mini-lessons, the teacher uses think-alouds and models for students how to use specific strategies. Shared reading is also used with students during the second week of each unit as students are exposed to a new genre of text and we complete a read-aloud of a big book that goes with the unit.

During this shared reading, the text is read aloud with students and the teacher models the use of metacognitive strategies. Students will eventually begin to participate as part of the shared reading experience, applying these strategies independently and discussing them with partners or as a large group. When working with students during guided reading the teacher models and reminds students to use these strategies as they are reading independently or out loud. All of these best practices have been shaped by my teaching and learning experiences.

Currently I have a total of ten years of teaching experience across the primary, intermediate, and secondary grades. In 2017/2018 an additional K-12 reading license was pursued due to my interest in teaching reading. With my new knowledge and experience in teaching reading, it is my goal to continue to learn more about the importance of these metacognitive strategies and what the best research-based strategies are for teaching them. My graduate work in reading and personal experiences have convinced me that by

creating lessons that focus on these metacognitive strategies, students will be focused and able to apply these strategies effectively to their own independent reading. These experiences have provided me with evidence as to why teaching metacognition is so important.

Rationale for Teaching Metacognitive Strategies

As a reading teacher, it is critical that as my students are independently reading they begin to self-monitor what they are reading and use metacognitive strategies to aid them in understanding of their texts. By providing explicit lessons for students that contain effective methods for teaching these strategies my goal is for my students to begin learning how to self-monitor and apply these strategies across the content areas. The significance of this is noted by Pellegrino, Chudowsky, and Glaser (2001), stating, “metacognition is crucial to effective thinking and problem solving and is one of the hallmarks of expertise in specific areas of knowledge and skill” (p. 4). As students understand the importance of these skills they will become better thinkers and problem solvers, not only in reading, but in other subject areas as well. When students self-monitor their thinking, teachers need to continually be assessing students to ensure that they are consistently applying these strategies to what they are reading.

There needs to be accountability for all students and a way to track how they are using these strategies on their own. As part of our Benchmark Literacy (2014) curriculum teachers currently have access to a toolkit that provides informal assessments for comprehension and reading development for use with students. The toolkit provides access to teacher checklists and prompts that they can use when discussing with students

how they are using their metacognitive strategies. These assessments are very broad, not specific to individual students, and do not make students accountable for using these strategies during independent work time.

There are also several examples available online through curriculum and instruction at my school that include exit slips that teachers can use with individual students so that they are responsible for showing how they used the strategy during their independent work time. Although these exit slips are more appropriate for individual student use, it is my intention to explore using a more engaging way of assessing students instead of continually asking them to fill out an exit slip daily. By exploring other varied possibilities of assessing student use of metacognitive strategies through this research, students will be accountable for using these strategies daily. In order to provide appropriate assessments and a quality reading experience for my students, the current Benchmark Literacy (2014) curriculum must be analyzed to understand how it can be improved to ensure student success.

Any time that a new curriculum is implemented there is always a new concept or idea to learn, but there is often little time available to reflect during the school year on what the successes were and what could be done differently the next year to improve upon instruction. In reflecting on my reading curriculum, Benchmark Literacy (2014), I have found that there are areas that could be improved upon or developed more. Based on my graduate coursework in reading it is clear that my co-workers could significantly benefit from additional resources in the area of metacognition. Although teachers in my school district have specific required elements that they need to implement in our

curriculum, they should be continually thinking about content areas that they could integrate metacognitive strategies into.

One area that is lacking in our Benchmark Literacy (2014) curriculum is poetry. By integrating metacognitive strategies into poetry lesson plans, students can gain a better understanding of how to use these strategies independently. Through the creation of this project, metacognitive strategy lessons will be developed that will provide a way for students to think deeply about their understanding of how to use these strategies independently in Benchmark Literacy (2014) lessons. Metacognitive strategy lessons will occur not only during reading lessons, but also in the content areas of science and social studies to provide relevant and enhanced learning opportunities for students. By using metacognitive strategy lessons in the content areas, students will also have opportunities to assess their understanding of these strategies using a connected text. Since metacognitive strategies can be used in other content areas, this can lead to use by other professionals in a variety of teaching contexts.

The use of metacognitive strategies can be applied to other content areas such as math, science, social studies, etc. When this project is completed, professionals in the education field will be able to access lesson plans that will provide opportunities to incorporate metacognitive strategies into content, as well as reading lessons. These strategies can be applied across all grade levels, including those students in preschool through twelfth grade and into adulthood.

The lesson plans will also provide teachers with important teaching structures that can be applied to these content areas, including the use of think-alouds, interactive

read-alouds, shared reading, and guided reading, all of which will be described further in Chapter Two. Since these strategies can be used in many ways, students with a wide range of ability levels will benefit from instruction in these strategies. In Chapter Two specific teaching structures that will allow professionals to use metacognitive strategies effectively in their classrooms will be reviewed. The next section will provide an overview of this project, including an introduction to the literature review presented in Chapter Two.

Overview of Project

This project will use research-based literature to gain a better understanding of the importance of metacognitive strategies and how to best teach them to students. After exploring this research a unit of lesson plans will be created that will assist my colleagues in teaching and assessing metacognitive strategies in a second grade classroom. Formative and summative assessments will be included in my lesson plans to keep track of individual student growth in the use of these strategies. These lesson plans may include read-alouds, interactive read-alouds, think alouds, shared reading or additional teaching structures that are found through my research. Cross-curricular lessons and areas that need further development in our current curriculum, like poetry, will also be included as part of the lesson plans.

Conclusion

In this chapter, the importance of metacognition on my personal journey as a reading teacher was described, along with my educational background and prior knowledge. The importance of teaching metacognitive strategies in a balanced literacy

curriculum was also made apparent as well. Through this project I will help my colleagues and others who are at the beginning stages of trying to understand how to best support students in this learning process of understanding how important metacognitive strategies are. Through the use of my lesson plans and shared experiences in this project the reader will be able to answer my research question: *Does the use of metacognitive strategies contribute to increased reading comprehension?*

In Chapter Two a literature review and synthesis of the findings of other theorists and researchers in relation to the importance of teaching metacognitive strategies will be provided. First, the origins and benefits of teaching metacognition will be given, second, research-based ideas to use metacognitive strategies effectively in the classroom setting will be made available. Finally, the importance of cross-curricular integration and assessment of metacognition in the classroom setting will be emphasized. In Chapter Three an overview of the theoretical frameworks that will establish a clear rationale for my lessons will be clarified. The setting where the research will take place and a review of how my project is organized will be included as well. In Chapter Four I will reflect on what I have learned through project completion, reiterate the importance of the literature review to the project, discuss project implications and limitations, and provide further recommendations for further research work as well as communication of the results of this project.

CHAPTER TWO

Literature Review

Although many educators would agree that teaching comprehension strategies is critical in helping students understand what they are reading, authors Boulware-Gooden, Carrerker, Thornhill, and Joshi (2007) asserted that many classroom teachers fail to teach metacognitive strategies, even though they are considered to be valuable in teaching text comprehension. There is research-based evidence that the teaching of metacognitive strategies is important. Paris and Oka (1989) attributed improved comprehension through the use of metacognitive strategies to the “readers’ ability to control and regulate their comprehension” (p. 34). Since this research provides an understanding of the importance of teaching metacognition, educators need additional guidance in understanding how to effectively teach these strategies. The review of literature in this chapter will explore the following question: *Does the use of metacognitive strategies contribute to increased reading comprehension?*

First, this section provides an overview of the origins of metacognition and the theories that form the importance of these strategies. Second, it will review the benefits of teaching metacognitive strategies in the classroom, and how they positively impact the classroom environment for both students and teachers through increased self-awareness, the ability to self-regulate, and application to other content areas. Third, guidance will be provided in how to use a variety of teaching structures to explicitly model the use of metacognitive strategies, including: think-alouds, interactive read-alouds, shared reading, and guided reading. Fourth, the importance of including metacognition in cross-curricular

content through metacognitive talk and application to the Common Core State Standards will be included. Finally, there will be a review of the importance of using assessment to monitor the use of metacognitive strategies in all content areas.

