Instructional Strategies in Adolescent Literacy: The Process Sixth-Grade Science Teachers Use to Integrate Strategies during Instruction, and How Their Students Utilize Them

by

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Abstract

Instructional strategies are important components for facilitating active engagement in reading text. This comparative case study sought to determine what instructional strategies three sixth-grade science teachers used, and how these teachers planned for, used, and scaffolded the instructional strategies in their classrooms to facilitate adolescent literacy. The study also examined how sixth-grade students in these three classes used instructional strategies collaboratively and independently. Participating teachers used, largely, the same instructional strategies in their classrooms. A variety of factors influenced planning decisions. Teachers used combinations of collaborative and independent reading, writing, and questioning instructional strategies during instruction to facilitate adolescent literacy. A variety of scaffolding was used to assist students in learning how to use the instructional strategies. Students mimicked their teacher's use of the taught strategy when using one collaboratively or independently, with little deviation. Though there were differences among the three participants and their students, it is interesting that striking similarities were found among the three classrooms in how instructional strategies were used and scaffolding was provided. While the results of this study are in line with Brinkmann and Kvale's (2015) miner and journeyman concepts, more research is warranted to determine if the similarities reported in this study are common across other elementary and secondary sixth-grade classrooms, and if these strategies used produce strong results in students' better comprehending texts.

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"I can do all things through Him who gives me strength." Philippians 4:13

War Eagle!!!

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CHAPTER 1. STATEMENT OF THE PROBLEM

Since 1960, literacy has become much more complex than merely reading a text. A literate individual can read, write, and communicate effectively (International Literacy Association [ILA], 2015). Becoming literate is a process; therefore, students need strategies to assist them in developing the skills possessed by literate individuals. In the International Literacy Association (2012) position statement, they postulated the need for adolescent literacy.

Due to the ever-changing modes of communication of texts, the position statement of ILA was updated to reflect the flexibility of learning among adolescents. According to ILA, adolescents should be able to read texts that are paper based, talk about texts with a variety of audiences, ranging from peers to world-wide audiences, and interact with texts across disciplines in a variety of methods (p. 2). The definition of a text is important for classroom teachers and researchers today, as a text no longer refers to a book, article, or other document that is only paper-based. "Texts" refer to the print form of a work being read or studied, and can be paper or electronic based. Texts are not merely defined by books and the print on the pages; text can be represented on the internet, text messages, and games. Though the ILA recognizes that texts are presented in a variety of formats, the current study will focus on print-based texts.

Students struggle to meet proficiency in reading, based on assessments currently in place, such as Standardized Testing for the Assessment of Reading (STAR), Aspire, National Assessment of Education Progress (NAEP) reports, and standardized tests associated with statewide assessment. To address the struggle to meet reading proficiency, one school, which

was the inspiration for the current study, implemented an Intervention/Enrichment (IE) program. The administrators and teachers at this school were keenly aware of the struggle, based on qualitative classroom observations, such as the ability to answer level 1 questions (basic recall), as well as quantitative data, such as the locally administered STAR test reports and ACT Aspire national assessment results. Based on NAEP, Aspire, and other state department data sources (Alabama State Department of Education, 2015; Mississippi Department of Education, 2015; Tennessee Department of Education, 2015; U.S. Department of Education, 2013), students' proficiency on high stakes tests in the English Language Arts and Reading areas have much to be desired. A range, depending on the test (national or state), of 35–57% of students scored at a proficient level in reading. In Alabama, sixth-grade students scored an overall 42% proficient or advanced on the 2014 ACT Aspire in reading. In Mississippi, 56% of sixth-grade students scored proficient or advanced on the statewide assessment, Mississippi Curriculum Test, Second Edition, in Language Arts. Tennessee sixth-grade students scored a total of 57% proficient on the Reading Language Arts test of the Tennessee Comprehensive Assessment Program (TCAP). Based on 2013 NAEP results, 35% of fourth-grade students that participated in the assessment on a national level scored proficient or above on the reading subtest, whereas 36% of eighth-graders scored proficient or above. The NAEP results are fairly consistent, dating back to 1992, where 28% of fourth-graders and 29% of eighth-graders scored proficient or advanced in reading, and in 2011, 34% of fourth-graders scored proficient or advanced in reading, where 33% of eighth-graders scored proficient or advanced on the NAEP reading test. In Alabama, the 2011 NAEP report indicates that 32% of fourth-grade students and 26% of eighth-grade students scored proficient or above. In 2015, that percentage for Alabama students in fourth-grade decreased to 29% and remained stable at 26% in eighth-grade (Students First, 2015). The results

are indicative of a problem, as they demonstrate that students struggle to meet proficiency in reading, particularly as it pertains to state and national assessments.

Instructional and reading comprehension strategies have demonstrated promising results in facilitating student thinking about various texts of study across content areas (Benjamin, 2007; Fisher, Brozo, Frey, & Ivey, 2015; Schorzman & Cheek, 2004). Schorzman and Cheek (2004) attested that instructional strategies for teaching comprehension have yielded positive results in developing understanding in students. Benjamin (2007) described the notion of learning being an active process, which requires that students have time to process and interact with texts in meaningful ways. Fisher, Brozo, Frey, and Ivey (2015) described how they spent most of their careers examining how adolescents learn to read and stated "every teacher needs to use instructional routines (the word routine was chosen, as opposed to 'strategy') that allow students to engage in all of these (reading, writing, speaking, listening, and viewing) literacy processes" (p. 1).

Many schools have taken various steps to address the problem of reading proficiency in their student populations. One example of a way schools have addressed the proficiency in reading problem is through intervention groups for struggling students. This study was developed as a result of an "Intervention/Enrichment" program that was piloted at a middle school in the southeastern United States. Students labeled as "At risk" by administrators, based on the results of a locally administered test called "STAR," were assigned to reading intervention groups. The "IE" groups met four mornings per week, for thirty minutes per meeting. Teachers taught students instructional strategies to use when reading texts, specifically informational texts, which are complicated. The instructional strategies were taught to give students a strategy to assist them in making meaning of the texts. Teachers were also asked to incorporate the

strategies taught into their content area instruction. Though teachers may or may not use similar instructional strategies in their content area instruction, this study examines how teachers use a variety of instructional strategies in their content area science classes to foster adolescent literacy, and how students use those strategies collaboratively and independently.

Conceptual Framework

This study is framed around three major theories. First, Rosenblatt's (1991, 1994) transactional theory will be related to adolescent literacy. Second, cognitive learning theory (Fang, 2012; Winstead, 2004; Woolfolk, 2016) will be addressed, and the role it plays in how students learn. Finally, active learning theory (Bennice 1989; Drew & Mackie, 2011; Gillis & MacDougall, 2007) will be the backbone of this study.

Transactional Theory

> Teachers need constantly to remind themselves that reading is always a particular event involving a particular reader at a particular time under particular circumstance. Hence, we may make different meanings when transacting with the same text at different times. And different readers make different defensible interpretations of the same text. (Rosenblatt, 1991, p. 445)

Louise Rosenblatt was credited with expounding the transactional theories of Dewey and other "transactional" psychologists. Rosenblatt (1994) described the relationship between the reader and the text as a transaction, where meaning of the text is made based on their interpretations of the text at the time, and those interpretations can change over time.

According to Rosenblatt (1994), the text "may be thought of as the printed signs in their capacity to serve as symbols" (p. 12). The text contains symbols, but these symbols help to activate the reader's response to the symbols on the page. The symbols "point to these

sensations, images, objects, ideas, relationships, with particular associations or feeling-tones created by his past experiences with them in actual life or literature" (p. 10). In this quote, Rosenblatt explained how the reader creates a response to the text based on their experiences, and the response to the text could be different based on the time and place one is at in their life as they read the text – that is, meaning can change from time to time of reading a text.

Rosenblatt (1994) proceeded on to describe transaction by stating "transaction designates, then, an ongoing process in which the elements or factors are, one might say, aspects of a total situation, each conditioned by and conditioning the other" (p. 17). Essentially, the transaction between reader and text occur during reading of the text, when the reader intakes the symbols on a page and it transacts with past and present experiences. Meaning is then made from the text.

Transactional theory is pertinent to this research project because reading is "transactional," in that each student will interact with a text in different manners. Instructional strategies have the potential to encourage students to interact with texts in a variety of ways, which could change from one reading to the next, in association with the same text. Oftentimes, instructional strategies are collaborative. Collaborative instructional strategies in adolescent literacies encourage transactions with the text that can be unique to each student. When those transactions are shared, students can, then, interact with the text with a new perspective, considering the thoughts of other students, allowing the individual to make meaningful connections to the text, and further comprehend the content.

Cognitive Learning Theory

Cognitive learning theory is a branch of educational psychology that deals with how people learn, and became a highly researched phenomenon in the 1960s. Fang (2012) described cognitive psychology as "a branch of psychology that studies how people perceive, understand,

think, reason, remember, and learn" (p. 103). Fang further described cognitive strategies as systematic methods students use to help them remember information gained from texts or other sources. Winstead (2004) included in her explanation of cognitive theory that the teaching and learning occurring is student-centered. The teacher's primary role is to serve as a facilitator, scaffolding learning experiences and strategies.

The cognitive learning theory is often compared to a computer system, or information processing system. Essentially, new information, or input, is entered into sensory memory, where that information is coded as information to be stored or ejected. From there, it moves to either working memory, if it is being used at the current time, or long-term memory, to be stored for later use. The new information inputted, should it be stored, can alternate between working memory and long-term memory. Stored information can be moved from long-term memory to working memory, should it be needed for use, then moved back to long-term memory (Woolfolk, 2016, pp. 292–293).

Cognitive theory is essential to this research, as it provides a basis for learning strategies. It is important to understand how the newly acquired strategies are taught, stored, and used. The teacher plays a critical role in the facilitation of the new strategies to aid adolescents in learning new content. Cognitive learning theory paved the way to the constructivism movement and social cognitive theory.

The theory of constructivism describes how children make meaning, or construct meaning, of the world around them. In the context of this research, students will be constructing knowledge about a text they are reading, as it pertains to science content. Piaget (1969) described four stages of development in his research. Adolescents fall under the "formal operations" final phase of development in Piaget's theory, but he recognizes there is a

preadolescent phase between concrete operations and formal operations. These students are able to think and reason beyond the concrete, but still require some scaffolding for higher levels of thought. Constructivism is essential, as it pertains to this study. First, students will use strategies to make meaning of texts, and to learn more from them. Also, students will require the scaffolding to use the strategies being taught.

Albert Bandura is credited with developing the social cognitive theory. Bandura (1988) explained in social cognitive theory there are causes to learning, such as environmental factors, behavioral factors, cognitive factors, and other personal factors. He went on to explain how modeling (scaffolding) is a major factor in learning development. He stated, "Modeling is the first step in developing competencies" (p. 276). He described the process that embodies this modeling as a way to break down complex skills into smaller parts, learning the smaller bits, then recombining them with the more complex skills. This is relevant to the current research insofar as teachers will be modeling strategies for students to use to help develop literacy skills.

Metacognition is an integral component of the cognitive learning theory. It focuses on "thinking about thinking" (Serra & Metcalfe, 2009, p. 278). Brown (1987) stated, "Metacognition refers to understanding of knowledge, an understanding that can be reflected in either effective use or overt description of the knowledge in question" (p. 65). Metacognition involves thinking about learning processes, the planning and monitoring of learning, and the evaluation of that learning (Baker & Brown, 1984; Chamot & Kupper, 1989; Oxford, 1990; Pintrich, 1999). Flavel1 (1999) discussed metacognition in children in terms of a student's awareness of their thinking, knowledge, and strategies they use to help them develop their own thinking processes. Metacognition assists children in controlling their thoughts and knowledge through awareness. Flavell (1987) also suggests that teachers can facilitate metacognitive

awareness in their classrooms, and frequently do. Teachers expose students to strategies that facilitate awareness of cognitive processes. The significance of metacognition to the research study is twofold. Teachers are asked to be metacognitive about their planning process, being asked to articulate what they are planning for activities, and even why they chose specific strategies with texts. Also, students, when interacting with texts, using specific instructional strategies, are promoting a level of cognitive awareness, or metacognition.

Active Learning Theory

Active learning theory relates directly to students participating "actively" in their own learning process. Drew and Mackie (2011) defined active learning as learning that "requires learners to make decisions and think in an active manner" (p. 456). They went on to describe that the learning process is composed of many elements, which include building on prior knowledge and experiences, reflection, and social interactions. Bennice (1989) defined five key principles in active learning theory. However, three of these principles are quite important to the study at hand. First, students are active, not passive, in their own learning. This theory assumes some level of student intrinsic motivation. Secondly, the learning is student-centered, as opposed to being teacher-centered. Finally, Bennice stated the student and the teacher would learn from each other in the active learning theory.

Gillis and MacDougall (2007) explored the parallels between active learning reading and science instruction. They found the two corresponded closely in strategically teaching active learning lessons. Essentially, they described three parts to the lesson. For science, they coined the introductory section of the lesson "exploration," the middle, or meat, of the lesson "concept invention," and the end of the lesson "application" (p. 46). For reading, Gillis and MacDougall described the three parts of the lesson as "preparation, guided and scaffolding, and reflection"

(pp. 46–47). The exploration/preparation portion of the lesson engages students, catching their interest in the topic or text to be studied. It activates their prior knowledge, or sets a purpose for learning. The concept invention/guided and scaffolding portion of the lesson is where students learn the content being studied. It is noted this is the component of the lesson described as "teaching and learning" (p. 46). Finally, the application/reflection piece of the lesson taught requires students to use the new information gained in the previous phase to solve problems, or to reflect on their own learning. In true active learning, teachers spend time planning and preparing lessons, so the lessons are student-centered and require the students to take responsibility for their own learning.

Scaffolding during instruction is a concept Lev Vygotsky described at length. Students have a developmental level that they are actually working on, but they can learn and grow past their current level. The zone of proximal development refers to the "distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 85). Teachers help students reach their full potential level through scaffolding. They facilitate student learning and engagement through the strategies used during active learning. Vygotsky further explained students "imitated" what was being taught in the classroom by the teacher or a more capable peer. He described how students could only mirror that of what their potential level of learning was capable, meaning this zone of proximal development could only be stretched to the ability of the student. This level is different for each individual learner. Though there are limits to the reach of a student in their potential learning at a given time, Vygotsky (1978) acknowledged that students are more likely to increase learning at a greater rate with the aid of adults or more knowledgeable peers than they would

individually. Vygotsky's research is significant to the current research as active learning involves working collaboratively with others, working with differentiated groups, and using tools, such as graphic organizers, which could potentially be beneficial scaffolds for student learning.

In conclusion, this research study is based on three major theories: transactional theory, cognitive learning theory, and active learning theory. Rosenblatt (1994) explained reading is a transactional process between the reader and the text. Readers make meaning of texts, and those meanings can change with repeat readings of a given text. Cognitive learning theory explains how students learn and process information and it paved the way for social constructivism. Due to the advances in cognitive learning theory, active learning theory was developed, and is the major theory of this framework. Active learning theory asserts learners take an active role in their own learning process, and are not merely passive observers. It also allows for collaboration and interaction with peers, which facilitates higher level learning experiences. All three of these theories are critical to the framework of this research.

Purpose of the Study

This study sought to determine the instructional strategies used by teachers to promote adolescent literacy in their content area classrooms. Adolescent literacy describes the ability of middle to upper grade students, approximately aged 12–18, to read and interpret texts across disciplines and content areas (International Literacy Association, 2015).

This study examined how sixth-grade science teachers purposefully plan for the use of instructional strategies to promote adolescent literacy, how these strategies are integrated during instruction, and how modeling and scaffolding is used to teach strategies. Since these strategies directly impact adolescent students in their learning process, this study sought to determine how

students used the strategies taught during instruction in collaboration with others, and independently.

Research Questions

1. What instructional strategies did sixth-grade science teachers incorporate into their daily instruction to facilitate and support adolescent literacy?
    a. How did sixth-grade science teachers intentionally plan for the use of instructional strategies?
    b. How did sixth-grade science teachers implement the use of instructional strategies?
    c. How did sixth-grade science teachers model and provide scaffolding for the use of instructional strategies to support adolescent literacy?
2. How did sixth-grade students use instructional strategies in both collaborative and independent practice?

Significance of Research Contribution

There is no denying the struggle American students have with reading and comprehending texts. There are many data sources from various state departments of education websites (Alabama State Department of Education, 2015; Mississippi Department of Education, 2015; Tennessee Department of Education, 2015; U.S. Department of Education, 2013) which point directly to the dire nature of the struggle elementary and adolescent students, and beyond, face in the reading domain, particularly in the southeastern United States (Alabama State Department of Education, 2015; Mississippi Department of Education, 2015; Tennessee Department of Education, 2015; U.S. Department of Education, 2013). For example, in the state of Alabama, ASPIRE Reading results (2015) for the 2013–2014 academic calendar year indicate

only 42% of students in Alabama meet or exceed reading standards. According to the Mississippi Department of Education (2015), approximately 56% of students scored proficient or greater in the area of Language Arts, which includes reading. The Tennessee State Department of Education (2015) reported approximately 57% of sixth-grade students tested scored proficient or above on the Tennessee Comprehensive Assessment Program (TCAP) test in English Language Arts for the 2012–2013 school year.

According the U.S. Department of Education, the 2013 NAEP Reading Assessment for fourth-graders indicated approximately 65% of the 190,000 fourth-graders tested scored at a level of *Basic* (33%) or *Below Basic* (32%). The term basic, as defined by NAEP, means only a portion of the skills deemed necessary for success in reading have been met. Kaiser and Kaiser (2012) summarized U.S. Department of Education (2008) statistics by making at least two assertions about adolescent literacy: "Sixty-eight percent of eighth-graders fall below the proficient level in their ability to comprehend the meaning of texts at their grade level. Reading ability is a key predictor of achievement in mathematics and science" (p. 9).

Though this study examined sixth-grade students, it is important to observe the trend across the grade levels. Based on state and federal data, reading is a struggle, which ranges from intermediate elementary aged students to late middle school aged students. Though NAEP does not examine sixth-grade students, sixth-grade falls in between fourth and eighth-grades, and the trend, based on state data cited above, holds true for sixth-graders in the struggle to meet reading proficiency. The low scores on state assessments, such as the ACT Aspire, indicate students need strategies for reading complex texts and making sense of them. A variety of instructional and reading comprehension strategies have shown promise in assisting students in developing the skills they need to decipher difficult texts.

Another significant contribution of the research is this project was designed to demonstrate how a selected group of science teachers use instructional strategies to facilitate adolescent literacy. This has become of utmost importance, based on the data regarding reading test scores. Adolescent literacy encompasses much more than reading. However, the data available indicated there was a problem in the specific area of reading. This study examined how teachers addressed adolescent literacy and scaffolded strategies to teach students to interact with content and texts.

A final research contribution was a close look at how a selected group of sixth-grade students used instructional strategies to interact with content and texts. First, the research indicated how students worked collaboratively, providing insight into their conversations and thoughts as they used and applied instructional strategies to make sense of content. Next, this research provided data regarding the transfer of the use of strategies to independent practice. It addressed if students used the strategy during independent practice, and if so, how they used it, questioning if students use the strategy as the teacher modeled and scaffolded, or if they modified the use of the strategy during independent practice.

This provided great insight for the research community, as well as teacher practitioners, on how teachers purposefully plan for the use of instructional strategies and use these strategies to promote adolescent literacy, as well as how students process the strategies and use them, both collaboratively and independently.

CHAPTER 2. REVIEW OF LITERATURE

Introduction

In 2013, 45 states adopted the Common Core Standards, or variations almost identical to the Common Core, and, as of 2016, 42 states implement these standards (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). With the adoption of the Common Core State Standards in literacy, content area instruction was significantly changed nationwide. Instructional standards, known as "Anchor Standards" in the state of Alabama, extend from kindergarten to 12th grade students, with an emphasis placed on reading and comprehending increasingly more complex texts (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010).

According to Fisher and Frey (2015), complexity of text is determined based on three factors: quantitative factors, qualitative factors, and the relationship between the reader and the task to be performed. The quantitative factors include a formula which provides a calculation, taking into account sentence length and unusual words in texts, while qualitative factors include more subjective indicators, such as the understandability of the language used, and the underlying meaning of the text. The relationship between the task and the reader mainly refers to the amount of scaffolding students will require to read the text and complete a given task.

The shift in course of study standards for the states and the more rigorous requirements placed on students is significant. Elementary and adolescent learners are asked to perform tasks involving increased rigor in their ability to decipher meaning of a text. As students emerge from

elementary and middle schools towards high school and college, they are expected to be able to read and make sense of difficult, complex texts. As young adults enter the workplace, they are expected to be able to read for functional and informational purposes, and perform as valued members of a team (Common Core Standards Initiative, 2015).

Teachers require methods, strategies, and routines to teach, and students need a set of strategies to discern important information in texts of study due to this increase in rigor and student expectation set forth by the Common Core State Standards. Instructional strategies, used in conjunction with reading comprehension strategies to promote understanding of a text are a promising approach to promoting adolescent literacy (Benjamin, 2007; Fisher, Brozo, Frey, & Ivey, 2015; Schorzman & Cheek, 2004). Kuhn (2000) addressed levels of metacognitive thinking and the utilization of strategic instruction in cognitive development, and cited the example of text comprehension, among others. This is significant because the use of strategies by students to monitor comprehension helps students develop the ability to think metacognitively about how to monitor their own comprehension of complex texts. There is a plethora of instructional strategies available for student use, to assist them in understanding complex texts, and there are many adaptations of each of those strategies (Alabama Reading Initiative, 2013; Texas Education Agency, 2000; Benjamin, 2007). This section will provide a background on instructional strategies and reading comprehension strategies, though the focus of this study will be, primarily, on instructional strategies that can be applied to adolescent literacy.

Skills and Strategies

One of the many roles of teachers is to assist students in their journey to become literate adults. Literacy is a multifaceted concept which involves many actions. Literacy is defined as "the ability to identify, understand, interpret, create, compute, and communicate using visual,

audible, and digital materials across disciplines and in any context" (International Literacy Association, 2015). This means to be deemed literate, students must be able to proficiently identify important information, interpret it, and disseminate the gained information in multiple formats. To be a skilled, literate student, strategies are a productive method to assist students in the process of acquiring new information through a variety of texts and how to interpret new knowledge.

In terms of reading, skills and strategies are different, but there is not a clear consensus on the meaning of either. "There is a lack of consistency in the use of the terms *skill* and *strategy*, reflecting an underlying confusion about how these terms are conceptualized. Such inconsistency can confuse students and teachers and render instruction less effective" (Afflerbach, Pearson, & Paris, 2008, p. 364). Afflerbach, Pearson, and Paris (2008) elaborated on, in detail, the relationship between reading skills and strategies. They asserted skills occur automatically, and do not require the user to think about the process in which they are engaged, or to make any decisions. On the contrary, strategies are used as a result of conscious thinking and decision making. Afflerbach, Pearson, and Paris proceeded to express teachers need to be direct and explicit with their teaching, so students can learn to think metacognitively and learn how to read in a strategic manner.

Reading Comprehension Strategies

"The ultimate purpose of teaching comprehension strategies is for students to become independent readers, and to use strategies when they find them necessary to support comprehension" (Hughes & Parker-Katz, 2013, p. 96). According to Pilonieta (2010) comprehension strategies are "conscious, deliberate, and flexible plans readers use and adjust with a variety of texts to accomplish specific goals" (p. 152). They included the following

actions on the part of the reader "prediction, setting purpose, imagery, clarify comprehension, monitor comprehension, make inferences, summarize, story grammar, graphic organizers, and questioning (teacher and student)" (p. 165). The Texas Education Agency (2000) defined comprehension strategies as "conscious plans that are under the control of a reader, who makes decisions about which strategies to use and when to use them" (Texas Education Agency, 2002, p. 10).

According to Dymock and Nicholson (2010), a reading comprehension strategy is "a comprehension strategy that is a plan or technique used by students to get information they need from the text," and that direct instruction is needed to teach comprehension strategies (p. 166–167). McNamara (2007) described a reading strategy as one which "helped a reader to understand and remember more from a text in less time than it would take without using the reading strategy" (p. xii). She emphasized reading comprehension strategies took time to learn, initially. McNamara (2007) further defined these reading strategies as a "cognitive or behavioral action that is enacted under particular contextual conditions, with the goal of improving some aspect of comprehension" (p. 6). In 2009, McNamara stated the relationship between reading skills and strategies as, "strategies provide the means to tackle complex problems in more efficient ways and, with practice, the strategies lead to skills which become automatic and quick over time" (p. 34).

Strategies in reading demand active participation in the reading process, and they allow students to ownership of comprehension of a text. Keene (2008) stated,

> By using comprehension strategies, they (children) are actively manipulating their own thinking *in order* to understand more deeply. They are showing that understanding isn't

a fixed element – you either get it or you don't – rather, understanding is an outcome that can be manipulated, altered, and improved by using comprehension strategies. (p. 171)

Keene further explained teachers should challenge students to use higher level thinking through using rigorous instruction and comprehension strategies. Research has indicated teacher modeling of behaviors and strategies have been found to be the key to success (Miller & Veatch, 2010; Vaughn & Klingner, 1999).

Instructional Strategies

Instructional strategies, sometimes called "instructional routines" (Fisher, Brozo, Frey, & Ivey, 2015), are often used to facilitate reading comprehension. Schorzman and Cheek (2004) asserted, "the time has come for in-depth investigations of instructional strategies for teaching comprehension to middle school students has come" (p. 38). They contended teachers could do more to teach comprehension and strategies should be used to do so. Instructional strategies are deliberately planned strategies used before, during, and after instruction to assist students in gaining new information. They can be used with a variety of tools and materials, and include independent, cooperative, and collaborative work.

Miller and Veatch (2010) conducted a study in which Miller collaborated with Nancy Veatch, a sixth-grade teacher, to study how she chose and used instructional strategies to teach from a social science textbook. Recognizing many of her students did not have the skills to adequately read and comprehend the difficult text, Veatch developed a deliberate, strategic plan to utilize the social science textbook with her students. She strategically used "assessment, reflection, planning, and teaching/reteaching" (p. 154). As she shared her thought processes with Miller, Veatch made it apparent that knowledge of her students was a critical aspect of planning her instruction. She chose instructional strategies would serve her students best to meet their

individual needs. She used a variety of strategies to support learning before, during, and after reading over a period of two days, which included instruction in "vocabulary, fluency, comprehension, and motivation" (p. 157). Those instructional strategies and tools referenced in Miller and Veatch's work ranged from graphic organizers to cloze and choral reads, to collaborations and independent written summaries.

Frequently, instructional strategies include collaboration from teacher to student(s) or from student to student. Collaboration "is the action that fosters the sharing of an individual's knowledge with others in the group to achieve common knowledge convergence" (Draper, 2015, p. 110). Knowledge convergence is the goal of collaboration. Draper (2015) explained that in order to achieve this, critical thinking skills must be used.

The goal of modeling instructional strategies to promote adolescent literacy is that students will become aware of techniques strong readers use to help them make sense of complex text. This aligns with active learning theory in that students take an active part of their own learning process. They work with a text, actively, to learn from it, and often in a collaborative manner.

Instructional strategies can be grouped into three broad categories: before reading, during reading, and after reading. Strategies used before, during, or after reading can often be used interchangeably, depending on the purpose for use and the text of utilization. The Texas Reading Initiative (2002) described how skillful readers "construct meaning before, during, and after reading by using a set of comprehension strategies to integrate information from a text with their background knowledge" (p. 10). The Alabama Reading Initiative (2013) also held a similar perspective on how skillful readers construct meaning in the process of the three separate parts of a lesson.

According to Benjamin (2007), before reading, during reading, and after reading are each important aspects of a lesson in which students are engaged in learning to comprehend a text. In her book, she described each of these components. Though not explicitly stated, her work also aligns with active learning theory, as described in the theoretical framework. She described before reading strategies as those which set a purpose for reading. She went on to provide examples for how a teacher might preview a text to set a purpose, activating prior knowledge, so students could build background to better understand a text. Next, she described during reading strategies as those that "hook up with the before reading strategies to help the reader extract meaning from the text" (p. 107). She said, "During reading, readers need to be engaged in self-talk, which is called meta-reading…" (p. 107). Meta-reading is similar to metacognition, except students are thinking about reading as they read a text. Finally, she described the after reading strategies as a "wrap-up" (p. 141) of reading a text. Students complete activities that "create the link between the known and the new" (p. 157). After strategies allow student to demonstrate learning in a way that allows them to take ownership of the newly acquired information.

Instructional strategies are vast and varied. However, before, during, and after strategies have some commonalities. They all require the reader actively engage with texts. Students are required to actively read and think about the text being studied. For instance, in using a K–W–L, students activate prior knowledge, considering what they know about the subject at hand, considers what they would like to learn about the given subject, then, after learning, reflects on what they learned, synthesizing knowledge gained with prior knowledge. With using a paired read, students read a text with a partner, then discuss what they learned about the text, or even respond to questions. They are not passive readers, essentially, scanning words. Many of the strategies discussed and listed offer collaboration with peers when reading and learning from

complex texts. It is worth noting that research indicates effectiveness of strategies varies from text to text, and from student to student. Strategies should be chosen carefully for the text (Ortlieb, 2013). Examples of before, during, and after instructional strategies can be found in the figures below (see Tables 1, 2, and 3). This is relevant to the study as these are some possible expectations of instructional strategies could be observed to promote adolescent literacy in sixth-grade science classrooms, but can be used across many grade levels.

Table 1

Before Instructional Strategies

Anticipation Guides	Advance Organizers	Survey Techniques	Structured Overview
KWL	Circle of Interviews	Think Aloud	Predicting
QAR	Question Generating	Directed Inquiry	Quick Write
ABC Brainstorm	Five Word Prediction	Table Talk	Prereading Plan
Semantic Map	List-Group-Label	Knowledge Rating Scale	Entrance Slips
Quadrant Cards	Carousel Brainstorm	Think-Pair-Share	Preview and Predict
Brainwriting	Vocabulary Development	Interactive Notation to Effective Reading and Thinking	

Adapted from "Effective Content Reading Comprehension and Retention Strategies," by S. Thompson, 2000, *Texas Education Agency*, p. 2–19. Copyright U.S. Department of Education, and "Planning Strategic Lessons: A Step by Step Guide," by The Alabama Reading Initiative, 2013, *Alabama Reading Initiative's Plan for Adolescent Literacy (ARI-PAL)*, p. 2–41. Copyright Alabama Reading Initiative.

Table 2

During Instructional Strategies

Fishbowl	Annotation	Turn and Talk	Quick Write
Fist to Five	Flow Chart	Question Generating	Think Aloud
Reading Grid	Reciprocal Teaching	Socratic Seminar	Journal Writing
Predicting	Graphic Organizers	Say Something	Coding the Text
3-2-1	QAR	KWL	Predicting
ICE	Brainwriting	Cornell Notes	Cubing
X Marks the Spot	Job Charting	Margin Notes	Venn Diagram
T-Chart	Journal Responses	Frayer Model	Think-Pair-Share
Jigsaw	Think Aloud	Knowledge Rating	Q-Chart
ReQuest	Backwards Note Taking	Double Entry Journal	Three-Minute Pause/Review
Circle of Interviews	Carousel Brainstorming	Interactive Notation to Effective Reading and Thinking	Semantic Feature Analysis

Adapted from "Effective Content Reading Comprehension and Retention Strategies," by S. Thompson, 2000, *Texas Education Agency,* p. 2–19. Copyright U.S. Department of Education, and "Planning Strategic Lessons: A Step by Step Guide," by The Alabama Reading Initiative, 2013, *Alabama Reading Initiative's Plan for Adolescent Literacy (ARI-PAL),* p. 2–41. Copyright Alabama Reading Initiative

Table 3

After Instructional Strategies

Brainwriting	Study Guide	Circle of Interviews	Anticiption Guides
Directed Inquiry	Writing to Learn	Quick Write	Guided Writing
Graphic Organizers	Semantic Map	Frayer Model	3-2-1- Exit Slip
Magnet Summary	Discussion Web	Journal Responses	GIST
RAFT	Exit Slips	5-Word Reflection	Summarization
Knowledge Rating	KWL	Think-Pair-Share	Cubing
Carousel Brainstorming	One Pager	Interactive Notation to Effective Reading and Thinking	Paired Summarizing
ABC Brainstorm Reflection	Praise-Question-Polish (PQP)	Save the Last Word for Me	

Adapted from "Effective Content Reading Comprehension and Retention Strategies," by S. Thompson, 2000, *Texas Education Agency,* p. 2–19. Copyright U.S. Department of Education, and "Planning Strategic Lessons: A Step by Step Guide," by The Alabama Reading Initiative, 2013, *Alabama Reading Initiative's Plan for Adolescent Literacy (ARI-PAL),* p. 2–41. Copyright Alabama Reading Initiative.

Reading and Literacy

This study examined how sixth-grade science teachers use instructional strategies in their science classes to promote adolescent literacy. Some distinctions need to be made between content area reading, content area literacy, and adolescent literacy.

Content Area Reading and Content Literacy

According to Bryant et al. (1999), content area reading refers to "students interacting with text to interpret and construct meaning before, during, and after reading by using their prior

knowledge and the skills and strategies developed during early reading instruction" (p. 293). They further described that content area reading occurs in multiple subjects, including science, and the nature of the definition assumes students can read and understand expository texts in the content area.

Vacca, Vacca, and Mraz (2014) expressed that in 1990, the term *content area reading* was broadened to include language. They defined content area literacy as "the ability to use reading, writing, talking, listening, and viewing to learn subject matter in a given discipline" (p. 16). In the same work, Vacca, Vacca, and Mraz explained content area literacy included the use of learning strategies that support the five domains of learning with the utilization of texts.

The 2015 Revised Alabama Course of Study in English Language Arts is known as the "English Language Literacy for College and Career Readiness." In its basic overview, the domains included in the Course of Study are writing, speaking and listening, reading literature, reading informational text, and language. In addition, for kindergarten through fifth grades, there is a domain for reading foundations. It is expected that for students to be literate, they are proficient in the five domains. Reading standards for literacy were adopted in content areas, including social studies, history, science, and technical subjects, which mandated all teachers promote literacy in content areas.

