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IT'S NOT JUST THE TEXT: TRANSACTIONS BETWEEN CONTENT AREA TEACHERS AND STRUGGLING READERS

By

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ABSTRACT

IT'S NOT JUST THE TEXT: TRANSACTIONS BETWEEN CONTENT AREA TEACHERS AND STRUGGLING READERS

By

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This study examined the ways in which: (a) three middle school struggling readers transacted with the reading task demands of their content area classrooms and (b) three content area teachers transacted with these students in relation to these demands. The results suggest that the ways in which struggling readers transact with reading task demands is influenced by their surroundings, how they view themselves as readers, and how they want their peers and teachers to view them. The teachers in this study recognized that the participating students might need additional help in comprehending the text used in their classrooms. However, they believed that any problems students had with text could be solved by engaging in a set of specific behaviors (for example by applying comprehension strategies or asking for assistance). The teachers in this study did not recognize how additional factors influenced the ways students made decisions about text.

Each of the struggling readers recognized the behaviors that their teachers expected them to use to comprehend text. For the most part, the students rejected these behaviors and refused to use them. This happened even when the students understood when, how, and why they would want to apply a specific behavior in order to better comprehend text. The students explained that they understood these behaviors were

meant to help them, but the extent to which they would use them was tied to how they wanted to be seen as a reader within the context of their classroom.

The findings from this study suggest several important things. First, teachers may need more help in thinking about how students' views on reading influence the decisions they make about text. Teachers cannot assume that if they provide quality instruction intended to increase comprehension of text that students will make use of these behaviors. Second, teachers need to develop an understanding of the world in which struggling readers reside in. This includes learning how they see themselves as readers and also understanding their fears and hopes about how others might see them.

Finally, more work needs to be done that examines how and why struggling readers do/do not make use of comprehension strategies. The results from this dissertation suggest that providing excellent instruction may not be enough to insure that the comprehension of struggling readers will improve. Future research should also consider how teachers can apply what they know about students' goals/motivations to strategy instruction.

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Finally, I wish to thank my husband Mark Enfield. He had to live with me during the time I wrote this and I cannot imagine it was a pleasant experience. He understood

when I needed to lay on the floor, stare at the ceiling, and just be left alone. He stood to the side and gave me space when I needed to throw a tantrum because I had to revise something yet again. I would never have gotten through this with my sanity intact without his support.

If anybody out there is reading this, I have one piece of advice: By the time you get through this process you will know who your true friends and family are. They are the ones that will always be next to you, no matter how rough it gets. And they will always try to help you even if they never understood why you chose to put yourself through this in the first place. These are the people I will always be thankful to have known and would do anything for. I hope they know that.

TABLE OF CONTENTS

LIST OF FIGURES

Chapter One

Introduction

I like social studies. It's fun to learn about history and culture. I'm just not into the reading stuff. It's just hard and I'm not good at it. The kids in my class can all read good. But I can't. I should, but I can't.

- Sarah, 6th grade social studies student

It frustrates me when I do have kids with special needs in here who have a reading disability or a comprehension – whatever. How do I help them? Because I'm not trained in that. I'm a science teacher. A straight, factual science teacher.

- Robyn Baker, 8th grade science teacher

The above statements were made by a student and teacher who participated in my dissertation research. Though not all participating students felt the same as Sarah, each had their own interpretations of what they were capable of doing versus what they believed they should be capable of doing. Likewise not all participating teachers shared Mrs. Baker's frustration about how to help students with reading difficulties. However, each teacher was cognizant of the challenges struggling readers faced with the text used in her classroom, the ways in which she worked with struggling readers, and the extent to which this might be improved upon.

My motivation to develop a line of research that focused on middle school struggling readers, content area literacy, and teacher education came out of my own experiences as a sixth grade language arts and social studies teacher in Houston, Texas. The majority of the students I taught were considered to be struggling readers and needed extra support when reading text. However I found I had only been prepared to think about

these students within the context of language arts and reading fictional text. Though my college coursework had provided me with information about the reading process, I found it difficult to incorporate strategy instruction within the content area of social studies. It was this issue that drove me to graduate school and to develop this study. This research is my first step into a series of studies I will design that will help researchers, teachers, and teacher educators consider the experiences of struggling readers in content area classrooms how to help them improve their reading abilities.

Overview of the Dissertation

I wrote this dissertation in an alternative format (Duke & Beck, 1999). It begins with this introduction, is followed by three separate manuscripts, and ends with a conclusion section. In the introduction I will provide an overview of my dissertation study that will contextualize each of the manuscripts that follow. The manuscripts appear in the following order: (a)"I know I can't read": The Influence of Identity on a Struggling Reader's Transactions with Text, (b) Bringing Television Back to the Bedroom: Transactions Between a Struggling Reader and a Mathematics Teacher, and (c) "Sometimes I'm Not That Good a Reader": An Eighth Grade Struggling Reader's Perspectives and Experiences on Reading in Science. The conclusion summarizes key findings, discusses my plans for cross-case analysis, and lays out my plans for future research.