Origins of Metacognition

Metacognitive theory is a theoretical perspective that has been highly influenced by the theory of constructivism which began in the 1920s (Tracey & Morrow, 2012). Tracey and Morrow (2012) explained that constructivism occurs when new and existing knowledge are integrated, which only occurs when the individual is actively involved in the learning process. Constructivism has been applied to the field of education, in particular reading, using theories highlighted by Tracey and Morrow (2012): inquiry learning, schema theory, transactional/reader response theory, psycholinguistic theory and whole language theory, metacognitive theory, and engagement theory. This literature review will focus on the theory of metacognition, which I have found through my research has now become widely known in the field of education to support reading comprehension.

Baker (as cited in Tracey & Morrow, 2012) noted how in the mid-1970s Flavell and Brown introduced the idea of metacognition that was grounded in their research on children's ability to regulate their own cognitive thinking. Flavell (1979) attributed that the monitoring of one's cognition occurs through the "interactions among four phenomena (a) *metacognition knowledge*, (b) *metacognitive experiences*, (c) *goals* (or *tasks*), and (d) *actions* (or *strategies*)" (p. 906). Metacognitive knowledge is all of the cognitive information stored inside your brain; essentially what you already know about

the world around you. Flavell (1979) declared metacognitive experiences as “items of metacognitive knowledge that have entered consciousness” (p. 908). Flavell (1979) reasoned that an individual’s metacognitive knowledge is either added to or deleted throughout life through metacognitive experiences. As knowledge is either added or deleted, one can begin to use the strategies that they already have access to. These strategies can assist with two different types of goals, both cognitive and metacognitive. Cognitive strategies are meant to make cognitive knowledge, while metacognitive strategies exist to monitor cognition (Flavell, 1979). Although the foundation of metacognition is in psychology, it has been applied to the field of education as well.

It was not until the late 1970s that educators began to inquire about teaching metacognition as a strategy for students. Educators began to think about teaching metacognition as a direct response to Durkin’s research (as cited in Tracey & Morrow, 2012). Durkin argued (as cited in Tracey & Morrow, 2012) that the technique that most teachers use to teach a text is the directed reading lesson. Directed reading lessons involve reading a text, guiding students in reading the text, and completing a discussion about what was read. Tracey and Morrow (2012) maintained that “this approach to reading instruction, although still popular and advocated in many basal reading series, often leaves students in a teacher-dependent state, offering them little in the way of tools that they can independently apply to facilitate their own reading comprehension” (p. 72). Duffy asserted (as cited in Tracey & Morrow, 2012) that as a result of Durkin’s research many researchers began looking for opportunities for students to build their comprehension as they read independently, which led to the utilization of metacognition

to analyze reading comprehension and provide effective instruction to students. To provide metacognitive instruction to students, teachers must first have an understanding of what attributes metacognitive learners possess.

Definition of Metacognitive Learners

Harvey and Goudvis (as cited in Kelley & Clausen-Grace, 2013) declared that there are four different types of metacognitive learners that educators should have knowledge of. These metacognitive learners include: tacit learners, aware learners, strategic learners, and reflective learners. *Tacit learners* do not have an awareness of what they are thinking as they are reading a text. *Aware learners* know when they do not understand what they are reading, but do not have the necessary strategies to help fix up their thinking. *Strategic learners* know when they do not understand what they are reading and are able to use strategies to fix their thinking. *Reflective learners* reflect as they are reading and are intentional about applying a strategy when they need to fix their thinking or deepen their understanding of a text. These definitions can be useful in identifying specific learners in the classroom.

Teachers can begin to identify the types of metacognitive learners that they have in their classrooms through formative assessment and individual conferencing with students. This can take place most often during guided reading, independent reading time, or during individual teacher and student conferences. As the teacher gets to know the student and their attitudes towards reading, including the strategies that they use as a reader, they can begin to gain an understanding of who they are as a reader. Having provided an overview of the attributes of a metacognitive learner and how to identify the

four types of learners, next I will summarize the benefits of using metacognitive strategies with students.

Benefits of Using Metacognitive Strategies

Brown and Palincsar noted (as cited in Fogarty, 1994) that teaching metacognitive strategies is a way to help students “unlock the reading process” (p. 10). In my teaching experience, unlocking the reading process means that students understand what they are reading and can apply metacognitive strategies independently to texts that they are reading. Pogrow (as cited in Curwen, Miller, White-Smith, & Calfee, 2010) also emphasized the importance of metacognition, stating, “recent research suggests that the further development of cognitive to metacognitive thinking enhances both retention and comprehension for the learner, and that the ability to think metacognitively is the critical distinction between low and high achieving students” (p. 129). Based on my review of the research, these high achieving students that are able to retain knowledge from texts have several characteristics that make them successful metacognitive learners in the classroom. These students are able to: self-monitor themselves as they are reading, they have increased self-awareness, and they are able to understand what they are reading across the content areas.

Self-Monitoring and its Impact on Reading

Borkowski and Turner (as cited in Afflerbach, Cho, Kim, Crassas, & Doyle, 2013) defined metacognition as the “learners’ knowledge related to cognition, their awareness of their own thinking processes, their understanding of what is needed for learning, and their regulation of cognitive strategies” (p. 442). This awareness of thinking

is critical in self-monitoring, as stated by Fogarty (1994) who argued that self-monitoring, or regulation of one's thoughts as they read is necessary to be successful when completing intellectual tasks. According to Ridley, Schutz, Glanz, and Weinstein (1992), self-regulation consists of three different dimensions: developing metacognitive awareness of one's self, environment, and situation, creating goals based on one's established awareness, and monitoring/completion of goals. Rigney (as cited in Fogarty, 1994) identifies four self-monitoring skills that are necessary to be successful in any intellectual task:

- being able to keep track of one's place in a long sequence of tasks or operations,
- knowing when one has reached a goal, and
- being able to identify errors and fix them.

Research has also identified other elements of self-monitoring that are also important when reading.

Fogarty (1994) distinguished looking ahead and looking back as important parts of self-monitoring. Looking ahead includes learning the structure of a task, identifying areas where an error is likely to be made, and choosing a strategy for correcting the error while keeping in mind the availability of feedback. Looking back entails determining errors that were previously made, keeping track of what was done to fix the errors, assessing what should come next, and determining the outcome of the task. By using these self-monitoring strategies, students are able to keep themselves much more focused. Quigley, Muijs, and Stringer (2018) confirmed this research in their guidance report on self-regulated learning, stating: "self-regulated learners are aware of their strengths and

weaknesses, and can motivate themselves to engage in, and improve, their learning” (p. 10). This research can be easily applied to reading in a classroom setting.

For example, as a student is reading a book they will need to keep track of the story elements, including: setting, characters, and plot. If as they are reading they have difficulty understanding a part of the text, they need to use a metacognitive strategy to fix their thinking to meet their goal. Self-monitoring also includes being self-aware and understanding how one thinks. By becoming self-aware, students will be able to better monitor their thinking as they begin reading a text.

Self-Awareness

Underwood (1997) acknowledged that self-knowledge, or being aware of oneself, is critical for beginning readers, especially when they need to understand how to process complex reading material. A critical part of being self-aware is setting appropriate learning goals. Ridley et al. (1992) suggested, based on their research, that students who self-regulate effectively are able to base goals for their learning due to their high levels of self-awareness. They asserted that these students will achieve high levels of performance because they have “both a target goal, which provides a motivating challenge, *and* metacognitive awareness, which provides information about possible appropriate strategies for accomplishing the goal” (Ridley et al., 1992, p. 295). M. Ganz (1990) and B. Ganz (1990) also argued that students should be aware of their own thinking and learning, as those that do not may begin to exhibit symptoms of learned helplessness. As a result of learned helplessness, students can begin to fail to perform tasks and have a diminished self esteem. As students progress in age, the long term effects can be severe,

leading to failing grades and possible withdrawal from school. Further research has determined the importance of being aware of one's emotions when reading.

Another component of self-awareness, according to M. Ganz (1990) and B. Ganz (1990), is assessing one's feelings of understanding as they are reading a text. Eva-Wood (2008) agreed with this, advocating for incorporation of more sensory and emotional responses when discussing metacognition. She further elaborated on this, stating, "more traditional notions of metacognition--'thinking about thinking'--are incomplete in language arts contexts in which increased self-awareness can occur in and through reading" (p. 575). Although it is important for readers to understand their own feelings and know how they are progressing as they are reading a text, problems may emerge if teachers are not providing accurate feedback to the student.