Literacy encompasses many areas. In fact, the former International Reading Association changed their name to the International Literacy Association to reflect the significant differences in the terms *literacy* and *reading*. According to their website, the organization has changed and evolved over the last 60 years, and felt the term *reading* needed to be changed to reflect updates in expectations. They also feel "literacy is the primary foundation of all learning" (International Literacy Association, 2017).

Adolescent Literacy

Adolescent literacy refers to the ability of students in the middle to upper grades to become productive citizens as a result of their ability to "comprehend and construct meaning using print and nonprint materials in fixed and virtual platforms across disciplines" (International Literacy Association, 2012, pp. 2). To do this, these learners must be able to "read, write, understand and interpret, and discuss multiple texts across multiple contexts" (p. 2). The statement put forth by the National Council of Teachers of English (2007) indicated adolescent literacy not only includes content area literacy, but social situations, as well. Online media is included in adolescent literacy, as well as other forms of multimedia, including digital and nondigital media.

Instructional Strategies in the Classroom

Each reader brings unique qualities to the text he/she is reading. Thus, instructional strategies are diverse, to accommodate those exceptionalities among students. In addition to active learning theory, this relates to the theory of transactional reading. Since students bring unique qualities to the texts they are reading, each student will have a different transaction with the text being studied. It is important to gain an understanding of the instructional strategies teachers model and use in their classrooms because the strategies employed by teachers will be the strategies students learn and subsequently use, through scaffolded instruction or independent reading. Harvey and Goudvis (2013) stated,

> We don't teach strategies for a strategy's sake. We don't teach kids to visualize so they can be the best visualizers in the room. We teach our kids to think strategically so they can better understand the world around them and have some control over it. (p. 433)

To better understand what strategies students are using, it is necessary to know what strategies teachers are using and modeling with their students. Barry (2002), a professor charged with teaching a reading course to content area secondary major undergraduates, conducted a study in which she sent a survey to 550 former students, asking them which reading comprehension strategies they use in their own classrooms. Seventy-six percent of the surveys were returned, and 123 of the documents were utilized in the study. Of these, she found teachers who greatly varied in content areas and grade level taught, engaged in teaching a diverse palette of reading comprehension strategies. More than half of teachers that returned surveys reported they used instructional strategies, including "visual aids, analogies, graphic organizers, note-taking, writing to learn, study guides, vocabulary activities, anticipation guides, K-W-Ls and summarizing" (p. 139). Barry also reported all comments regarding the use of instructional strategies were positive, and the negative comments related specifically to the individual teacher's use of the strategy, such as the amount of time it took to teach and use a strategy.

Pressley et al. (1997) conducted a study of how 62 fifth-grade teachers, labeled "highly effective" in teaching reading by their supervisors, taught reading. They recognized much research had been conducted in the realms of whole-language learning and more traditional instructional methods, utilizing basal programs, but there was not a lot of research indicating what teachers actually thought or did. They surveyed these teachers twice, and found these teachers considered highly effective actually incorporate a variety of instructional strategies in

their teaching. It is worth noting that theoretical approaches to teaching were varied, and there was a combination of whole language approaches and traditional approaches.

Nichols, Young, and Rickelman (2007) conducted a study examining how familiar middle school teachers were with instructional strategies for reading and writing in the content areas, and if they chose specific strategies in favor of others. Though it was not explicitly stated, based on their comment "reading in the content area is seen as a process in which the construction of meaning occurs by the interaction of knowledge stored by the learner and the textual information the learner encounters" (p. 101), it is implied they used the theoretical framework of constructivism and active learning. This study also examined professional development opportunities for the middle school teachers, and how it was used to facilitate the use of instructional strategies in content area reading and writing. Nichols, Young, and Rickelman created a list of 62 strategies for the use in reading and writing in the content areas of language arts, math, science, and social studies. Teachers self-reported which one they used most often. Of this list, 39 reported using them at least a level "3" (Sometimes/Once or twice a month). Each content area teacher reported using a different strategy most often. To check this, the researchers conducted observations, and found what teachers reported and what they observed were consistent. Though the purpose of this study was to determine how professional development influence the use of instructional strategies in the middle school, the study examined what instructional strategies these middle school teachers reported using, which directly relates to the current study.

Fenty, McDuffie-Landrum, and Fisher (2012) investigated how Question-Answer-Relationships (QARs) were used to facilitate literacy in the content area in middle schools. QARs are an instructional strategy that encourages a student to find answers to questions, either

in their head or in the text. The authors provided a template for how teachers might use collaboration between special education teachers, general education teachers, and instructional/reading coaches to plan for and implement a lesson using this instructional strategy, which can be used across many content areas. Fenty, McDuffie-Landrum, and Fisher used vignettes about a special education teacher, Mrs. Hunt, who worked collaboratively to use the instructional strategy in middle school core content area classrooms, which included language arts, science, math, and social studies. The lesson progression included a scaffolded process, which, though not stated, utilizes Vygotsky's original scaffolding theories. The lesson examples included demonstrating an anticipatory set, to peak students' interest in the learning, modeling, which was done by the teacher, guided practice using the strategy with small groups, independently practicing the strategy, and closure, which was a conclusion of the lesson. The authors asserted the QAR strategy was a great way for students to interact with texts, and each other, as well as help struggling students gain maximum content in general education classrooms.

Fisher and Frey (2012) conducted a study on close reading in elementary grades K–6. They called close reading an "instructional routine" (p. 179), which is similar in meaning to what this study refers to as "instructional strategies." They called close reading an instructional routine because it is a strategy that can be used across grade levels and content areas. Close reading is defined as "an instructional routine in which students critically examine a text, especially through repeated readings" (p. 179). At the time of this article's publication in 2012, they asserted there had been multiple studies conducted on close reading in secondary grades, but not so much in elementary grades. To conduct this study, Fisher and Frey asked elementary principals in their group of focus to identify teachers that were classified as "highly effective."

Of those teachers, 14 were chosen to collaborate and participate in this study, a total of two in each grade level K–6. Ten (10) secondary teachers were chosen to participate, as well, for the purpose of comparing how secondary teachers use the close reading versus elementary teachers, and how the methods secondary teachers used close reading could be adapted to help elementary teachers use them in their classrooms. The key features they described for this close reading qualitative study were the texts had to be short in length and complex, in that they were "pretty hard and way above the independent reading level of most students" (p. 181), there could be limited preteaching and conversations to build background information about the text, the text would be read multiple times, and the questions asked by teachers had to depend on the text for students to answer. Fisher and Frey found several features that could be used in either elementary or secondary classrooms, such as complexity level of text should be difficult. They also stated rereading the text was beneficial for students, as was citing textual evidence to answer questions. However, there was significant disagreement on the issue of frontloading the text, or preteaching to build background knowledge. They also found that, though annotating the text was commonly used in secondary classes, many elementary teachers did not know how to adequately teach students how to annotate the text, as they lacked experience with using this strategy. At the conclusion of the study, they referenced Rosenblatt in consideration of "both the openness and the constraints" (p. 187) of using the strategy, and implied more research would be beneficial to further understand how using this strategy is beneficial to elementary students.

The Transfer of Strategies to Independent Learning

Ortlieb (2013) performed research on the use of anticipation guides in a sample of third grade students. He found those students that used the anticipation guides performed significantly better than those that did not. However, they inquired, further, in their study, asked the question

"Would students use the strategy of preparing an anticipatory guide in other content areas?" (p. 154). They found that, initially, in other content area classes, students did not use the strategy unless they were reminded. However, after a three-week period, the students were no longer reminded of the strategy. They found that 30% of students were able to take questions from a commercial resource for test preparation, and generated their own questions for an anticipation guide.

House (2008) examined the effects of instructional strategies with the performance of elementary-aged students for the 2003 Trends in International Math and Science Study (TIMSS) assessment. The TIMSS assessment examines student performance, at an international comparison level, in math and science. House stated there are many instructional strategies that could be used to increase science achievement. He went on to describe how "authentic learning strategies provide opportunities for students to make connections between real-world problems and information presented during classroom instruction" (p. 259), and went on to discuss the potential benefits of collaborative working environments. Though this study did not outline specific instructional strategies used during instruction, nor did it indicate how students used the strategies, it was determined students who reported using instructional strategies during lessons had higher test scores on the TIMSS, and that the same held true for those students who used collaborative strategies. This is in comparison to students that reported not using collaborative and other instructional strategies during lessons.

Summary

While there is a plethora of literature which describes instructional strategies across many content areas, and describes how instructional strategies could be used in many content area classrooms, there is very little literature on how teachers actually plan for, use, and scaffold

instructional strategies in their classrooms (Benjamin, 2007; Fisher, Brozo, Frey, & Ivey, 2015; Miller & Veatch, 2010; Schorzman & Cheek, 2004). Research demonstrated a few studies, quantitative in nature, where teachers self-reported use of strategies (Nichols, Young, & Rickelman, 2007; Pressley et al., 1997). There were even fewer studies conducted on if and how adolescents use instructional strategies independently and collaboratively. There were several studies which indicated how teachers might use one, specific strategy in their classrooms. Since there are significant gaps in the literature in regards to this proposed research study, the information collected and analyzed provided an insightful account of how this planning, use, and scaffolding process unfolded in the sixth-grade science content area classroom of three teachers (Fenty, McDuffie-Landrum, & Fisher, 2012; Fisher & Frey, 2012; Ortlieb, 2013). It is useful for the research community to understand how students actually use the strategies in their own learning.

Conclusion

Adolescents today are expected to process a variety of materials and information to be deemed literate. Instructional strategies can be used to assist students in processing information and texts before, during, and after reading. Since reading is transactional, and there is a relationship between the words on the page and the reader, the strategies help to engage students, actively, with the text being studied. Teachers can provide modeling and scaffolding to teach students to use strategies to better understand texts and assist them in using them. Research is limited on how students transfer the use of instructional strategies to independent use.

CHAPTER 3. METHODOLOGY

Purpose

The purpose of this study was to take a close look at how teachers make use of instructional strategies in sixth-grade science classrooms, in order to promote adolescent literacy. Given the nature of the struggle students have in reading and comprehending content area texts, and that instructional strategies have demonstrated promise in promoting adolescent literacy (Benjamin, 2007; Fisher, Brozo, Frey, & Ivey, 2015; Schorzman & Cheek, 2004), it is important to know how teachers go about implementing the strategies in daily use. The study addressed the following questions:

1. What instructional strategies did sixth-grade science teachers incorporate into their daily instruction to facilitate and support adolescent literacy?
    a. How did sixth-grade science teachers intentionally plan for the use of instructional strategies?
    b. How did sixth-grade science teachers implement the use of instructional strategies?
    c. How did sixth-grade science teachers model and provide scaffolding for the use of instructional strategies to support adolescent literacy?
2. How did sixth-grade students use instructional strategies in both collaborative and independent practice?

Research Design

I designed this qualitative study to capture the essence of what instructional strategies three, sixth-grade science teachers used to promote adolescent literacy, and how their students, in turn, used those strategies. According to Anderson (1987), the case study is a "research paradigm that emphasizes inductive, interpretive methods applied to the everyday world which is seen as subjective and socially created" (p. 384). Though teachers use instructional strategies differently in their classrooms, I predicted that similarities would exist between teachers' usage of instructional strategies, as well as that of their students. I sought to determine the ontology and epistemology of three scenarios, and to compare these realities amongst each other (Hatch, 2002).

I chose a comparative case study approach for this study. Hatch (2002) stated, "case studies are a special kind of qualitative work that investigates a contextualized contemporary phenomenon within specified boundaries" (p. 30). I examined teachers' and students' use of instructional strategies within the classroom setting. When using a comparative case study approach, more than one case is studied, and the purpose of doing this is to compare and contrast what is learned from the cases in the study (Bogdan & Biklen, 2007). Creswell (2013) coined this research as a collective case study. Hancock and Algozzine (2006) asserted collective case studies provide "insight into how people think and behave in a particular situation" (p. 33). I addressed that in this study at length.

I used grounded theory to interpret and report the results. According to Bryant and Charmaz (2007), grounded theory is an inductive method of qualitative research used to construct theory from data. Glaser and Strauss (1967) described grounded theory as a generation of theory that is a "systematic discovery of theory from the data of social research" (p. 3).

Grounded theory methodology involves a constant interaction between the data and the emerging theories.

Participants

The participants of this study were located at two middle schools in the southeastern United States. Three sixth-grade science teachers participated in this study to answer questions 1, 1a, 1b, and 1c. I observed and interviewed students of each individual teacher who provided insight and data, which led to the response to question 2. I observed approximately 150 students throughout the course of this study, but randomly selected students are highlighted in the results. The rationale behind choosing a minimum of two sites is that methods of using instructional strategies to promote adolescent literacy would vary in different settings, due to the nature of training and professional development provided to teachers on using instructional strategies. Each teacher provided a unique perspective on the use of instructional strategies in the science classroom setting.

Yin (2003) described why using multiple participants, or cases, would be beneficial to case study research design. He suggested, even though direct replication may not be possible, or desirable, there is the possibility of demonstrating similar results across two or more cases. He went on to describe when two or more cases are used, and produce similar results in specific areas, the case is made stronger. Conclusions that are developed as a result of this study will be more significant with two or more cases and sites, as opposed to just one case and one site. My study provided insights into what teachers did in terms of planning for, using, and scaffolding instructional strategies to promote adolescent literacy.

Within the state where I conducted this study, sixth-grade teachers can be certified in either an elementary or secondary educational capacity. Similarities and differences existed in

prior background knowledge as it pertained to planning and incorporating instructional strategies in content area adolescent reading and literacy. Finally, though the course of study standards are the same for all sixth-grade classrooms within the state, each and every system is unique in population, resources, and a variety of other attributes, such as teacher education, training, and background knowledge related to the topic and questions being studied. To best answer the questions above, it proved to be helpful studying three individual teachers at two site locations. All names of schools and participants referenced are pseudonyms.

Site 1: Village Middle School

The first site included two teachers from a public middle school in the southeastern United States. This middle school, referred to as Village Middle School, is housed in a suburban community in the southeastern United States. The community had a population of approximately 30,000 people (United States Census Bureau, 2014). The median household income (2009–2013) of this community was approximately $40,000, while 24.5% of the population was estimated to be below the poverty level. Village Middle School is the only middle school within the city school system. It is home to approximately 1,000 sixth, seventh, and eighth-graders. Nearly 300 of these students are sixth-graders. There were four sixth-grade science teachers at this school, and I chose two of them for this study. I chose one because she holds a secondary certification, while I chose the other due to her elementary certification.

The first participant, Mrs. Jill Morrison, was a certified elementary teacher with 25 years of total teaching experience. Although she only taught sixth-grade science and reading at the time of this study, she had, previously, taught third and fifth grade, as well. She had also instructed all core content area subjects of math, science, history and reading. In 2016, Mrs. Morrison was in her fifteenth year at Village Middle School, and had taught science for

approximately 10 years. Mrs. Morrison had engaged in numerous trainings on how to plan for and incorporate instructional strategies in lessons.

The second participant at Village Middle School was Mrs. Rebecca Gillman. Ms. Gillman was not originally certified within the state that is home to this study, but a neighboring state. She held certifications in middle school science, seventh through twelfth grade chemistry, and gifted education. At the time of this study, she had a combined total of 17 years of teaching experience within both public and private school settings. She had taught all grades ranging from sixth through twelfth grade. Mrs. Gillman had taught at Village Middle School for ten years, and has been teaching sixth-grade science for seven of those years. Mrs. Gillman had not received significant training in planning strategic lessons using instructional strategies.

Site 2: Harris Middle School

Harris Middle School was part of a rural, county school system that was home to approximately 10,000 students ranging from kindergarten to twelfth grade. Harris Middle School serviced students in grades five through eight, and had a student population of approximately 600 (Alabama State Department of Education, 2016). Approximately 150 of these students were in sixth-grade. A total of approximately 65% of the students at Harris Middle School were eligible for free and/or reduced lunch for the 2016–2017 academic calendar year (Alabama State Department of Education, 2016).

It is worth noting the county in which Harris Middle School is located had a total population of approximately 157,000. However, only about 65,000 of those lived within the county which serviced those 10,000 students in 14 schools. The remainder of the students within the population of the county attended one of two major city school systems. The median

household income in 2014 for the county was approximately $44,000 with a total of approximately 25% of families at or below the poverty line.

Mrs. Cathy Fowler was the teacher participant at Harris Middle School. Mrs. Fowler was certified in two areas. She had a master of special education and a certification in elementary education, kindergarten through sixth-grade, which was attained through taking the PRAXIS and meeting a few additional requirements. Mrs. Fowler had been teaching for a total of approximately 16 years, and had taught every grade of school, from kindergarten through twelfth grade. At the beginning of her teaching career, she taught high school science and health in her own classroom, but also pulled special education students out to assist them in developing math and reading concepts. In elementary education, she had taught both reading and science. She had been at Harris Middle School for approximately 12 years. She taught special education reading for the first six years, and subsequently taught science for seven years. She had attended numerous professional development opportunities that addressed using instructional strategies.

Data Collection

I began the study began with the recruitment of participants, which were ultimately located at two sites in the southeastern United States. Data collection took place over a period of fourteen weeks from August to November, 2016. I observed each participant for a total of ten weeks. Before the data collection process began, participants and students, along with their parents, signed an IRB-approved consent and assent form, which allowed me to collect the data for my study (see Appendix B). Initially, I conducted a consultation interview with each participant to learn about teacher's background in education certification, years of experience strategic teaching training, schedule, other basic information, and best times for interviewing and observations (see Appendix C). During the first two weeks of school, I visited each classroom

once to introduce myself to students, answer any questions they had about the study, and observe the classroom setting. I initiated data collection related to the research questions approximately two weeks after the start of the school year. Each week consisted of the following cycle: a pre-lesson planning interview with the teacher, an observation, and a reflective interview with the teacher. Also, as much as possible, I utilized direct observation of student interactions, as to not interfere with the learning environment, but at times,
individual or small group interviews took place during instruction (see Figure 1).

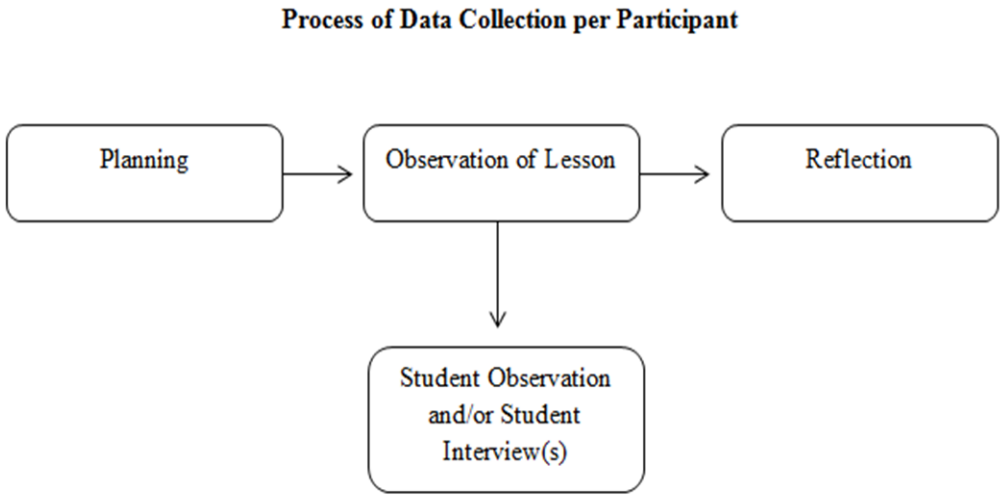

Figure 1. Process of data collection per participant throughout the ten-week planning, observation and reflection period of the research study.

Data collection tools used included teacher and student interviews, direct classroom observations, audio/video recordings of student and teacher activity, and photographs recording student or teacher activities. Each week, I collected data. I transcribed teacher planning and reflective interviews. I employed a variety of data collection tools to address concerns about

credibility and trustworthiness, and to triangulate data (Berg & Lune, 2012). In qualitative research, the researcher is the primary tool, and they go to the location of study to collect data (Bogdan & Biklen, 2007). Therefore, I was the tool in the data collection process.

Interviews

I conducted interviews in several contexts. With respect to the teacher, I conducted an initial interview to establish educational background information, prior training the teacher had received in relationship to the use of instructional strategies, and to develop a schedule for interviews and observations. After this initial conversation, planning interviews took place prior to the lesson observed, and reflective interviews occurred after the lesson had been taught.

Interviews were semi-structured in nature. According to Brinkmann and Kvale (2015), a guide is necessary to start each interview, which includes broad topics that are to be discussed in each interview, and Hancock and Algozzine (2006) supported that case study research lends itself to semi-structured interviewing techniques. Planning interviews contained questions in the general areas of what content would be taught, what was previously been taught, what kind of background knowledge, if any, students had about the content, what instructional strategy, or strategies, would be used throughout the course of this lesson, how would the strategies be used, what scaffolding would be provided, information expressing if students had used the planned strategies previously, anticipated problem areas in the use of this strategies, and any benefits students could incur as a result of using the strategies. Reflective interviews contained questions in the areas of how the strategy use planned compared to actual use, how students used the strategy, how the scaffolding was provided and if it was an appropriate amount, considerations regarding student success in the using the strategy, how using the strategies helped students to better understand the content being taught, and strengths and struggles in the use of the strategies

(see Table 4). Before conducting the weekly reflective interview, I read observational data to assist in developing more probing questions.

Table 4

Planning and Reflective Semi-Structured Teacher Interview Questions

Planning Questions	Reflective Questions
What is the content that you will be teaching during this lesson?	How was your plan to use the strategy similar or different to what actually occurred?
What instructional strategies will you use to help students better understand the content they will be reading?	How do you feel that your students responded to the scaffolding provided? Do you feel they needed more or less? Why?
What are your goals for student learning in using the specified instructional strategies?	Did you observe a benefit in the use of this strategy? Why or why not?
How do you plan to use the strategies?	Would you use it again? Why or why not?
What kind of scaffolding will you use to teach the students the strategy itself?	Do you feel that the students better understood the content of the lesson through using this strategy? What is your evidence?
How will you monitor their use of the strategy?	

Student interviews occurred during classroom instruction, which, on most occasions, did not allow for recording. I asked students questions in the area of what instructional strategies they were using, how they used the strategy with their partner(s) or independently, and other questions related to the use of instructional strategies. If a student was using a strategy independently, I asked them to explain what they were doing in terms of using the strategy in conjunction with the text. I was also mindful of interference with the learning sequence. I asked questions at appropriate times during the lesson and made every effort not to interrupt students

when it appeared they were deep in thought. I talked to them after completing an activity. When the teacher was talking or directing whole group instruction or discussions, I did not interrupt the teacher or students.

Since the interviews were semi-structured in nature, I was able to ask questions that built on teachers' responses to initial questions. I recorded interviews using a Sony voice recorder, and, subsequently, I transcribed the interviews. A characteristic of a strong qualitative researcher is the ability to listen (Hatch, 2002; Yin, 2003). Recordings allowed for maximized listening to the participant during interviews and minimal note-taking, at the time.

The majority of the interviews occurred in a face-to-face context. However, due to scheduling conflicts, there were times that I conducted interviews through the use of FaceTime. I interviewed Mrs. Fowler once per week through FaceTime. Initially, we planned to reflect via FaceTime. I was originally conducting face-to-face planning interviews on Friday afternoons, observing on Tuesday morning, and reflecting on Tuesday afternoon via FaceTime. However, planning on Friday afternoons in a face-to-face format proved to be a great burden to Mrs. Fowler. Therefore, we adjusted this protocol to plan via FaceTime on Monday afternoons, observe on Tuesday morning, and reflect together on Wednesday afternoons.

I conducted the majority of planning and reflecting interviews with Mrs. Morrison and Mrs. Gillman face-to-face. I planned with each participant individually during their planning periods on Wednesday afternoons, observe on either Thursday or Friday mornings, and reflect individually with the participants on Friday afternoons. There were occasions in which the teachers were absent, or were in meetings with parents when I arrived on meeting days, and we agreed to conduct the interview via FaceTime later that evening.

When the interviews had been transcribed verbatim and observational data were organized, participants were provided the opportunity to offer feedback on the data through member-checking. Through member checking, it was noted on one occasion, the names had been transcribed and two quotations were attributed to an incorrect speaker. Otherwise, participants were in agreement with the interview transcriptions and observational recordings.

Direct Observation

Creswell (2013) stated, "Observation is one of the key tools for collecting data in qualitative research" (p. 166). Direct observation was essential in answering all research questions posed.

I observed each of the three sixth-grade science teachers once per week for the duration of the ten-week study. The observations did not always occur consecutively. Each participant skipped one week at some point in the study, and two participants had to reschedule two weeks, pushing the timeline for data collection to 12 weeks, as opposed to 10 consecutive weeks. As I observed lessons involving the use of instructional strategies, I recorded detailed field notes and focused on what Eisner (1998) called "thick description." Thick description provides a very detailed account of the happenings in the field which, in this case, was the classroom.

In observing, I actively sought information that focused on my research questions. However, I recorded data related to the context of the scenario, as well. Hatch (2002) stated that the researcher would have to exercise judgment in determining what to attend to in making field notes, but gave guidelines, expressing that providing as many details, and word-for-word accounts of conversations and events, as possible is desirable. Based on Hatch's suggestions, I developed a protocol for use during the observation to guide my field notes, providing a source to develop that thick description necessary, as related to the research questions.

The use of this protocol proved challenging. I had organized the lesson observation protocol by "Before, During, and After Instruction," but what I found was two-fold. First, the teachers might not have a before, during, and/or after instructional strategy, and second, attempting to physically type in the document was difficult. Therefore, I ultimately decided to type and/or handwrite field notes in a narrative-type format. I recorded a total of 30 observations. Each week, my observational recordings became more detailed and specific. I included periodic "time stamps" throughout the observations. I was able to capture conversations, verbatim, representing teachers and students, as well as depictions of events, which proved beneficial in answering my research questions.

Audio/Video Recording

I used both audio and video recordings to provide a clear picture of the interviews and observations. I recorded all interviews and they were transcribed, verbatim. Following transcription of the interviews, I reviewed the transcripts for accuracy, and provided that data to the participants for their review.

I video-recorded each participant once during the data collection process, with the intent to use the recordings as a reflective tool. However, due to unforeseen circumstances with video processing, this proved to be too much of a challenge, resulting in video recordings that were not used for reflections, as originally intended. In one instance, in Mrs. Fowler's classroom, the iPad ran out of memory. When I attempted to retrieve the video, I was unable to download and save the video. It took over a week to retrieve the data, which proves troublesome when attempting to reflect on details in a classroom observation. Meanwhile, I still needed to make recordings of Mrs. Gillman and Mrs. Morrison's classroom. I purchased a "Go Pro" to video record those classes. The "Go Pro," though fully charged, quickly ran out of battery life. At that point, I

attempted to use my cellular phone to finish recording the lesson. All in all, though I had a "Plan B" and "Plan C," I was unable to work through the technical difficulty to use this as a reflective tool.

Artifacts

I captured multiple photographs during each observation. These included images of teacher and student work. Teacher work photographs included items written on boards or projected via ELMOs, the teacher providing scaffolding on an ELMO, or other image related to the study. I used photographs of student work samples as evidence of the use of instructional strategies, where appropriate.

Triangulation

Berg and Lune (2012) described triangulation of data in qualitative research. They expressed that there are multiple methods used to collect data and each method, though used for the same, ultimate purpose, carries a different "line of sight" (p. 6). They described how each "line of sight" provides a different perspective on the same study. The ultimate goal of triangulation is to demonstrate validity in the study. For the purposes of this study, triangulation of data includes the use of interviews, observations, member checking, and audio/video recording. Photographs of student work, used within context, triangulated the data collected, in terms of developing conclusions.

Data Analysis

According to Berg and Lune (2012), one of the first steps in data analysis of qualitative research is recognizing that the data need to be "reduced and transformed (coded) in order to make them more readily accessible, understandable, and to draw out various themes and patterns" (p. 55). In keeping with this, data was collected, coded, and analyzed for underlying

themes, or categories, for each participant. Following this, data for the three participants were compared and contrasted to find similar or different themes. Creswell (2013) discussed the "data analysis spiral" (p. 182), which means that there is not one correct manner in which to analyze data. Creswell explained the concepts of "organizing data, reading/memoing the data, and interpreting the data" (pp. 182–188).

Collins, Brown, and Holum (1991) described the concept of a cognitive apprenticeship. They explained that in a cognitive apprenticeship a newcomer to a field serves as an apprentice under an expert. The expert provides scaffolding to help the apprentice learn cognitive and metacognitive skills. At the point of data coding and analysis, I collaborated with Dr. Daniel Henry on a regular and frequent basis, sharing my coding, codebooks, and analysis. He provided exceptional feedback on the coding and analysis process, enabling me to conduct theory-based qualitative research.

Organizing Data

Research questions of this study, essentially, address teacher behavior and student behavior as related to the use of instructional strategies. I collected data weekly through planning interviews, observations, and reflective interviews. I stored each teacher participant's data in individual electronic files on a locked flash drive. Interviews were transcribed and I typed observational data. Once all data was transcribed and I had typed all field notes, I created one file per week, per participant, which included a chronologically ordered document of the interviews and observation, as well as any photographs that were captured during observations or interviews. I created a binder for each teacher participant. The binder consisted of informed consent documentation for specified teacher, printed copies of all data collected for analyzation,

and any additional documents that the teacher provided during the course of the study. I stored student and informed consents and assents in a locked filing cabinet.

Initially, I intended that data be organized into two categories: teacher and student data. Unfortunately, it was impossible to separate the two. I collected the student data during observations and it involved frequent teacher interaction. I saved the student data in conjunction with the weekly planning, observation, and reflective data collected. I replaced all names with pseudonyms to maintain confidentiality.

Reading Data

I read my data on multiple occasions. When I received transcriptions of interviews, I read the data to ensure it was correctly documented. I read observational notes to help prepare for reflective interviews. I invited participants to read the data, ensuring correct depictions were exhibited. I read the data on several occasions during the coding process. Throughout the analyzation period, I examined and read the data repeatedly to ensure quality analysis.

Coding Data and the Codebook

Creating a codebook and coding the data proved to be a multi-faceted venture. This iterative process took approximately six weeks to complete. Initially, coding began in Microsoft Word, using a color-coded system to represent multiple themes. However, I purchased the student edition of the program Atlas.ti. to assist in coding and analysis. I recoded the data I coded in Microsoft, then continued through coding the remainder of my data. When I began recoding using the Atlas.ti. software, I used open coding. I coded everything in the data. According to Holton (2007), open coding is a necessary form of coding. It allows all data to be interpreted, and for underlying themes to emerge. I coded all of Mrs. Fowler's data in an open manner, which will be discussed at length in subsequent paragraphs. Upon completion of the

coding of Mrs. Fowler's data, and after a mentoring conference with Dr. Henry, a professor at Auburn University and the methodology member of my dissertation committee, I moved toward selective coding, as also outlined by Holton (2007). The process of delimiting codes is used to help the researcher understand the data at a deeper level, in terms of some construct. After examining Mrs. Fowler's data, creating a codebook, and multiple revisions, I became increasingly aware of the major themes and categories (codes) emerging from my study in relationship to the research questions.

Coding was a defining component of this study. Thomas (2006) described five key features of codes. He explained that a category (I refer to as code) needs an identifier, typically a short word or phrase. I identified my codes in short phrases that provided strong implications for the meaning of the codes. Second, he stated each code should have an operational definition that further defined the code. Then, he emphasized the purpose of a sample text that exemplifies the meaning of the code. The codebook I created provides a detailed description of the code meaning and samples of text that exemplify the code. He expressed that codes should have some relationship with other codes. Finally, he said that categories should be embedded into a broader framework, which I refer to a theme.

I chose the sentence as my unit of analysis for this data. Lincoln and Guba (1985) discussed that in inductive data analysis, the hallmark of qualitative research, the unit of analysis is the smallest bit of information which renders content useful and meaningful. With that in mind, I considered coding by words/phrases, sentences, and paragraphs. I felt that coding by words and/or phrases would be counterproductive and context of events would be lost in the coding. Coding by paragraphs, I felt, would be too broad, and could, feasibly, include many codes within the paragraph. Therefore, I chose to code by sentences. I felt that a sentence within

the data would provide context for the coding. After I coded all of Mrs. Fowler's data, I began to notice that, when running analysis reports in Atlas.ti., context was lost within the sentences. For example, I coded the following sentence multiple times

Now, the teacher asked them to write about the text in terms of doing their role.

I coded it "Instructional Strategy – Collaborative," "Instructional Strategy – Independent," "Instructional Strategy – Questioning," "Instructional Strategy – Writing," and "Scaffolding – Teacher Models." However, context was lost within the sentence, and, without reading and understanding the context of the lesson, it would be impossible to understand why this was coded as such.

When I coded Mrs. Gillman and Mrs. Morrison's data in a selective manner, I examined each sentence and coded, but I created codes that would encompass complete thoughts. Glaser (2007) described the significance of context in data. He stated, "Context is a general word for environment, setting, ambience, larger picture, immediate situation, local normative frame of reference, etc." (p. 106). The significance of this is that context was lost in coding sentence by sentence without a frame of reference. Therefore, though I still coded by sentence, keeping the collection of sentences together to form context was more significant in coding Mrs. Gillman and Mrs. Morrison's data. For example, I coded the following sentences "Communication - Making Connections," "Communication - Scaffolding – Individual," "Instructional Strategy – Independent," "Instructional Strategy – Questioning," and "Instructional Strategy – Writing."

Um, and then I asked Shanae, um, if he played football. He said yes. I said, "Does practice ever get canceled?" He said, "Yes." And I said, "Why?" He said, "Whenever it's stormy," or whatever. I said, "Ah, okay. Well, now answer the question." And I did. I

got it from him. He's... You know, that one was from him. He said, uh, the water cycle affects his life because whenever it storms, his football practice is canceled.