Overview of the Study

Previous research has found that there are a variety of instructional methods teachers can use to help students comprehend expository text (Guastello, Beasley, & Sinatra, 2000; Klingner, Vaughn, & Schumm; 1998; Lederer, 2000; Montali &

Lewandowski, 1996; Musheno & Lawson, 1999; Spence, Yore, & Williams, 1999). These studies have found that students' comprehension of expository texts can be improved when: (a) they are taught how to use graphic organizers, (b) when they are explicitly taught how to be metacognitive and apply specific comprehension strategies, and (c) when students are able to hear text read aloud as they follow along with it.

Though this research has helped both teachers and teacher educators consider ways to increase students' comprehension of content area texts, few studies have asked us to think about other factors that might influence how students, and in particular struggling readers, approach text and the degree to which they are able to learn from it (Brozo, 1991). In addition, a limited number of studies have addressed how content area teachers respond to the needs of middle school struggling readers and the degree to which these interactions are successful (Bintz, 1997; Kinney-Sedgwick & Yochum, 1996; Muth, 1993). The studies that have examined this have often found that teachers are likely to find ways to help struggling readers learn content without reading text. These studies have also suggested that while content area teachers can recognize cognitive difficulties students may be having with text, they do not appear to consider how other factors, such as a student's beliefs about him/herself as a reader or as a student, may influence them as well.

This study focuses on further developing these findings. In doing so it allows for a greater understanding of how students' beliefs about themselves as readers has the potential to affect the ways in which they learn content and/or how they improve as readers of content area text. It also suggests that teachers may need help in thinking about

their interactions with struggling readers beyond strategy instruction and how they can develop an understanding of students' literate identies.

Given the above, this study addressed the following questions:

1. How does a middle school struggling reader in: (a) a sixth grade social studies class, (b) a seventh grade mathematics class, and (c) an eighth grade science class transact with the reading task demands of her classroom?
2. How do the students' teachers transact with their reading/task challenges?

To answer my research questions, I used a descriptive case study approach (Yin, 1994). I observed three female struggling readers and their teachers in three different classes: one sixth grade social studies class, one seventh grade mathematics class, and one eighth grade science class. The inclusion of these three content areas was important because the ways in which teachers and struggling readers transact with each other may look different across subject matter contexts (Alexander, 1997).

All teachers in this study were certified to teach both the content and the grade level in which they were observed. The gender of the students was kept constant in order to prevent differences in experiences that might have occurred based on gender (Wallbrown & Levine, 1991). Data from the sixth grade social studies class was collected from August 2002 – May 2003. Data from the mathematics and science classes was collected from August 2003 – May 2004. The sites for my dissertation were three middle schools located in three separate districts in the Midwestern United States.

Data was collected through bi-weekly field observations, teacher and student questionnaires and interviews, student comprehension assessments, and collection of student work. All classroom observations and interviews were audio-taped. Field notes

were taken during each observation. Each teacher and student was observed, on average, fifty times over the course of the study. Each participant completed one questionnaire at the beginning of the study and was interviewed at the beginning, middle, and end of the study.

The findings from this study suggest that these content area teachers are able to recognize, at least to some extent, the difficulties struggling readers may have when expected to read text. In some instances, the teachers in this study considered how to address these difficulties in hopes that the student would improve her reading abilities. However, this study also suggests that it is not just the students' abilities to apply comprehension strategies to text that determines the extent to which they will comprehend it and/or improve their abilities as a reader. Findings suggest that how a student views him/herself as a reader contributes to the ways in which they are willing to transact with text. This includes their willingness to read it, apply comprehension strategies, and discuss text and text related assignments with their teachers and peers.

The teachers in this study did not appear to recognize how students' perceptions of themselves as readers, along with other socio-cultural factors in the classroom, may have influenced the ways in which they transacted with text and/or engaged in the behaviors that the teachers would have liked. For the most part, these teachers were confused as to why the students did not make use of comprehension strategies or request help when reading text. Rather than ask the students to explain why they did or did not engage in certain behaviors when reading text, the teachers were more likely to assume that the students did not care, were not interested in learning, and/or were lazy.

Despite this negative pattern, the students in this study expressed that they liked and wanted to learn their subject matter, wanted to get good grades, and wished that they could be better readers. This attitude persisted throughout the year regardless of how well or poorly they did in the class they were being studied in. Each student had specific strategies for how she might go about learning the content in instances where she felt she was not capable of comprehending the text. However, this went unrecognized by the teachers.