Pintrich (2002) cautioned educators to not try to boost students' self esteem with feedback that can be misleading about their progress. Instead teachers should guide students in making accurate assessments of their own knowledge. This will help them understand what they need to improve upon. By being aware of oneself and possessing the ability to self-monitor as students read, they can begin to recognize the connection of metacognition to other content areas as well.

Application To Other Content Areas

M. Ganz (1990) and B. Ganz (1990) found that there is a need for metacognitive training in the classroom to help students be successful. By applying metacognition to other content areas besides reading, such as history and science, M. Ganz (1990) and B. Ganz (1990) noted that students have significant success as young adults when they enter

the workforce and begin studies in higher education. This metacognitive instruction should take place throughout a child's educational experience. Pressley and Gaskins (2006) advocated for long-term instruction in metacognition to help students be successful since these strategies can be applied to learning in elementary and middle school classrooms that teach a variety of subjects.

By providing long term instruction, students learn many important skills that they will use throughout the rest of their lives. Pressley and Gaskins (2006) reasoned that students begin to learn other important skills as they utilize comprehension strategies, such as: decoding, problem-solving, and self-organization. These skills are vital in forming successful students throughout elementary, middle, and high school. This research advocates for teaching metacognitive strategies across all content areas rather than teaching them primarily as part of reading instruction. In one particular study researchers found important evidence for teaching metacognition in content areas.

The study completed by Curwen et al. (2010) on the Read-Write Cycle Project focused on empowering teachers to understand the role of metacognition in literacy and increasing literacy lessons in content areas. Tracey and Morrow (2012) discussed that the Read-Write Cycle project was part of a professional development opportunity offered to ten elementary schools in southern California.

During the Read-Write Cycle project teachers were provided with professional development opportunities for 18 days in the area of metacognition. After they were given guidance in teaching metacognition, data was collected on the effectiveness of instruction. In analyzing the results of the project, they found that as teachers progressed

through the study they noted that students were excited about learning in content area instruction and they saw an increase in higher-level thinking and questioning in the classroom. This particular project emphasizes the need to incorporate metacognition into the content areas, but it is still the teacher's responsibility to find opportunities for integration throughout the school year.

Pintrich (2002) recommended that teachers plan throughout the school year to incorporate teaching metacognitive strategies into their regular lesson planning, assessing students on their ability to use these strategies as well as their content knowledge. He also advocated for having discussions about metacognition as part of the everyday classroom routine.

Pintrich (2002) claimed, "making the discussion of metacognitive knowledge part of the everyday discourse of the classroom helps foster a language for students to talk about their own cognition and learning" (p. 223). With the many varied opportunities to utilize metacognitive strategies in the classroom throughout the day, teachers must remember to be intentional about taking time to teach these strategies. In the next section, I review researched-based teaching methods that will be beneficial to educators in explicitly teaching metacognitive strategies. I also provide guidance for teachers on how to implement these strategies effectively.

Teaching Metacognition

In order for students to understand how to effectively use their own metacognitive skills as they are reading, teachers need access to quality, research-based teaching methods and tools. Costa (as cited in Fogarty, 1994) maintained that the metacognitive

strategies that teachers use should be embedded into their teaching methods, taught as part of staff development, and utilized by administration as well. This correlates directly to the instruction that teachers are providing for students. As students are reading independently, they should be continually monitoring what they are reading in their minds. Tracey and Morrow (2012) asserted that if they are not understanding what they are reading, they should begin to use fix-up strategies to help them understand the text.

Benchmark Literacy (2014) provided a variety of fix-up strategies, including: rereading, stopping and thinking about what has been read, writing about what was read, asking questions, reading ahead, and talking about what was read. Although it is important for students to know these fix-up strategies, they need to understand how to apply them. According to Tracey and Morrow (2012), teachers should provide explicit instruction to students in how to use these strategies. “Explicit instruction means that teachers attempt to be clear, organized, and detailed regarding the nature of the metacognitive strategy they are explaining, and how that strategy should be applied by the reader during the reading experience” (p. 73). There is a need to provide explicit instruction in these strategies, which will be addressed in the following section.

First, the relationship between balanced literacy and specific metacognitive strategies that can be used in the classroom will be examined. Second, guidance will be provided on the importance of using the appropriate teaching structure to teach these strategies. Third, some of these critical metacognitive teaching structures that provide explicit instruction including: think-alouds, interactive read-alouds, and shared reading

will be investigated. Finally, I will explain how to apply these metacognitive strategies during a small group guided reading lesson.

Relation to Balanced Literacy

To recognize the importance of teaching metacognitive strategies, there must be a true understanding of how the teaching of these strategies fits in the context of the core reading curriculum. Fountas and Pinnell (as cited in Frey et al., 2005) provided their version of balanced literacy as programs that “include community, home, and library involvement as well as structured classroom plans and use of activities such as read alouds, guided reading, shared reading, and independent reading and writing” (p. 272). Pressley et al. (2002) believed that there are many components that make up effective balanced literacy instruction. These components are: phonemic awareness and the alphabetic principle, word recognition, vocabulary teaching, comprehension strategies, and self-monitoring. In addition, students should take part in extensive reading where they are able to use prior knowledge to help them understand what they are reading, and should have access to writing instruction from their teachers.

Pressley et al. (2002) defined phonemic awareness as the understanding that words are made up of different sounds that can be blended together, while alphabetic awareness is grounded in the idea that the sounds in words are represented by different letters of the alphabet. Additional components of balanced literacy described by the authors describe include *word recognition* that is made up of two components: decoding and practice to ensure that students are able to read words automatically. Vocabulary teaching is another important component of balanced literacy instruction. There is an

argument by Pressley et al. (2002) that the teaching of *vocabulary* word meanings should be explicit since as students read they may infer the meaning of a word incorrectly. The authors also note that *self-monitoring* occurs as students are reading texts and notice that there is a problem. This requires them to fix-up their thinking and use a strategy to help them understand what they are reading.

The last component of balanced literacy, *comprehension strategies*, are strategies that help readers understand why they are reading a text (Pressley et al., 2002).

According to Pressley et al. (2002), “balanced reading instruction includes modeling and explaining of comprehension strategies and student practice of the strategies with teacher support” (p. 9). In my teaching experience, I have noticed that often students use multiple comprehension strategies at a time as they are reading independently.

Pressley et al. (2002) emphasized that readers should not use only one strategy at a time and that instruction should take place everyday until students are able to use these strategies independently. This may mean that students need to be taught these strategies for a few years before they have developed excellent comprehension skills (Pressley et al., 2002). Now that comprehension strategies have been defined within the balanced literacy model, I will provide examples of some effective strategies that teachers can use to provide metacognitive instruction to students.

Metacognitive Strategies

As part of the Benchmark Literacy (2014) curriculum that is utilized at my school, there are multiple metacognitive strategies that can be utilized when teaching students in the classroom. These strategies can be used alongside of comprehension strategies using

a variety of teaching structures. The strategies include: asking questions, determining text importance, fix-up monitoring, making connections, making inferences, summarizing and synthesizing, and visualizing (Benchmark Literacy, 2014). For the purpose of this research, I will be focused primarily on using these strategies since they will become a vital part of my project.

Benchmark Literacy (2014) described each of these strategies. *Asking questions* involves students asking questions about what they are reading to help them understand it. *Determining text importance* means that students are able to identify important parts in the texts that they are reading and understand how they contribute to the importance of the text. *Fix-up monitoring* is when students are reading and begin to have difficulties with comprehension, they use strategies to clarify their thinking. *Making connections* involves students connecting what they already know to something that they are reading. In order for students to make *inferences*, they have to use the clues that are in the text to help them determine what is happening, while *summarizing and synthesizing* is putting together all of the big ideas in a passage using what the student already knows. Finally, *visualizing* helps students create pictures in their minds as they're reading to help them understand what is happening in the text. Once educators have a solid understanding of these specific metacognitive strategies, they need to understand how to utilize them in an efficient way to help students be successful readers.