This scaffolded dialogue between Mrs. Gillman and a student was in response to an exit slip – a connection between the text of the lesson and the student's personal life. I quoted from a reflective interview between Mrs. Gillman and me. To code any one quotation from the recounted conversation would be illogical and the context would be lost. Each sentence provided a distinct role in offering context in coding.

Throughout the coding process, I examined the data in terms of my research questions, looking for any and all evidence to provide a thorough response to each question. When I started the process, I created a code for everything, with miniscule differences separating the codes. For instance, when I began coding for instructional strategies, I coded for specific strategies, such as "Turn and Talk," "Think-Pair-Share," "Think-Write-Pair-Share," "Quick Write," and a host of others, 15 to be exact. I coded very specific types of questions, such as "Teacher – Guiding Questioning" and "Teacher – Questioning after Reading." In all, I had developed 13 themes and 47 codes for three weeks of data with one participant. After a conference with Dr. Daniel Henry, I realized that the level of specificity was too minute. There are only minor differences in strategies such as "Turn and Talk" and "Think-Pair-Share." Some codes were not even necessary to answer my research questions. At that point, I started the code reduction process. I examined my codes and emerging themes, and began to reduce and merge. I examined every individual instructional strategy I had coded and realized that they all had certain characteristics in common. Some involved reading, while others writing. Some involved questioning, either orally or in writing. Some were independent use strategies, while others were collaborative strategies. From that, I developed the five codes for types of instructional strategies. These

codes did not change throughout the remainder of the coding process. There were overlapping areas in codes, where a reading strategy might involve collaboration, or a reading and writing code might be an independent use strategy.

The coding process was an "expanding and shrinking" endeavor. I reduced the number of codes I had, grouping them by major themes, or categories, then I would find something new in the data and create a new code. However, as the process evolved, I found myself considering the creation of new codes on a much deeper level. I considered how a new code might fit under the umbrella of a previously existing code. For instance, on my third codebook revision, I had a code called "Previous Lesson," "Time – Time to Complete Activity," "Time – Progression of Lesson," and "Time – Behind Lesson." For the first, it had not been placed under a theme; for the latter three, the theme was "Time." Each had a short operational definition. By my fourth codebook revision, I had modified the codebook by eliminating "Previous Lesson," and defining each of the latter three codes further. By my tenth revision of the codebook, I began to seriously question the remaining three codes, and by the eleventh revision, I eliminated "Time – Progression of Lesson" and "Time – Behind Lesson." I renamed that "Scope and Sequence."

Not only did the codes evolve, but the themes did, as well. As I mentioned earlier, the codebook I first created had 13 themes. My final codebook had four. The process of analyzing and defining themes was an earnest task. For instance, from the first through thirteenth codebooks, I had themes for "Environment," "Level," "Mandates," "Lesson," "Time," "Tools," and "Uncertainty." Dr. Victoria Cardullo, my committee chair and professor at Auburn University, suggested that these themes were addressing factors that affect the development of the lesson. Dr. Henry recommended renaming the entire group "Pedagogy." At that moment, codes related to this were classified under the broad theme of "Pedagogy." Essentially, I was

able to adjust my operational definition of the theme, and merge codes, to reduce my codes to a more manageable number.

After my thirteenth revision, I met with Dr. Henry face to face (this was the third time in six weeks), and shared my work with him. I wrote a note on the top of the page that quoted him: "Thinking about merging…" Dr. Henry told me I needed to reduce my themes and codes to no more than 3–5 themes and approximately 20 codes. I knew why. The purpose was to help me answer my questions in a clear, rational, and concise manner. He told me to "be brutal" with my codes. I quote him here because that is exactly what I felt like it was being: brutal. At this point, revision 13, I had created four themes "Communication," "Instructional Strategies," "Pedagogy," and "Uncertainty," and I had 25 codes.

There were several comments and decisions that led me to my final codebook. At this conference, Dr. Henry was impressed by the coding that I had completed. I had coded the data for everything, including comments from interviews that were not related to the questions and observed events that were unrelated to the research. Dr. Henry told me to examine the remainder of my data in terms of my research questions and to consider how I could reduce my codes based on those parameters. I returned to my thirteenth codebook and examined it from a new perspective. Immediately, I eliminated codes "Confirming," "Affirmation," "Gratitude," "Teaching and Activities," and "Unrelated." The first three codes addressed my interactions with participants during interviews. The fourth code, "Teaching and Activities," addressed activities that were important to the classroom or lesson, but did not answer my research questions. For instance, explaining how the classroom behavioral management system worked (Dojo) is important to the classroom environment, but did not serve to address my research

questions. "Unrelated" codes were just that – something completely unrelated to anything in the lesson or the study.

I made my final revisions to the codebook in drafts 14 and 15. I struggled to eliminate "Scaffolding – Student and Student Works Together." However, I redefined my operational definition of a "Collaborative Instructional Strategy," and was able to merge the two codes. I also struggled to eliminate "Pedagogy – Roles," but ultimately realized two things. It was coded at a minimum, and it fostered collaboration between students. I had already operationally defined this under a "Collaborative Instructional Strategy."

Organizationally, I also revised the final codebook (see Appendix A). I elected to move the "Scaffolding" codes from the theme of "Pedagogy" to the theme of "Scaffolding." My rationale behind this decision was that scaffolding is a form of cognitive apprenticeship (Dennen, 2004). Scaffolding, in the context of this study, required communication, either orally or in writing, and in many cases, both. To me, it seemed more logical to use scaffolding as an independent theme rather than to support "Pedagogy" in relationship to my research questions.

Another organizational adjustment I made was to create an "Emergent" theme. I moved the codes of "Reflective Changes," "Required to Teach," and "Uncertainty" to the "Emergent" category. These codes represented ideas or events I found in the data, but I did not originally anticipate.

My final codebook includes four themes and eighteen codes. The theory-predicted themes include "Communication," "Instructional Strategies," and "Pedagogy," and they all serve to address the research questions of my study. The "Emergent" theme also answers the research questions, but includes a new perspective in relationship to the questions. I used all codes to support their respective themes.

Interpreting Data

Data interpretation, informally, was considered throughout the entire research process. However, I formally began data interpretation upon the completion of Mrs. Fowler's data coding. I printed all of the data and placed it in a binder. I read one full week of data collected, including the planning interview, observation, and reflective interview. Member checking had occurred and Mrs. Fowler was in 100% agreement with the data. As I read the data, I made annotations on the pages. I created an organizer, of sorts, on my bedroom walls. I placed questions 1, 1a, and 1b on one wall, question 1c on a wall, and question 2 on another wall.

For question 1, "What instructional strategies do sixth-grade science teachers incorporate into their daily instruction to facilitate and support adolescent literacy?," I created a space for each of the five major "Instructional Strategy" themes, as I knew that would answer the question. However, I wanted to specify specific strategies that the teachers used, which connected to my preliminary review of literature. Therefore, I began reading the data, making notes about specific strategies Mrs. Fowler used, either explicitly stated or implied.

For question 1a, regarding how teachers plan for the use of instructional strategies, I reread the week of data, looked for specific ways that teacher planned for the data. I placed sticky notes on my wall to support this. When I repeated the process for question 1b, how teachers use the instructional strategies, I noticed that there was not going to be enough room on the wall to explain this, and that it was not productive for that question, nor would it be productive for question 1c or 2. However, I found great benefit in doing this for question 1 and question 1a. I repeated the process for Mrs. Fowler's week 2 data. I placed sticky notes on the walls to help me thoroughly answer the questions. After doing this with two weeks of data, I noticed that each of the sticky notes on the wall somehow represented my codes. In fact, they

were my codes. At that point, I returned to Atlas.ti. and ran analysis reports on each code stuck to the wall. I was able to develop a visual representation to see how pedagogical patterns affected how teachers planned for the use of instructional strategies, as well as specific strategies that were used in Mrs. Fowler's class. This process repeated itself for Mrs. Gillman and Mrs. Morrison.

To answer questions 1b, 1c, and 2, I ran reports in Atlas.ti. to assist in providing specific examples of how teachers and students used the strategies. In this manner, I found excerpts of data readily available to use for interpretation of results. I found Atlas.ti. greatly beneficial in the assistance of comparing teachers' use of instructional strategies and scaffolding, as well as their students' use of the instructional strategies.

Memoing. Memoing is a process in which the researcher writes notes about their thoughts regarding the data. Glaser (2007) described it as a necessary step in qualitative research, specifically grounded theory, and explained that it must be ongoing throughout the process. When collecting the data, I made notes within my data about events, connections, and other thoughts. I also memoed as I was coding my data in Atlas.ti. I included in these memos questions I had about the data, connections to the strategies or use of scaffolding, and other comments that I thought might be of importance later in the analysis process.

All of the steps I described based on research, led to a credible and trustworthy study and reporting of results.

Credibility and Trustworthiness

In quantitative research, validity and reliability are of utmost importance in guaranteeing the quality of the research. The qualitative counterpart to validity is credibility and reliability is trustworthiness. Henceforth, validity will be referred to as credibility and reliability will be

referred to as trustworthiness. Prior to the study, I conducted two pilots that influenced the formulation of the research questions and methodology. My own background as a teacher and instructional coach factored into the formation and implementation of this research study, as well.

Pilots

This study stemmed from two different events and "pilots," per se. First, it was the result of a program developed by a public middle school, in which I served as a sixth-grade science teacher. Based on Standardized Testing for the Assessment of Reading(STAR) test results, a program developed by the Renaissance Company (Renaissance, 2017), and ACT Aspire (ACT Aspire, 2016) test results, our school administrators determined that there was a significant gap in reading skills and test scores, as they translated to success in high-stakes testing. Administrators also recognized that students struggled with reading complex texts in content area classrooms. A collaborative effort from teachers, administrators, and an instructional coach produced a program of study to be tested schoolwide. This team decided that rather than focusing solely on test-taking skills, teachers would teach instructional strategies that could be applied to content area classrooms.

Resources developed by Daniels and Steineke (2011) were used to support the initiation of this schoolwide pilot program (see Figure 2). The team of administrators, teachers, and an instructional coach picked nine of the comprehension and collaborative strategies found in their work, *Texts and Lessons for Content-Area Reading*, which paired high-interest articles with a strategy the authors of the program found appropriate for use with the article. For thirty minutes a day, four days out of a week, for the duration of the 2014–2015 academic calendar year, students labeled "At Risk" based on the STAR data, participated in an intervention class to help

them develop strategies for understanding non-fiction, informational texts. "At risk" sixth, seventh, and eighth-grade students learned to use and apply the nine instructional strategies. A new strategy was introduced weekly to the students. The nine strategies taught were turn and talk, paired reading, two-column notes, sketching through the text, text coding, text annotation, read with a question in mind, save the last word for me, and written response. Many of the strategies used can be used collaboratively, which are called collaborative instructional strategies. Collaboration relates to communication, and is key to not only becoming a literate individual, but to adolescent literacy as well. The primary goal of the program was that students would have strategies to select from to help them comprehend difficult texts.

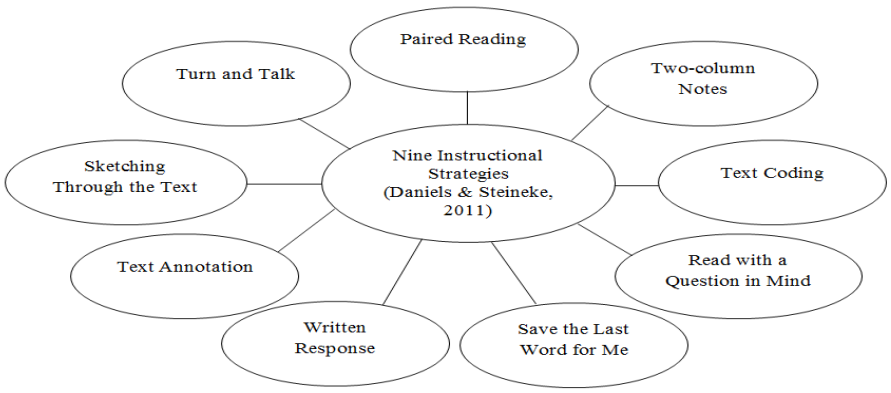

Figure 2. Daniels and Steineke's (2011) nine basic instructional strategies taught during a pilot study prior to the current research study.

The second goal of the program was that teachers were to transfer the use of these strategies during the Intervention/Enrichment (IE) block to their classrooms, which is of primary interest to this research. Other than how I, personally, transferred the use of the strategies to my own classroom, it is unknown to me how that took place, or if it took place, in other classrooms,

as I was unable to personally observe implementation of the nine strategies emphasized during the IE block each morning. There were other limitations to this trial. For instance, students are unable to collaborate on the high-stakes test. Talking and passing notes are prohibited on the test. Also, in this particular school, the ACT Aspire test is completed electronically. Therefore, if a strategy required writing on a text, such as using text codes or text annotations, they were unable to do this during the test. Also, in most cases, students are prohibited from writing on a testing booklet during a high-stakes test.

In response to this schoolwide program, I conducted a pilot study to partially fulfill obligations of a qualitative research course I took while in graduate school. I studied which of the nine strategies students thought were most useful in helping them understand a text and which they found the most motivational. I learned that most students in the sixth-grade intervention group were able to articulate procedures for using the strategies, state and explain which strategies they found most helpful, and which of the nine strategies they liked. Interestingly, the two did not always correspond.

Though this study did not seek to explain what strategies students found most useful or motivational, as it did in the pilot study, there are parts of the pilot that were useful in conducting the current investigation. First, when I conversed with students regarding their use of the instructional strategies modeled for them during instruction, I felt confident that they would be able to express to me what strategy they were using and how they were using it. Also, I felt that students provided insight into how they would or would not use the strategy independently.

Epistemological Stance

Qualitative research is unique from quantitative research in many ways, not the least is that the researcher's perspective is paramount in establishing credibility and trustworthiness in

the study. Schwandt (2000) described three stances that resonate in the field of qualitative research, but the theory of social construction readily applies to the underpinnings of this study. According to Schwandt (2000), social constructivists draw on "everyday, uncontroversial, controversial" events and believe that "knowing is not passive – a simple imprinting of sense data on the mind – but active; that is, mind does something with these impressions…" (p. 197). He went on to describe that social constructionists assert that people construct their own knowledge. Knowledge is created based on experiences, schemas are created and modified based on more experience, and this process continually repeats itself. This premise works in conjunction with Lincoln and Guba's (1994) concept of a paradigm, which they define as "the basic belief system or worldview that guides the investigator, not only in choices of method by in ontologically arid epistemologically fundamental ways" (p. 105).

At the time I collected data for this study, I had completed six years as an elementary school teacher and one year as an instructional coach. My last three years in the classroom were in teaching sixth-grade science. My belief, based on my own schooling, experience, and observations, is that students are more actively engaged in lessons and instruction when teachers use purposefully planned instructional strategies to facilitate learning. Due to the great increase in professional development from state-funded initiatives, such as the Alabama Reading Initiative (ARI) and the Alabama Math, Science, and Technology Initiative (AMSTI), to education teachers on what instructional strategies are and how to successfully implement them in the classroom, I knew that teachers would be familiar with the term "instructional strategies." I am a strategic planner, and I found that my students were highly successful in reading and interacting with complex texts as a result of using instructional strategies, which is also supported by research. It piqued my interested in the planning habits of other teachers, as well as

how they use instructional strategies in their own classrooms. I began to wonder how their students interacted collaboratively and independently with texts as a result of using instructional strategies. I wondered if the instructional strategies teachers used were purposefully planned. I am highly passionate about strategic planning and teaching, and the use of instructional strategies with texts, and I wanted to explore on a deeper level what various teachers did to plan, use, and scaffold instructional strategies, as well as how their students responded to the strategies taught. Due to my interest in the use of instructional strategies in the classroom and my background as a teacher and coach, it was difficult for me, at times, not to coach my participants. I was concerned that my probing questions acted as a scaffold between what they teacher planned and change their course of action due to my questioning. I worked diligently throughout the process to act solely as a researcher and not as a coach, and chose my questions carefully. It is likely that my background experience as a teacher and instructional coach directly influenced what I observed throughout the scope and sequence of the study.

Credibility

Credibility is of utmost importance in making the case for qualitative case studies. Bernard and Ryan (2010) outlined guidelines to check for credibility in qualitative research. Yin (2003) also discussed methods to check for credibility, which he referred to as validity. For this reason, I referred to this as construct validity, internal validity, and external validity. In keeping with these two sources, credibility was assessed in a variety of methods.

Construct validity was assessed using Yin's (2003) principles. First, I used multiple sources of evidence in collecting data, which included interviews, observations, audio/video recordings, and photographs. I also used member checking, which was essential to the credibility of my project, as it ensured that there was close agreement between what I observed

and what actually happened. I used a "chain of evidence" (Yin, 2003, pp. 34), as well. This included a log of events, in which I detailed the date an activity occurred, what the activity was, and who it included. This log began with the recruitment of participants.

Internal validity, according to Yin (2003), seeks to establish a causal relationship in which certain situations produce certain outcomes. Though I did not seek to establish causal relationships, there were some established between a teacher and her students.

I ensured external validity of this study from the arrangement of multiple sites, teachers, and students being used as participants. According to Lincoln and Guba (1995), the "only generalization is that there is no generalization" (p. 110). My purpose in conducting this study was not to generalize the results, but to share what teachers were doing in terms of using instructional strategies and providing scaffolding, and to demonstrate how their respective students used the strategies.

Trustworthiness

Bogdan and Biklen (2007) asserted that "qualitative researchers tend to view reliability as a fit between what they recorded as data and what actually occurs in the setting under study, rather than the literal consistency across different observations" (p. 40). Based on this assessment of trustworthiness, there were steps that I put in place to ensure that the data collected was accurate, to the furthest extent possible. First, I audio recorded and had interviews transcriptions which ensured that conversations were recorded, verbatim. Next, I utilized member checking which ensured that what the participant stated and what was recorded was the intended outcome, and that I had adequately captured the spirit of the interview or observation. Finally, I used codebooks and calendar entry logs which further served to demonstrate that the study was trustworthy in that the data recorded actually occurred.

Interrater reliability was established using Cohen's Kappa. Dee Fowler, a fellow candidate in the Adult Education program at Auburn University, agreed to serve as an intercoder. Dee was a good candidate to code my data because we had completed qualitative coursework in the same class. We had the same professor, Dr. Carey Andrzejewski, and we participated in similar assignments. We had a similar experience, therefore, I knew that he would be capable of serving as an intercoder. I coded the majority of my data individually. However, I saved several pages of data to code cold with Dee. When I met with Dee, initially I trained him on how to use my codebook. After we discussed the themes and codes, and meaning behind each, we coded data to calibrate. We found that a few terms, such as "discussed" would be problematic in interpreting meaning, as Dee did not understand the context of the scenario. After coming to agreement in our calibrating coding, Dee asked if he could talk through coding the data and I record. I suggested that I code my four pages of data, then I could record his verbally dictated codes. I expressed my desire to develop my own coding conclusions before he shared his thoughts. I coded 43 bits of data in 4 pages. While I coded, John read the data to gain a deeper context. When I finished coding the data, John began to orally dictate his codes. As he read the data aloud, he dictated my transcriptions. At the end, we compared agreement on codes. We were in agreement on 37 of 43 codes, resulting in a Kappa of 86%. Our goal was to achieve an 80% agreement rate on the data. At 86% agreement before talking about our discrepancies, it was evident that we were consistently observing the same things in the data.

Summary

The process of data collection, coding, and analysis was a complex, research-based design. The systematic use of research-based methodology ensured that this study met standards for credibility and trustworthiness. Though it is not desired to generalize results, this study could

be replicated by another researcher based on the thorough and descriptive methods used. Results, as discussed in the next chapter, vary from teacher to teacher, but there are significant similarities between the three teacher participants.

CHAPTER 4. RESULTS

Introduction

Brinkmann and Kvale (2015) described a miner and journeyman approach to reporting qualitative research. They explained that in the miner approach, a traveler goes to a place in search of something. However, in the journeyman approach, a traveler collects data with the intention of sharing what has been learned in the form of a narrative. Over a fourteen-week period, I visited three sixth-grade science classrooms to learn how teachers plan for, use, and provide scaffolding for instructional strategies to foster adolescent literacy, and then, in turn, learn how students actually use the strategies. Each of the three teachers participated in planning interviews, observations, and reflective interviews for ten weeks. I found several theory-predicted pieces to be evident, but I also gained some new insights that were emergent. The following is an analysis of "what I saw" (Brinkmann & Kvale, 2015).

Themes

Throughout the course of this study, four broad themes readily emerged from the data I collected from each of the three participants. These themes were interwoven throughout the study and often used to answer multiple research questions. "Instructional Strategies" was the first theme that began to emerge in this study. Given the context of examining instructional strategies used to facilitate adolescent literacy, it is quite logical to think this would be an important theme. Much of the literature that I read discussed the breaking down of instructional strategies into the categories of "before, during, and after" reading (Alabama Reading Initiative,

2013; Benjamin, 2007; Schorzman & Cheek, 2004; Texas Reading Initiative, 2002). However, after reflecting on my data, I began to realize that there were other manners in which to group these strategies. For this study, I elected to classify the instructional strategies by "reading, writing, questioning, independent, and collaborative." All of the strategies used across participants and throughout the study can be classified as at least one or more of the categories. Some strategies fit into multiple categories. For example, a paired reading could be classified as a reading and collaborative instructional strategy.

"Pedagogy" was a second theme that presented itself as the data began to be coded and analyzed. In all cases, the teacher's pedagogical beliefs, ideas, and resources reflected the instructional strategies that were chosen for use to facilitate adolescent literacy. The content of the lesson was directly related to the strategies chosen to accompany a text, as was the material for use. The scope and sequence of the lesson and course of learning proved to be important, as was the time it took to complete an activity or strategy when reading a text. Additionally, the classroom environment was a factor for determining strategies, as was students' ability level. Finally, high stakes testing was ultimately included as a pedagogical theme. The Common Core State Standards (2015) mandate that all students be able to read and comprehend complex texts. High-stakes test scores indicate that students struggle with reading proficiency (Alabama State Department of Education, 2015; Mississippi Department of Education, 2015; Tennessee Department of Education, 2015; U.S. Department of Education, 2013). I found no literature to support that high stakes testing factors into the planning and usage of instructional strategies. When I began to code and analyze my data, that concept emerged. However, in an event that provided a role in the inspiration of this study, a public middle school attempted to use

instructional strategies as a strategy to increase high stakes test scores. Because of this, I ultimately moved this theme from "Emergent" to "Pedagogy."

Another theme was "Scaffolding." Scaffolding was essential to the use of instructional strategies to facilitate adolescent literacy, and occurred in various contexts. Scaffolding from the teacher could be in terms of modeling/whole group instruction, a combination of the teacher working with the whole class, or the teacher working with a small group or individual. Students served as scaffolders, too, but that is factored into the results of the study as a collaborative instructional strategy.

The final theme derived from the study was that of the "Emergent" themes. The emergent themes were not theory-predicated. There has been a call for more research on instructional strategies in middle schools to facilitate reading comprehension (Schorzman & Cheek, 2004). One of the codes that emerged included the requirements of teaching specific strategies. There was instances that teachers were required to teach certain instructional strategies. Another emergent idea from the study is how teachers used personal connections as a strategy to scaffold the content. The final emergent theme to come from the data is the uncertainty that teachers face in planning and implementing instructional strategies to facilitate adolescent literacy in their science classrooms.

All four of the themes — instructional strategies, scaffolding, pedagogy, and emerging — will be addressed in conjunction with answering the research questions for each of the three teacher participants.

Mrs. Cathy Fowler

Context

When I first approached Mrs. Fowler's classroom, I immediately was engaged with the massive floor-to-ceiling volcano in the back of the classroom. It must be highly motivational for a child to approach the room on the first day of school and see the lava-spewing, light-up volcanic display in the back of the room. The room had little natural light, as there were very small windows at the top of the walls in the classroom. When I first encountered the classroom, there were a variety of desks, but after a week of observing, those desks had been replaced with lab tables and chairs, making it a much more comfortable learning area for Mrs. Fowler and the students. A "SMART" board was situated at the front of the room, between two white boards. There was a recording unit on the ceiling at the center of the room. A small group horseshoe table was immediately in front of the classroom door. A row of tables with computers lined the back wall, along with seating for three students. Cabinets and shelves were visible in the room. Every square inch of space was in use in this classroom. However, Mrs. Fowler had an entire science lab across the hall for her use. Since she is the only sixth-grade science teacher in this building, she has sole use of the lab. It's as if she has two classrooms.

Mrs. Fowler had a perky smile, the kind that let me know that she was highly-enthusiastic about her content area of science. She has a diverse educational background and has taught all grade levels. She is a veteran teacher and very energetic. She presents herself as relaxed and flexible, confident and knowledgeable. Mrs. Fowler has a block schedule, in which she has one group of students for approximately ninety minutes, and teaches them every other day. For this reason, I worked with two groups of students.

In answering the research questions in the context of Mrs. Fowler's classroom, all quotations and observational notes are derived from planning and reflective interviews with Mrs. Fowler, as well as observational notes from experiences in her classroom.

Instructional Strategies Used

I had the opportunity to observe Mrs. Fowler use instructional strategies to facilitate adolescent literacy in the majority of her lessons. Mrs. Fowler used all five categories of instructional strategies, and, frequently, those strategies would fall into more than one category. All of the strategies she used were theory-predicted, and appeared on either an ARI list (Alabama Reading Initiative, 2013) or Texas Education Agency document (Texas Education Agency, 2000), except one. The instructional strategies Mrs. Fowler used were cloze read, reciprocal reading, chunking, jigsaw, jot notes, anticipation guide, a rating scale, guided writing, quick write, cloze procedure, essential questioning, grand conversation, reciprocal reading, table talk, turn and talk, and a strategy that she coined the "NAMES" strategy. All of the strategies that Mrs. Fowler used were applicable to one or more of the five categories per instructional strategies, with some being a part of all five categories. For instance, reciprocal reading is a reading, writing, questioning, independent, and collaborative strategy, chunking is a reading strategy, and grand conversation is a collaborative strategy. The exception to this is that while reading, writing, questioning, and collaborative strategies could be used independent of each other, the independent instructional was not isolated. Students could work independently to use reading, writing, or questioning strategies, but they could not utilize an independent strategy associated with no other strategy.

The strategy that does not appear in either resource was Mrs. Fowler's "NAMES" strategy. The "NAMES" strategy was a strategy that she coined. To clarify, I asked her if it was a system-wide strategy. Her response was, *"No. But, I mean, actually, I've shared it with my faculty, so I know some other...I know, um, the whole faculty."* [1]

[1] All direct quotations are henceforth italicized.

She created an acronym for a series of reading comprehension strategies. According to Mrs. Fowler, the "NAMES" strategy *"... spells out "names," so we've got Number the paragraphs, Arrange chunks, Mark for understanding questions, Establish main idea and purpose, and Summarize chunks..."* Mrs. Fowler used the "NAMES" strategy often – five of the ten weeks I observed her class.

Planning for the Use of Strategies

Before observing weekly lessons with Mrs. Fowler, I conducted planning interviews to get an overview of the impending lesson and to gain a better understanding of how she planned for the lesson. What were her thoughts? How did she plan? What were her considerations in planning? The pedagogical considerations of content, materials, scope and sequence, environment, student ability, and time were constantly recurring throughout the planning interviews for the duration of the study. High-stakes testing was reflected in her planning, but only on two occasions. She also addressed how she thought she would scaffold the use of the strategy in association with the content of the lesson to facilitate adolescent literacy.

In every planning interview, Mrs. Fowler considered the content of the lesson and the materials to be used in conjunction with the instructional strategy. In fact, most of our interviews began with the content of the lesson, which invariably would include references to the materials being used as she planned for the use of the strategy. For example, Mrs. Fowler stated in our second planning interview,

> *They are going to be basically comparing and contrasting tornadoes, hurricanes, and thunderstorms. We're doing a reading selection. I am going to... At the beginning of class, they're going to be asked three questions, and as kind of a formative assessment. Okay. They are going to... The three questions are thunderstorms cause tornadoes...or*

their statements. There's three statements and they have to copy in them and write down whether it happens always, sometimes, or never. So, thunderstorms cause tornadoes is the first statement. Hurricanes and tornadoes have spiraling winds, and then the third one is tornadoes are deadly. So, just to get an idea of what they think, and then we will... And then we'll move into our reading, and I do have a graphic organizer that they're going to fill in as they read. It has columns and rows, and at the top it says thunderstorms, tornadoes, and hurricanes, and on the left-hand side is a list of questions, how do they form, where are they found, how fast do they move, how fast are the winds, and how do we measure them. So that's the graphic organizer to help them kind of organize the information as they read. And I will allow them to use the "NAMES" strategy as they read, as well, if we have time to go through it twice.

In this example, it is evident that she was considering the content of the lesson, which was tornadoes, hurricanes and thunderstorms, but also recognized that there is a reading selection associated with the content and a graphic organizer to help organize the information in the article. Mrs. Fowler also made several connections to instructional strategies. Initially, she considered the "hook" of the lesson and explained that the student would need to respond to three questions, and use a rating chart, of sorts, to consider their level of knowledge about the statements. Another clear connection to the planning of the instructional strategy is that of the "NAMES" strategy. At a later point in the planning interview, Mrs. Fowler referenced sticky notes, a material to be used in conjunction with the strategy. She said, *"We're going to read it together, and I will give them time, opportunity to do the "NAMES" strategy, and then, with all of those sticky notes in the book, hopefully that will help them fill in the graphic organizer."* In addition to the text being read in the classroom, sticky notes proved to be a valued material in

several observations in Mrs. Fowler's classroom. The article associated with this text was a complex text, challenging for the sixth-graders in her class.

In another example, Mrs. Fowler stated,

> *We are going to read from STEMscopes, my new textbook, and we're going to use the "NAMES" strategy and they're going to read about the Earth's systems. It's called Earth Materials, and the article is about how Earth's systems interact in the biogeochemical cycles, and it's a review, and it reviews the rock cycle, the water cycle, weathering erosion, and then it talks about the carbon and the nitrogen, which we haven't talked about yet. We've already talked about the rock and the water, so that will be review for them, but also the section on the nitrogen and the carbon and oxygen will be new.*

In this excerpt, Mrs. Fowler discussed the content and materials in relationship to the instructional strategy. In both examples, the textbook is the source of the content articles. She discussed that should would be using the "NAMES" strategy to help students read and understand the content of the text being studied.

In this example, however, Mrs. Fowler considered the scope and sequence of the lessons. This pedagogical notion repeatedly came up in the study. She discussed what students already knew and had studied previously to demonstrate how it related to the content they would engage in learning. Other examples that developed through conversation with Mrs. Fowler were

> *That will be the next lesson. And we talked about one of the causes of vortices was the uneven heating of Earth. So, that moves into this, and that's how I'm going to lead into it, is just say the uneven heating...one of the causes of hurricanes, because that's what we're focusing on right now, is the uneven heating of the Earth.*

and

Um, I have...I only had one incident, and, uh, but the students enjoyed it and they learned what the convection current was from it, and they were able to develop kind of their own definition of convection current weather front, which is preparing them to be able to read weather maps next, uh, and understanding what fronts are and how they move and, um, being able to...which is the standard is...that I'm getting them towards is to be able to predict weather, just use instruments to predict weather. So, they're making their weather instruments, and, um, and right now I'm just teaching them vocabulary and what, um, they're going to see on a weather map…

Though both examples were unique to the lessons being taught, they both included the consideration of the progress of the lessons in terms of what background knowledge had been built within the classroom and well as the direction in which students were headed in terms of learning.

For Mrs. Fowler, environmental factors were considered repeatedly in planning. When considering the environment, many factors were included, but essentially could be summed up as providing an environment that is conducive to learning. Classroom management was taken into account in this concept, as well as student responsibilities and choice. For example, when talking with Mrs. Fowler during the first week of the study, when discussing which instructional strategies she would be using, she made the comment

So, just establishing rapport and, um, making them feel safe to take risk and it's okay to have questions. And, I've noticed that they're not taking a lot of risk. And what I mean by that is just, you know, answering questions out loud in front of the class and... And...

And they're getting more comfortable with that with me. I'm telling them, you know, it's okay to take risk. I'm not expecting you to know this. Just take a guess.

Environment was crucial to the use of instructional strategies in this classroom. In the context of the quotation above, she was talking about students using the "NAMES" strategy, and being fearful of summarizing and asking question to partners in the whole group, grand conversation. She recognized that in order for her to use the strategy successfully, she had to establish and environment conducive to learning.

Throughout the study, she continued to discuss an environment conducive to learning during planning interviews. Environmental factors also included materials to be used and the manner in which they would be used in terms of effective flow in the classroom. For instance, Mrs. Fowler was using a station approach to reiterating a concept of learning. There were three stations in the class, and students would be asked to rotate throughout the classroom completing reading and computer activities to reinforce the concept of the carbon and nitrogen cycle. In planning to use the instructional strategies associated with each of these, I questioned her about how the students would get from station to station, and what materials they would need to bring. She told me,

All the resources they have are at the table, and if they want to take the sticky notes with them, they can. But I'm not requiring them to carry stuff around, because it's just not... It's just too hard to do that. So, they're not going to bring anything with them. I'll have the supplies at the group.

She recognized that the spacing in the classroom would be minimal, and asking students to carry items around the classroom would be difficult and disruptive.

Student choice was emphasized repeatedly as an environmental factor in Mrs. Fowler's classroom. On another particular day of planning for the use of stations, she considered how students might make choices in using the "NAMES" strategy to read a text about global winds. In planning, she stated,

> *Um, you can read it and, um, you know, add anything you wanna add on your stickies, and then, um...and then they can...um, answer the questions and color their paper, label their paper. Yes. So, I'm just giving them a choice, like, whatever you wanna try.*

Mrs. Fowler was cognizant of her goal that students would take responsibility for their own learning, and offered students choice in how to use strategies to better understand text was important to her.