Teaching Structures

Kelley and Clausen-Grace (2013) created a model for teaching metacognition successfully. This model is called the Metacognitive Teaching Framework (MTF) and

includes four phases: think-aloud, refining strategy use, letting strategy use gel, and self-assessment and goal-setting. This model differs from the Benchmark Literacy (2014) curriculum since it only focuses on five cognitive strategies: predicting, questioning, visualizing, summarizing, and making connections (Kelley & Clausen-Grace, 2013). Kelly and Clausen-Grace's (2013) model begins with a focus on explicitly teaching a selected strategy by using think-alouds completed by the teacher, which include an interactive read aloud and shared reading. The MTF then begins to shift responsibility for learning the strategy from the teacher to the students by providing instruction in whole group and small group lessons, cooperative think alouds, and R⁵.

R⁵ is a practice used during students' independent reading time called: Read, Relax, Reflect, Respond, and Rap (Kelley & Clausen-Grace, 2013). Kelley and Clausen-Grace (2007) stated that during the read and relax phase students will read independently and the teacher will record what the student is reading on a log sheet. The teacher will also conference with one or two other students during this time and provide reading support as necessary. Next, during the reflect and respond phase, Kelley and Clausen-Grace (2007) discussed that students will record information about their book on individual logs, including the title, pages read, and thoughts about the text. Finally, during the rap phase students will discuss with a partner their use of strategies as they read. The teacher will then facilitate a whole group discussion about student strategy use during independent reading time (Kelley & Clausen-Grace, 2007). This allows students to understand how to use a variety of strategies independently, which leads to the next phase of the MTF.

Kelley and Clausen-Grace (2013) believed that once students begin to understand the strategy and it “gels” with them, most of the strategy use becomes student-directed. Students begin to work on content area studies, form literature circles with classmates, complete independent reading using these strategies, and can engage in R⁵ (Kelley & Clausen-Grace, 2013). Kelley and Clausen-Grace (2013) suggested that after students have been taught a specific strategy for several weeks they begin to set goals for themselves and self-reflect on what they would like to improve upon in regards to the strategy (Kelley & Clausen-Grace, 2013). Teachers provide support for the students through coaching during R⁵ and reading conferences as students read independently and in literature circles (Kelley & Clausen-Grace, 2013). Kelley and Clausen-Grace (2013) believed that students should ultimately begin to use these strategies independently.

It is important to remember that as teachers are using this model the overall goal of this framework is to make students independent learners. Allington (as cited in Kelley & Clausen-Grace, 2013) stated the overall goal of comprehension as being “the development of transferable strategies that [promote the] independent use of effective thinking while reading” (p. 120). Kelley and Clausen-Grace (2013) asserted that in order to promote this transfer of learning teachers need to begin by scaffolding strategy use for their students, beginning with direct and explicit instruction in each strategy which will lead to a gradual release of responsibility to the students. The structures that follow are a way to ensure that students are able to independently use these strategies on their own following teacher instruction. One strategy that can easily be initially modeled by the teacher and eventually used independently by students is think-alouds.

Think-Alouds

According to Kolencik and Hillwig (2011), think-alouds are the most commonly used metacognitive strategy. Think-alouds are when someone shares the thinking steps that they used in order to complete a task (Kolencik & Hillwig, 2011). The think-aloud structure, according to Kucan and Beck (as cited in McKeown & Gentilucci, 2007), has three goals: “(1) It provides a method of inquiry to understand cognitive processing related to reading research; (2) it serves as a method of instruction; and (3) it is an aspect of social interaction” (p. 137). McKeown and Gentilucci (2007) asserted that think-alouds are also beneficial for many second-language learners as they allow them to monitor their own thinking and apply a variety of strategies to texts that they are reading. Kolencik and Hillwig (2011) emphasized that as teachers complete think-alouds they should act as the experts and emphasize solutions to problems that students may come across as they are completing a task. There are many other recommendations for using think-alouds effectively provided by researchers.

Kelley and Clausen-Grace (2013) recommended that when using a think-aloud, teacher instruction must be explicit to ensure that students understand how to use the strategy. Gambrell and Morrow (2015) agreed with this, asserting that explicit instruction is vital, stating “explicit instruction involves teacher modeling, explanation, and think-alouds that help children understand what strategic processes are, how to use them, under what conditions they might be used, and why they might be used” (p. 235). To complete a think-aloud, a teacher must begin by thinking-aloud about something that didn’t make sense to them as they are reading a text to students. Their think-aloud should

also include an explanation of a fix-up strategy that could be used to help them understand the text (Gambrell & Morrow, 2015). Gambrell and Morrow (2015) emphasized that the teacher should then model how to use the fix-up strategy with the text for students so that they can understand how to use this process independently. A similar strategy to the think-aloud is the read-aloud, which also has been expanded in this literature review to include interactive read-alouds.

Interactive Read-Alouds

According to Fisher, Flood, Lapp, and Frey (2004), through read-alouds teachers can demonstrate how to use reading strategies. Kelley and Clausen-Grace (2007) distinguished between a read-aloud and an interactive read-aloud as read-alouds being used for enjoyment vs. interactive read-alouds which are used mainly for teaching purposes and to promote student interaction with the text. The authors also recommended only one to two strategies are introduced at a time during an interactive read-aloud, as the primary purpose of a read-aloud is for enjoyment. In my personal teaching experience, the interactive read-aloud must be carefully planned in advance to be effective.

Fisher et al. (2004) used data from researchers to identify seven essential elements of an interactive read-aloud that can be used in the classroom setting: text selection, previewing and practicing, establishing a clear purpose for instruction, modeling fluent reading, using animation and expression, allowing for discussion of the text, and connecting students' independent reading and writing to the read-aloud. After selecting an interactive read-aloud to read, the teacher will plan instruction in a specific strategy. As the teacher reads aloud the text, they will stop and use think-alouds as part of their

lesson, clarifying how to use a selected strategy. Students will then be invited to interact with the text, making comments, answering questions, and talking with peers about the text (Benchmark Literacy, 2014). Interactive read-alouds can be used in different ways in the classroom setting.

According to Benchmark Literacy (2014), teachers can start a new interactive read-aloud daily with students or can be part of an ongoing text that a teacher reads aloud daily. Interactive read-alouds should be included as part of a daily reading/writing workshop or content lesson (Benchmark Literacy, 2014). Shared reading is related to a read-aloud, but is completed with a read-aloud that students have been exposed to several times.

Shared Reading

Vaca and Grove (as cited in Benchmark Literacy, 2014) explained shared reading as a three-step process: introducing a new story, rereading familiar stories, and encouraging independent reading. In this process the teacher reads the book the first time for enjoyment, then in the rereading process students will begin to participate in some way, including joining the teacher in reading or chanting repetitive parts of the text. As students become more familiar and comfortable with the book, the teacher can begin to introduce strategies to the students.

Benchmark Literacy (2014) suggested that teachers select from a wide range of resources when planning a shared reading event with their class, including: big books, poetry charts, a passage from a book that students have copies of, song lyrics, maps, recipes, etc. Throughout my teaching experience, shared reading has encouraged students

to be active participants in the lesson. Stahl (as cited in Kelley & Clausen-Grace, 2008) believed that students are more active participants in shared reading because they have direct access to the text that is being modeled by the teacher. This allows them the opportunity to become the expert on the strategy that is being taught, leading to work with cooperative think-alouds. This means that students have an opportunity to work in pairs and share their thinking with each other as they participate in the shared reading activity. Once students have mastered these strategies through think-alouds, interactive read-alouds and shared reading, they should be prepared to use them independently during guided reading.

Application to Guided Reading

According to H. Harris (1995), T. Harris (1995), and Hodges (1995), guided reading is “reading instruction in which the teacher provides the structure and purpose for reading and for responding to the material read” (p. 102). Tracey and Morrow (2012) discussed the importance of guided reading in helping students learn how to read difficult texts and understand difficult concepts. Ford and Opitz (2011) contended that guided reading should be scaffolded, meaning that teachers are planning instruction for students based on where they are developmentally. Frey and Fisher (2010) suggested that once students begin reading independently after scaffolding instruction, teachers can begin to observe them to assess their reading abilities. Before starting a guided reading lesson, teachers must gain an understanding of their students’ reading abilities.

Benchmark Literacy (2014) provided guidance on beginning guided reading lessons, suggesting that first teachers should observe students in a variety of teaching

structures, including shared reading and independent reading, and collect data on how students are interacting with the text. Once the teacher has an idea of where the students are developmentally, they should place the students into instructional-level groups (Benchmark Literacy, 2014). Benchmark Literacy (2014) described a student's instructional-level as books they can read with 92% to 96% accuracy. Once students are placed in groups, teachers may begin instruction.

Tracey and Morrow (2012) defined guided reading instruction as instruction that “engages students in previewing, careful reading, use of strategies, and interpretive and critical analysis before, during, and after reading a text (including digital and video texts)” (p. 112). Benchmark Literacy (2014) stated that to begin a guided reading lesson a teacher will carefully select a text that is appropriate for a group of students, set a focus for reading, including the strategies that will be taught, and will activate their prior knowledge of the book. The teacher will then introduce the book to the students, set teaching points that they will review, including strategy use, and will observe them as they read. As students read, the teacher is taking note of reading behaviors that students are exhibiting to help them with further instruction in specific areas (Benchmark Literacy, 2014). Questioning and the use of ongoing, formative assessments are other important elements of a guided reading lesson.

Frey and Fisher (2010) emphasized the importance of using questions right away with students to check for understanding and then prompting and cueing students when they begin to have difficulty with comprehension. Direct explanations and modeling can be used with students if they are still not understanding the text after prompts and cues

are used by the teacher. Frey and Fisher (2010) asserted that the teacher should continually assess students during the lesson to determine what the student has mastered and what they may need additional instruction in. Frey and Fisher (2010) also suggested that as teachers review their guided reading lesson plans they “develop several robust questions and compose cognitive and metacognitive prompts that you can use when understanding breaks down” (p. 93). The research has provided evidence of how to utilize a variety of teaching structures to effectively teach metacognitive strategies. We can use these same teaching structures to utilize these strategies in other subjects besides reading.

Cross-Curricular Connections and Integration

Metacognition is not only useful when teaching students how to read, but it also applies to other content areas and can be integrated into thematic units. Pellegrino et al. (2001) reasoned that metacognition is crucial in effective problem solving and critical thinking across content areas (p. 4). For example, Spence, Yore, and Williams pointed out (as cited in Michalsky, Mevarech, & Haibi, 2009) that by using self-monitoring strategies, students can significantly improve their science reading comprehension skills. Furthermore, the National Reading Panel Report (as cited in Curwen et al., 2010) emphasized the need for teaching comprehension strategies, stating “it might be efficient to teach comprehension as a skill in content areas rather than through stand-alone methods” (p. 129). In the first part of this section, I will explain the importance of teaching metacognition in other content areas such as science and social studies. In the

second part of this section, I will provide guidance on how to assess student use of metacognitive strategies.

Importance of Metacognition in Cross-Curricular Topics

Pressley and Gaskins (2006) discussed the importance of using comprehension strategies to understand content in areas like math, social studies, and science, stating “By using such strategies, students do get more out of text, and thus, build prior knowledge that permits them to comprehend better in the future” (p. 108). Curwen et al.’s (2010) study maintained the importance of metacognitive strategy use, finding that teachers in their study who focused on using metacognition in content areas had successful classroom experiences for students. Curwen et al. (2010) reported that “teachers in these participating classrooms noted not only students’ renewed enthusiasm in content area instruction but also an increase in higher order thinking” (p. 141). Pogrow (as cited in Curwen et al., 2010) asserted that by moving from cognitive to metacognitive thinking in the classroom, students are able to increase their comprehension and retention of knowledge. The research presents a detailed model for teaching metacognition in the next section.

Teaching Metacognitive Strategies in Content Areas

Quigley et al. (2018) presented research-based evidence on teaching metacognitive strategies in the content areas. They asserted that there is a seven-step model for explicitly teaching metacognitive strategies that can be applied to a variety of content areas. The seven-step model (Quigley et al., 2018) for teaching these strategies is as follows:

- Activating prior knowledge
- Explicit strategy instruction
- Modelling of learned strategy
- Memorisation of learned strategy
- Guided practice
- Independent practice
- Structured reflection

Quigley et al. (2018) argued that this model allows students to become increasingly independent through initially working on developing understanding of the content and then slowly decreasing the amount of scaffolding that the teacher provides to students. Pressley and Gaskins (2006) hold similar ideas regarding the teaching of strategies, supporting previous research on metacognition that suggests direct teaching of metacognition will increase the use of the strategy. Pressley and Gaskins (2006) believed that this depends on whether or not teachers are educating students on how to use these strategies in different situations and if they are encouraging students to assess their strategy use and determine when specific strategies should be used. Not only can metacognition be taught through specific instructional strategies, but it can also be integrated into classroom discussions.

Metacognitive Talk in Content Lessons

Quigley et al. (2018) advised that the quality of discussion that occurs in the classroom during content area lessons can positively impact students' metacognitive skills by providing them opportunities to hone their skills. Alexander (as cited in Quigley

et al., 2018) suggested that classrooms use dialogic teaching which emphasizes classroom conversations that are purposeful and give students opportunities to “reason, discuss, argue, and explain” (p. 21). There are six effective ways to include talk in the classroom according to Alexander (as cited in Quigley et al., 2018). These ways include: talk settings, everyday talk, learning talk, teaching talk, questioning, and extending.

The most important forms of talk for establishing metacognitive skills, according to Quigley et al. (2018), are learning talk and teaching talk. Learning talk consists of narrating your thinking and using questioning techniques and discussion. Teaching talk includes instruction, exposition, and dialogue (Quigley et al., 2018). Quigley et al. (2018) provided other suggestions for incorporating talk into the classroom setting, including the use of Socratic talk, talk partners, and debating. Socratic talk is part of a Socratic circle which, according to Styslinger and Pollock (2010), “is a method to try to understand information by creating a dialectic in which participants seek deeper understanding of complex ideas through rigorously thoughtful dialogue” (p. 37). Quigley et al. (2018) asserted that it is important to remember that by interacting with each other and the instructor, students will be able to build their own knowledge in a variety of content areas by utilizing the metacognitive strategies that they have been taught. Teachers can also use metacognition in thematic units of study, such as poetry, to assist students with comprehension.

Application to the Academic Standards

Metacognition can be utilized by teachers to meet academic standards. For the purpose of this project, I will be using the second grade Common Core State Standards

(CCSS) in English Language Arts (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010) to create lesson plans which focus on teaching students how to use metacognitive strategies. Through my personal experiences using the Benchmark Literacy curriculum (2014) in my school district, one of the areas of instruction which needs further development and supplementation is poetry. Two of the English Language Arts Standards that are specific to the class that I teach which I would like to focus on are: CCSS.ELA-LITERACY.RL.2.4 and CCSS.ELA-LITERACY.RL.2.10 (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010).

- CCSS.ELA-LITERACY.RL.2.4 Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song
- CCSS.ELA-LITERACY.RL.2.10 By the end of the year, read and comprehend literature, including stories and poetry, in the grades 2-3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

According to Eva-Wood (2008), “Poetry, as a bridge to self-understanding, can complement and build on the self-knowledge inherent in metacognitive practices” (p. 564). By integrating teacher structures and strategies seamlessly into poetry, students will be able to effectively build their knowledge to meet these standards.

Poetry

Vardell (2013) asserted that teachers can integrate metacognitive strategies into the teaching of poetry by using an approach called “Take Five.” This approach can be

used to introduce a new poem to students every Friday, which is often called “Poetry Friday” in classrooms (Vardell, 2013). Vardell’s (2013) approach to poetry instruction involves the following steps:

1. Read the poem aloud
2. Read the poem again, this time with student participation
3. Provide an open-ended prompt for students to discuss with each other
4. Make a skill connection with the poem (only one)
5. Make text-to-text connections with the piece of poetry

By using this approach, students can utilize many of the metacognitive strategies that have been explicitly taught in the classroom.

Benchmark Literacy (2014) provided metacognitive strategies that may be used including: asking questions, determining text importance, fix-up monitoring, making connections, making inferences, summarizing and synthesizing, and visualizing. Vardell (2013) explained that before reading a poem aloud, the teacher can ask the students to close their eyes and visualize what the scene or place in the poem looks like. To determine text importance and make connections, Vardell (2013) suggested that readers go back to the text after it has been read aloud and “connect the poem with the students’ own experiences, which then can lead back to looking at specific words, lines, and stanzas in the poem” (p. 32). To allow students to ask questions, Vardell (2013) stated that the teacher can provide an open-ended discussion question about the text which allows students to begin to notice specific parts of the poem (alliteration, repetition,

rhyme, onomatopoeia, etc.). Based on Vardell's (2013) research, poetry lessons should allow students to both enjoy and understand the particular poem that they are reading.