In keeping with student responsibility and choice, Mrs. Fowler did consider student ability level in planning for the use of instructional strategies to facilitate literacy in her science classroom. Student ability level, in the context of this study, is the perceived ability of the students to perform some task related to the lesson. That ability level could include a skill, like reading or summarizing, or it could include lack of knowledge of something, like a strategy, at a given point, thereby affecting ability to complete a task. Though student ability was not discussed every week, it was discussed frequently enough that I found it related to this study. In the first week, I planned with Mrs. Fowler, she discussed the group I was going to observe. In talking about using the "NAMES" strategy, she said of her group, *"Um, and then the summaries that I read today and yesterday, um, varied greatly, so I have lots of different abilities, for sure… Um, and I think that...that group that you're coming to watch did well…"*

In another planning interview, she talked about reading a difficult text and referenced that *"Um, I think with this first period they should be fine reading with their group, and I think they'll*

enjoy um, being able to read together...um, because there's just so much vocabulary." The context of this conversation was in relationship to reading this difficult text, "Why Does the Wind Blow," using the "NAMES" strategy, and formulating questions. She felt strongly that the students' ability levels, coupled with the use of the collaborative strategy, would contribute to the completion of this task.

Half way through the study, Mrs. Fowler was planning to use an anticipation guide to engage students in the upcoming text about air masses. She wanted students to look at some pictures to make predictions about air masses, then read a short text. Following this, she wanted students to prove whether their prediction was correct or incorrect. I asked her if she was going to ask students to do it independently or collaboratively. She stated, *"Um, first period, I feel like they could do it by themselves, because they're just a...a high...pretty high group. Um, so I'm going to let them do it by themselves, and then I'll go over it."* This statement exemplifies how she considered her students' overall ability level in planning for the use of the strategy.

The next to the last week I planned with Mrs. Fowler, she was going to ask students to do a guided writing showcasing what they learned about weather. She told me

> *Um, but I want them to try to pull all that out of their brains and put it on paper creatively, and, um, hopefully some will...some will be more creative than others, I'm sure. Um, but maybe I'll have some artist in the group who'll add some art if they want. I think the majority of them will do okay, but, um, there are just those kids who just struggle creatively…*

Again, Mrs. Fowler recognized that some students were not as creative as others, and this could impede their ability to complete the written response in a creative manner.

High stakes testing facilitated a small role in planning for Mrs. Fowler. It was not a prominent feature of her planning, but on two occasions during planning, she mentioned the ACT Aspire, the high stakes test for the state. She said,

> *And, um, so I used it as the end of the unit last year, um, but I wanted to use it at the beginning because they really need to know graphs, especially for the ACT Aspire. But, um, I just found that...that they're not taking science ACT Aspire.*

Part of the content of the lesson included a reading in which students would examine graphs to help them learn more about natural disasters. Mrs. Fowler was referring to the science subtest of the ACT Aspire. It was questionable if the students would have to take that portion of the test, but she will be aware that they did not. However, she wanted them to know how to read graphs.

Finally, when planning to use instructional strategies in the classroom, Mrs. Fowler considered the time it would take to complete the activity. From the very first week, and frequently thereafter, she would make comments such as, *"Um, so I don't think we're going to have time on Tuesday,"* which, in this case, was a reference to the creation of a graph after reading a text using the reciprocal reading strategy. Planning, in another instance, she stated that, *"I would really like us to read it once with the "NAMES" strategy and then let them read it by themselves and fill in the graphic organizer, depending on how much time we have."* The context of this statement is that she was planning for students to read an article called, "That's a Fact: Thunderstorms, Tornadoes, and Hurricanes." Her plan was to use the "NAMES" strategy as they read. She wanted to read the text with them and demonstrate how to use the "NAMES" strategy because it was only the second time they had worked with that. However, she had a graphic organizer that was part of the curriculum she was using. She wanted the students to use the graphic organizer at the end of the reading, but she did not know if time would allow for it.

In another, rather humorous exchange, Mrs. Fowler was planning for a lesson. She was planning to ask students to examine a text collaboratively. She wanted the students to devise and implement a method for chunking the text, then summarize each chunk on a sticky note. Then, she wanted the students to use their chunk summaries to develop an overall summary for the article. After explaining this to me, she said, *"And then, of course, I have extra work if we finish, but after... Um, every time I tell you I've got more stuff to do, I never get to it, you know. But I over plan, so..."* By stating this, she acknowledged and was aware that time was an ever-pressing issue in planning her lessons using instructional strategies. The other instance of reference to the high stakes test, or ACT Aspire, was near the end of the study. She stated,

> *Um, anyway, but I think it was just best for this class to stick with just the sixth-grade article. But another class, I used the fourth-grade for some of my students with IEPs. But the majority of them, I used sixth-grade, and, um...'cause that's what they're gonna see on the ACT Aspire. So, it's a lot that I felt like they could possibly see on the spring test. Um, so, you know, that...why teachers are doing what they're doing, because literacy's important, it's helping prepare for the ACT Aspire. Kind of giving them a purpose, hopefully, for...you know, learning. But the ACT Aspire is...they're gonna be timed. But when we get into our literacy plan in our future, they're going to be timed on it to prepare for that. So... And we'll phase these strategies... I mean, I'll... You know, it's... I just want them to, um, basically, to prepare for the ACT Aspire. I'll phase out the actual, you know, numbering the paragraphs and arranging the chunks, and hopefully, making them do that mentally, arranging into chunks mentally and just seeing how it's organized, seeing that there's three subheadings, um…*

Mrs. Fowler's pedagogical constructs factored into planning for the use of instructional strategies. However, scaffolding was a secondary theme that emerged during the planning for the use of instructional strategies. The scaffolding Mrs. Fowler planned for fell into three categories: modeling, working with the class, and working with individual or small groups of students.

Modeling the use of instructional strategies was discussed many times during planning interviews, but especially at the beginning of the study. During the first week of the study, Mrs. Fowler was planning to use two strategies – reciprocal reading and the "NAMES" strategy. Both strategies involved reading, writing, questioning, collaborating, and independent work. She did not discuss scaffolding with the reciprocal reading strategy, but she did talk about scaffolding the use of the "NAMES" strategy.

Erin: *Are you all going to do, like, an example together? Um...*

Mrs. Fowler: *Well, the example... See, we've done this already with the scientific process.*

Erin: *Okay.*

Mrs. Fowler: *So, they've done the name strategy before.*

Erin: *So, they have background knowledge on the strategy. Okay.*

Mrs. Fowler: *Yes. So, we've already done the strategy, so I hope that, you know, they can do it.*

Erin: *Okay.*

Mrs. Fowler: *But we'll see.*

Erin: *Absolutely.*

Mrs. Fowler: *Um, but I will definitely guide them a lot, you know, and then eventually I will...I can just hand this to them and they'll be able to do it. But I will do a lot of guiding with them on that day. And, um, so...*

The following week, Mrs. Fowler planned to use the "NAMES" strategy again. In speaking about scaffolding during planning, Mrs. Fowler said,

So, I will read it with them and kind of go more modeling again with them. We've got to practice with them. I may even do the first few for them on thunderstorms, but really, it's very easy…

The previous examples demonstrate that she planned on guiding students a great deal, even to the point of completing the first few examples for the students, so they would have a better understanding of how to use the strategy.

In the planning data with Mrs. Fowler, I found no examples of how she planned to provide scaffolding while working with the whole class using an instructional strategy, and only located one example of her working with an individual. Mrs. Fowler was planning a guided writing activity, and after students constructed some form of poetry about a weather-related topic, she wanted the students to rewrite the pome on specific construction paper, so she could hang it in the hallway outside of her door. Before she allowed the students to copy it on the construction paper she said, *"It's fine. But, um...um... And I will check... I will make sure that they come and show me their rough draft before getting a piece of construction paper to put... And I'll help them with spelling and everything..."* She wanted to help them use the writing to exemplify what they learned, but her intent was to scaffold the grammar and mechanical aspects of their writing.

Many factors contribute to how Mrs. Fowler planned for the use of instructional strategies in her science classroom. Pedagogy and scaffolding were the predictable themes that emerged when planning. Emerging themes, particularly the category of "uncertainty," will prove to be significant when examining the data. Uncertainty played a tremendous role in the planning process. For example, in discussing using the "NAMES" strategy for the upcoming lesson, she stated, *"So, we've already done the strategy, so I hope that, you know, they can do it. But we'll see."* She was uncertain if the students could use the strategy effectively, but hopeful that they could. This was based on one use of the strategy in a previous lesson. In planning for the use of reciprocal reading she said, *"So, I'm trying to figure out how I want, you know, um... Because I...I want everybody to have a job. Because I might change the jobs, but…"* She knew that she wanted to use the strategy, but she was quite unsure about how she would do this, or even what her basic jobs would be. In another example, Mrs. Fowler stated,

> *I would really like us to read it once with the name strategy and then let them read it by themselves and fill in the graphic organizer, depending on how much time we have, because I'm trying to remember what class you're coming to, but there was one class that didn't finish the lab reflections, so that might cut off some of that.*

There were several key uncertainties in this comment, ranging from how she wanted to use the instructional strategy to the time they had to complete the lesson and even to finishing portions of previous lessons.

As we progressed through the research process, uncertainty continued to be a strong part of the planning process. Five weeks into the study, Mrs. Fowler was planning for the use of a cloze procedure to reflect on a text in conjunction with a science lab activity on air masses. She

was using it as a reflective wrap up on what students learned, in addition to a study guide for an upcoming test. In planning for the use of this, she said,

> *I'm not sure that we'll finish it, but, um, I may read it with them, so we can read a little bit quicker, um, although this group is pretty quick, so I don't know. Um, I may play it by ear. Either I'll read it aloud or I'll let them read silently, um, and then just go over the answers.*

This statement was full of uncertainty in terms of planning for the text and sheet. She considered time and ability in planning for this lesson and cloze procedure.

In planning for a very difficult text, in terms of complexity and content understanding, Mrs. Fowler talked through how she might use collaborative and independent reading, writing, and questioning, but was uncertain as to how she might utilize this text. She knew the "NAMES" strategy was going to be utilized, but she was considering how she might help the students use that strategy. She stated,

> *So, I wanted them to kinda soak...you know, kinda take it in on their own, talk about it, and then, um, go from there. I don't know if I'm making any sense, but... And then there's a bunch of chunks. But, um... And I...I was just trying to decide if I wanted to, uh, have them share after every chunk or just share at the end, come up with a big summary at the end together. And I may have them, like, um... That's how we can summarize it at the end, is to have each group share their best summary of the chunk.*

The number of chunks, which was organized by headings and subtitles, would affect the students, time was a factor, and she was uncertain as to how she wanted the students to read on their own, then discuss with groups.

Planning for the use of instructional strategies was a multi-faceted process for Mrs. Fowler. Overlapping themes prevailed in planning to infuse instructional strategies into her lessons that supported adolescent literacy in science. The strategies in and of themselves were a major consideration, her own pedagogical beliefs and constructs were interwoven into the planning process, and the use of scaffolding was a consideration. Uncertainty was an emerging concept that was exhibited during planning, as well.

Using Instructional Strategies to Facilitate Adolescent Literacy

Instructional strategies were used to facilitate adolescent literacy throughout the course of this research study in Mrs. Fowler's sixth-grade science classroom. She used several instructional strategies, and they overlapped in terms of the categories of reading, writing, questioning, independent, and collaborative. In many cases, it was impossible to isolate one type of instructional strategy used, as they were used in conjunction with other types of strategies.

In terms of reading instructional strategies, they were always used either independently or collaboratively, and oftentimes in conjunction with writing and/or questioning. For example, the first week I observed Mrs. Fowler, she used the instructional strategy of reciprocal reading. In this strategy, she used a piece of paper as a graphic organizer. She asked students to write one of four separate roles in the center of the paper (turned either portrait or landscape), and provided an example for the students to copy (see Figure 3).

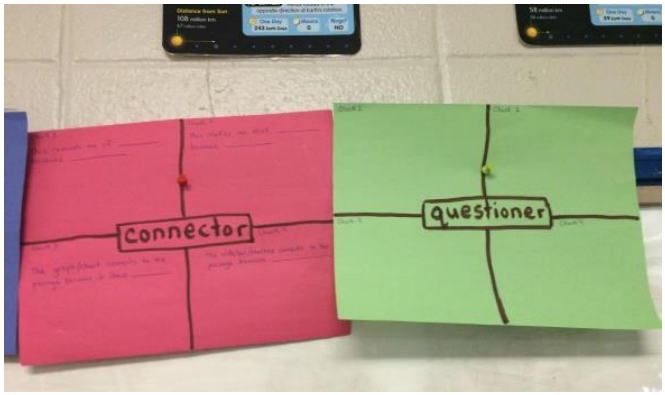

Figure 3. Scaffolding sample of a graphic organizer provided to demonstrate the roles for reciprocal reading.

Those roles were summarizer, questioner, connector, and cause and effect finder. Mrs. Fowler also had the names of the roles and descriptions projected on the front SMART Board. She told students that they would each be doing a "role" for four chunks. Students, in collaborative groups of four, wrote one of each of the roles in the center of the paper, thereby creating four different jobs per group the teacher envisioned for this lesson. She used roles to facilitate reading by the students with respect to the role from where they were reading. In doing this, she used the reading instructional strategy in union with questioning and writing. One of the roles in the reciprocal reading strategy was a "questioner." This student was to question the text as they read. Though questioning is typically a reading comprehension strategy, it was being used as part of an instructional strategy. Regardless of role being performed, students were to write on their organizer information gathered from the text in relationship to their said role. This incorporated writing within the overall reading strategy.

The reciprocal reading strategy was used in both independent and collaborative contexts. First, students were to read their "chunk" of text independently and record information on their graphic organizer. Then, students were to have a collaborative conversation in which they discussed the chunk of text in terms of their own role. Mrs. Fowler used this strategy to, first, facilitate understanding of the text. However, she also used the strategy to create roles for each student, thereby allowing each person to have a unique perspective on the same text.

In a note about this lesson, Mrs. Fowler planned to use the "NAMES" strategy after the reciprocal reading strategy. Ultimately, she did not use the "NAMES" strategy. I asked her what caused her to eliminate the use of the strategy and she stated,

> *Time and, um, the...the text was broken down enough that they already had a role to complete, so they really just needed to focus on that one role instead of trying to mark all this different stuff. The roles kind of took care of the marking...the marking, the "NAMES" strategy.*

The following week, Mrs. Fowler planned to use the "NAMES" strategy. The content of the particular lesson was tornadoes, and she began the lesson with a prediction of the differences between tornado watches and warnings. She used collaboration, grand conversation, to engage students in the content of this article. Then, she read the short article to the class. She used a cloze read, in which she would pause at specific words, and the students would fill in that missing word. Initially, when she paused, students did not fill in the blank, or the missing word, so she reminded students of the strategy, then began reading. This collaborative reading strategy kept students engaged in reading the article. Following the reading, she used a turn and talk strategy to engage students in collaborative conversations about the content of the article. According to my notes, this took approximately eight minutes. In the eight minutes, Mrs. Fowler

used two reading strategies collaboratively, either in grand conversation or the facilitation of paired conversations.

The next activity utilized the "NAMES" strategy. Mrs. Fowler used the "NAMES" strategy to help her students better understand a lengthy article called "That's a Fact: Thunderstorms, Tornadoes, and Hurricanes" that was from the AMSTI curriculum. The first thing she did in using this strategy was to chunk the text. Chunking is an instructional strategy in which the text is arranged into smaller, more manageable pieces of reading. She told students they would be using "stickies" because they could not write in the book. Stickies are simply sticky notes. Mrs. Fowler had two sizes of sticky notes. She had smaller ones, about 1/3 of the size of a regular, square sticky note, and the larger sticky notes, which were the size of a standard post-it note. She told students to use small sticky notes for unfamiliar words, personal connections to the text, and for questions. The larger sticky notes would be used for summarizing each chunk of the text.

After reading a chunk of text together, she told students to write *"what is going to help you understand the text. You are in control of your own learning."* Students independently recorded information on sticky notes that was meaningful to them, in response to this facilitation. Throughout the article, the teacher used this strategy as an independent work strategy. She would read a chunk, then students would make notes on their sticky notes. She did not facilitate collaboration until the end of the activity, and did so through grand conversation. The "NAMES" strategy served to facilitate adolescent literacy through a purposefully planned series of events. She used the reading strategy chunking, students wrote on sticky notes independently to reinforce their learning, and they had the opportunity to record questions that they had about

the text. The collaboration at the end, through grand conversation, helped to solidify information learned through the reading of the text.

In another observation, the teacher used a pictorial anticipation guide style activity to engage students in thinking about where different air masses are located in North America (see Figure 4). This was a prefabricated material.

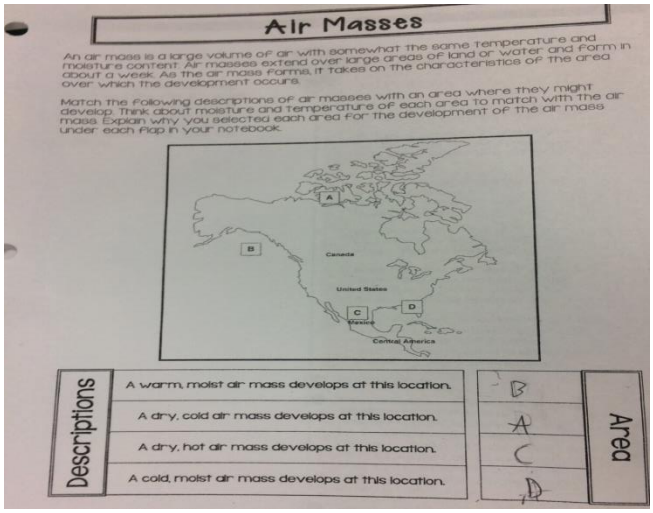

Figure 4. Air Masses Anticipation Guide (student work sample being used as an anticipation guide in Mrs. Fowler's classroom).

After using this prediction activity, students independently read a two-paragraph text that included answers to the guide. Mrs. Fowler asked students to go back and "prove" their answers from the text. She asked them to use text evidence, but students did not know what that meant. She explained to them they had to prove that their answers were correct or incorrect, based on the text. Students had about five minutes to do this; the teacher then gathered the class together

for grand conversation, recognizing that some might not be finished. She reviewed the correct answers for the sheet with the class, and explained why each answer was correct.

In this activity, Mrs. Fowler used an independent reading strategy, associated with questioning and writing. The collaboration occurred at the end of the independent working time in the form of a grand conversation.

In another lesson, Mrs. Fowler used stations to facilitate adolescent literacy in her science classroom. She had three stations set up over a total of six tables. The first station was a computer station in which students would watch a video, then create a model of a jet stream. The second station was a reading station. The students would read a text about different kinds of winds and use the "NAMES" strategy to help them better understand the text. The third station was to be a science lab activity in which students would try to mix hot water and cold water in baby food jars. For this observation, I focused on the reading group.

The teacher told the class, in a general overview of the stations before beginning the activities, they would use their journal to complete the activity. She told them it was short and to use the "NAMES" strategy that they have been using. She had materials at the table. She had crayons at the table to mark the text for different words and make text annotations. Mrs. Fowler had asked the students to underline the nouns and circle the verbs. She also had an answer key at the table, as a guide, so students could check themselves as they worked. There was a diagram on the next page of the text and students were to label the types of winds. There were also questions at the end students were supposed to answer when they completed the activity.

The teacher used the "NAMES" strategy is a small group, collaborative manner. The teacher instructed the students to use this reading instructional strategy to assist them in better understanding the text to be read. This involved writing and questioning the text, both through

the creation and facilitation of student question and through answering questions at the end of the text. The writing also included labeling winds on a diagram to support understanding of the text. Largely, this was a collaborative strategy. The two groups that I observed worked collaboratively to complete the "NAMES" strategy associated with the text (see Figure 5).

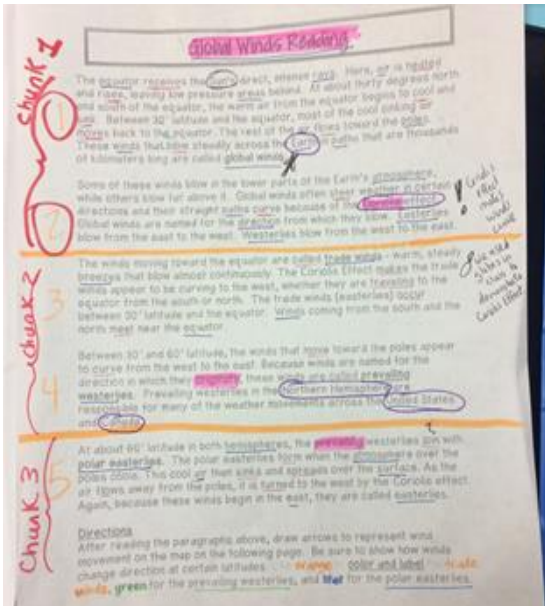

Figure 5. Student Work Sample for the "NAMES" Strategy

To facilitate adolescent literacy in her sixth-grade science class, Mrs. Fowler used a variety of strategies. However, she used the "NAMES" strategy most often. She used a mixture of independent and collaborative strategies to facilitate adolescent literacy. Almost all of her reading strategies were accompanied by some form of writing strategy. Questioning was evident, as well.

Scaffolding Instructional Strategies

Scaffolding was an essential part of teaching students to use instructional strategies so that they could interact with the text at a deeper level. Mrs. Fowler provided three types of

scaffolding. First, she provided modeling or direct instruction to the whole class on how to use a specific strategy. Another type of scaffolding she provided was a combination of interactions between herself and the whole class. Finally, as needed, she provided scaffolding to individual students or small groups of students.

Mrs. Fowler provided a great deal of modeling, or direct instruction, related to the use of the instructional strategy. During the first lesson I observed in Mrs. Fowler's class, she used reciprocal reading. She recognized that students did not have the prior knowledge to use this strategy without her assistance, and she provided multiple instances of modeling for the use of this strategy. First, she provided an oral definition of reciprocal reading, and projected the definition on the SMART Board. She provided a visual representation of the way the paper would be used for each student to do a role. She stood in the front of the class and demonstrated how to fold the paper and where to write the role and each chunk. She walked the students through how to use the strategy step-by-step before she ever asked the students to use the strategy. In my notes, I recorded, *"She said, reading from a PPT, that they were going to read in groups; they will read text in chunks – stated they had already read in chunks, but it would be easier to read and not so overwhelming."* This particular quotation was important as she was setting the purpose for using reciprocal reading in her classroom, in addition to modeling how students would use the strategy.

After she finished providing explicit instruction on how to use the strategy, she invited the students to use the strategy. In my notes, I recorded that the

> *...teacher went to page 4 of the text. She said that this was the first chunk, and everyone should pick a box and write chunk 1 on it. To model, the teacher read a chunk, and asked*

students to engage in cloze read. She said, "Stop and read the word in a normal voice when I stop."

To scaffold the literal reading of the text so students could use the reciprocal reading strategy, she used the cloze reading strategy. Before she read, she told student what to do. The teacher would stop at words like "floods and wildfires," and the students would read those words aloud. When she finished reading that particular chunk, she told the students to write about the text in terms of their role, and if they were not sure what to do, they should raise their hands. She gave students a period of time and asked them to share with their partners the information that they recorded on the paper. After the conversations, she told students they should pass the paper to the right and she read a new chunk. She told students that they were assuming a new role this time, therefore they had a new piece of paper with a different role recorded on it. She gave students a short period of time to write about the text in terms of a new role, then asked them to share. This process repeated itself two more times. Then, she asked the students to read another text using the same strategy.

This teacher provided extensive modeling and direct instruction on how to use the strategy. She was aware that her students needed this assistance. She also walked around the room providing assistance to students that were struggling.

In another example, Mrs. Fowler was introducing tornado watch and warning, and key terminology associated with this. She projected a graphic organizer, a web, to help students learn the terminology associated with the text they were about to read.

This is the first occasion that the students used the "NAMES" strategy. Mrs. Fowler provided "bookmarks" with the "NAMES" strategy described on the back. This was a visual reminder for students, a scaffold, should they forget how to use the strategy, even after she

explicitly described how to use it. Mrs. Fowler explained what "NAMES" meant and described how to use sticky notes in association with the strategy.

In another observation, Mrs. Fowler divided students into groups to go to stations. The reading station was to read about global winds using the "NAMES" strategy. She provided two visual scaffolds to assist students. For one, she provided the "NAMES" bookmark. She also provided a teacher key that demonstrated some of the words that should have been marked on the paper, and examples of text annotations.

Nearing the end of the study, Mrs. Fowler used a guided writing strategy in which students would write a poem about some topic related to weather and climate to demonstrate learning. Mrs. Fowler provided a sheet for students to create an initial poem, in a set format. She modeled how to do this with the class, sentence by sentence (see Figure 6).

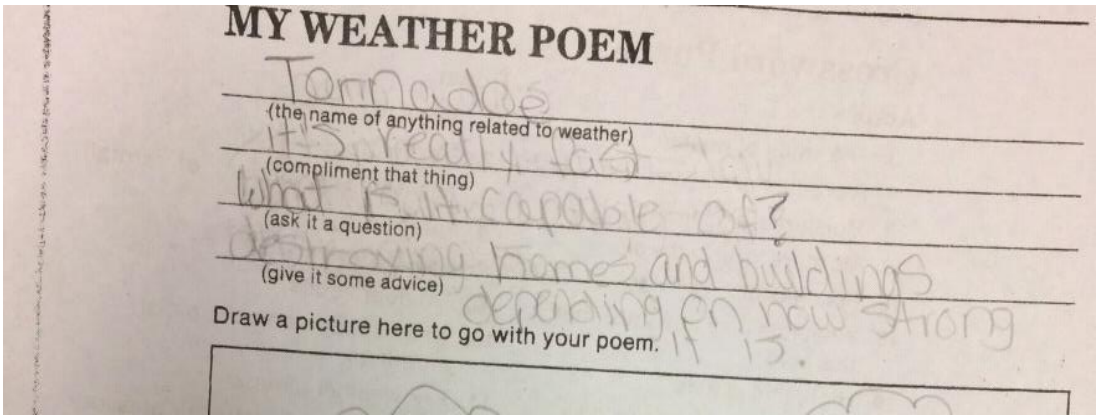

Figure 6. Scaffolded Template for Guided Writing (a student work sample before they create a poem in a guide writing activity).

Mrs. Fowler also modeled how to do an acrostic. She explained what an acrostic poem is, and demonstrated by showing students an acrostic she created (see Figure 7). By so doing,

she enabled students to see examples, hear how to do the writing, and provided them with opportunities to brainstorm to start their own poetry.

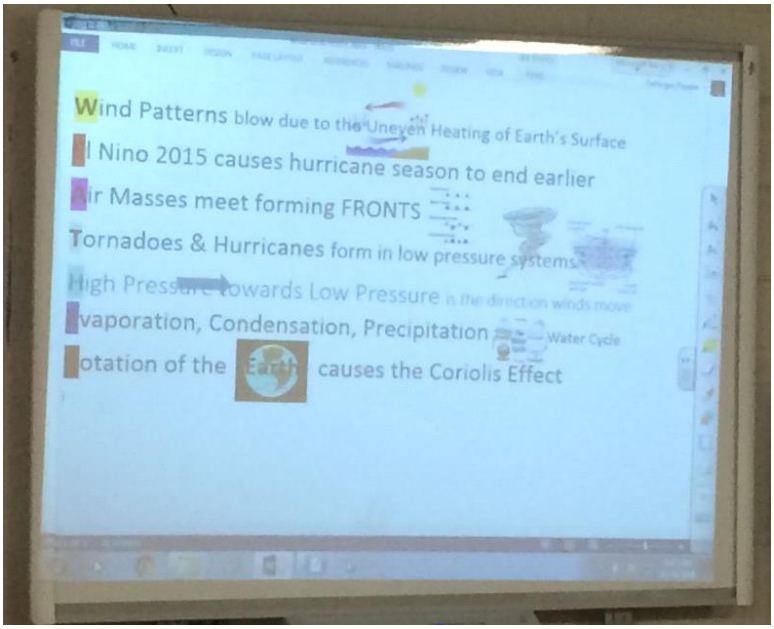

Figure 7. Mrs. Fowler's Acrostic Sample (sample of an acrostic Mrs. Fowler created to scaffold the guided writing process with her students).

Mrs. Fowler frequently provided scaffolding of the use of instructional strategies through interactions with the whole class. Oftentimes, this scaffolding would take place in the form of questioning. For example, in breaking up chunks of text to read (chunking), she would ask students questions such as, *"Where should we stop and summarize to make sure we understand?"* In this case, the students decided to stop at subtitles in the text.

In another exchange, in regard to chunking the text with the "NAMES" strategy, she asked students where they should stop reading. Conversation ensued.

Mrs. Fowler: *"Should we stop after every sentence?*

Students*: No!*

Mrs. Fowler: *That would take us too long.*

Mrs. Fowler: *Should we stop after every paragraph?"*

Some students say yes and some say no.

Mrs. Fowler: "*Where do you all think we should stop?"*

Tara: *"Every paragraph so we can understand what's on each page."*

Mary Claire: *"Every heading."*

Mrs. Fowler: *"Why?"*

Mary Claire: *"Because it separates it into larger parts and it's easier to read"*

Kale: *"Every half page."*

Daria: *"Every 2 paragraphs."*

In this conversation, Mrs. Fowler is guiding the students to an understanding on how to chunk a text effectively, in a manner that makes sense. Students had ideas about how to chunk it, but she provided an interaction representing a scaffold for the students using the "NAMES" strategy.

The final form of scaffolding that Mrs. Fowler used to assist students in learning how to use instructional strategies was the individual and small group scaffolding. In every lesson, I observed Mrs. Fowler using an instructional strategy to facilitate adolescent literacy, she walked around the room, offering assistance and guidance to individual students or small groups of students. In one case, the guided writing strategy, she did not walk around the room offering assistance, but sat at a horseshoe table offering assistance to students as needed.

Scaffolding was a necessary component of the use of instructional strategies in Mrs. Fowler's classroom. She provided scaffolding for the strategies in some form, be it whole group

modeling, working with the students, or some individual or small group assistance. She explained thoroughly how to use the strategies, to assist students in reading the texts.

Student Use of Instructional Strategies

Overwhelmingly, student use of the instructional strategies, be it independent or collaborative, mimicked the teacher's instruction. In only very few instances did students engage in some unique use of the said instructional strategies. The vast majority of the students I observed were actively engaged in the use of the instructional strategies. In only two instances did I observe blatant off task behavior for a continuous period of time. Frequently, independent strategies were used in association with collaborative strategies. Usually, if Mrs. Fowler used an independent strategy, she used it as a precursor for collaboration.

One example of using an independent strategy preceding a collaborative strategy was when she used the "NAMES" strategy. The teacher modeled the "NAMES" strategy and then asked a student to read aloud. After the student read a given chunk aloud, the teacher asked the students to use their sticky notes to make notes, or annotations, on their textbook. She stated *"I want to see sticky notes all over the book. Just be careful not to tear the pages."* At this point, I began to observe student work. Jodie wrote, *"How storms form"* as her annotation on the chunk. She placed her sticky note on the page, close to where she was making the notation. Kale, however, placed sticky notes all across the top of the page, but not next to any specific text. I asked him about his thoughts on using the sticky notes and why he chose to do arrange his sticky notes in that manner, especially since I noticed most students placed the sticky notes on the page next to the text. When asked about how he felt about using sticky notes, he stated, *"The sticky notes help me to summarize the most important points in the text. It helps me to find the main idea."* I asked him why the sticky notes were across the top of the page as opposed to by the

paragraphs and he stated that *"it would help him return to the page if he needed to go back."* He said he sometimes put something like *"The first two sentences,"* or *"Bullet number 5"* if it was really important, so he'd know to go back to it (see Figure 8).

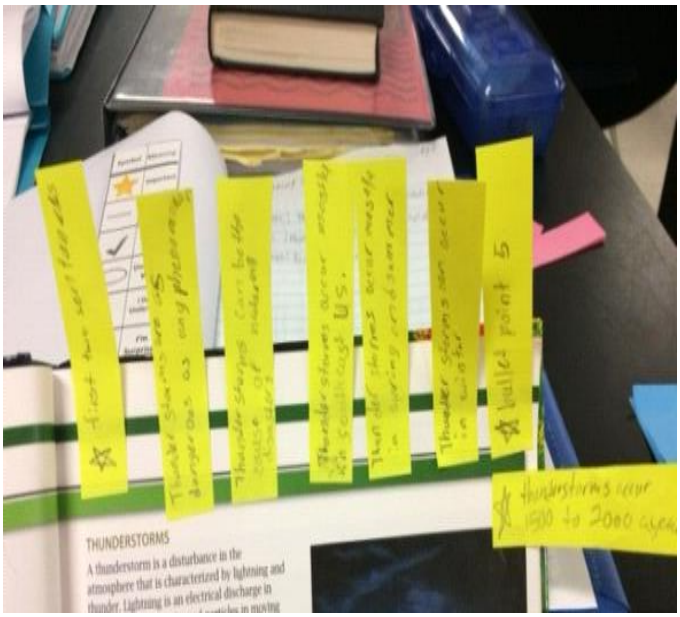

Figure 8. Student work sample demonstrating how one student used the "NAMES" strategy to annotate the text.

Mrs. Fowler even commented on their independent use of the strategy and stated that she could tell they were thinking because she saw many sticky notes. After making positive commentary to the students about their use of the sticky notes and the strategy, she asked them to individually summarize the chunk on a larger sticky note. I talked to Tori about how using the strategy and sticky notes helped her to summarize. She said, *"If I'm able to use the sticky notes it makes it easier to take all of the information in the text and my mind, and put down a little piece of information."* She went on to describe that it's easier to look back at the notes and figure out important parts, which led her to the summary. Then she could take some information

"in her head, and put it with the sticky notes, and write the summary." In this instance, the "NAMES" strategy is assisting students in better understanding the text.

In this scenario, after each chunk Mrs. Fowler asked the students to share what they learned from the text with their partners. This is an example of how an independent instructional strategy can be used both independent and collaboratively. Students were also engaged in reading and writing instructional strategies.