According to Vardell (2013), in second grade the first focus of poetry should be on enjoyment and then a secondary focus should be on responding to rhyme and rhythm in a poem, along with repetition and alliteration, which can change the meaning of the poem. Vardell's (2013) ideas connect directly to the second grade CCSS in English Language Arts (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010) since they provide a large focus on reading for personal enjoyment as well as using elements of a poem, including rhythm, to understand its overall meaning. As students are utilizing their metacognitive strategies when reading a text, teachers should not forget the importance of assessment.

Assessment

There are two reasons to assess comprehension according to McKenna and Stahl (2015): to understand how well a student has comprehended a text and to estimate the level of proficiency that a student has with a text, which can be used to estimate the student's instructional reading level. McKenna and Stahl (2015) provided guidance on major approaches to assessing comprehension, including: questions, cloze assessments, maze, oral retellings, and written responses to text. McKenna and Stahl (2015) suggested that "Questions, cloze tests, and retellings are the three most popular approaches to comprehension assessments" (p. 208). They also include other possibilities for assessment, including: student-generated questions, performance tasks, and evaluations of student participation in discussions with higher-level thinking (McKenna & Stahl,

2015). There is strong research evidence on the importance of using formative assessments when assessing metacognition.

The International Reading Association (IRA) (2013) supported formative assessment as being key in comprehension, stating, “The International Reading Association supports formative assessment as an integral component of a comprehensive approach to literacy instruction and assessment” (p. 2). Formative assessment should be ongoing everyday and is not focused on grading, rather on monitoring student learning and allowing them to improve in areas they need extra support in (IRA, 2013). The IRA (2013) concluded that formative assessments are able to help students as they read increasingly more difficult texts to meet the CCSS and provide information that can help teachers formulate instruction to meet their specific needs. There are many ways that teachers can use formative assessment in the classroom with students.

Kelley and Clausen-Grace (2008) maintained that even though teachers may have observational data on student strategy use and know that they are using strategies as they read, additional assessment information is still needed. In Kelley and Clausen-Grace’s (2008) project, which focused on using the metacognitive teaching framework, they created a process of incorporating student self-assessment and goal sheets for students to use as part of the assessment process. Kelley and Clausen-Grace (2008) stated that at the end of each unit of study, after students had worked on using a particular strategy and had time to practice, they were asked to identify which components of the specific strategy that they were using regularly and meaningfully. Students would then choose one item that they would like to improve upon, formulate a plan for improvement, and practice

putting their plan into action during independent reading time as well as conference time with the teacher. Kelley and Clausen-Grace (2008) reiterated the importance of making sure that students are transferring the skills that they have learned to independent reading and in other content areas as well.

Pintrich (2002) added to the IRA's argument for formative assessment, addressing that the purpose of metacognitive knowledge is meant to help students with their own learning, so "it is more likely that any assessment of metacognitive knowledge by teachers will be informal rather than formal" (p. 224). Discussions and informal conversations between the teacher and student that include metacognitive knowledge will give the teacher an idea of what the student already knows, which in turn will help them differentiate instruction for students. Pintrich (2002) also asserted the importance of students' self-knowledge about their strategy use and that this should be shared with only the teacher to increase student motivation. Pintrich (2002) suggested that another possibility for assessment could include portfolios where students can reflect on their work and self-assess. The research on assessment of metacognition illustrates the importance of using primarily formative assessments when assessing student strategy use.

Conclusion

The literature presented in this chapter provided three important ideas about metacognition. The first is the benefit of teaching metacognitive strategies and how they have successfully helped students improve their comprehension. The second important idea is that there are a variety of metacognitive strategies that can be taught explicitly to students and that instruction should be scaffolded to allow students to use these strategies

independently. The third is that metacognition can be integrated into a variety of subject areas and should be continually assessed throughout the school year, primarily through formative teacher assessments. All of these ideas provide evidence for my research question: *Does the use of metacognitive strategies contribute to increased reading comprehension?* In Chapter Three, I will provide guidance on how to enhance my school's current reading curriculum, Benchmark Literacy (2014), through the use of the Metacognitive Teaching Framework (MTF) (Kelley & Clausen-Grace, 2007). I will then utilize the Understanding by Design (UbD) Framework (Wiggins & McTighe, 2011) to create meaningful cross-curricular lessons that will allow students to use these metacognitive strategies independently.

CHAPTER THREE

Methodology

When my journey began as a second grade teacher in 2014, I recognized the need to develop lessons that will enhance my school's current reading curriculum (Benchmark Literacy, 2014). This realization occurred after noticing that students were unable to use metacognitive strategies independently as they read. In Chapter One and Two, the need to incorporate metacognitive teaching strategies into reading instruction and cross-curricular content areas was discussed. Methods of instruction and assessment were also provided to enhance lesson plans and provide an understanding of whether or not students were able to use the metacognitive strategies independently. It is my intent in this project to establish a six-week unit of lessons that will be integrated into the Benchmark Literacy (2014) curriculum that will allow me to explore the following research question: *Does the use of metacognitive strategies contribute to increased reading comprehension?*

This chapter will begin by providing an overview of the Understanding by Design (UbD) Framework (Wiggins & McTighe, 2011) which will allow me to design and write metacognitive strategy lessons using the three-step process that will be further described in the next section. There will also be an overview of the Metacognitive Teaching Framework (MTF) (Kelley & Clausen-Grace, 2007) which will provide the basis for how the metacognitive strategy lessons will be organized, incorporating a gradual release method. Next, the setting that this project will take place in, along with the audience that it has been created for, will give the reader an understanding of who this project was

specifically designed for. Finally, a description of how my project will be organized and completed, along with how results will be communicated, will be included to ensure that others have access to this information.

Understanding by Design (UbD) Framework

My curriculum is written and organized using the Understanding by Design Framework (Wiggins & McTighe, 2011). The project begins with the end in mind, meaning that the desired outcomes, including goals for student learning are determined first. This is referred to as stage one of the lesson plan. Next, the plan shifts to thinking about the assessments that will be used to determine whether or not students have met the desired outcomes in stage 2. Finally, the learning plan for my lessons are created in stage 3, which will include activities that the students will complete to meet the desired outcomes. Activities are differentiated to allow students to access the curriculum and tied directly to the established goals in stage one.

For the purpose of this project, I have decided to complete a six-week metacognitive strategy unit on visualizing, which focuses on important student learning goals. Three different types of goals that Wiggins and McTighe (2011) referred to in stage one are: acquisition (A), meaning making (M), and transfer (T). Acquisition refers to what students will know and be skilled at once learning has occurred. Meaning making refers to what the students will understand and keep thinking about after learning has happened. Transfer means what students will be able to do independently after instruction has occurred. All three of these goals are articulated as part of the learning plan activities

that students participate in as part of the project. Another area that is key in the first phase of planning is establishing the desired learning goals.

Curriculum goals for student learning are tied directly to the CCSS in English Language Arts for the state in which my school is located. I also integrated this metacognitive strategy to content area learning in the areas of science and social studies, which means that some of the student learning goals are tied to more than one content area. This is important since the research suggested in Chapter Two that teaching metacognition in other content areas will improve student use of these skills. After planning and writing the desired outcomes for my students in my lesson plans, essential questions were formed. Wiggins and McTighe (2011) defined essential questions as those questions that promote inquiry about a big idea and provide opportunities for deep thinking that promotes transfer to many other situations. As part of stage 2, examples of both formative and summative assessments for student use are provided.

Wiggins and McTighe (2011) discussed the importance of assessment being based on valid evidence versus just choosing a specific format of assessment before reflecting on why a specific assessment is needed. Assessment should be able to inform instruction, establishing what students are able to explain or apply in order to show that they understand a goal. In creating assessments for this curriculum design project, assessments that directly correlate to the goals that have been established are incorporated. A variety of assessments, including both formative and summative assessments are included as part of the UbD (Wiggins & McTighe, 2011) writing process.

Some formative assessments that are utilized in this project are recommended by Kelley and Clausen-Grace (2007) and include: conference forms for individual students, the R⁵ (read, relax, reflect, respond, and rap) conference form, graphic organizers (called think sheets), tally sheets, and goal setting forms for each strategy. Summative assessments include a comparison of NWEA Map scores, which will determine the effectiveness of my instruction, and a comparison of students' independent reading levels, which will indicate the students' ability to use metacognitive strategies independently with texts at their reading level. Through the use of these assessments, appropriate learning activities are designed for my students.

The learning activities are designed to allow for students to acquire knowledge, make meaning, and transfer their learning to new situations. These activities are also engaging for effective for a variety of learners. The UbD Framework (Wiggins & McTighe, 2011) cautions against choosing activities that students and teachers are familiar with but instead select activities that are key in determining whether or not students are able to achieve their goals. Similarly, Wiggins and McTighe (2011) asserted that instruction should be scaffolded for learners so that they are able to transfer their learning to other situations and independent work. Some examples of learning activities from Kelley and Clausen-Grace (2007) that allow students to become proficient in the area of visualizing include: think-pair-share, visualization continuum, anticipation guides, and draw to remember.. These activities allow students to understand how to visualize across the content areas.

The UbD Framework (Wiggins & McTighe, 2011) provided an important connection to my research question: *Does the use of metacognitive strategies contribute to increased reading comprehension?* The focus is not just on writing lesson plans, rather it is on providing transfer for students so that they can apply these metacognitive strategies independently to work in many different content areas. This directly correlates with the Metacognitive Teaching Framework developed by Kelley and Clausen-Grace (2007). The MTF model is essential in establishing lesson plans as part of the curriculum development process.

The Metacognitive Teaching Framework (MTF)

The Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007) is a comprehension model that is used to support students in using metacognitive strategies. The model breaks learning the metacognitive strategies down into four different phases of instruction: think-aloud, refining strategy use, letting strategy use gel, and self-assessment and goal setting. Learning is scaffolded and the instruction shifts from the teacher who uses direct modeling to the student who uses the strategy independently. An overview of this framework, along with a rationale for its use will be provided in the next two sections.

Think-alouds in my lessons include interactive read-alouds and shared readings. As strategy use is refined, small-group and whole-group lessons are created as well as cooperative think-alouds and and R⁵. As strategy use begins to gel, lessons are provided in content areas that correspond with a particular metacognitive strategy so students can practice strategy use. Students also use R⁵, complete work in content area studies, take

part in literature circles, and work on independent reading. Finally, during the self-assessment and goal setting phase students participate in R⁵ (read, relax, reflect, respond, and rap), literature circles, and independent reading, completing self-assessments of strategy use and setting future goals for themselves based on their understanding of how to use the strategies independently. This teaching framework is important to the overall development of the project.

The Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007) fits well with my project because it contains a gradual release of responsibility and provides explicit instruction in the strategy before placing the responsibility on the students to use the strategy independently. It also incorporates a variety of teaching structures that are best for teaching metacognitive strategies, including: interactive read-alouds, shared reading, small group work, and independent reading, as referenced in the Chapter Two literature review. Students are also accountable for their learning in this model, providing many opportunities for students to self-assess their ability to use these strategies. In the next section an overview of the research participants and setting will be provided to gain an understanding of how these frameworks align with the project.

Research Setting and Participants

This project takes place in a second grade classroom located in a first ring suburb of a major metro area in the upper midwest. According to the state department of education where my school is located, during the 2017-2018 school year, this school had an enrollment of approximately 700 students and 80 staff members, including paraprofessionals. The school's student demographics are as follows: 35.2%

Black/African American, 32.4% Asian, 15.3% White, 8.8% two or more races, 7.9% Hispanic/Latino, 3% American Indian/Alaskan Native, and 1% Native Hawaiian/Pacific Islander. There are 23.3% EL students, 12.4% special education students, 64.6% of students that qualify for free/reduced lunch, and 1.1% homeless students.

The curriculum will be implemented during the 2019-2020 school year with a classroom of approximately 25 second grade students. The classroom contains students with a wide range of ability levels, with students reading independently at a kindergarten to first, second, or third grade level. There are five sections of second grade, with a total of approximately 125 students at the grade level.

Second grade teachers teach all core subjects in the classroom, including: reading, math, social studies, science, health, and art. There are approximately 90-minutes provided daily for reader's workshop at this school, with time allotted as follows: 10-minutes for an interactive read-aloud, 20-minutes for a mini-lesson (core content lesson), and 60-minutes for guided reading rotations (20-minutes each). Approximately 30-minutes are provided during the day for social studies and science instruction. The lessons are utilized during reader's workshop or during science or social studies instructional time, depending on the lesson. These lessons are organized around teaching specific metacognitive strategies as described in the following section.

Organization and Assessment Process

My project provides a six-week unit, based on teaching the metacognitive strategy of visualizing, that is integrated into the Benchmark Literacy (2014) curriculum. The Benchmark Literacy (2014) curriculum requires teachers to teach the following

metacognitive strategies: asking questions, determining text importance, fix-up monitoring, making connections, making inferences, summarizing and synthesizing, and visualizing. The Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007) that is utilized includes the teaching of: predicting, questioning, summarizing, making connections, and visualizing. In order to teach the strategies of fix-up monitoring and making inferences teachers would need to supplement with another resource. Additional teaching strategies in these areas can be found in Harvey and Goudvis (2017). Assessment of students' needs will need to be considered first before planning instruction.

Assessment of student prior knowledge occurred prior to beginning this project. Student needs are determined by using the self-assessment and goal setting sheets created by Kelley and Clausen-Grace (2007) to determine what strategies students already use independently and which they need additional instruction in. I also included formative assessments and classroom observations to determine student strategy use as part of the curriculum that I developed. I created a series of lessons that include a pre-assessment component and correlate with each metacognitive strategy that will be taught as part of the Benchmark Literacy (2014) curriculum. These lessons include the use of interactive read-alouds, shared reading, small group lessons, cooperative think alouds, and R⁵, as modeled in the MTF comprehension model. I also integrated metacognitive strategies into content area lessons in science and social studies, as well as poetry, which is an area that needs further curricular development in the Benchmark Literacy (2014) curriculum.

The six-week unit will be incorporated into my daily reader's workshop lessons or science/social studies lessons with students. Oral reading records (ORR) will be completed on all of my students at the end of the teaching unit to determine their independent reading level. I will also compare NWEA MAP scores prior to instruction and at the conclusion of the project. This will provide data that will determine whether or not instruction was effective with students. To further understand how this project will be organized, a timeline of events is included in the next section.

Timeline

The six-week unit that is created is based on the Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007). Each unit, according to Kelley and Clausen-Grace (2007) can last up to six weeks and focuses on using one metacognitive strategy, which the teacher will determine. It is possible to complete all of the metacognitive strategy lessons within one school year, otherwise the teacher may choose to use only those strategies which students may need additional support with. Lessons are focused around the metacognitive strategy of visualizing and include cross-curricular lessons in science and social studies as well as poetry. My project began in the fall of 2018 as I continued to refine Chapters One and Two of my project.

Phase one, two, and three of the UbD process (Wiggins & McTighe, 2011) began in the months of February, March, and April 2019. In these phases the desired results of my lesson plans were established, formative and summative assessments that match student goals were created, and the learning plan along with student activities were written. In late April feedback was utilized to complete my final project. Once the project

was completed Chapter Four was drafted and feedback was used to complete a final draft. Finally, in early May 2019 my project was submitted.

To summarize the findings of my project, a professional development presentation was developed that provided an overview of teaching metacognition in the classroom setting and guidance on how to implement the Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007) to teach a particular strategy in any classroom. This presentation was shared with colleagues at my grade level and school to help others incorporate metacognitive teaching strategies throughout content area lessons and strengthen students' knowledge in how to use these strategies independently.

Conclusion

In this chapter, two important frameworks were presented to complete the curriculum design: the Understanding by Design (UbD) Framework (Wiggins & McTighe, 2011) and the Metacognitive Teaching Framework (MTF) (Kelley & Clausen-Grace, 2007). The research setting and participants in this project were clarified, an overall description of the project was given, along with a timeline of project completion, including how my research information was shared with other colleagues. Through the completion of this project, my research question was answered: *Does the use of metacognitive strategies contribute to increased reading comprehension?*

In Chapter Four, a personal reflection on my overall project will be provided, including what has been learned through its creation. Next, Chapter Two will be revisited and reiterate the importance of the literature review, including influential work that was incorporated into my project. Then, potential implications and limitations of my project

will be brought forward. Finally, I will provide my recommendations for future research work, communication of the results of the project, and a review how this research may be of benefit to others.