In another example of Mrs. Fowler using instructional strategies in both an independent and collaborative context, students were to read about the nitrogen and carbon cycle using the "NAMES" strategy. The teacher reviewed the strategy with the students, then asked them to write down their thoughts on sticky notes. One student, Daria, asked if they could write on paper if they did not want to write on sticky notes, which the teacher readily agreed to. The teacher suggested that students use orange sticky notes for the nitrogen cycle and green sticky notes for the carbon cycle. As the students were writing independently, I walked around looking at their notations. One student, John, explained why he recorded his statement.

John: *"I wrote this down because I already know about Earth's systems."*

Me: *"How do you know about that?"*

John: *"I learned about it last year, and this (what he had recorded on the sticky note) is what made sense."*

I asked another student, Ginny, about why she recorded the statements she chose. She said, *"Plants breathe in carbon and humans breathe in carbon so they both breathe in carbon. I thought that was important."* I asked her about her third sticky note. She said, *"I wrote that this is very important, the whole first sentence in the second paragraph."* I questioned, *"Why not write the sentence (as opposed to the 1st sentence 2nd paragraph)?"* Ginny answered, *"Because it takes too long and I need to read faster."* I asked if she likes using the stickies. She replied,

"Yes, because it helps me to write down things that are important. It helps me to see what's most important."

Finally, Mary Claire had three sticky notes on her page, so I asked her about her writing and why she wrote down the statements she chose (see Figure 9). She stated that, *"it is the most important part."* I asked her if it was her own words or written directly from the text. She said that she *"put it in her own words because it helped her to understand the text and it made more sense than copying straight from the book."*

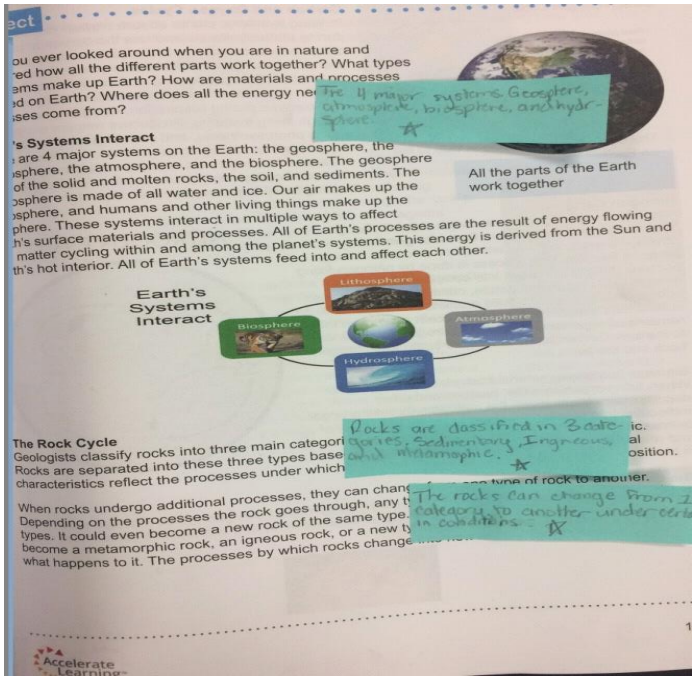

Figure 9. Mary Claire's work sample, demonstrating how she took notes using the "NAMES" strategy.

After independent use, students shared their thoughts and ultimate summaries with the whole group, thereby facilitating the grand conversation and collaboration in the classroom.

Both independent and collaborative use of the instructional strategies facilitated adolescent literacy in Mrs. Fowler's classroom.

Mostly, the student's use of instructional strategies mimicked the teacher's use. However, I noticed there were two distinct exceptions. Both examples were used during a collaborative group reading, and both exceptions involved the use of the "NAMES" strategy. They occurred during two separate observations.

During one observation, the teacher was using stations. She used a computer station to explain the jet stream and asked the students to make a model tube to represent the jet stream. She used a lab activity to see if students could mix hot water with cold water. Finally, she had a reading station in which students would read about global winds and use the "NAMES" strategy, but unlike the other times students had used that strategy, they had to underline nouns and circle verbs. I observed the reading station. When the second group of students arrived at this station, they sat down and began to read a direction card at the table. Kaitlyn, the only girl in the group, began reading the directions, and the other two boys in the group did not have the article out. Mrs. Fowler notices this and asked them to please take out their copy, which they already had in the binder. After this, the three students began to read the directions in a round robin style. They passed the instruction card around the group and took turns reading. The following is an account of the conversations and observations between the three students taken from my field notes:

> Carrie: *Ok we have to do step 1. She grabs the teacher's paper and says, "Chunk 1." Sam begins to read the first paragraph. Carrie underlines and circles what the teacher has underlined and circled. Beaux said that just because the teacher's paper was there, does not mean that he had to underline and circle what she wrote. I asked him why he said that. He said it was because she said that it was there to use, but did not have to*

copy. I asked him what he would underline if he had a choice and he said global winds because the text was about global winds. Carrie said that she was going to underline because it was there and she wanted to use as an example. They continued to read. Carrie continued to underline what the teacher had on her paper, but the boys did not. They just kept reading.

In this example, Beaux was the first student that I observed actively take ownership of his own learning. He did not want to copy the paper just because it was available as a scaffold. Just to gain their insights, I asked the group how they felt about underlining and circling on the text to help them better understand it. I received the following response:

Carrie said she liked it, at first. Sam said that he didn't like it, but then Carrie started sharing. But then Beaux piped up and said that did not like it and that he found it distracting. He explained that it was hard to go back in the text and try to read/reread through all of the color and he did not know what it said. He found it distracting. Carrie agreed that she found that distracting as well. He'd rather read and go back and find the important parts without the colors. He also finds it distracting to try to read with others talking in the room.

While it is clear that Beaux finds reading the text and working collaboratively distracting, it is unclear how Carrie feels. This group provided excellent insight into how students use the strategies collaboratively, and how one student wanted to assume the role of being responsible for his own learning.

I found another unique example of how a student used an instructional strategy in a different manner from what was modeled by the teacher. The context is that students were to break up in groups to read a text about earthquakes. They were to read the text using the

"NAMES" strategy. The teacher provided the "NAMES" bookmarks with the acronym meaning on the back. She asked the student to arrange the text into chunks that were meaningful to them. I joined a group of boys – Jack, James, and Dillon. The teacher thought the text was difficult so she made a quick decision to read the text to the class using a cloze read procedure. After she read the text to the class, she asked them to go back and chunk the text, reread, and use the "NAMES" strategy. Highlighters and sticky notes were available for use.

The group of boys I was seated with grappled with how to chunk the text. One wanted to chunk by paragraph while the other wanted to chunk by every three paragraphs. Chunking by headings, as modeled, was never discussed as an option in this group. While Dillon and Jaylon were trying to decide how to chunk the text, James was working quietly on his own. When I glanced at his paper, I realized that he was doing something unique. He was creating a code on his paper. I asked him about it, then he described it. It was a color code for his highlighting. He also wrote the meaning of "NAMES" at the bottom of his paper, so he could refer back to, even though there were bookmarks with the acronym and meaning on the back. Other students saw what he was doing, then began to make their own color codes. This was unique, and the only time I observed something like this happen.

In my field notes, I reflected that the boys were truly collaborating using this strategy. They grappled with summarizing the most important parts of the text, they struggled with chunking the text, but in an appropriate manner. They received guidance from the teacher on a couple of occasions. However, their conversations were rich about using the strategy as well as the content of the text. For example, after reading a chunk about earthquake damage and cost of the damage, the boys discussed what the most important part of the text was. My notes stated

Jaylon said he added some information about damage.

Dillon said that you can't know how much it will cost because of people suing, damage, etc.

Konner agreed, then began to read his summary.

Then Jaylon asked if it was his turn to read.

Jaylon highlighted a piece of information; then I asked him why he chose to highlight that specific piece of text. He began to describe it then he hesitated. I asked him why he thought what he highlighted was the most important part. He described how *"a 9.0 killing more than 10,000 people was important."*

The use of reading, writing, and questioning instructional strategies to facilitate adolescent literacy can be used independently or collaboratively. In Mrs. Fowler's class, there was a great deal of collaboration. Ultimately, in this class, instructional strategies used independently were used in conjunction with collaborative strategies.

Interviews and observations with Mrs. Fowler and her class provided a wealth of information about how she planned for and used instructional strategies in her classroom, as well as how her students, in turn, used instructional strategies.

Mrs. Rebecca Gillman

Mrs. Gillman, at Village Middle School, was the second participant in this study. Her interviews and classroom proved to be just as informative in providing information about the planning and use of instructional strategies.

Context

Mrs. Gillman was a certified secondary teacher at Village Middle School. At this school, she had taught sixth, seventh, and eighth-grades. Most of her experience, over ten years at this

school, was in teaching sixth-grade science. To date during the study, she had not received any formal training on instructional strategies.

My initial impression of Mrs. Gillman was that she was very relaxed. She made me feel at ease from the moment before I walked into her classroom. She was standing in the hallway as I approached the door, and she welcomed me into the class. Mrs. Gillman's room had an eclectic style to it, but still had a recognizable "recycling" theme. Mrs. Gillman was passionate about conservation and recycling, which she included in her classroom discussions. Pithy posters were on the walls, with quotes like, "If you can't change it, change how you think about it." A small "spirit" wreath hung on the inside of her classroom door. Pictures of family were displayed in her classroom, reflecting a personal side of Mrs. Gillman. Every inch of storage space was filled with books, binders, and materials. The teacher's desk was strategically placed at the front, center of the room, and student desks were arranged in rows. One particular bulletin board caught my eye. It said, "Lure You to the News," and had several newspaper articles pinned to the display.

Mrs. Gillman used humor in her classroom to engage her students. She had a dry sense of humor, but she would make wisecracks in class from time to time, and the students would respond through laughter and discussion. She created community in her classroom through humor and personal connections to the content being taught.

Mrs. Gillman's schedule consisted of four periods of teaching 55 minutes of science, one period of teaching reading, and a short intervention period. She had two "back-to-back" planning periods, which also frequently consisted of meetings and parent conferences. There were 24 students in this "advanced" class, though the teacher had concerns about the realistic nature of the label "advanced" for this particular class. I observed this group for seven of the ten

weeks. The second group I observed, for the final three weeks, was an "advanced" class, and Mrs. Gillman felt confident that these students were "truly advanced." Mrs. Gillman used a variety of instructional strategies to facilitate adolescent literacy.

Instructional Strategies Used

As stated earlier, I grouped instructional strategies into five categories: reading, writing, questioning, independent, and collaborative use strategies. These strategies can overlap and be classified in multiple categories. Mrs. Gillman used all of the five categories of instructional strategies. The reading instructional strategies Mrs. Gillman used consisted of text annotations, cloze read, chunking, jot notes, anticipation guide and paired reading. The writing instructional strategies she used were jot notes, anticipation guide, guided writing, quick write, close, written response, 3-2-1 exit slip, $2.00 summary exit slip, and a strategy she calls the "Sponge." Mrs. Gillman also used questioning instructional strategies. They included essential questioning, anticipation guide, and the "sponge." Mrs. Gillman used independent strategies, consisting of the anticipation guide and cloze procedure. Finally, the collaborative strategies Mrs. Gillman used were grand conversation, anticipation guide, turn and talk, cloze read, and paired read. All of the instructional strategies that Mrs. Gillman used appeared in Alabama Reading Initiative documents that support instructional strategies except for the "sponge."

The "sponge" was an original strategy that she created. The "sponge" was designed to engage students in the lesson of the day. It is similar to a bellwork-style question. She used this strategy at the beginning of the class when students would enter the room. They would respond to the prompt on the board by writing in their journals.

Planning for the Use of Instructional Strategies

Mrs. Gillman planned for the use of instructional strategies in an interesting manner, especially in the beginning. I noticed that Mrs. Gillman discussed content, materials, and scope and sequence during planning frequently. Environment factored into her decisions during planning, frequently. She also talked about student ability level and time. She discussed the high-stakes test, the ACT Aspire, on several occasions. However, scaffolding and the actual instructional strategies proved difficult for her to plan for, as she had little experience in using instructional strategies to facilitate adolescent literacy. In fact, with her secondary science background, she was uncomfortable with teaching reading entirely. When I initially asked her what she thought of when she considered instructional strategies, she stated, *"Panic."* She went on to explain that this was because she *"was not trained elementary, so we were...we did not focus on instructional strategies. We focused more on content."* This impacted her planning for instructional strategies.

Mrs. Gillman always considered the content of the lesson and materials available for use when planning to use instructional strategies to facilitate adolescent literacy in her science class. From the first week to the final week of the study, this was always a consideration. For example, during the first week of the study, Mrs. Gillman told me that her focus was to, *"totally just focus in on this thunderstorms, tornadoes, and hurricane sheet."* The sheet was a curriculum created organizer to compare and contrast facts about tornadoes and hurricanes. There were a couple of questions on it about thunderstorms.

The very next week, she planned for the use of instructional strategies by considering content, materials, and scope and sequence. She stated,

Well, today in class we began reading an article called "The Source of Earth's Heat" in the AMSTI book about solar energy and how the uneven heating of the Earth's surfaces is the primary cause of weather and, therefore, catastrophic events. And we began by previewing the article and realizing that it fell into three chunks, and so we started reading the article and using a graphic organizer to break apart the article into the three chunks. So, tomorrow... We did not finish that today, so tomorrow we will be working on it. I have a graphic organizer that gives a main idea kind of question for the chunk for them to answer, and they were not allowed to pick up their pencil and answer the question until they were done with the chunk. So, there were three chunks, three questions, and then they were to draw a diagram on page 47 which demonstrates solar energy that is reflected and absorbed.

Content of the lesson, materials available for use, and scope and sequence continued to be an important part of the pedagogical theme that exhibited itself throughout the study for Mrs. Gillman. In a later planning session, Mrs. Gillman explained that

We have a quiz on Friday over the weather instruments that we went over yesterday, and so we need to go over those, review those, and they have a foldable that we will review. But I also need to make sure they know about the Doppler radar, which is not on their foldable. But Doppler radar is mentioned in this reading on pages 68 through 73 or 72, about what's the weather forecast. And I also wanted to make sure they understand that James Spann the weatherman is coming to visit us in October, and who he is and everything. So, that's going to be kind of like a ten, fifteen-minute discussion about meteorology, which ties into the Hurricane Katrina video, showing how they had to track and predict and report that, as well. So, it all ties together. So, that's pages 68 to 72.

The example demonstrates how she planned for the lesson, considering the content of the lesson, hurricanes, radar, meteorology, in addition to the materials. She talked about a foldable, a video, the quiz, and a text. She also considered what students had previously done and activities and events that were upcoming.

Mrs. Gillman considered the scope and sequencing of using the instructional strategies in and of themselves. For instance, during the first planning interview, she stated that *"I've been working with my first period specifically on, um, chunking. I don't really like the name, but chunking. And, uh, I'm definitely going to have them use chunking when it comes to table one."* Content, materials, and the scope and sequence of lesson and activities seemed to be universal in planning for the lessons in Mrs. Gillman's class.

Environmental factors were a consideration in Mrs. Gillman's room, also. The first time I entered Mrs. Gillman's room, the desks were in paired rows. On the third week of the study, I entered her room and the desks were in pods of four. I asked her about why she changed the setting and she stated,

> *I just wanted to learn their names and I tried to pair strong students in every group. I'm trying to think about labs in the future as well and who worked well together and who I know are helpers. So, that's when I moved them into their groups. Yeah, I've been telling them that about a week or two prior to this that I was going to be moving them into groups, that I just needed to learn their names.*

Her seating arrangement factored into the classroom environment when planning for the use of instructional strategies. She wanted to pair students that would get along and help each other, but the reality was that she had a strategy at the beginning of the school year to learn their names.

In another example of how environmental factors influenced Mrs. Gillman's planning to use instructional strategies, she stated,

> *Right, and that they need to understand what Doppler radar does. And, considering that every Tuesday we do weather.com as our sponge question, we'll discuss Doppler radar after they've read this section. So, that pretty much... That's how I'll get them interested. Honestly, when it comes to weather, these kids are very excited about weather, so it doesn't take a lot to get them excited about weather.*

She knew that the content of the lesson would factor into the learning environment, as she recognized that the topic was engaging. She also planned to use her "sponge" to foster engagement and interest in the classroom.

Another environmental consideration that factored heavily into Mrs. Gillman's lessons throughout the study was classroom management. About halfway through the study, Mrs. Gillman was planning for her lesson and made the following comments:

> *Well, the number one thing I listen for whenever kids at this age work in groups is to be on task, but then I also will go around to the groups, all groups, but then also specifically the groups of the kids who I know are struggling readers, and make sure, one, they're not being dominated by their partner, and two, that they're not just copying from their partner, and three, that they're understanding what they are actually reading. So, I might poke my head in to the conversation, ask a random question.*

She addressed many aspects of planning in this commentary, but it exemplified the environment as conducive to learning. She was very concerned with compliance of the students, including being on task and taking responsibility for their own learning when working collaboratively when preparing for the use of the upcoming anticipation guide.

Another factor that was a consideration to Mrs. Gillman in planning for the use of instructional strategies was the student's ability level. During the first planning session of the study, Mrs. Gillman addressed paired reading, and why her students were not ready to try it. She said,

> *But enough for the advanced class that I just thought, you know, paired reading might not be...they might not be ready for it yet. I'm not giving up on it. That's... I just had a boy in here to finish in the four question, four text thing. He had none done. He did not understand at all from that class. So, the reading scale level... I have a college kid, college-level kid, and I have a fourth-grade-level kid. So...*

The context of this comment is that she was planning for students to read a text and fill out a graphic organizer independently. I asked her why independently and not with partners. She told me that they had not finished their activity from the day before and some would finish early. She did not like *"down time,"* so she was going to let them go ahead and start reading the next article independently. Her concern was that she had such a varied group of readers that some would be bored while others would be lost. She stated that a paired read might be good for a grade level class, but not the advanced class I was coming to observe.

During week five, Mrs. Gillman was planning for the use of an anticipation guide, and wanted to use it collaboratively. In planning, she said that, *"I think I will have them do this in pairs tomorrow, because it is the first anticipation guide. I will pair up strong leaders with struggling leaders…"* She had begun to shift perspectives on paired reading in her classroom.

High stakes testing played a role in the planning process for Mrs. Gillman in relationship to instructional strategies used. Frequently, throughout the planning process in this study, she

referenced the high stakes test students would take. For example, during the first week of the study she said,

> *And I went over how to pull information off of data tables and how they're going to have to do that on the state...uh, science assessment in seventh grade, just like they took it in fifth grade. This worksheet is something like what you would see on your science assessment – pulling information off tables.*

She is referring to the science portion of the seventh-grade ACT Aspire. Historically, sixth-grade students in the state have not been required to take the science component, but Mrs. Gillman taught seventh grade previously. She was attempting to prepare students for the future.

In planning for using texts and strategies, she considered the ACT Aspire reading test that students would take in the spring. She said,

> *So, I'd like to say that I should give some sort of introduction more, a little bit of a lecture first and then have them read it, and they should understand it better, but that's not how they're going to be tested on the Aspire. They need to learn how to take a passage that they have no clue what it's about and comprehend it.*

Five weeks into the study, in planning to use an article with an anticipation guide instructional strategy, Mrs. Gillman stated,

> *And so, I just thought that that would be more, uh, realistic to a...a shorter, uh, article on the Aspire or something, whereas if it's a long article, you know, they need to read the whole thing through. But shorter informational texts, usually they can just read it, a paragraph, and then go back and answer the questions right then.*

She was planning to use the statements on the anticipation guide as a way to connect to the Aspire. She wanted to show students how to go back in the text and prove an answer to be correct or incorrect.

Finally, nearing the end of the study, I asked her if the ACT Aspire was shaping how she used strategies in her class and she stated,

> *Um, yes and no. I mean, when I see that it fits what might be on the Aspire, I'll mention it. Um, every morning, we do Aspire-type work in reading, so, um, you know, cause and effect, it kind of just struck a chord that I know that it's on the Aspire test.*

For Mrs. Gillman, high stakes testing was a significant factor in planning for the use of instructional strategies.

In planning to use instructional strategies, scaffolding was a theme that was recurring. In fact, in the beginning of the study, when Mrs. Gillman was planning for students to read a text independently and use a graphic organizer, I asked her what scaffolding she would provide to assist them. She stated,

> *Um, only previewing questions before they read the chunk, so that they understand what the focus is, to help them focus in on such a large piece of information. I'm not a scaffolder. That's not… (laughs) my strategy.*

Initially, she did not feel that she needed to do any scaffolding. During the second week of planning, Mrs. Gillman was sharing what she planned on doing. She referenced an activity she had started in an earlier lesson and said,

> *I already have four (words) in mind that I'm pretty sure they don't know what they mean, and we're going to preview those and discuss those. And then even if they got through*

that section, they are going to need to reread it and fix any answers based on the vocabulary previewing.

Mrs. Gillman recognized that there was a lack of knowledge of terminology in content, and realized she needed to provide a form of scaffolding to assist them in acquiring the content. She was going to use jot notes and grand conversation to help them learn the terminology.

By the third week, she was planning for the use of scaffolding in conjunction with collaborative strategies. For example, she said

…we're going to come back as a whole class once their groups are done reading and taking notes and answering that question, and discuss as a whole class where the... And I'll ask the pairs who wants to answer, you know, and we'll discuss their answers to this question.

Mrs. Gillman was starting to recognize the need to plan for collaborative strategies and provide scaffolding for the content of the lesson as well as the use of strategies. She was starting to consider using instructional strategies more often.

A final consideration about planning with Mrs. Gillman was uncertainty in planning. Planning is an uncertain process by nature, but proved to be significant in talking with Mrs. Gillman. In one instance during planning, Mrs. Gillman was not sure what she would be doing in terms of using instructional strategies with the independent reading and graphic organizer. She thought through the process orally,

I'll probably introduce my directions to this first. And, although they can't write in it, I'm probably going to have them jot down some notes. I'll have to think about that. Okay. Exit slip. Um, at some point, I have to mention to them that we're doing a lab on Friday because it is my day. And so I might actually... I do a sponge every day. But I

might actually... Because we're talking about thunderstorms, it's not quite all, um, like, relevant.

This think-aloud was about reading a text and filling out an organizer independently. She was not really sure how she wanted to facilitate learning through the use of strategies. She wanted them to make jot notes, but they could not write on the book, so she thought she'd have them do it in their journals. Then, she wanted to have them to an exit slip, but it took time, and she had to preview a lab that they were to do on Friday. She did not think the content of the lesson would be relevant to the lesson she was facilitating. She was unsure of what to do.

In another scenario, she was attempting to plan for the use of an instructional strategy but she was unsure of what it was called. She said, *"Close. See, I know all these things! I just don't know the names! [Laughs]"*

Every one of the pedagogical, scaffolding, and instructional strategy themes played a role in how Mrs. Gillman planned to use instructional strategies during her instruction to facilitate adolescent literacy. The planning process is complex, reflecting a variety of themes and topics.

Using Instructional Strategies to Facilitate Adolescent Literacy

Mrs. Gillman used a combination of instructional strategies to facilitate adolescent literacy. She used independent, collaborative, reading, writing, and questioning strategies, and, as mentioned earlier, these strategies overlapped. Initially, Mrs. Gillman was more interested in her students working independently, and it was largely due to environmental facts, mainly classroom management. However, as the study progressed, Mrs. Gillman began using more and more collaborative strategies. During the first classroom observation, Mrs. Gillman explained what students were to do throughout the course of the class period.

Mrs. Gillman: *"Take out your worksheet from yesterday. Feel free to ask me any questions about this. Take how long you need. This worksheet is something like what you would see on your science assessment – pulling information off tables."*

"Then, we are going to chunk when you are finished with that. Turn to page…

The article that these tables are in is what we are going to read next. Look at the beautiful and devastating pictures of the storms. Here's what you will do when you get to that point. P. 30–31 is an introduction. 31 is about?"

Kids: *T-storms*

Mrs. Gillman: *"Turn the page. Pages 32–33 is about?"*

Kids: *Tornadoes*

Teacher continued with the hurricane sections. *"I do not expect you to finish the whole thing today. This is what you will do when you get done. Take notes on this sheet. Text annotations in your spiral. I check your spirals when I test you guys. I check to make sure you are taking notes."*

In the account taken from my observational notes, the teacher essentially gave directions for what the students would do for the class. There was very little interaction between the teacher and class. There was little explanation of the strategies that the students would be using to help them interact with the text. However, there was accountability associated with the use of the strategy, as she intended on grading the notes. The environment here played into the use of the instructional strategies as there was a spirt of compliance that resonated in the classroom. The instructional strategies did overlap. Students were using a combination of independent reading and writing strategies. Students would take jot notes in their spirals as they read the text. They

were to use the chunking strategy when reading the text about thunderstorms, tornadoes, and hurricanes as well.

In another example, Mrs. Gillman began each class with the instructional strategy that she called the "sponge." In the second classroom observation I conducted, the students entered the classroom and sat down to do the "sponge." The following is an account from my observational notes:

> *The "sponge" today was designed to have them review a major concept that they studied, that would lead into today's lesson. The "sponge" today was "Where is tornado alley?" The students worked on the "sponge" for 7 minutes. The teacher discovered that several were struggling, so she provided support. She asked the students that were struggling (she told the class) to open up to a particular lesson, and read the particular paragraph. The teacher used "Dojo" to randomly select students to call on. She asked for states that are included in tornado alley.*

The "sponge," as described by Mrs. Gillman, had two purposes. First, it was a classroom management strategy, providing students with work to when they entered the classroom. The second purpose was to invite students to either preview the upcoming lesson or review some previously studied concept. This day, she wanted to review a concept leading to the new lesson with the independent questioning and writing strategy. However, she recognized after a period of time the struggle that students were having with the question. She provided scaffolding by directing them to textbook. Afterward, she provided a time for collaboration in sharing responses through grand conversation.

By the third week of the study, however, Mrs. Gillman tried a more collaborative strategy. She had changed the arrangement of the desks from rows to pods of four, which, by

nature, invited collaboration. She told the class that they were going to do a paired read. She said

> *As you read, please take bullet notes. You are reading with a question in mind. The question in mind is at the bottom of the article. Tamara, read the questions… "Where do you think air masses often meet in the United States? Why?" You are going to get a sticky note per pair. When you finish, you are going to put it on my whiteboard. One sticky note per pair.*

In this example, inviting the paired reading was new to this classroom. The teacher had been vehemently opposed to students reading in partners because she tried it once and felt that it turned into *"social hour 101."* The introduction of the collaborative reading and writing strategy was new. Also, she included questioning in her strategy. She created a question for students to consider while reading the text. Mrs. Gillman also introduced sticky notes and movement. First, the sticky notes were to be used to respond to the question, and then, she was going to invite students to get up and go to the board to place their sticky notes on display.

After students had the opportunity to read, write, and share, the teacher concluded the lesson. She asked the students to use a $2.00 summary, which is, in this case, a 20-word exit slip summary of the central focus of the lesson. She explained the $2.00 summary by saying

> *Now, here's what I want you to do. Take out a piece of loose leaf paper. I am about to introduce a $2.00 summary. A $2.00 summary. Every word is 10 cents. $2.00 summary. You can't go over $2.00. On your sheet of paper, you are going to turn in to me, you are going to write a $2.00 summary of what we just talked about. You have to use 18–20 words.*

In this independent writing instructional strategy, Mrs. Gillman explained what students were expected to do with the strategy. It is worth noting that this was the first time students had used the strategy. She did leave room for student choice in the summary by stating that they could use less than exactly twenty words. She used this strategy as a formative assessment to see what students learned from the lesson.

Mrs. Gillman also used an anticipation guide during my observations in her classroom. When she first introduced the anticipation guide, she asked the students if they had ever heard of this before. The consensus was that some had heard of it, but did not know what it was, while other students had not ever heard of an anticipation guide. She explained, step by step, what an anticipation guide is and how to use one. This strategy was used collaboratively, and it used reading, writing, and questioning. Students worked together to read a text and respond to six statements on the guide predicting, then proving, whether they were true or false.

Mrs. Gillman used reading, writing, and questioning instructional strategies both independently and collaboratively. In the beginning of the study, she used mostly independent strategies but that shifted to a combination of independent and collaborative strategies to foster adolescent literacy. She used the "sponge" every day, but used a variety of strategies throughout the study.

Scaffolding Instructional Strategies

Mrs. Gillman scaffolded the use of instructional strategies to facilitate adolescent literacy in three methods: modeling, interacting with the class, and through small group or individual instruction. This process appeared to evolve throughout the course of the study, as well.

Initially, when planning with Mrs. Gillman for the first observation, she stated that she was not a scaffolder. She was emphatic that the scaffolding that she would provide would be at

the beginning of the activities for the day, which included finishing an activity from the previous day and reading a new text. During the observation, Mrs. Gillman did exactly what she planned. She told the students what they would be doing, but the students had several questions. My notes read

> Student: *"So, do we do the lab?"*
>
> Teacher: *"No."*
>
> Girl student: *"So we write on here?"*
>
> Teacher (held up new sheet): *"Instead of me explaining this to 25 different kids who finish the other sheet at different rates, I am explaining it all now.*
>
> *Students have questions about reading scales vs graphic organizer sheet.*

Students were confused. The reason the teacher elected to go over all of this at the beginning of the class period was so there would not be "down time" in the class, meaning some students had finished with the activity from yesterday while others would still be working. The teacher walked around the room providing individual scaffolding. Many students asked questions about what they were supposed to be doing. Mrs. Gillman even reminded several students of what a "chunk" was. I made a couple of field notes about this. In one notation, I observed*, "A student approached the teacher and asked for instructions again. The teacher told them to take notes on all sections, but take notes on the thunderstorms first."* In another note, I wrote

> *The teacher is still up, walking around the room, answering questions about what students were supposed to be doing. This is her way of providing scaffolding. She is providing it individually to students, as opposed to walking through a more formal process, whole group directed.*

I vividly recall wondering how the activities would have been different if she had provided some modelling, be it a list or some scaffolding between the activities. What if she had provided a set

period of time to finish the activity from the previous day, while other students worked on something constructive? I wondered how many times she answered the same question.

In another example of scaffolding provided by Mrs. Gillman, students were completing their morning "sponge," but she realized that they were struggling with some of the terminology. She asked the students to read through the text and make notes of words they did not know. She provided scaffolding to the entire class. I noted,

> *The teacher began to explain the meaning of the word 'unimpeded.' She gave the example of student, Erica, who stated she did not know what the word meant yesterday, but today, since she had to write it down, she paid attention to it. She figured out what the word meant by reading around the words. The teacher bragged on her for figuring it out today. She then demonstrated other ways to figure out the meaning of a word (prefix 'un') if they see something like this on the ACT Aspire. She also pulled up dictionary.com and projected the meaning of the word on the smart board. Another word was radioactive. The teacher said, "No, not the song," and the students responded to that by saying "Huh?" Teacher sang, "Radioactive, radioactive." Then, she compared it to a movie, but stated she does not want for them to get the wrong impression, because a lot of that is fictitious. She explained radioactive.*

In this scaffolding excerpt, Mrs. Gillman provided direct scaffolding in the form of modeling. She explained how to use context, electronic resources, and even prefixes to help determine the meaning of unknown words. Recognizing the words that were unknown to students and jotting them down was the reading and writing independent strategy. However, Mrs. Gillman provided strategies for determining unknown words. She even infused humor and connections into this discussion to provide a safe environment for students.

In another observation, the students were using a 3-2-1 Exit Slip at the end of a lesson. Mrs. Gillman anticipated that students would struggle to use the independent writing strategy, so she provided scaffolding (see Figure 10). She projected an image on her interactive whiteboard of the prompt for which students were to respond. Then, she provided an example. My notes state that

> *She gives an example using 3 foods I like, 2 foods I don't like, and 1 food I am unsure of. She explains to students what their exit slip will be. She told them to write this down and do their 3-2-1.*

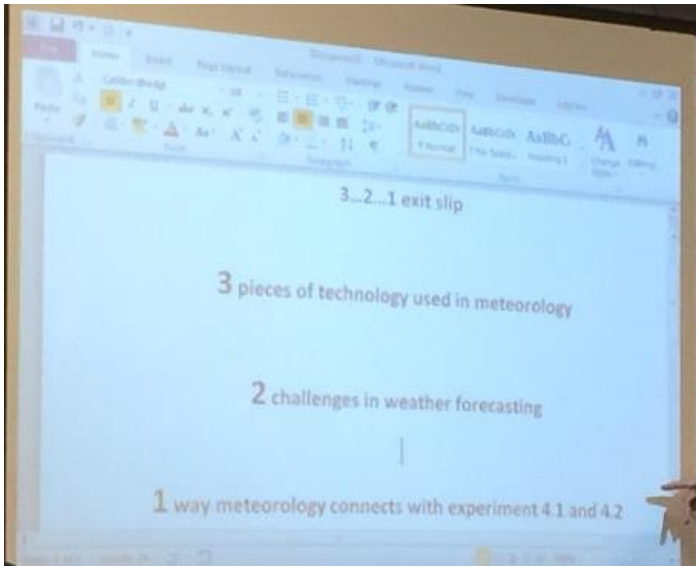

Figure 10. Mrs. Gillman's 3-2-1 Exit Slip Scaffolding – Mrs. Gillman projected a scaffolded 3-2-1 exit slip to assist her students.

The mere projection of the prompt assisted students in completing the exit slip. She provided a model for students to use, as well as an easy to understand example for students to pattern their responses after.