CHAPTER FOUR

Conclusion

In Chapters One through Three a thorough review of my research question: *Does the use of metacognitive strategies contribute to increased reading comprehension?* was completed. Chapter One provided an overview of my personal and professional context and specific rationale for teaching metacognitive strategies in the classroom across the content areas. A general overview of the organization of this project was also provided in Chapter One. In Chapter Two a review of the current literature on teaching metacognition was explored and the importance of including these strategies across content areas emerged. The benefits of metacognition, specific teaching structures, and cross-curricular integration were all highlighted during the literature review process. In Chapter Three the key teaching frameworks that guided this project were explained in depth, including the Understanding By Design Framework (UbD) (Wiggins & McTighe, 2011) which served as an organizational tool for the unit plans that were created. During the curriculum development process in this project, the Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007) was highlighted and lessons plans were established based on this framework. This chapter also provided information regarding the research setting and participants, assessment process, and a general timeline of how this project will be implemented in the classroom setting. Next, in Chapter Four, I explore what I have learned during the completion of my capstone. I also revisit my literature review and highlight specific resources that were particularly influential in the completion of my capstone. Implications and limitations of my project are explored and other future

research in the area of metacognition is recommended. Communication of my project results and benefits of my project will be highlighted as well. Finally, I provide an overview of Chapter Four and revisit my research question.

Capstone and Literature Review Reflection

In reflecting back on the capstone process, I found that I really enjoyed researching and finding information that would contribute to my literature review. When I began, I had a lot of questions about what was the best way to teach metacognitive strategies to students, but by the end of my review, I found that I had a better understanding of how to effectively teach metacognitive strategies and the overall benefits of the inclusion of teaching these strategies to students. I am looking forward to sharing my findings with other teachers and providing key resources that will allow them to make teaching these strategies not something that they only integrate into reading lessons, but lesson plans across all subject areas. In completing the project portion of my capstone, I was excited to incorporate what I had learned from my literature review into my lesson plans.

I found that as I completed my UbD (Wiggins & McTighe, 2011) unit plans, I was able to thoughtfully weave together lessons that would be beneficial for my students and colleagues. I chose to use my district's current reading curriculum, Benchmark Literacy (2014), as a basis for lessons, but I included other critical elements from my research in the lesson plans as well. When completing my unit plans, I realized just how important it was to complete the literature review portion of my paper prior to actually completing the project. The literature review portion was highly influential in how I decided to complete

the project portion of my capstone and helped me formulate ideas of what was critical and needed to be included as part of my project. As I completed the literature review portion of my paper, there were many important connections that I was able to make, both to my school's current curriculum and the use of these strategies across grade levels.

As I began my research during this capstone process, I was eager to explore a question that I had held for many years regarding the importance of metacognition in teaching. I was also able to uncover gaps in my school's current reading curriculum (Benchmark Literacy, 2014) and discovered that there are many other opportunities to enhance this curriculum through cross-curricular connections. I found through my research that metacognitive strategies can easily be incorporated into content areas, but must be intentionally and thoughtfully incorporated into lessons to ensure that students have opportunities to use them. I chose to focus on incorporating metacognitive strategies into the cross-curricular areas of science and social studies, which I felt had natural connections to teaching metacognitive strategies with students. I also knew that another area which was lacking in my school's curriculum was poetry, so I intentionally incorporated lessons on poetry into my project. As I began my research in these particular content areas, I began to notice that there were many ways to easily integrate metacognitive strategies in a cross-curricular manner and that these particular strategies could be used at all grade levels, not just at the elementary level.

I was surprised to find through my research that metacognition has significant importance in both elementary and secondary classrooms and that secondary teachers are using these strategies to improve comprehension in their classrooms with students. I also

found through my research that much of the instruction in metacognition is based around discussion with students and helping them verbalize how they are using these strategies to help them understand what they are reading and strengthen their comprehension skills. One of the frameworks in particular that influenced my research work was the Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007). This framework in particular I felt taught all metacognitive strategies in an easy, scaffolded manner to students and provided ample time to practice these strategies prior to students using them independently. I also found that the framework was very beneficial to educators that want to incorporate these strategies into the balanced literacy block of time that they have available in their classrooms. Although I did find the Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007) beneficial, I also thought that there could be some potential limitations and implications educators may face when implementing this framework in their classrooms.

Limitations and Implications

When using the Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007), it is assumed that most educators are completing R⁵ (read, relax, reflect, respond, and rap) during their regular balanced literacy block of time, which is typically 90-minutes long. R⁵ can last anywhere between 20-40 minutes, depending on the teacher's preference. The first 30-minutes of a balanced literacy block is typically devoted to an interactive read aloud and/or whole group mini-lesson. This is then followed by a 60-minute block of time where students are engaged in guided reading, independent reading, and word work activities. The teacher will work with small groups

of students during this time in guided reading groups. This leaves very little time for teachers to work with students specifically on R⁵. If teachers are willing to use the Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007) in their classrooms, they will need to more than likely alter their typical schedule to include the teaching of specific metacognitive strategies.

When altering the balanced literacy block, teachers will have to carefully think about the implications that they will encounter when trying to manage adding another additional element to their balanced literacy block. Often school districts require that certain elements must be included as part of a typical balanced literacy block, for example, guided reading must be taught weekly. There may be some days where there could be more flexibility to alter schedules, based on the requirements of the school district. Teachers who are serious about implementing these strategies may want to carefully think about how these strategies can be integrated into already existing curriculum or how the balanced literacy block can be altered to accommodate these additional teaching units without ignoring the requirements that are already in place for them regarding district balanced literacy expectations. These limitations and implications also contribute to my ideas about related research that should be completed on teaching metacognition in the classroom as well.

Further Study

After gaining a better understanding of how important teaching metacognition is in improving student comprehension, I am now interested in learning more about how to alter my balanced literacy reading block to include more metacognitive teaching

opportunities for students. Since R⁵ is meant to be implemented all year-round with multiple metacognitive strategies, I want to know more about how this could be altered to fit the 60-minutes that I have available to work with students during their guided reading and independent practice time. One of my unit plans also includes an introduction to literature circles. I am interested in researching when would be the best time to include these as part of my balanced literacy block to ensure that students are engaged in a variety of opportunities to use the metacognitive strategies that have been taught.

I have completed as part of this project unit lesson plans that engage students in the metacognitive strategy of visualizing, but there are other metacognitive strategies that could be studied in depth as well which are a part of the Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007). These metacognitive strategies include: predicting, questioning, summarizing, and making connections. Further study and careful considerations must be made when forming lesson plans across the content areas for these particular strategies. Next, in the conclusion I will discuss my overall project results and the benefits of my research to the teaching profession.

Conclusion

Based on the results of my project, teaching metacognition in the classroom does lead to increased comprehension for students. I found that teaching metacognitive strategies based on my school's reading curriculum (Benchmark Literacy, 2014) recommendations is a great way to begin teaching metacognition, but to truly develop these strategies so students use them independently, they should be incorporated into cross-curricular topics as much as possible. Now that I have begun the process of

integration of these strategies, my co-workers and other teaching professionals that are interested in using these strategies with their students will have a better understanding of how to effectively teach metacognition in the classroom across all subject areas. This information will be presented to all staff in the form of a Google Slides presentation that will give an overview of the completed research and project highlights. I expect that once students have been introduced to all metacognitive strategies in the classroom by their teachers that there will be increased overall comprehension for all students, regardless of the grade level that these strategies are used with.

In this chapter I reflected on the overall capstone process and how I grew as a researcher and writer during the completion of this project. I also took time to revisit my literature review and found connections to other areas of education, including teaching metacognition to all students in grade K-12 to increase overall student comprehension. I was also clear about specific limitations and implications in this project, including allocating specific time set aside to teach all elements of this project. Finally, I made suggestions about what further research could be completed to enhance the overall results of this project, including completing unit plans for other metacognitive strategies that are a part of the Metacognitive Teaching Framework (Kelley & Clausen-Grace, 2007). In summary, this capstone project provided much reflection on the inclusion of metacognitive strategies in the classroom, strong evidence to support these teaching strategies, and a variety of teaching materials across content areas to answer my research question: *Does the use of metacognitive strategies contribute to increased reading comprehension?*

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