When introducing the anticipation guide instructional strategy, Mrs. Gillman provided scaffolding through interacting with the class. This was the first opportunity that students had to complete an anticipation guide in her class. I noted that

> Mrs. Gillman explains anticipation. *"When you anticipate something you look for it."* Boy: *"Like a hypothesis?"* Teacher, *"Sort-of." She gave the example of growing up in Philadelphia and if she heard on the news there was traffic, she anticipated her father would be upset when he got home because he had to sit in traffic.*

She defined terminology through scaffolding after determining that her students did not understand the meaning. Then, she provided a scaffolded learning process for using the guide. I recorded

> *The teacher explained the anticipation guide. She said that they would read six statements and anticipate if they thought it was agree or not. She asked if they'd rather use T or F, then subsequently decided to allow them to use T for true and F for false. She said that she expected them to get it wrong because they don't know this stuff. One student asked, "What if we all get it right?" Teacher stated that would be "groovy." Teacher moved on to the "during" part of the guide. She read the instructions. Then she displayed a copy of an anticipation guide on the Elmo. She said that they would read the statement and predict if it was true or false. She put T in the first blank to demonstrate. Then, she told them they were going to do a paired read and demonstrated to them how to prove the answer as true or false. She said that once they come back to the whole group.*

This scaffolding helped students to better understand the use of the strategy. She taught them what to do through whole group interactions and demonstrations as opposed to merely telling them.

In another observation, the teacher was using a text to teach about mythology concerning earthquakes in terms of what ancient cultures previously believed caused earthquakes. Mrs. Gillman provided a graphic organizer to help organize the information in the text. She was leading the students toward a guided writing in which they would create their own myth about why we have earthquakes. The following field notes describe the interaction between Mrs. Gillman and her students:

> *The teacher began to read the first paragraph of the text. Some students chorally read aloud with her. Most did not. The teacher went over the graphic organizers. She read each box and then filled in the answer for each box.*
>
> Teacher: *"So, the text did not really tell you when it occurred. Most of these myths occurred a long time ago. Most of you can think of books you've read that says 'A long time ago'," and one child blurted out "Movies!" So the teacher gave examples.*
>
> Teacher: *"Cause and effect." You are going to need to know these words for the Aspire. What was the cause and what was the effect of the cause? What is the cause?*
>
> Daris: *"The dog had fleas and began to scratch and the earth shook."*
>
> Teacher: *"The cause is the fleas. The dog had fleas and the dog began to scratch."*
>
> Teacher: *"All righty. Now you are starting from the beginning of the article on page 60. This includes reading the captions. Imagine thinking that the earth rested on a giant catfish!"*
>
> *Children talked about this.*

Teacher: *"Please read 7 and 9, and then you are going to go back and fill in number 2 with your favorite one. When you are done with that one, I want you to stop."*

Mrs. Gillman demonstrated to students how to use the graphic organizer, and made notes about the purpose of each organizer. Providing the visual and the interactive conversation with the class served as scaffolding between the teacher and the class. She worked with them to assist them in understanding the text at a deeper level, and assisted them in using the note-taking strategy. Again, she did not merely tell them how to use it; she demonstrated (see Figure 11).

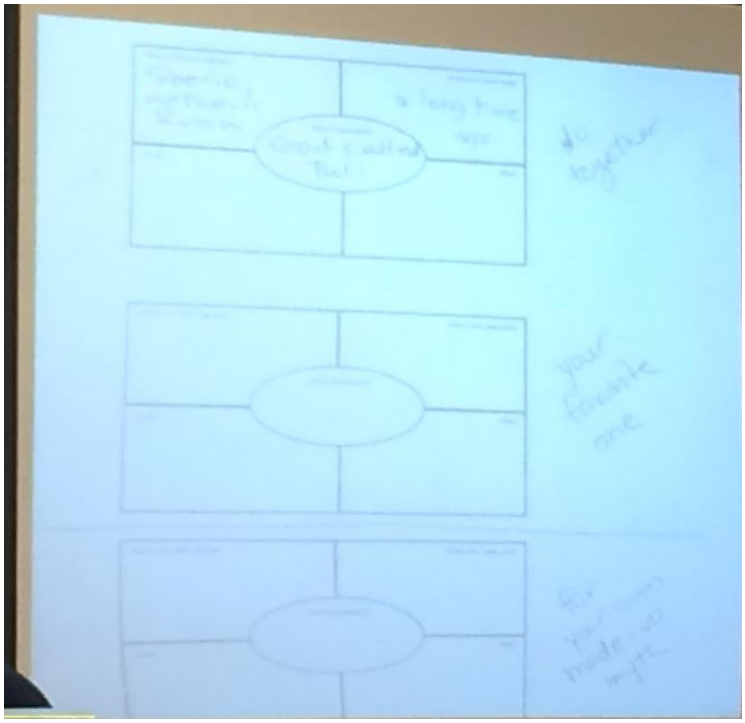

Figure 11. Graphic Organizer for Guided Reading and Writing – Mrs. Gillman projected a graphic organizer and modeled how to use it with the class.

Mrs. Gillman used different forms of scaffolding in her classroom to assist in the acquisition of not only content but in using instructional strategies that would help her students understand the content of texts at a deeper level. She evolved over the course of this study from

telling the students, then reiterating it many times throughout the class period to demonstrating to how to use a strategy.

Student Use of Instructional Strategies

The students used the instructional strategies in a manner that mimicked how they were taught. Students used the reading, writing, and questioning strategies in an independent and collaborative manner. During the first two weeks of the study, the strategies were largely used independently. However, after that, more collaboration was prevalent in the classroom.

I was able to talk with two students during the first observation in Mrs. Gillman's class. They were using the reading instructional strategy of chunking, the writing instructional strategy of jot notes, then students completed a graphic organizer about thunderstorms, tornadoes, and hurricanes. The following is an account from my field observations of what they shared with me about the strategies.

> *Nadine said chunking is where you "take one paragraph and write down the most important parts." We talked about the paragraph she was reading which was about the size of a thunderstorm. She said she was able to use the chunking to help her figure out the most important parts. She wrote down the most important parts of the chunk on her paper.*

Another student shared with me her note-taking strategy (see Figure 12).

> *I noticed that she was writing about thunderstorms and tornadoes sideways all over her paper. I asked her what she was doing and she stated that she was taking notes on the chunks that she was reading. I asked her why she was writing in the way that she was (wondering if it was some sort of mental strategy she was using). She said that she could*

not write straight. I asked her if she was chunking her notes on the paper, and she said yes. This was indicated by the heading.

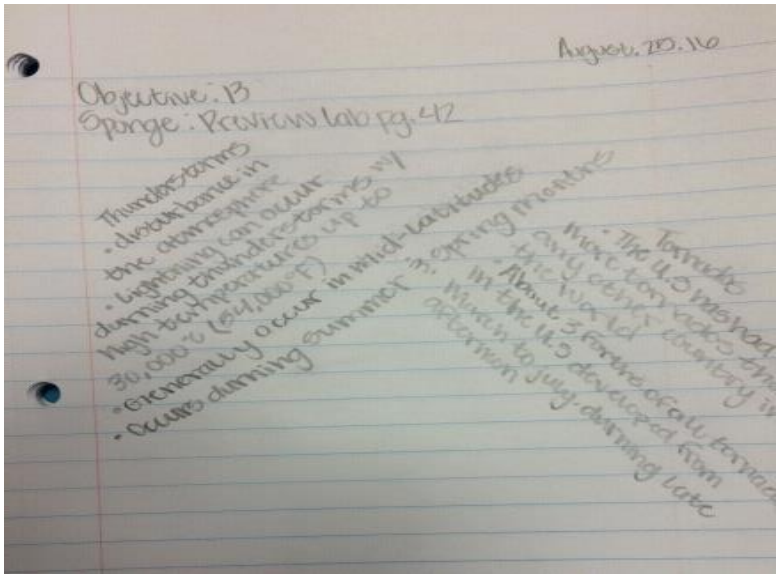

Figure 12. Student Note-taking Sample – This student work sample displays how one student elected to chunk their note-taking.

In another example that took place during the second week of the study, students were working independently, chunking text and answering questions on a graphic organizer. The organizer provided a question for each chunk of text. I approached Annie and asked her how she was using the strategy.

She is on chunk 3, "A Delicate Balance." I asked her what she was doing, and she said she was reading that chunk. When she finished, she began answering the question on the graphic organizer, for that chunk. The question, "What does the uneven heating of Earth's surfaces causes?" When she finished writing her response, I asked her if she minded if I asked her a couple of questions, which she said "Sure." I asked her what she

was doing. She stated that she was reading the third chunk and answered the question. I asked her what the chunk was, and she pointed to a paragraph in the book and to her graphic organizer. I asked her where the chunk came from, and she really could not answer.

The third observation included collaborative reading, writing, and questioning strategies. The teacher engaged students in a reading of the text by offering the opportunity to work with a partner. She also introduced sticky notes for making notes. I joined Katelyn and Andrew, observed them working, and asked questions about the strategy. Initially, Katelyn and Andrew read the text with each other. When they finished, however, neither were certain about what to do, so Andrew approached the teacher to ask. She reiterated the instructions to the pair. Then, Andrew began to jot notes, and Katelyn followed suit. As they were working, I asked a couple of questions to Andrew, then Katelyn.

I asked Andrew what he was doing (as he took jot notes) and he stated, "I am reading and scanning the text. I'm looking for important parts to write down."

I asked, *"How do you know what is important enough to write down?"*

Andrew said, *"I think about what I read and think about how it works and think if it's important."*

I asked, *"How does writing it down help you to learn it?"*

Andrew stated, *"When you write it down you remember it longer. And you can go back and read it."*

Katelyn share her thoughts, too.

Me: *So what did you write down?*

Katelyn: *The most important parts.*

Me: *How do you know what's important?*

Katelyn: *She was very quiet for a long period of time. She restated that she looks at the important parts*.

Me: *Does writing down information help you?*

Katelyn: *Yes. It helps me to remember.*

Unlike Andrew, Katelyn was not very sure of herself in using the strategies. Andrew, however, was very confident. He shared one more tidbit of information that was very useful during this conversation about the use of the strategy. I asked Andrew how he felt about using the sticky notes. His response was:

Andrew said, *"I guess I like it because I look at the amount of space on it and I know that I only need to write the gist of what's going on."*

Me: *"What if you had to write it on the paper?*

Andrew: "*I'd think it needs to be more, you know, step by step, and I have to fill it (the paper) up."*

He was aware of how the sheer space on the sticky note helped to guide his thinking and interaction with the text.

During a lesson using a graphic organizer, quick write, and guided writing, students read about myths to explain why we have earthquakes. Students used an organizer to record details of one myth, scaffolded by the teacher, then details from another myth while working independently.

Following this, Mrs. Gillman asked students to do another independent strategy, the quick write, to share which myth was their favorite and why. Students were eager to share their thoughts with the class following the writing.

Carrie: *"I like this myth because I like when people get in trouble and don't get away with stuff."*

Jennifer: *"My favorite myth was the elephant one because of how people thought they were smushed by the elephants."*

Sawyer: "*My favorite myth was the catfish because of how silly it is."*

Students connected with the text and they were able to articulate these connections both in writing and orally using the independent and collaborative reading and writing instructional strategies.

Students used the instructional strategies, essentially, how the teacher taught them to. Commentary exhibited that students were using the strategies to interact with the text.

Mrs. Gillman used a combination of all five of the types of instructional strategies. She used various scaffolding methods. Many pedagogical considerations factored into her planning and instructional decisions.

Mrs. Jill Morrison

Context

Mrs. Morrison was a veteran, certified elementary teacher. At the time this study took place, she had over twenty years of experience. She had been teaching sixth-grade science at Village Middle School for over ten years. She had participated in several trainings on instructional strategies, including professional development opportunities offered by the Alabama Reading Initiative and school-level trainings.

When I first walked into Mrs. Morrison's classroom, I could immediately sense her contagious enthusiasm for teaching. It exuded from the colorful, red curtains in the room tied back neatly with pretty white and black ribbons, the pieces of realia strategically placed around

the classroom, the trade books about the science topic being taught, the "school spirit" items around the room, and all of the other details that made this room inviting. Sun streamed in through the windows. Mrs. Morrison's room was organized, although she would argue otherwise, as she was consciously aware of the "mess." Well, learning is messy. Student-created concept maps lined the walls, indicating students' background knowledge of weather and climate. Desks were arranged in pods of four, in pairs, facing the front of the room, which drew attention to the interactive white board on the far left side of the room, followed by a long whiteboard.

Students loved Mrs. Morrison. That was evident by the portfolio of artwork, presented to her by various students throughout her years of teaching, which lined the walls behind her computer workstation, located in a back corner of the classroom. Students listened to Mrs. Morrison. Her hysterical sense of humor kept students engaged with her lessons. The rapport she was able to establish in a very short period of time, approximately two weeks, with her new sixth-graders was admirable.

Mrs. Morrison's schedule consisted of teaching one period of reading, four periods of science, a short intervention period, and two back-to-back planning periods, which regularly consisted of meetings and parent conferences. She had approximately 55 minute classes. I observed two different classes over the course of the ten weeks I spent in Mrs. Morrison's classroom. The first class, observed the first seven weeks, was classified as an "advanced" class, and there were 25 students in the class. The second class I observed, for the final three weeks, was a "grade level" class, consisting of 23 students.

Instructional Strategies Used

As per the context of this study, instructional strategies were classified into five categories including reading, writing, questioning, independent, and collaborative strategies. There was an allowance for strategies to be classified in multiple categories. The reading strategies Mrs. Morrison used were chunking, paired reading, cloze read, cloze read procedure, and anticipation guide. The writing strategies used in Mrs. Morrison's class were paired writing, Dot jots/two-column notes, jot notes, sketching, commit and toss, cloze read procedure, and anticipation guide. The questioning strategies used in Mrs. Morrison's class were essential questioning, reading with a question in mind, and anticipation guide. The independent strategies used in Mrs. Morrison's class were Dot jots/two-column notes, commit and toss, and cloze read procedure. The collaborative strategies used were paired reading, paired writing, grand conversation, cloze read procedure, say something, partner talk, table talk commit and toss, and anticipation guide.

Every time I observed Mrs. Morrison's class reading a text, she had a well-developed lesson. She purposefully planned for the use of instructional strategies at each planning meeting and implemented them within her classroom setting. She facilitated a great deal of collaboration within her classroom setting and provided ample scaffolding.

Planning for the Use of Instructional Strategies

Mrs. Morrison provided a wealth of insight into her planning process through our pre-observation interviews. Mrs. Morrison frequently referred to the content, materials, and scope and sequence of her lessons while planning. Though it was mentioned, she did not dwell on student ability level or high stakes testing. Her environment was a consideration, as well as her scaffolding process. Additionally, uncertainty was noted in planning interview transcriptions.

Mrs. Morrison addressed the content and materials of her lesson on every occasion that I planned with her. During the first week of planning, she described to me what the class would be studying during my first observation.

> *I think we're going to do tornadoes...thunderstorms together. And then I kind of thought maybe they would, um, do, like, a partner read. And, you know, do tornadoes together and write their information. This is a student sheet for them to kind of take notes about tornadoes and, um, they're going to write down where does a tornado form, what causes it to form, how big is it, how fast does it move, how fast do the winds rotate, and what scale we use to measure. And they'll answer those as they read with their partner about tornadoes and then about hurricanes.*

Mrs. Morrison addressed the content of the lesson and the student sheet that would be used to take jot notes. In this quotation from the planning interview, she described how students would use a collaborative reading and writing strategy to interact with the text.

In another example the following week, she discussed the content of the lesson to be observed. She stated

> *Well, we're going to read an article called "The Source of Earth's Heat", and it mainly talks about the energy we get on Earth comes from the sun, and then we're going to talk about the seasons on Earth and how the last section will be that it's a delicate balance, that the sun is positioned exactly in the right place, and the sun and the Earth are positioned right in the exact perfect place for us to live on Earth, and how we rotate and revolve about the solar energy, how much is absorbed, reflected. And that, again, is a perfect balance, because if it was more we wouldn't be able to live on Earth, and less, we wouldn't be able to live on Earth.*

In this example, Mrs. Morrison specifically addressed the content of the lesson. She continued on to describe that students could do a Dot jot in their journals to write down important information from the text. By doing this, she considered the content of the lesson in conjunction with the instructional strategy to be used during the lesson.

Later in the study, Mrs. Morrison planned for a lesson about myths that explain why we have earthquakes. In planning, she stated,

> *Um, it's a lesson on, um, myths. The kids will learn about, um, myths from different cultures that explain why we have earthquakes. And, um, after we read a couple of very short ones, um, they will write one of their own.*

She followed up by referring to a graphic organizer that students would use as they read the text about earthquake myths.

> *It kind of... It breaks down, um, kind of like the "who, what, when, where and why" of myths. They have to fill in who's the main character, where did the myth originate, when did it take place, um, and the cause and effect.*

Mrs. Morrison considered the content of the lesson, the materials that would be used, and how it related to the reading and writing during the lesson.

In addition to considering the content and materials of the lesson, Mrs. Morrison also considered the scope and sequence of learning that previously occurred. In one example, Mrs. Morrison referenced information students do not know as a result of a curriculum change and how that effects students' learning. Village Middle School is an AMSTI school, and they receive kits with mini-textbooks and activities. Historically, Village Middle School had received a unit on Earth in Space during the first nine weeks, but this year, they received their Weather and Climate unit first. She said

Normally when I teach this, they've already had a whole nine weeks about sun, Earth, moon. Well, they don't have that now, so I got a concrete model to show them how Earth is tilted, and a flashlight so they can shine a light on it, and even though we only have one to use, you know, they can't... They have a visual, and I can have volunteers come up and rotate, move the model around the sign to help them understand better.

Students not having background knowledge about Earth's tilt has influenced Mrs. Morrison's planning. She knows that they do not have prior knowledge on a topic that is going to impact students' ability to understand the text.

Student ability level was only discussed three times throughout the course of the study when working with Mrs. Morrison. In the first reference, she discussed why she would use a cloze read. She stated that even though the group was an "advanced group," she wanted them to keep up with her in the reading. In a second quotation, she mentioned that during the previous lesson students did a cloze read with her, but this time, she wanted students to read independently, *"especially the advanced."* In a final quote, she considered the needs of her "grade level" classes in planning for reading instructional strategies. In planning for the use of instructional strategies, in the cases of these quotes, she considered student ability level as a basis of decision-making for the use of instructional strategies. High stakes testing was not mentioned once during planning.

Environmental factors contributed to the planning of Mrs. Morrison's lessons that used instructional strategies. Oftentimes, she referenced activities and strategies available to use that would facilitate active engagement with the text. For example, in describing the "Dot jot" note-taking strategy, Mrs. Morrison stated, *"Um, it's kind of just a...a name to make taking notes a*

little more interesting to them." She felt that instead of suggesting that the class take notes, they make "Dot jots," thereby providing an environment that was engaging, not boring.

She considered student choice in another planning interview. She considered the content of the lesson in association with a chunked organizer students would be completing in class. Mrs. Morrison was planning for an exit slip based on the lesson taught. She explained,

> *The three questions on the hand-out, I may just have those on the board. What is the source of Earth's energy, what would happen if the Earth was not tilted on its axis, and what does the uneven heating of Earth's surfaces cause? And let them maybe pick one of those to answer and explain, or if they want to write about all three. But at the end, just give them a minute or two to write what they've learned about those three sections on an index card.*

Student choice was an important concept in planning for an environment conducive to learning. She wanted for students to respond to a question of their choosing to demonstrate learning.

In another example of environmental considerations in planning for the use of instructional strategies, Mrs. Morrison described using a new strategy for her classroom, the "Commit and Toss." In the "Commit and Toss" strategy, students would make an anonymous prediction about the lesson, write it on a piece of paper, wad it up into a ball, and toss it. Students would then pick up a paper ball off of the floor and read the prediction. In planning for it, I asked her how she thought the students would respond to the strategy. She mentioned

> *Um... [Laughs] I think, um, I'll have about three boys that might...that might get in a little trouble, but we'll see how they do, how they handle it. I think it'll have their...I'll have their... You know, they'll be interested, you know. They'll... I did this in, um, reading, um, one day last week and my...with...with a different class and they were...they were like,*

"You want us to wad the paper up? You want us... We can throw it?" And I just like, "Don't throw it at anybody." But, um... It was a... Such a little thing got them so in... excited.

Mrs. Morrison knew that having a paper ball throwing event in the class would be engaging and she used it as a strategy. She previewed the lesson by asking students to make an anonymous prediction, then used a highly engaging activity to get students to collaborate and write about the content.

Mrs. Morrison planned extensively for the use of scaffolding to assist her students in acquiring new strategies and content. In the first week of planning with Mrs. Morrison, she talked to me about using the "Dot jot" strategy. She explained,

Mary used a "Dot Jot" and I thought it was cute, so we may read a little chunk of that and...and jot down, you know, let them practice using, you know, main words and phrases and not copying sentences out of the text, and do the "Dot Jot" on thunderstorms, and then they'll do a partner read, which I'll probably have to explain and go over how to do that and let them do that with tornadoes. Um, and I'm kind of thinking I might let them do the last one on hurricanes by themselves.

Mrs. Morrison explained that she saw another educator use the "Dot jot" strategy previously and she found it engaging. She described that they would read together and provide an opportunity for students to practice using the reading and writing instructional strategy. She suggested that they would work together to do the first one. Then, she explained that there would be a gradual release of scaffolding in which students would work with a partner, then do one on their own. She purposefully planned the scaffolded experience in relationship to her lesson for her students. In the same planning session, she also described how she would scaffold students when it was

time for them to work collaboratively using the strategy. She said, *"And then so I'll walk around, listen to their discussion, look at what they're writing down, and, um, guide them or intervene if...if I see they're on the wrong track."* Mrs. Morrison planned to provide individual or small group scaffolding in the event it was needed.

In another example, Mrs. Morrison described her upcoming lesson that would involve an independent chunked read, coupled with a "Say Something" and "Dot Jot" strategy. She described to me how she felt her students would perform with the strategy.

> *I think that with my grade level, instead of letting them read silently, because I think some of them may struggle a little bit, especially with the first chunk, I may do a cloze reading, where I read maybe the first section and really model that with them a little more, because I think my grade level needs that. And they've done a little bit of that before, but especially the first section. The last two sections are shorter and I think I probably can let them do the silent reading and say something and then do a Dot Jot.*

Mrs. Morrison realized that the length of the text, along with the text complexity, might be difficult for her grade level classes, so she might do a cloze reading to scaffold the learning process.

During a planning interview about half way through the study, Mrs. Morrison discussed a complex and difficult text that students would be reading the following day. She recognized that it was a difficult text and that students would need scaffolding.

> *I would probably say, "Guys, I...I always have trouble remembering is a sea breeze during the day or at night," because I do. It's something that, you know, I remember that at night, the land's going to cool off, so the breeze is going to blow out this way from the water. Um, it can be confusing, um, and...and really, the main thing they need to know is,*

um, we have winds because the Earth is heated unevenly. So, that's the main thing they need to know. But it...it...it is kind of a difficult concept, land breezes and sea breezes, but I...I want to just kind of simplify it for them, because the main thing is the Earth is heated unevenly, so we have...we have land breezes and sea breezes and...relating back to the lab they already did.

Essentially, Mrs. Morrison made connections as a scaffolding technique. She related the content to physically going to the beach and subsequently related the text to be read to a prior lab experience.

A variety of pedagogical and scaffolding components were significant in Mrs. Morrison's planning process. She had many considerations in planning for the use of instructional strategies to foster adolescent literacy within her classroom setting.

Using Instructional Strategies to Facilitate Adolescent Literacy

Mrs. Morrison used a variety of instructional strategies in her sixth-grade science classroom to foster adolescent literacy. Each of the five categories of instructional strategies were represented in Mrs. Morrison's classroom. She facilitated the use of reading, writing, questioning, collaborative and independent instructional strategies to assist her students in deeper comprehension of the texts under study.

Mrs. Morrison used the reading instructional strategy, cloze read, to scaffold the reading process. At the beginning of the study, which coincided with the beginning of the school year, she would scaffold the process by telling students how to use the strategy. For example, on one occasion I wrote in my notes, *"Teacher says when she stops, she wants them to say the next word. Teacher begins to read. "…they all involve (what?) kids – rain and high winds…"* By doing this, she engaged the students in the reading process, and also provided scaffolding.

In the same lesson, Mrs. Morrison used "Dot jots," a catchy way to describe a note-taking procedure. Mrs. Morrison used this reading and writing strategy to draw students' attention to important parts in the text and to teach them how to take notes. She described to students that they didn't need to *"write down everything."* Following that, a student asked if they could skip lines, and Mrs. Morrison said that they did not have to, but they could. In doing this, she engaged students actively in the reading process, even to the point that students questioned the formatting of the "Dot jots." Mrs. Morrison taught many things in conjunction with using the reading strategy.

Mrs. Morrison used questioning strategies in association with facilitating adolescent literacy. For example, in the second week of the study, Mrs. Morrison began the lesson with a question. She said, *"This is what I want you all to focus on today." She writes and says, "What causes weather and its storms?"* She asks students for any ideas, or if they know anything about what causes weather and storms. Mrs. Morrison used strategic, essential questioning to set the purpose for the lesson. She also provided an opportunity for collaboration in the classroom, so that students could respond with their prior knowledge.

In another example, Mrs. Morrison used the independent and collaborative reading strategy "Say Something" with the text, "The Source of Earth's Heat." The following event transpired:

> *The teacher said, "In this section, I want you to read the rest of this first column. Read the little bit silently, then I want you to turn to your partner and say something. I don't want you to say you are hungry. I don't want you to say I am glad we are not coming to go to school on Monday. I want you to say something about the paragraph."*

"Say Something" is a strategy that is very similar to a "turn-and-talk." However, it has an engaging name, which creates an environment of excitement and enjoyment. She used this strategy to invite students to "say something" about the chunk of text they were reading. Initially, she asked students to read the chunk of text independently. In that manner, students had the opportunity to consider their own perspective on the text. Then, they would have an opportunity to compare what they learned from the text with their partners. This collaborative component of the strategy afforded students the change to confirm, revise, or consider alternate perspectives on the text read. What followed after students shared was a grand conversation in which students were asked to share something that either they stated or their partner stated during the paired discussion. The choice that the teacher offered factored into the use of the strategy.

The teacher used the instructional strategy "Commit and Toss," an interactive writing, questioning, independent, and collaborative strategy. The "Commit and Toss" took place at the beginning of the lesson. In this strategy, the teacher asked the students to respond independently, in writing, to statements projected on the whiteboard in terms of whether they thought the statements were true or false. She wanted students to record the one statement on their paper they thought was true. After doing this, the teacher asked the students to crumple their paper up into a paper ball. She divided the class in half and told students they had "committed" to a statement by writing it down on a piece of paper. She explained that students were going to *"toss the paper, not baseball star 100 miles per hour toss, but toss."* She then demonstrated how to toss the paper. After that, the students tossed their papers at the opposite half of the classroom. Then, students picked up a paper ball from the floor, opened it up, and read the prediction on the paper. After students read the prediction, Mrs. Morrison divided the students

into three places around the room. She even had signs posted on the wall with the statements written. She asked the students to move to the statement that represented the one on the paper. Students struggled with this because if it was in disagreement with the statement they wrote, there was a need to justify the notion that the individual did not actually write that.

In using this strategy, the teacher provided a way to make predictions about a text to be read in a highly unusual manner. This is the only time I observed an instructional strategy being used in a manner that involved throwing paper. The students read statements on the board and made a prediction by writing the statement they thought to be true. This portion, completed independently, paved the way for the collaborative component of the strategy. Students were actively engaged in predicting information to be read in the upcoming text, and they were excited. She used this strategy to create excitement about reading the impending text (see Figures 13 and 14).

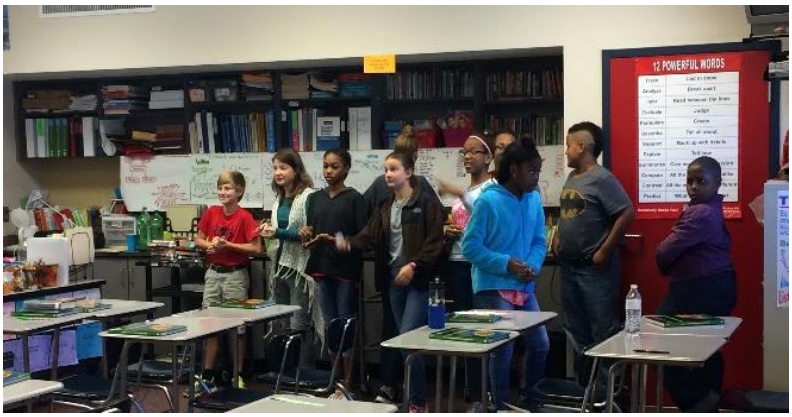

Figure 13. Commit and Toss, Part 1 – Students line up on opposite sides of the classroom to toss crumpled paper at the other side.

Figure 14. Commit and Toss, Part 2 – Students read the paper they retrieved and gather in groups with those who have the same response recorded.

Mrs. Morrison used a variety of instructional strategies, but they all fell within the five categories of reading, writing, questioning, collaborative, and independent. She used the instructional strategies to facilitate adolescent literacy, but also used them to create an environment conducive to learning. She used her strategies to create interest and excitement about reading the text and the interaction that would occur with the text as a result of the strategies.

Scaffolding Instructional Strategies

Mrs. Morrison provided ample scaffolding to teach students to use instructional strategies. With every strategy she presented, be it reading, writing, questioning, collaborative, or independent, she provided extensive scaffolding for the students. She recognized that they would need assistance in learning how to properly use the strategies. She provided explicit

modeling, scaffolding in which she worked with the class, and individual/small group scaffolding when needed.

During the first week I observed Mrs. Morrison, she was teaching students how to do "Dot jots" in their journals using two-column notes. She provided explicit instruction on how to do this. She presented the strategy in the following manner:

> *Teacher provides journal entry on the board for students to copy (modeling). Only label thunderstorm b/c we have a handout for tornadoes and hurricanes. Do you remember when we took "Two-column notes"? We are going to do what I call two-column notes. We are going to divide our paper in almost half. 1/3 on the left and 2/3 on the right. On the left, our topic is thunderstorms and on the right, "Dot jots." Lawyers do this! They make special tablets for lawyers to take notes like this! We are going to make dot jots.*

Mrs. Morrison demonstrated to students, explicitly, how to divide their journals into two columns conducive for recording notes (see Figure 15). She even made a connection to lawyers making "Dot jots" so that it would make the notetaking more interesting.

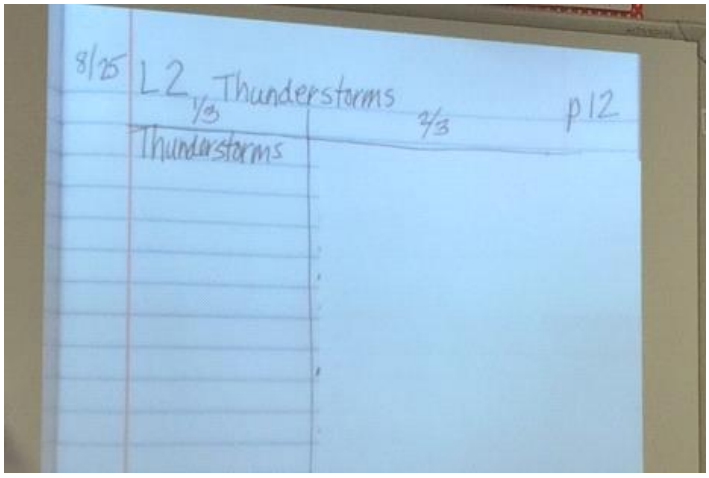

Figure 15. Modeling Two-Column Notes – Mrs. Morrison models how to divide journal pages to create a two-column notes page for "Dot jots."

Mrs. Morrison taught students how to do paired reads, and used humor in the scaffolding process. She said

> *We are going to do a strategy called paired reading. You have to be sitting beside someone and Elaine is going to read the first column. You are going to be following along reading silently in your head. Then you are going to stop, answer the questions and talk to each other. You are going to have to read, listen to each other, talk to each other, then write. Then, the partner will read the second paragraph. Continue… You are going to read out loud, but in a quiet voice because you are talking just to each other. You know how you do at lunch? Maybe that's how we are supposed to talk… Sorry, I'm being a little facetious. What if you don't have a partner? Then you would have to work in groups of three.*

This type of scaffolding represented explicit instruction and modeling on the part of the teacher. She explained how to use the paired reading, but then she inserted a humorous connection. In scaffolding, she created an engaging learning environment.

There were many instances in which Mrs. Morrison worked with the class to provide scaffolding. She used a great deal of questioning strategies to do this. After the teacher modeled a strategy, she would frequently have the students practice using it to a certain point in the text. She would then stop the class and have a discussion of sorts, or provide some sort of modeling. For example, students were reading a text and using the "Say Something" strategy, an independent and collaborative reading strategy. She modeled how to do it with a chunk. Then, she asked students to try it. The following exchange transpired:

The teacher said, "OK. Let's read the next column. Read until you find what's important. When you are done look at your partner and says something important."

Following this, student read the text, then began to talk to their partners.

After modeling with the class, she provided scaffolding so that the class could practice.

In the same lesson, the teacher modeled how to do "Dot jots," the second week in a row. After she provided explicit modeling, she began to interact with the class, providing scaffolding. The exchange was documented in my field notes:

Teacher: *"The next "Dot jot" – "We can say Earth is heated just the same, right?"*

Students: *"NO!"*

Teacher*: "Oh. We can say Earth is heated unevenly."*

Students all write and copy on graphic organizer.

Teacher says she's trying to keep it short when she writes.

Mrs. Morrison used reading, writing, and questioning strategies as she provided the interactive scaffolding on how to use the "Dot jot."

I did not observe a significant amount of individual or small group scaffolding in Mrs. Morrison's room. However, on all occasions, Mrs. Morrison was walking around the room, talking with children. I do not have record of those conversations. However, I did find one instance of the scaffolding provided by the teacher in an individual/small group setting. Mrs. Morrison had invited the class to read a text about ancient seismographs. She was using a reading, writing, independent, and collaborative strategy in which students read a chunk of text, turned their textbook over, then wrote what was important about the text. Students did this independently. Then, they were to share with a partner. The following events occurred:

The teacher walked around the room and talked to the kids. She looked at their papers, and made comments to them. Then she said, "Ok guys, let's go ahead and talk to our shoulder partner. This time the shoulder partner on the right talks."

Mrs. Morrison provided scaffolding to help individuals with their writing response to the text and finding an appropriate time to share their responses.

Mostly, in Mrs. Morrison's class, scaffolding occurred in the form of teacher modeling and interactive scaffolding with the class. She walked around the room, talking with students, during collaborative or independent work using the reading, writing, and questioning strategies. Scaffolding was an important theme in her classroom, as she explicitly taught students how to use the instructional strategies which would assist them in better understanding the text.

Student Use of Instructional Strategies

Essentially, students used instructional strategies in the manner they were taught by the teacher. Students did use instructional strategies independently and collaboratively that involved reading, writing, and questioning strategies.

In the first week, Mrs. Morrison used the cloze and "Dot jot" strategy. Essentially, students did exactly what their teacher modeled. Mrs. Morrison told the class that they were going to read cloze style, then take "Dot jot" notes. The following field notes were captured to describe the classroom scene when reading the text using the cloze:

The air immediately around (what?) kids – lighting – is heated to up to 30,000 degrees Celsius. Teacher stops and talks about Celsius. 0 degrees is freezing and boiling is 100 degrees. Fahrenheit is 32 freezing and 212 boiling. Teacher reemphasizes how hot is lightning? Redirect. Continue cloze read. Teacher reads aloud and students fill in the missing word chorally.

When Mrs. Morrison stopped to take "Dot jot" notes, one students was concerned with the formatting of the page, so she asked if they had to skip lines. The teacher allowed for student choice in that circumstance.

At the end of the class, the teacher began to describe the forthcoming paired read, but ran out of time before they could engage in the strategy.

In another example, Mrs. Morrison was encouraging students to consider the content of the text and how they might use the reading strategy "chunking." First, Mrs. Morrison posed an essential question at the beginning of class. She asked the students to consider what might cause thunderstorms. The class engaged in a collaborative discussion to share thoughts and ideas related to the question. Some emerging ideas were

Will: *"This might be a guess but the strong weather and what that causes storms."*

Another student, Ellie: *"The sun shines on the earth."*

Other students guessed wind or heat.

Students were willing to engage in responding to essential questioning through collaborative discussion. In the next part of the preview of the lesson, Mrs. Morrison asked students to develop a question about a chunk of text which had a heading, text, picture, and caption. Students considered this independently, then shared, collaboratively, questions they had about the text. They asked questions such as

Reagan: *"What is solar energy?"*

Dale – "*How did it reflect off the snow?"*

Luke – *"Why does it reflect off the trees?"*

This process continued through the text, and students considered questions independently, then shared following each predictive exercise per chunk.

While reading the text, the students used "Dot jots" on a graphic organizer. The graphic organizer had guiding questions in each chunk. The teacher modeled the first chunk, but then asked students to read the following chunk with partners, then "Say Something." Students used the strategy, mostly, as instructed. There was a slight deviation about using the "Dot jot." I joined a group to listen to their conversations and observe the use of the strategies that were being used independently and collaboratively in a reading, writing, and questioning context.

Students read quietly, then I begin to hear murmur.

Will: *"The energy and the air goes against the wind."*

Jaden: *"It radiates through space."*

I asked Will what he was doing with that piece of paper (graphic organizer) and he stated that they were going to back to the question on the chunk (the essential question for each specific chunk) when they finished reading the chunk. Jaden had information recorded, but Will and Kelsie did not. The teacher had not given instructions to record.

It was unique that Jaden took the liberty to make jot notes on his organizer, even though the teacher asked them to read the text, then "Say Something" to their partners. I asked him about why he went ahead and made "Dot jots" on his organizer and he said as he read he saw something that answered the question, and it was the right answer. This comment indicated that he was interacting with the text, using the questioning strategy, to help him better understand the text.

At the end of the class, I talked to Jaden again. The following were notes recorded from my interaction with Jaden:

I asked Jaden if having a tool like the graphic organizer helped him to understand what he was reading. He said yes, so I asked him why. He stated that when he uses it and writes down information, it helps make it easier to learn. (note that Jaden was the only

one of this group that was using the graphic organizer before the teacher asked them to do so.) I asked him why he thought that his teacher chose the question that was in the chunk and he got really quiet. I told him it was ok to say he didn't know. I asked him if he thought that the questions had something to do with the chunk and he said yes, the important parts. I thanked him for talking to me.

Jaden indicated that he was deeply thinking about the text. He made the metacognitive statement that he felt the graphic organizer and "Dot jot" strategy assisted him in learning the information from the text.

The "Commit and Toss" strategy was unique to this study in that Mrs. Morrison was the only teacher that facilitated the use of this strategy, or any other instructional strategy where students threw paper and moved around the class. The students were very much engaged with the strategy. After students recorded a projected statement from the board onto a piece of paper and crumpled it up, they lined up on opposite sides of the classroom and "tossed" the paper balls at each other. They each picked up a new paper, as instructed, opened it up, then read it. Students struggled with going to the area designated for the paper they had, not their own predictions. They seemed to be fearful that if they were in the "wrong answer" location, they would be perceived as incorrect, even though no one knew whose prediction was on the wadded-up notebook paper. It was an almost even split between two statements (10 in one and 9 in the other), but there was one statement that had two students predict that was true, prior to reading a text. The students used this independent and collaborative, writing and questioning strategy appropriately and as Mrs. Morrison had intended and instructed. There was no variation.

In a later lesson, Mrs. Morrison engaged students in the reading of a text about earthquake myths. Students would read a text that discussed what ancient cultures and

civilizations believed to be the cause of earthquakes. They would complete a graphic organizer to record pertinent information, then they would complete an organizer that would lead them to creating their own myth – a guide writing strategy.

Mrs. Morrison posed an essential question, "What is a myth?" at the beginning of class. The following is an account of what happened next:

Students begin to answer.

Jon-Jon says *"Hercules and Slenderman." He tells the story of Slenderman.*

Girl, *"Fountain of Youth."*

Davis, *"An old story that is passed down from generation to generation.*

Boy, *"The Loch Ness Monster."*

Girl, *"It starts with an H and you can see it in a movie.*

There was lots of giggly chatter.

The students engaged in the questioning strategy, which was to help them predict what the lesson would be about. One student provided a definition of the myth, but other students responded by identify a myth they were familiar with and making a connection. Some of these connections were not actually myths, but this was what students predicted based on the questioning strategy.

The Mrs. Morrison introduced the text and the graphic organizer, which included areas to record the "main character" of the myth, along with where it took place, approximately when it took place, the cause of the earthquake and the effect of the earthquake. She modeled how to fill it out, using one chunk of text as an example. For the second organizer, Mrs. Morrison asked students to read and write collaborative. I joined one group and listened.

The students begin to work with their partners. Jessica and Jason were reading together. Interestingly, Jessica found the answers and gave to Jason to copy. However, the teacher saw this and corrected it. At that point, Jason found the myth in the text and began to

point to it, reading it to Jessica. It was about dogs and fleas and they were scratching.

They were able to successfully fill in the graphic organizer based on the text. Initially, it appeared that Jason was going to merely copy off of Jessica. However, the teacher was aware of what was happening, then corrected the issue. Jason demonstrated that he was using the strategy by finding information in the text and sharing with his partner. The students used the organizer as it was intended.

Mrs. Morrison used a variety of reading, writing, questioning, and independent instructional strategies in her classroom. Collaborative strategies were significant in her classroom. She valued student interactions with the text and with each other. She provided ample scaffolding so that students could successfully use the strategies presented as she modeled. Students used the strategies as they were taught. They were able to create and respond to questioning strategies, and, after scaffolding, were more than capable of using the strategies presented by Mrs. Morrison.

CHAPTER 5. CONCLUSION

Introduction

The purpose of this research study in examining the use of instructional strategies in sixth-grade science classrooms to facilitate adolescent literacy was two-fold. First, this study sought to determine what instructional strategies sixth-grade science teachers use in their classrooms in conjunction with a text, and to learn how the three teachers planned for, used, and scaffolded the use of the strategies for their students. The second purpose of this study was to examine how students used instructional strategies in the classroom, both collaboratively and independently. The research project consisted of planning, observing, and reflecting with three teachers for ten weeks. I talked with students during observations to learn how they were using the strategies independently and collaboratively, as well as observed their work samples.

Following the data collection, I coded and analyzed the data, and four themes emerged. Those themes were Instructional Strategies, Scaffolding, Pedagogy, and Emergent. Each theme was further defined by codes that helped to describe the theme.

Following the guidance of Lincoln and Guba (1985), this study does not seek to make generalizations to a broader population. Certainly, there were parallels between the participants, but this does not seek to generalize to the broad population of teachers. Stark contrasts were made, too, between the participants.

The majority of my observations were theory-predicted, but I did notice some emerging concepts that did not stem from the literature.

Comparison of Cases

This study was based on three broad theories. First, Rosenblatt's (1994) transactional theory asserted that reading is a transaction between the reader and the writings on the page. The reader brings with them prior knowledge and background experiences when they read a text, and transactions are made based on those experiences. Transactions are compounded when readers collaborate and share thoughts on the text. Secondly, cognitive learning theory addressed how students learn in a classroom context, and further addressed Piaget's (1969) constructivism theory and Bandura's (1988) social learning, or cognitive, theory. Piaget asserted that students create their own knowledge, or construct it. Bandura recognized the importance of environmental factors in learning. Metacognition was addressed in cognitive learning theory, as the instructional strategies studied prompted students to "think about their thinking" (Serra & Metcalfe, 2009, p. 278). Finally, the third portion of the theoretical framework of this study addressed active learning theory. Active learning theory asserts that students are active, not passive, in their own learning (Bennice, 1989). This was critical to the study, as instructional strategies promote students' to actively participate in reading and understanding the text. This theoretical framework exhibited itself repeatedly throughout the course of the research study.

Instructional Strategies Used

Essentially, the teachers used similar strategies. All three teachers used reading, writing, questioning, independent, and collaborative strategies. The Alabama Reading Initiative (2013) and the Texas Education Agency (2000) outlined a series of instructional strategies that could be used during instruction to facilitate a deeper understanding of texts. Most of the strategies that the teachers used appeared in either document. The teachers all used the instructional strategies

of cloze read, variables of jot notes, chunking, anticipation guide, guide writing, quick write, cloze read procedure, essential questioning, grand conversation, turn and talk, and paired reading. However, each teacher used some unique strategies, as well. Mrs. Fowler used reciprocal reading and a strategy she created, the "NAMES" strategy. Mrs. Gillman used the "Sponge," a strategy she created and exit slips. Mrs. Morrison used the "Commit and Toss" strategy.

In all cases, similar or different, the use of these strategies related directly back to the theoretical framework set forth at the beginning of the study. Each of the strategies, somehow, promote an interaction with the text, supported by Rosenblatt (1994). Essential questioning fostered a specific interaction with the text. Grand conversation facilitated discussion about the text in use through the entire class. Guided writing strategies, in all cases, invited the students to use some creative means to share what they learned about a unit or a concept. By nature, the instructional strategies used prompted learning to occur, which is supported by cognitive learning theory. These strategies speak to how students learn and process information. The strategies promoted thinking and learning.

Finally, each of the strategies used by Mrs. Fowler, Mrs. Gillman, and Mrs. Morrison are active learning strategies, which corresponds with Bennice's (1989) statements about active learning theory. When using the strategies, students were deliberate in their learning, taking an active role, as opposed to merely reading or listen to words on a page. Students engaged in these strategies were actively engaged in their learning process.

Instructional strategies were used to facilitate adolescent literacy in three sixth-grade science classrooms. There was little deviation in the strategies used among the teachers, however. This was not an anticipated outcome of the study. Not only was there little deviation

in the strategies used among the teachers, but there were not many strategies that were used, and all were basic strategies. Two of the teachers that were participants in the study were trained on Daniel and Steineke's (2011) nine basic instructional strategies discussed in the pilot study of the methodology section. This could account for why Mrs. Gillman and Mrs. Morrison were using the consistent strategies, but does not address the third. Also, Mrs. Gillman and Mrs. Morrison planned together frequently, as they were at the same site location. This does not explain the similarities held by Mrs. Fowler, as she was at another site. However, data collected in response to this research question indicates that these three teachers are using instructional strategies to facilitate instructional strategies in sixth-grade science classrooms.

Planning for the Use of Strategies

In planning for the use of instructional strategies, several factors were included in the planning. In fact, all four themes were addressed during the planning for the use of instructional strategies with all three teachers.

The theme, "Pedagogy," was addressed during planning interviews. Categories of data that support this theme were content, materials, scope and sequence, environment, student ability, high stakes testing, and time to complete activity. In all three cases, content, materials, and scope and sequence were addressed. Each teacher frequently referred to the content of the lesson in relationship to the instructional strategy to be used in the upcoming lesson. This is supported by cognitive learning theory, as content plays a significant role in the planning for the instructional strategies to be used to facilitate adolescent literacy. Materials available for use were significant for Mrs. Fowler, Mrs. Gillman, and Mrs. Morrison. All three teachers planned to use graphic organizers and anticipation guides in relationship to the instructional strategy. Textbooks were commonly used among the three participants, as were science journals.

However, there was variation among the teachers in materials planned for use. For example, Mrs. Fowler and Mrs. Gillman both planned to use sticky notes with their strategies at some point. Sticky notes were regularly planned for in Mrs. Fowler's classroom. Mrs. Fowler planned for the use of stations in which students would use instructional strategies, whereas Mrs. Gillman and Mrs. Morrison did not use stations. Scope and sequence was a commonality displayed among the participants. Frequently, teachers reflected during planning interviews on what had been taught previously and what would be taught in the future. This is supported by cognitive learning theory. Fang (2012) described how students learn, and that includes methods that help students remember information. The prior information gained was significant in using the instructional strategy, be it through the prior use of the strategy, or knowledge of previously taught content.

Bandura (1988) stated that there are many factors that influence learning, and environmental factors are implicated as having a critical role. Each teacher planned for environmental factors that would affect the learning process. Mrs. Fowler repeatedly mentioned in the beginning of the study that she was attempting to create an environment that students felt safe to take risks and answer questions. She wanted them to take a role, or have a choice, to direct their own learning, and she felt that using the strategies helped students to "take charge" of their own learning. Mrs. Morrison referenced student choice, as well, on occasions, encouraging them to have a choice in their learning. Classroom management was an important concept mentioned by both Mrs. Fowler and Mrs. Gillman. Classroom management was of utmost importance to Mrs. Gillman in initially planning for independent work, as she felt collaborative strategies promoted off task behavior. Mrs. Morrison planned for engaging environments. She planned for the use of "Dot jots," as opposed to note-taking or jot notes because the title was

more “catchy.” She planned to use a “Commit and Toss” strategy to give students the opportunity to get out of their seats and throw paper, recognizing that the students would not know how to respond to that initially, but being aware that they would enjoy it. Environment was a great factor in the planning for the use of instructional strategies.

All three teachers referenced student ability level at some point during the study. Mrs. Gillman referenced it most often, while Mrs. Morrison referenced it least often during the study. Ability level was planned for in correspondence to the type of class I was going to observe (advanced, grade level, high group) and the difficulty of the text in relationship to students’ ability to read and understand it (Fisher & Frey, 2015). Knowledge of students is essential in planning for the use of instructional strategies. Miller and Veatch (2010) examined how instructional strategies were used in relationship to a social science textbook, and Veatch expressed the critical nature of having knowledge of students. This was an apparent consideration in planning for all three cases.

Before this study was conceived, I conducted a pilot study on students’ perceptions of the use of instructional strategies to fulfill course requirements at Auburn University. The use of instructional strategies at one middle school stemmed from a desire to improve high stakes test scores. High stakes test scores in the southeastern United States are relatively low, and there is much room for improvement, particularly among sixth-grade students (Alabama State Department of Education, 2015; Mississippi Department of Education, 2015; Tennessee Department of Education, 2015; U.S. Department of Education, 2013). Mrs. Gillman regularly reference the ACT Aspire high stakes test that students take in the spring of each school year. In planning for the strategies, she considered what students would have to do on the ACT Aspire, and contemplated how the strategies could assist them in their quest to score proficient on the

ACT Aspire. Mrs. Fowler mentioned the ACT Aspire during planning at the beginning of the study, then did not mention it again until the eighth week of the study. Mrs. Morrison mentioned it once during reflection, but in the context that the high stakes test should not influence decision-making in the classroom, but the strategies could help the students on the test. There were variations in how the teachers considered high stakes tests in planning for the use of instructional strategies.

Teachers were concerned with the time it took to complete an activity in class. In a study conducted by Barry (2002) conducted a study in which she surveyed teachers about instructional strategies used during classroom instruction. She received comments about the strategies themselves, but of the negative comments received in the returned surveys, most of them reflected the time it takes to teach and use the strategy in class. Time was a real concern for all three teachers in this study.

Another theme, scaffolding, was deliberately planned for in conjunction with the use of instructional strategies. Vygotsky (1978) discussed the scaffolding process as one that assisted students in moving from being unable to perform a task to being able to complete it with the aid of a more knowledgeable person, be it a teacher or peer. All three teachers provided scaffolding in various contexts. Whole group, teacher directed scaffolding, interactive scaffolding between the teacher and class, and individual/small group scaffolding were used by all three teachers. The most common form of scaffolding was the interactive scaffolding. Two of the teachers, Mrs. Gillman and Mrs. Fowler overestimated student ability, resulting in more scaffolding used than originally planned. In the first week of the study, Mrs. Gillman expressed that she was not a scaffolder, and that she would give students instructions on how to complete two distinctly different activities at the beginning of the period. She felt confident that the students would be

able to listen to her instructions and complete the tasks as described. During the first planning interview, Mrs. Fowler felt that she would be able to describe how to use a strategy because students had used it before. Mrs. Morrison planned for scaffolding at all levels. However, despite individual differences among the teachers, the scaffolding was deliberately planned for in terms of using the instructional strategies.

An emergent theme developed during the planning for the use of instructional strategies. Uncertainty during planning was prevalent among all three teachers. Frequently, teachers were at a loss for what they might do to facilitate adolescent literacy. Mrs. Fowler regularly grappled with choosing between strategies, as she wanted to pick the best one for the text and her students. She wanted to use reciprocal reading and "NAMES," during the first week, and she wanted to adapt roles for reciprocal reading to assist her students in better understanding the content of the text. Mrs. Gillman had not been previously trained on the use of instructional strategies as Mrs. Fowler and Mrs. Morrison had, and frequently she did not know if she was using an instructional strategy or not, or even how to use the strategies. Mrs. Morrison, nearing the end of the study, recognized that she was using the same strategies over and over, and wanted to try new strategies, but was uncertain as to what to try. Uncertainty in planning was common, and I did not anticipate the extent to which it would be observed.

Using Instructional Strategies to Facilitate Adolescent Literacy

Mrs. Fowler, Mrs. Gillman, and Mrs. Morrison used reading, writing, questioning, collaborative, and independent strategies to support and facilitate adolescent literacy. Mrs. Fowler and Mrs. Morrison started the year off with a spirit of collaboration. This notion is supported by all three major components of the theoretical framework of the study. First, they were creating a transaction with the text (Rosenblatt, 1994). Through the collaborations with

their peers about the text, there was discussion and transactions. New perspectives were created as ideas were discussed and expounded upon. Bandura (1988) coined the social cognitive theory, elaborating upon the interactions and knowledge gained in working with others in a learning context. The collaborative strategies are promoted by active learning theory (Bennice, 1989). Piaget's (1969) theory of constructivism was a contributing factor, additionally, as students were collaborating to construct knowledge of the text.

Independent strategies were initially used in Mrs. Gillman's classroom. This stemmed from classroom management considerations. However, during the third week, she elected to move toward collaborative strategies. Until then, the class was mostly teacher direct. After this point, the teacher turned desks from rows to collaborative pods, and fostered an environment of collaborative learning.

All teachers used some variation of independent and collaborative reading, writing, and questioning instructional strategies. All teachers, at some point during the study, provided an opportunity to work independently, then share with their partners. Mrs. Fowler expressed that working independently allowed the students to take ownership in their own learning, without interference from their partners. She even stated that a student did not need a partner to tell them what to think; they could decide on their own. This comment was made early in the study.

In all cases, graphic organizers were used at some point during the study, as were anticipation guides. According to Flavell (1987), teachers provide experiences to facilitate metacognitive awareness in their classrooms. The graphic organizers, used in conjunction with strategies, assisted students in visualizing their thinking, thereby promoting a metacognitive experience. Mrs. Fowler and Mrs. Gillman also used sticky notes to assist students in using the strategies. Sticky notes were a commonly used tool in Mrs. Fowler's class, and were only used

once in Mrs. Gillman's class. However, like the graphic organizers and anticipation guides, this simple material promoted cognitive awareness among students in relationship to the text being read. Sticky notes, as a side notation, were highly motivational in both Mrs. Fowler and Mrs. Gillman's classroom. Mostly, students looked forward to being able to use sticky notes to make annotations on either the text or to share thoughts on a board.

Though there were individual differences in how Mrs. Fowler, Mrs. Gillman, and Mrs. Morrison structured the use of the strategies, by the third week of the study, the teachers were regularly using a combination of independent and collaborative reading, writing, and questioning strategies. The similarities in use were striking in all three classrooms.

Scaffolding Instructional Strategies

Mrs. Fowler, Mrs. Gillman, and Mrs. Morrison provided scaffolding in the classroom for the use of instructional strategies. The types of scaffolding provided by the teacher were teacher modeling, teacher and class interacting, and individual/small group scaffolding. All three teachers used each of the strategies throughout the study. Bandura (1989) and Vygotsky (1978) recognize the need for scaffolding to help move students from being unable to perform a task, in this case use a strategy, to being able to effectively use a strategy.

In modeling strategies, not only did the teachers provide direct, explicit instruction on how to use the strategy in a step by step manner, the teachers provided visual representations. This occurred in different formats. In Mrs. Fowler's class, she displayed a construction paper version of a graphic organizer students were creating to use with their reciprocal reading strategy. In Mrs. Gillman's class, she shared student work samples related to the guided writing. Mrs. Morrison was notorious for displaying her science journal to show students something as

simple as how to divide the page to create a two-column chart. At some point during the study, all teachers used technology to model how to use an instructional strategy.

Teacher and class interactions were common in scaffolding. They occurred regularly in each classroom. During the first two weeks of planning and observation with Mrs. Gillman, she expressed that she did not scaffold, which proved to be more or less true. She gave directives for assignments, and answered many questions throughout the class periods. In fact, at one point, I recall wondering how many times she answered the same question. However, after this, she provided more of an interactive scaffolding environment, which also coincided with her changing the setting of the classroom from rows of desks to pods of desks.

All teachers provided individual and small group scaffolding, as needed. Mrs. Fowler, Mrs. Gillman, and Mrs. Morrison all walked around the classroom offering assistance to students during independent and collaborative use of instructional strategies.

Scaffolding was an essential component of using the instructional strategies in the classroom. The teachers recognized that students did not know how to use the strategies and taught them how to do so. Mrs. Gillman was the exception to this, but only during the first two weeks. In reflections with Mrs. Gillman, she made statements with respect to why her students continued to ask questions and not follow her directions in relationship to the use of the strategies. Initially, she suspected they did not listen to her instructions, but as she talked through the interview, she started to consider that she should have provided scaffolding. This type of talk happened after the first two interviews without change. By the third observation, she began to provide more scaffolding. Scaffolding was a predominant theme in the use of instructional strategies in the three classrooms.

Student Use of Instructional Strategies

Overwhelmingly, students used the strategies as the teachers presented them. The only study that I found available prior to this study related to the transfer of use of instructional strategies in students was conducted by Ortlieb (2013). Ortlieb examined anticipation guides, specifically, and found that only about 30% of students retained the use of the strategy and used it independently three weeks after last use. I can neither support nor refute that claim based on my study. However, I can assert that, by and large, students are mimicking teachers in their use of the strategies. Essentially, they are using the strategy exactly as it is taught to them. I was unable to observe the use of a strategy in an independent context that was not facilitated or prompted by the teacher to see how a student uses a strategy without teacher instruction and scaffolding. According to Flavell (1987), teachers facilitate the use of cognitive strategies to help in the development of the critical thinking process. This process is fostered through the use of instructional strategies. Bandura (1988) and Vygotsky (1978) addressed the teacher's role in scaffolding student learning, which, in this context, was the use of the instructional strategy. Vygotsky (1978) even stated that students "imitated" what was taught in the classroom. Afflerbach, Pearson, and Paris (2008) expressed that teachers need to be explicit so that students can learn how to think and read in a strategic manner. Based on this foundation, it is reasonable to conclude that students will imitate what they observe from their teacher.

There were two cases, both in Mrs. Fowler's classroom, that students did not use a strategy as modeled. In the first case, Mrs. Fowler had placed a model, or guide, at a station for students to use and check their work. A student elected to use the strategy in his own method and stated that just because the teacher's example was available did not mean he had to do it the

same way she did. In the other example, a student created a color-coding system before using the "NAMES" strategy.

Implications of the Study

This results of my study yielded various implications. Students are, in fact, transacting and interacting with the text, as Rosenblatt (1991, 1994) suggested in her transactional theory. They were also mimicking the example set forth by the teacher, as indicated by Bandura's social learning theory. Of Piaget's four stages of development, sixth graders are uniquely positioned on the cusp of formal operations. According to Piaget, children are in the concrete operational stage of development up to about the age of 12, although this is a general guideline (Martorell, Papalia, & Feldman, 2014). Students in the concrete operational stage of development are learning to think logically, but still require models to help them do this, whereas students in formal operations can think and reason abstractly, and make decisions based upon what would be their best course of action to complete a task or solve a problem (Durwin & Weber, 2017).

This study demonstrated that students mimicked their teachers' examples, by and large. The implication is that students using these instructional strategies are in concrete operations based on this. The scaffolding the teachers provided assisted students in thinking abstractly about the strategy. This is reflective of what Harvey and Goudvis (2013) in that teachers teach strategies to students not so they can just learn strategies, but to think strategically about the world around them. Based on my observations, only two students took ownership of the use of the strategy and manipulated it in a way which was beneficial for them. However, I agree with their statement in that teachers need to teach the strategies. Being in the concrete stage of development is a necessary part of development. They must learn the strategy before they begin to apply the strategies to various situations and scenarios.

Next Steps in Future Research

Several possibilities for future research exist in light of the results from this study. After examining and comparing data from the cases using instructional strategies to facilitate adolescent literacy, more research is warranted.

Given the nature of the results in that the three teachers in this comparative case study used similar strategies with little variation, it is warranted to examine other teachers' classrooms to see if the same holds true in various settings. Research on why the teachers used the similar strategies repeatedly would prove to be beneficial, as well, as it would be useful to know the root of why similar strategies are used.

In planning for the use of instructional strategies, multiple factors were considered and it proved to be a complex process. The teacher participants had varying time allotted for planning. Mrs. Fowler had approximately 40 minutes for planning, whereas Mrs. Gillman and Mrs. Morrison had approximately an hour and a half. Albeit, all three teachers had multiple responsibilities to attend to during their planning periods, ranging from meetings to conferences with parents, and other duties that would transpire during the course of the day. Planning for the use of instructional strategies takes time. It would be a worthwhile venture to study how the duration of planning periods, and actual uninterrupted time available to plan for lessons, affects the use of instructional strategies. If planning for and using instructional strategies is a complex process used to assist students in gaining knowledge, it would be useful to understand how devoting time to teacher planning influences the use of instructional strategies. It would also be of interest to determine how much of this planning takes place during a teacher's personal time, not during a school day.

Given the nature of the similarity of the uses of instructional strategies in the three classrooms to facilitate adolescent literacy, this study begs to examine the effect of instructional strategies, and that would be the next logical step for this study. A mixed methods study would prove beneficial to see if the quite commonly used strategies are, in fact, effective in fostering adolescent literacy. Schorzman and Cheek (2004) recommended that the strategies be studied at a deeper level, and I am in agreement with that statement.

In light of the discovery that students used instructional strategies during independent and collaborative practice as modeled, it would be reasonable to study the long-term effects of practicing instructional strategies when transacting with a text. Further research is warranted on if and how students use the instructional strategies when not prompted to do so.

In keeping with this idea, it would be beneficial to engage in a longitudinal study in which students are followed throughout middle school to see if they continue to use strategies as prompted. Given that my study revealed that students, mostly, used instructional strategies as their teachers modeled, it would be worthwhile to learn more about if and how students begin to take ownership of the strategies, and use them in a variety of ways, or if students used the strategies at all.

As an unintended outcome of my study, there are many research opportunities that could be pursued for future research.

Limitations of the Study

This study was constructed and executed soundly, based on theory, best practices, and the guidance of more knowledgeable mentors. However, there were limitations to this study. First, the study took place over a relatively short period of time. Though I believe I reached saturation by seven weeks into the study, there is much more that could be examined regarding teachers'

practice as it pertains to the planning and implementation of instructional strategies to promote adolescent literacy. As Schorzman and Cheek (2004) asserted, it is time to study and examine instructional strategies as it relates to middle school reading comprehension. Though this study did exactly that, it was for a short period of time.

Another limitation to the study was the number of participants. In accordance with Yin (2003), comparative case studies should have between three and five cases (classrooms) to provide similarities and differences across cases. However, the small number of classrooms is a limitation, even based on theory. The classrooms and participants were purposefully selected from two sites. The three teacher participants provided excellent insights into how they utilized instructional strategies in adolescent literacy, but the results cannot be conclusively applied to other sites and participants.

A final limitation to the study was the certification of participants. I purposefully selected elementary and secondary certified teachers to participate in this comparative case study (Lincoln & Guba, 1985). However, it cannot be assumed that any other elementary or secondary certified teacher would exhibit the planning process, use of instructional strategies, and scaffolding the use of these strategies in a similar manner to Mrs. Fowler, Mrs. Gillman, and Mrs. Morrison.

Conclusion

More research is warranted in this field, as Schorzman and Cheek (2004) suggested. Mrs. Fowler, Mrs. Gillman, and Mrs. Morrison provided excellent insight into how they planned for and used instructional strategies in their classrooms, and how their students in turn used the strategies. Future studies could focus on multiple aspects of this project to determine if similar results are yielded. The results of this study are beneficial to the research community in

providing insight into how three sixth-grade science teachers use instructional strategies to facilitate adolescent literacy, and how their students responded to those strategies.

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APPENDIX A

CODING GUIDE

Instructional Strategies in Adolescent Literacy: The Process Sixth-grade Science Teachers Use to Integrate Strategies, and How Their Students Utilize Them.

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April, 2017

This coding guide serves to assist in understanding how the data in was unitized, coded, and analyzed. After determination of the unit of analysis, coding was conducted. This guide provides a description of the unit of analysis. In addition, this guide provides operational definitions of themes and supporting codes. Finally, examples of codes are given to demonstrate how they were coded in the data.

Unitizing

The basic unit of analysis in this study was the sentence. Initially, when coding began, chunks of information, or what was perceived to be broad ideas, were coded. Multiple codes were assigned to each chunk. Upon further reflection, it was apparent that this unit of analysis was too broad. Sentences were chosen as the basic unit of analysis because it was feasible to analyze thoughts within the sentence. While many sentences combined to form complete, cohesive thoughts, individual sentences were examined within the context of the scenario, whether planning, observation, or reflection.

Coding

Based on the work of Yin (2016), the organization of the codes include a broad theme and specific codes that support and further define each theme.

There are four broad coding themes identified during data coding. The broad themes identified were "Communication," "Instructional Strategies," "Pedagogy," and "Emergent." Within the categories, more specific categories were identified. A total of 19 codes were ultimately utilized. Each sentence was examined, looking for qualifying information to link it to codes. Sentences were often coded multiple times. For example, the following quotation was coded as "Scaffolding – Teacher Models," "Instructional Strategy - Reading," "Instructional Strategy - Collaborative," "Instructional Strategy – Questioning," Instructional Strategy - Writing," and Pedagogy - Environment."

"This is how we are going to do it. We are going to do a strategy called paired reading. You have to be sitting beside someone and Elaine is going to read the first column. You are going to be following along reading silently in your head. Then you are going to stop, answer the questions and talk to each other. You are going to have to read, listen to each other, talk to each other, then write. Then, the partner will read the second paragraph. You are going to read out loud, but in a quiet voice because you are talking just to each other. You know how you do at lunch? Maybe that's how we are supposed to talk… Sorry, I'm being a little facetious. What if you don't have a partner? Then you would have to work in groups of three. Remember, the questions may not come in order. Go ahead."

In the context of this quotation, the teacher was providing information on how the students would do a paired read. She was scaffolding, providing a model, in which she described, step-by-step, how to use the strategy. Four instructional strategy codes were applied because the

strategy used was a paired read (reading collaboratively), answering questions with a partner (questioning in a collaborative manner), and writing jot notes on their journal page (writing). She also created an environment conducive for learning, and even inserted humor.

Instructional Strategies Codes

Collaborative

Students or teacher use any instructional strategies in conjunction with a text while working with another student(s). This can include partner, small group, or whole group collaboration. Examples include, but are not limited to turn and talk, think-pair-share, reciprocal reading, grand conversations, etc.

And, um, I'm probably going to split it up between groups and they're going to have to do, uh, reciprocal reading. So, each person will have a job. Um, they'll have a job written on a paper, then they'll pass it, uh, and then they'll have to do the ne...the same job on their friend's paper. I'm looking to see that they're doing their roll and that, um, the...when they pass it, that the students are adding to, um, the other person's thoughts. .And then at the end of the chunks, they'll discuss it with each other.

Write and share what you wrote in the chunk, then share, then move on with the strategy. After you pass, each person will have a new role for the reading, reiteration of how many chunks, writing, group members, etc.

Across the room, I could hear a boy state to another student that "I put…," then it got lost in the chatter.

I'll probably read it with them, because the first time I'll read it with them, and we'll do NAMES strategy, because I think we've only done the NAMES strategy once.

Upon finishing the article, teacher said "Turn and tell your partner the difference."

Um, so they'll share what they learned and they'll tell me what type of graph it was, um, so I'll probably do, like, a very mini lesson, because most of them know bar graph and circle graph

"…with as much reading as they have to do, and then they're going to have to share it with the whole class."

"Okay. And have a... Are you going to have, like, a grand discussion at the end? Uh, yes, because each group's going to have to share what they read."

"Tornado Watch or Warning" – previews by looking at title; does anyone know what the difference is? One student stated what a watch is, correctly.

Student question – what's a dust devil? John responded that it was like a dust tornado.

Three students read their summaries, Kale being one of them.

He summarized, but inserted his thoughts and connections.

Teacher – You can share something that you said or your partner said.

Independent

Students use any instructional strategies in conjunction with a text independently.

The teacher explained that each person will read a chunk, but it's up to the kids as to how they chunk it. She said, "As you read, assume role that you are reading about."

Now, the teacher asked them to write about the text in terms of doing their role.

After Logan read this chunk, all three students were very actively engaged in writing in terms of their roles. They were thinking deeply about what they read.

After the student reads an introduction paragraph, the teacher stops and says, "Go ahead and put the main idea of the paragraph down. Use small sticky notes." Students write independently.

In response to my questioning him of the structure of his sticky notes. He stated that “the sticky notes help him to summarize the most important points in the text. It helps him to find his main idea.”

I asked him why the sticky notes were across the top of the page as opposed to by the paragraphs and he stated that “it would help him return to the page if he needed to go back.”

He said that he sometimes put something like “The first two sentences,” or “Bullet number 5” if it was really important, so he’d know to go back to it.

I asked Torie if she liked using sticky notes. She said yes, and I asked her why. She gave me a lengthy description, stating that “If I’m able to use the sticky notes it makes it easier to take all of the information in the text and my mind, and put down a little piece of information.” She went on to describe that it’s easier to look back at the notes and figure out important parts, which led her to the summary. Then she could take some information in her head, and put it with the sticky notes, and write the summary.

(In response to why use the strategy independently and not collaboratively) Because... Well, because I want them to use their own brains. Because it was really what they thought about the text, not what their neighbor thought. I think that motivates them even more when they have a choice, so I didn't want to confine them to doing it a certain way. So, as long as they're interacting with the text and showing me their thinking, whatever works for them. Because when they get to college, they're going to use whatever works for them, so my thought was whatever works for me may not work for so-and-so.

Ok. We are going to go back to the sponge in the journal and do a quick write. It is quick and a write, thus a quick write. Think about which one was your favorite. Go back under your sponge and write about which myth was your favorite and why.

Questioning

Students use instructional strategies in conjunction with a text that involve questioning; examples could include, but are not limited to, essential questioning, read with a question in mind, turn and talk, think-pair-share, exit slips, anticipation guides, text annotations, quick writes, etc. These strategies can also be used independently and/or collaboratively.

Well, I will start them off with a warm-up question—probably something that they can find just on page 58, which is the introduction— just to get them thinking about heat and how heat is transferred.

She reads the EQ to the students "How does the temperature of the Earth's surface affect the temperature of the air above it?" The teacher states that by the end of the lesson, they should be able to answer the question.

"As you read, please take bullet notes." You are reading with a question in mind. The question in mind is at the bottom of the article. Tamara, read the questions… "Where do you think air masses often meet in the United States? Why?" You are going to get a sticky note per pair. When you finish, you are going to put it on my whiteboard. One sticky note per pair.

The teacher returns to the sponge. She asks, "What is meteorology?"

Um, first when the kids Wille in, they had a sponge: "What is a myth?" Why that question?

I wanted them to get, uh, in the mindset that a myth is something from a long time ago that was a belief from an unknown source, or like why something happened. Um, they Wille up with a reason why something happened. So, we were talking about earthquake myths, so I thought it would be a good lead in.

After reading the next chunk, the teacher posed the statement/question, “We can say Earth is heated just the same, right?” Students – NO! Teacher – Oh. We can say Earth is heated unevenly.

Reading

Students use instructional strategies in conjunction with a text that involve reading; examples could include, but are not limited to, chunking, anticipation guides, cloze read, jigsaw, text annotations, jot notes, read with a question in mind, etc. These strategies can also be used independently and/or collaboratively.

And, um, I'm probably going to split it up between groups and they're going to have to do, uh, reciprocal reading and then after they read, um, a paragraph or a section then they'll pass it, uh, and then they'll have to do the ne...the same job on their friend's paper

The teacher moved on to the meat of the lesson – reading a text and using reciprocal reading. She said, reading from a PPT, that they were going to read in groups; they will read text in chunks – stated they had already read in chunks, but it would be easier to read and not so overwhelming.

All students in the group will have a job.

Asked the kids if they were reading four pages, how should they chunk it?

To model, the teacher read a chunk, and asked students to engage in a cloze read – “stop and read a word in a normal voice when I stop.”

Teacher read first chunk and would stop at words like, “floods, wildfires,” etc.

He very clearly was excited about what he had written.

When I looked at his paper, he had written that “floods cause a lot of damage” and it was based on the graph.

This group was reading a text about tornadoes, and they were already in progress, reading Chunk 1.

Um, I noticed that you gave them the latitude to chunk up their chunk, um, for them to decide how they wanted to chunk their text.

Because they've been so used to that, I think, in elementary school, but just trying to get them to be a little bit more independent and take ownership of their learning and, um, help them...just to help them figure out when they need to stop (reading) and ask questions, so, um...and just group things together. And...And it forces them to look at the whole text first because they've got to figure out where they want to break it down, um, so they can see the big picture, and then it...it...and...and it makes it less overwhelming for them, and they're like, oh, okay, we'll just do this...these four parts.

Writing

Students use instructional strategies in conjunction with a text that involve writing; examples could include, but are not limited to, text annotations, jot notes, quick write, exit slip, think-write-pair-share, anticipation guide, etc. These strategies can also be used independently and/or collaboratively.

Write and share what you wrote in the chunk, then share, then move on with the strategy.

Now, the teacher asked them to write about the text in terms of doing their role.

Students are in phase 2 of the strategy/chunk of the text. They each assume their own role in writing about the chunk of the text that the teacher read to them.

He very clearly was excited about what he had written.

When I looked at his paper, he had written that “floods cause a lot of damage” and it was based on the graph.

Scaffolding Codes

Scaffolding codes address specific types of scaffolding used in the classroom. Scaffolding typically occurs when there is some form of explanation, modeling, or assistance in helping one complete a task that they could not otherwise complete on their own (Ormrod & Jones, 2015).

Scaffolding: Individual

Teacher provides scaffolding to individual students or small groups of students (not the whole class) struggling with using the strategy or content in conjunction with using the strategy She said, “If you are not sure what to do, raise your hand.”

The teacher walked around the room offering assistance to at least four students.

Students began writing, as the teacher circulated the room assisting groups.

(in response to amount of scaffolding provided)

Um, I did have to explain the summary and...and actually, I did have to explain to a few people, but they raised their hands and I was able to go and...and help them when they needed it, and I felt like they caught on after that.

They still wanted me to hold their hand, uh, but I wanted to give them that option, and some of them took it, and some of were...some of them were like, ooh, you know, can you just tell me what to do?

The teacher is moving from group to group talking to students and rewarding hard work with dojo points.

Um, I did have to explain the summary and...and actually, I did have to explain to a few people, but they raised their hands and I was able to go and...and help them when they needed it, and I felt like they caught on after that.

And, um...um, and then, you know, some people weren't sure about, you know, the connection and questionnaire, but the people that weren't sure asked me, and I...I feel like I got everybody taken care of, so...

The teacher comes back around and asks how many paragraphs they have for a chunk. She asks the boys if they are going to stop and summarize 8 times. She asks how they usually chunk the text and Jack said by heading. The teacher asks if it makes more sense to stop four times, rather than 8. The boys then shifted gears.

The teacher is still circling the room, offering feedback and assistance.

Scaffolding: Teacher and Class Work Together

This code signifies that the teacher and the class work together to use the instructional strategy. As opposed to the teacher demonstrating or providing a visual to the class, in this case, the teacher uses conversation and/or demonstration in conjunction with active participation from some or all students.

She asked the kids if they were reading four pages, and how should they chunk it?

Will said “Put a box with US natural disasters together, and another chunk together”; another student, Jerry, suggested “read by paragraphs/columns for three, then put the graph, textbox and – altogether for the last one.”

Jorica was still grappling with summarizing the text. The teacher offered a helpful hint to the class on this (more students must be struggling). She said that they could take “4 sentences from the graphic organizer and write them down.”

My first period was an advanced group. A lot of them wouldn't keep up. They're just not interested or did not have their attention when I was reading it to them. Even when I did, like, a cloze and I would leave a word out and say who or what, about half would participate and say

the word. They were keeping up, so I just thought it wasn't working, so I changed it to smaller chunks within the big chunk, and it seemed to help more. And when they have to read it and they know I'm going to pull a popsicle stick and call on them, they know they probably need to read it and have something to say. So, I thought it went better after making a change, and also, change my essential question to one shorter.

Scaffolding: Teacher Models

This code identifies examples of how the teacher provides direct modeling of how to use a specific strategy. It includes oral or visual examples the teacher provides for student to use for better understanding of the strategy.

She states that she is going to show students how to do reciprocal reading.

The teacher demonstrated what a t-chart was by providing an example on the smart board.

Teacher provided visual examples for the class.

Teacher models how to fold paper in half and half again to make fourths

To model, teacher read chunk, and asked students to engage in cloze read – stop and read word in a normal voice when I stop.

Um, when we talked on Friday, we talked a little bit about scaffolding. Um, and I noticed today that you used more scaffolding than you were planning on Friday. What caused you to do that?

But what I noticed was you took an entire chunk and you walked them through it step-by-step, right down to time management, all of those things.

Um, it's...it's the first time we've used this strategy, and I felt like it would be a lot easier for them when...when I...when it was time for them to do it by themselves. And that way, they all did every single role, so I could go ahead during that time and answer any questions they had about every single role, and, um, then from there I could, um... And then that way I could basically

help them with any misconceptions that they had, and then, um, fix that before they did it by themselves with the group.

Teacher projected a bubble web and gave a dictionary definition of vortices, causes, and examples of a vortex.

"A-ha! Convection current is one of those words we have to know. I am going to copy this sentence from the book or put it in my own words. That's how I dealt with a vocabulary word. I defined it on my sticky note! Words that are important you will define on the sticky note."

"It is one way to read text closely, and puts you in control of your reading so you can better understand what you read. We can't write in the book, but we can arrange in chunks and decide where to stop. So, the sticky notes will be the sumTara of each chunk. That is the "S" in names. M is for mark for understanding question, and E is for establishing main idea and purpose."

Teacher moves on to the "during part" of the guide. She read the instructions. Then she displayed a copy of an anticipation guide on the Elmo. She said that they would read the statement and predict if it was true or false. She put T in the first blank to demonstrate. Then, she told them they were going to do a paired read and demonstrated to them how to prove the answer as true or false. She said that once they come back to the whole group.

Teacher moves on to the "during" part of the guide. She read the instructions. Then she displayed a copy of an anticipation guide on the Elmo. She said that they would read the statement and predict if it was true or false. She put a "T" in the first blank to demonstrate. Then, she told them they were going to do a paired read and demonstrated to them how to prove the answer as true or false. She said that once they come back to the whole group.

Pedagogy Codes

Pedagogical codes include many aspects of the classroom setting, ranging from tangible to intangible. Many factors in this study effected the planning and usage of instructional strategies, as well as the manner in which the scaffolding was provide. These codes seek to explain a variety of pedagogical constructs.

Content

The teacher discusses the content that will be taught/facilitate during the observed lesson or content related to the understanding of the lesson; the teacher teaches content, or provides activities that facilitate the understanding of the content of the lesson.

Storm surge is the big word that I want them to get, and they're going to learn levee because they don't know what a levee is, and just some flooding and... I'm trying to think.

There are some words I want you to listen for. What do you call a hurricane before it is one? Tropical storm, tropical depression. I want you to listen for storm surge.

And there is something called SAFARI... Well, actually, where I sent them was SAFARI Montage. That's a new program that our county is using, and I have been trained on it. Two teachers at this school have been trained on it -- me and another teacher. And we're all... Actually, we all...we did a training for our faculty the other day. But you can make playlists on it, so that's what I sent my students, was a playlist through this, and the playlist included... I had videos of all the... It's a biogeochemical cycle playlist. Here it is. So, I have the nitrogen cycle, the carbon cycle, and then it even had the reading on there, and I added the water cycle and the rock cycle, and then there was a Google quiz at the end.

And maybe next time, I will show them how I'm going to grade it, um, to pull out some of that in-depth scientific vocabulary that they're not used to using.

Um, I feel like they under...have an understanding of plate tectonics, the different plate boundaries, and, um...and I feel like they made a connection to where these play boundaries are, specifically in California.

The teacher shows a picture of a museum of the Environmental and Heritage Center in Gwinnet county, near the Georgia Mall in Atlanta. She said she had not been there for years. She said she remembers a ball, like the ones you jump in. Kids say, "Ball pits." Teacher responded, "yes." You could jump in them and then shove them up in the "clouds" and as it gets too heavy, they fall down. As they fall down, they run into the "river" and then they run back into the pit, thus modeling the…?

Well, we're going to read an article called "The Source of Earth's Heat", and it mainly talks about the energy we get on Earth comes from the sun, and then we're going to talk about the seasons on Earth and how the last section will be that it's a delicate balance, that the sun is positioned exactly in the right place, and the sun and the Earth are positioned right in the exact perfect place for us to live on Earth, and how we rotate and revolve about the solar energy, how much is absorbed, reflected. And that, again, is a perfect balance, because if it was more we wouldn't be able to live on Earth, and less, we wouldn't be able to live on Earth.

Environment

This code addresses a classroom environment that is conducive to learning. This can include classroom management, establishing rapport with students, or establishing a spirit of respect, student choice, or responsibility in learning. It can include the teacher's use of humor in the classroom or praise/support in learning or behavior. It includes a comfort level of the teacher and students with me being in the classroom.

So, just establishing rapport and, um, making them feel safe to take risk and it's okay to have questions.

And I've noticed that they're not taking a lot of risk. And what I mean by that is just, you know, answering questions out loud in front of the class.

And...And they're getting more comfortable with that with me.

I'm telling them, you know, it's okay to take risk. I'm not expecting you to know this. Just take a guess. And, um, so, they're... I feel like they're getting better at that, so maybe next week they'll be even more willing, um, to just take a risk and go for it.

The entire class got the first example correct (pie graph) and the teacher was very encouraging "Clap it up!"

The teacher explained that each person will read a chunk, but it's up to the kids as to how they chunk it.

The teacher is moving from group to group talking to students and rewarding hard work with dojo points.

I was very proud of them for, um... They seemed to show great teamwork this morning.

And so, but it was the very first reading, and it did surprise me that they didn't put it on their stickies, but when I ask them out loud... And I was like, "I didn't know what that word meant." And then they were like, "Oh, yeah. We didn't either." It's almost like they needed to be affirmed that it's okay to not know something.

High Stakes Testing

A summative assessment used for accountability purposes by local, state, or federal government (science assessment, ACT Aspire, other related assessments).

And, um, so I used it as the end of the unit last year, um, but I wanted to use it at the beginning because they really need to know graphs, especially for the ACT Aspire.

But, um, I just found that...that they're not taking science ACT Aspire.

You know, I told you last time we did it.

I told you I thought they were gonna be taking the science test, and Ms. Vaughn just told me that they're not.

Um, so, you know, that...why teachers are doing what they're doing, because literacy's important, it's helping prepare for the ACT Aspire. Kind of giving them a purpose, hopefully, for...you know, learning. But the ACT Aspire is...they're gonna be timed. But when we get into our literacy plan in our future, they're going to be timed on it to prepare for that. So...

They all put bar graph instead of pictograph or pictogram and, um, so that kind of helps me, you know, because on the test, they're going to be asked, you know, "What does this pictogram show?" or, um, you know, it's just... ("the test" is the ACT Aspire)

And so, I just thought that that would be more, uh, realistic to a...a shorter, uh, article on the Aspire or something, whereas if it's a long article, you know, they need to read the whole thing through. But shorter informational texts, usually they can just read it, a paragraph, and then go back and answer the questions right then.

Lesson Materials

The code incudes materials that will be used to develop the upcoming lesson, or used during the lesson. This can include research sources, textbook sources, student organizers/graphic organizers, or other items of the like. This also includes actual materials that are used throughout the lesson during the observation as related to the use of the instructional strategy, such as sticky notes, organizers, or textbooks.

Um, so like I said earlier, I'm looking at the three books that I...I received two that are new STEMscopes, and this is, um, Houghton Mifflin Harcourt called ScienceFusion that I just received and, um, and then and… So, those are the three books that I have to choose from. Unfortunately, they can't write in any of them, so I was kind of disappointed in that but, um, see, it's a workbook yet they're not supposed to be writing in it. But that's just money, you know, with the... whatever.

So, next week on Tuesday, I plan on, um, having them create a foldable. The title of the role would be in the middle of the paper; four sections on the paper for each of the person to write on; only write on one of the four boxes.

Logan picked a question to record on his part of the organizer, and wrote, "How are there so many tornadoes in the world, and what causes there to be so many?"

Moments after this, the teacher flickers the lights, and indicates that students should be finishing up with their reading and moving to their AIT (analyzing Informational Text) sheet.

It has columns and rows, and at the top it says thunderstorms, tornadoes, and hurricanes, and on the left-hand side is a list of questions, how do they form, where are they found, how fast do they move, how fast are the winds, and how do we measure them.

Teacher projected a bubble web and gave a dictionary definition of vortices, causes, and examples of a vortex (see picture).

She says, "I can tell you are thinking because I see a lot of sticky notes."

So, I'm going to review the name strategy with them real quickly, and what I'm expecting to see on the sticky notes, since they cannot write in their book.

Um, have them jot down some notes in their spiral like they were writing it in the, um...the margins of the book, you know.

Yes. So, the sticky notes part of my lesson went really well, I feel like, because it was a way for the students to showcase and work together—which gave them a little bit more confidence to answer the question—but showcase what they thought what the answer was, and I think these kids enjoy seeing their work up on the board.

Scope and Sequence

The order of steps in a learning sequence (ex. last year, next week, next lesson, the previous lesson). This could include a whole lesson (steps to complete a lesson), skills and content previously taught, ranging from previous grades to previous lessons, or could include the final goals of lessons or unit. This can include the perceived notion that teachers and/or students are "behind" the lesson planning sequence.

I mean, and they're...they're supposed to know x axis and y axis in fifth grade, I'm pretty sure, for math.

So, we created the graphic organizer and they've been studying it and they have a test on it, what we've learned so far.

Yes, we're moving into plate tectonics, and so, um, I had talked about the biogeochemical cycles, water, nitrogen, oxygen, carbon, and I actually went ahead and included the rock cycle last, uh, when I did that a few weeks back, but, um, so we're revisiting the...the rock cycle, but to start off with, we're talking about the difference between a mineral and a rock and, um, we're talking about mining, because on Wednesday, the kids are going to be able to mine, um, we've got that mobile gem mining truck coming on Wednesday.

I tried partner last week and then we quizzed over it using those notes that they got to take, and they're not quite ready to do partner-paired reading.

Um, it's a mixed result, I think. In that class, they are...are...are doing better with important facts than some of my other classes. Um, and at this point, in sixth-grade, it's a learning process that I hope that they have learned by the time they leave me. Um, I try to teach them how to get ready for high school, even though they're sixth-grade. It's a transition. So, coming in, they don't have these skills, and I'm trying to teach them the skills as the year goes on. So, that's what, um, my focus is, on note taking.

So, it's part of the reading, and even though it talks about it already—it talks about the answer in this reading—they've already learned about Tornado Alley, obviously.

Student Ability

The perceived ability level of a student(s) in terms of current ability to perform a task, understand and use a strategy, or knowledge of content. It may be related to lack of experience with strategy and/or content. This perceived ability can be on the part of the teacher or student(s). This may or may not be used in determining scaffolding needs.

So, if I go over there and, um, if they're struggling... Well, I have my groups mixed, so I have a high reader in the group, so, um, hopefully the reading won't be an issue because I'll have a high reader that can help read out loud of correct people if they're...you know, when they're reading out loud.

Um, and then the summaries that I read today and yesterday, um, varied greatly, so I have lots of different abilities, for sure.

You know, last week, they read out loud, but I might...if I do that again tomorrow, I may let them do where they read silently, especially the advanced.

So, even though that was an advanced group, just kinda to keep them up with me. But with my, um, grade level and inclusion kids, um, that's something that can help them.

(In regard to why she elected to provide more scaffolding than planned) Um, it's the beginning of the year and I felt like they needed it more.

The teacher calls the class back together. She talks to them about the benefits of paired reading, and how everyone is on a different reading level. She said that if someone is struggling, and you can help them, it means a lot to both partners.

Time to Complete Activity

The amount of time that it takes students to complete an activity, with or without the use of an instructional strategy. This can include teacher's planning or reflective statements about accelerating or slowing down the pace of a lesson.

She gave students five seconds to finish it up because she noticed it was taking longer than planned (extended five second countdown)

She walks around the room monitoring group conversations and timing

John stated that "we get a lot done in a little time!"

Time and, um, the...the text was broken down enough that they already had a role to complete, so they really just needed.

So, I just cut it out... It was just extra time.

And then I kind of ran out of time at the end or I would have done it... I mean, I tried to do it again, but, um, I...I definitely ran out of time today.

Um, yes. I think that, um, I would've shortened maybe how much I'm not really...

I would've sped up the practice time, maybe. Um, and then...

Emergent

Making Connections

The teacher or students make connections to previous content, background knowledge, or experiences in relationship to the content of the lesson or to the usage of an instructional strategy.

Third chunk "Will" – "The thing is that if people do not throw out their trash and litter, we would not have global warming." Another student agrees.

She related the sumTara back to an activity last week.

Logan began the conversation with a connection. He stated that he remembered a time where there was a tornado down the road. He also remembered conversations with his dad regarding the number of tornadoes that move through our area. Then she could take some information in her head, and put it with the sticky notes, and write the sumTara. (on using the instructional strategy with reading the text)

They look at the names chart for hurricanes in the book and made connections. (in relationship to the hurricane names with friends'/relatives' names)

Required to Teach

The teacher references being required to teach certain mandated strategies or content. This could include instructional strategies, course of study standards, objectives, or other content-related material.

And the system-wide strategy that we do use, though, is text coding.

Um, I feel like there's a few things that may be different, but, um, I know that everybody is supposed to be doing text coding.

So, um... But, um, I'll have to look at the literacy plan and see if it changed from last year, honestly, on what she wants us to do.

Um, but we do have a literacy plan and everyone is supposed to use text coding, so, um... I feel like this is similar because I used it last year and I...I was doing what I was supposed to be doing last year, so I just have to...

I have to read... I don't know if she's changed it, so I have to look.

Um, reviewing... Really reviewing weathering and erosion and deposition, cementation, sedimentation, sedimentary, metamorphic, igneous, um, just reviewing all of those processes that are part of the standard for sixth-grade.

Right. I'm probably going to have to, um, model a couple more times. Um, I had modeled, especially with my first period class, since they are my reading class as well. I had modeled with them how to do it. But, um, I probably jumped in way too fast. And knowing our new standards, you kinda feel a little pressure to rush. [Chuckles]

Because the whole thing is not a topic... What's that called? An objective for us. We can't get too focused in on some of these articles. But there are a few key points that they need to know, so I'm going to probably have them read the section specifically on researching the weather, because they need to know the weather instruments more than anything else.

Uncertainty

The teacher is not sure what they will do in terms of teaching content; unsure of how to use instructional strategies and/or scaffolding. This can also include the teacher not knowing why they use a strategy or explanation of content during the lesson. Finally, it could include uncertainty in terms of how the use of the strategy might unfold or how the students would respond to the use of a strategy.

So, but I might even... I might, you know, use the other ones as examples, and then I'll make everybody do the temperature one

So, I'm trying to figure out how I want, you know, um... Because I...I want everybody to have a job. Because I might change the jobs, but.

So, summarizer, and then we have a clarifier, and then, um, I feel like somebody asks questions and then somebody makes predictions. I think are the original four. Um, but I might tweak it a little bit. But I...I need to look at it before that.

It's all over the place, but anyway...

And then, um, share each time, and then at the end hopefully it'll all come together.

I'm not sure that we'll finish it, but, um, I may read it with them, so we can read a little bit quicker, um, although this group is pretty quick, so I don't know.

Actually, I probably could make Bill Nye a center, because they're going to be 20-minute stations. So, I could do this whole group, instead of Bill Nye whole group, now that I think about it. But they would still... Or, I could just sit at the station and do it with them. So, I may put some head... Well, no, I can't do that. Never mind. I'm gonna... I don't know. I will probably... Yeah, we'll do Bill Nye whole group...

Well, Erin, I have no idea! I never know why I end up doing demonstrations sometimes. And the same demonstrations that I do in one class may not come up in the next class because they might get it, or they may not need that demonstration or I don't see it in their faces and whatnot, but it did talk about, you know, the similarity between Doppler radar and an ambulance and the frequency as it gets closer.

APPENDIX B

HUMAN SUBJECTS CONSENT FORM

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INFORMED CONSENT
For a Research Study entitled:
"Instructional Strategies in Adolescent Literacy: The Process Four Science Teachers Use to Integrate Strategies, and How Their Students Use Them"

You are invited to participate in a research study to examine how teachers plan for and use instructional strategies in their sixth grade science class to promote adolescent literacy, and to study how students use those strategies. The study is being conducted by Erin F. Klash under the direction of Dr. Victoria Cardullo in the Auburn University School of Education. You were selected as a possible participant because you are a sixth grade science teacher and are age 19 or older.

What will be involved if you participate? If you decide to participate in this research study, you will be asked to provide a weekly lesson plan to demonstrate a lesson where you incorporate instructional strategy/strategies in a content reading lesson. You will also be asked to participate in a pre-lesson interview describing what you will do in your lesson, allow me access to observe and record that lesson, and participate in a post-lesson interview to reflect upon the progression of the lesson, assessing how the use of your strategy accomplished your goal. Your total time commitment will be approximately forty-five minutes per week for interviews and once class period observation per week for ten weeks.

Are there any risks or discomforts? The only risk associated with participating in this study is breach of confidentiality. To minimize this risk, we will store any and all data collected in a locked filing cabinet at Erin Klash's home, and any copy of data will be stored in Dr. Cardullo's office, at Auburn University, in a locked cabinet. Also, in any publication or presentation this study produces, your name and site location will be coded. No identifying information will be presented for public use.

Participant's initials _____

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Are there any benefits to yourself or others? If you participate in this study, you can expect to be able to reflect at a deep level on your own teaching practice. This study is designed to provide insight for the research community into what teachers actually do when planning and implementing instructional strategies in lessons, and to provide a planning tool for educators that read the results of this study. We/I cannot promise you that you will receive any or all of the benefits described.

Will you receive compensation for participating? To thank you for your time, you will receive a $50 Visa giftcard upon fulfilling the ten weeks of planning interviews, observations, and reflection interviews.

If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary. If you choose to withdraw, your data will be withdrawn, as long as it is identifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with the College of Education at Auburn University.

Your privacy will be protected. Any information obtained in connection with this study will remain anonymous, or confidential. Information obtained through your participation may be used to fulfill an educational requirement, presented at a conference, or published in a journal.

If you have any questions about this study, please contact Erin klash at efk0003@tigermail.auburn.edu or Dr. Victoria Cardullo at vmc0004@auburn.edu. A copy of this document will be given to you to keep.

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Participant's initials _____

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HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE.

Participant's signature Date	Investigator obtaining consent Date
Printed Name	Printed Name
	Co-Investigator Date
	Printed Name

The Auburn University Institutional Review Board has approved this Document for use from 04/13/2016 to 04/12/2017
Protocol # 16-113 MR 1604

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PARENTAL PERMISSION/CONSENT
For a Research Study entitled
"Instructional Strategies in Adolescent Literacy: The Process Four Science Teachers Use to Integrate Strategies, and How Their Students Utilize Them"

Your son or daughter is invited to participate in a research study to examine how his or her teacher uses strategies in their classroom to help them better understand what they are reading in science, and to see how he or she uses those strategies to help them read science texts. The study is being conducted by Erin Klash, graduate student, under the direction of Dr. Victoria Cardullo, Assistant Professor, in the Auburn University College of Education. Your son/daughter is invited to participate because he/she is in sixth grade and takes science. Since he/she is age 18 or younger, we must have your permission to include him/her in the study.

What will be involved if he or she participates? If you decide to allow him or her to participate in this research study, he or she will be asked to talk about how they are using a particular strategy in science class to help them read a text. This will take place during science class. Your son/daughter's total time commitment will be approximately one hour per week during regular science class instruction. The activities observed will be activities that your child's teacher already has planned. The consent form is giving permission for your child to be interviewed about the lesson, and that this interview data can be used for this study.

Are there any risks or discomforts? The risk associated with participating in this study is break of confidentiality. To minimize this risk, we will not use your child's name in any publication or presentation that may come from this study. Any data collected will be stored in a locked filing cabinet at either Erin F. Klash's home or Dr. Victoria Cardullo's office at Auburn University.

Are there any benefits to your son/daughter or others? If he/she participates in this study, he/she can expect to think deeply about a text her or she is already reading in science class. We/I cannot promise that he/she will receive any or all of the benefits described.

Are there any costs? There are no costs to participate in this study.

Parent/Guardian Initials_____

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If you (or your son/daughter) change your mind about his/her participation, he/she can be withdrawn from the study at any time. Your son's/daughter's participation is completely voluntary. If you choose to withdraw him/her, your son's/daughter's data can be withdrawn as long as it's identifiable. Your decision about whether or not to allow your son/daughter to participate or stop participating will not jeopardize your or his/her future relations with Auburn University College of Education.

Your son's/daughter's privacy will be protected. Any information obtained in connection with this study will remain confidential. The data collected will be protected by Erin Klash or Dr. Victoria Cardullo. Information obtained through his/her participation may be used to fulfill an educational requirement, published in a professional journal, or presented at a professional meeting.
If you have any questions about this study, please contact Erin Klash at efk0003@tigermail.auburn.edu or Dr. Victoria Cardullo at vmc0004@auburn.edu. A copy of this document will be given to you to keep.

If you have questions about your son's/daughter's rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH FOR YOUR SON OR DAUGHTER TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO ALLOW HIM OR HER TO PARTICIPATE.

Parent/Guardian Signature

Printed Name

Minor's name Date

Investigator obtaining consent Date

Printed Name

Co-Investigator Date

Printed Name

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MINOR ASSENT
for a research study entitled
"Instructional Strategies in Adolescent Literacy:
The Process Science Teachers Use to Integrate Strategies,
and How Their Students Utilize Them"

You (*and your parents or guardian(s)*) are invited to be in a research study to help us understand how some children use strategies to help them understand what they are reading in science.

If you decide you want to be in this study, you will do what you normally do in class, and I will ask you questions about how you use strategies to help you understand what you read in science. While you are doing this, your teacher will be present.

Some of the time that you are using strategies to help you understand what you are reading, I will have a movie camera on, taking a video of you. I need the video to study later, after you go home. I can only make the video if you and your parent(s) or guardian(s) give us permission to do that. I may also take pictures of your work for the research study.

You can stop at any time. Just tell your parents, teacher(s), or me, Erin Klash, if you don't want to participate in the study any more. No one will be angry with you if you stop participating in this study.

If you have any questions about what you will do or what will happen, please ask your parents or guardian, your teacher, or Erin Klash (me) now. If you have questions about what I am doing while you are using your strategies to help you understand what you are reading, I want you to ask me.

If you have decided to help us, please sign or print your name on the line below.

Child's Signature	Printed Name	Date
Parent/Guardian Signature	Printed Name	Date

(Parent/Guardian must also sign Parent/Guardian Permission form!)

Investigator obtaining consent	Printed Name	Date

The Auburn University Institutional Review Board has approved this Document for use from 04/13/2016 to 04/12/2017 Protocol # 16-113 MR 1604

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APPENDIX C

PROTOCOL FOR INITIAL INTERVIEWS WITH TEACHER PARTICIPANTS

Initial Interviews with Participants

- Review protocol of study
  - Purpose
  - Timeline
  - Planning, Observation, Reflection; 1 video observation per teacher to be used in reflection toward the end of the study (October)
  - Member Checking
  - Closure interview for feedback
  - Confidential and anonymous – names will be coded; won't be identified – from this point on, I won't discuss this as a group; anything specific will be individual; committee members will receive coded names
  - Providing a copy of results – unidentifiable as per teacher; final results will be given to teacher and principals, but you will not be identified; identifying data will be locked in a filing cabinet and shredded upon the completion of this study (April, 2017, as per IRB); voice recordings will be destroyed, as will video
  - $50 Visa gift card upon completion of study
- Discuss informed consent and release documents for teachers
- Discuss informed consent and release documents for students
  - Send home student documents with the beginning of the year paperwork
  - Teachers collect and set aside, I will pick them up
  - I'd like to come at the end of the first week of school – Friday, August 12th to pick up paperwork on your planning period
  - Incentive to bring back – Suckers if you return all pages signed?

- Discuss a time to come introduce myself to students and talk to them about what I will be doing in the classroom – Week of August 15th
- Attempt to set up a base schedule
    - Monday – unavailable after 9:00 A.M.
    - Tuesday – available until 2:00 P.M.
    - Wednesday – unavailable after 9:00 A.M.
    - Thursday – available until 2:00 P.M.
    - Friday – available various Fridays (no classes or office hours; meetings may arise)
    - Saturday and Sunday – available various hours for planning and/or reflection

- <u>Teacher Information - Recorded</u>

    - How long are periods/blocks?
    - What is teacher's schedule?
    - Major/Certification area
    - Highest degree attained
    - Years of teaching experience
    - What subjects and grades have you taught
    - Years at this school
    - How long teaching science
    - What is an instructional strategy? – Clarify definition, if need be.
        - "Instructional strategies are deliberately planned strategies that are used before, during and after instruction to assist students in gaining new information. They can be used in a variety of manners, with different tools and materials, and include independent, cooperative and collaborative work." (Schorzman & Cheek, 2004)
    - What kind of training you have any training in instructional strategies? (i.e., ARI, workshops, etc.). If any, can you describe those?
    - Unrelated – Favorite snacks and beverages