Overall, this study suggests that these content area teachers are at least somewhat able to identify and address cognitive difficulties students may have with text. However, they do not seem aware of the extent in which self-efficacy, identity, and socio-cultural factors play a role in this as well. Teachers may need assistance in learning how to identify these factors and make use of them when planning for instruction. Finally, the students in this study suggest that struggling readers may not always feel hopeless and are not always likely to engage in negative behaviors when they cannot comprehend text as suggested by previous research (Brozo, 1991; Johnston & Winograd, 1985). Instead, these students, and their approaches to both text and school, cause us to rethink our conceptions of struggling readers and how they are so often portrayed.

Chapter Two

"I know I can't read": The Influence of Identity on a Struggling Reader's Transactions with Text

"It's embarrassing to read in front of the whole class because I might get a word wrong. I think most sixth graders are supposed to know how to read good but I can't. It's easy if I can just read with a friend. I always know they won't make fun of me. They'll always help." – Sarah[1]

It was early October when Sarah made this statement. For Sarah, the reading tasks she encountered in her social studies class were painful. In interviews she repeatedly indicated that the reading materials were too difficult for her to understand and that she had a hard time following class discussions that centered on text. To complicate things further, she was too embarrassed to let the teacher, or most of her classmates, know that she needed help in these areas. While she occasionally solicited help from her teacher and classmates, over the course of this study Sarah invited few people into her inner circle.

Though Sarah felt that most sixth graders should be able to read well, there is evidence to suggest that there are many students her age who have difficulties reading and/or comprehending texts. The recent results from the 2003 NAEP reading test shows that 42% of the eighth graders tested were considered to be at a basic level and had only partially mastered the reading skills expected for their grade level. In addition, another 26% were considered to be below the basic level. Sarah's 4th grade reading test scores from the Michigan Evaluation and Assessment Program (2001), and independent reading assessments administered by her 5th grade teacher, confirmed that she belonged to this

[1] All names are pseudonyms.

population of students and could be expected to have difficulties comprehending texts in school.

This case study reports on the challenges and successes that Sarah encountered with texts during one academic year in her sixth grade social studies class. Previous research has suggested that the main challenges students like Sarah might encounter in such a situation are difficult texts and teachers who, for whatever reason, fail to teach strategies for reading those texts (Bintz, 1997; Jackson & Cunningham, 1994). Other studies have suggested that struggling readers may (a) lack motivation and/or have problems with their self esteem (Johnston & Winograd, 1985) and/or (b) engage in disruptive behaviors in the classroom or try to find ways around reading text (Brozo, 1991).

This case study shows that the ways struggling readers approach text goes beyond these ideas and that they do not always engage or appear to be affected by the issues raised above. The use of case study methodology shows how Sarah's ideas, beliefs, and personal goals about herself as a reader and as a student influenced the ways in which she transacted with the texts used in the classroom. The findings of this study expand upon and challenge the ways in which we think about middle school struggling readers, like Sarah, and their positions inside content area classrooms.

Theoretical Framework

Three theoretical frames informed the conceptualization, design, and methodology of this case study. First, I used a transactional lens to examine how meaning between students and teachers is constructed. A transactional lens allows one to view learning in the classroom as involving more than only teachers' behaviors or only student

responses to teacher behaviors. As Rosenblatt (1985; 2004) explained, transactions are, "an ongoing process in which the elements of parts are seen as aspects or phases of a total situation."

Rosenblatt drew on Dewey and Bentley's (1949) discussion of the term. They argue that studying the decisions and behaviors that people make and engage in through a transactional lens provides a more detailed and explicit understanding of what took place. According to Dewey and Bentley (1949), this lens recognizes and considers how multiple factors in an environment motivate and influence the ways in which people engage with each other and their surroundings. A critical aspect of this lens is an understanding of the decisions people make. Developing such understandings involves more than observations alone.

Viewing teaching and learning through a transactional lens recognizes that people cannot be separated from the situation they are in. Multiple factors will influence the ways in which students and teachers engage with each other and their surroundings. Until an understanding of these factors is gained, the sense that can be made from initial observations is tentative at best. Prior knowledge about teachers, students, and learning will be useful in understanding the transactions between students and teachers, but that knowledge alone is not adequate enough to fully understand a given situation.

A transactional lens allows one to view teaching and learning as complex and multi-layered. To understand how teachers and students decide to work with each other requires an understanding of these layers and how they influence a given situation. These layers may look different across classrooms and contexts as the people involved change and bring new/different motivations and influences to bear on the situation.

Considering how students and teachers *transact* with each other and their surroundings allows for a broader and more accurate view of the situation as opposed to considering how they *interact* with these things. According to Rosenblatt (1985), the term transaction is more inclusive than the word interaction. Interactions, she states, consist of two or more entities acting upon each other. This term takes a behaviorist stance by seeing the events that transpired as a stimulus/response interaction.

It is important to note that I use the term *transaction* as a way to describe and understand the actions that take place between students and teachers. I am not using the term as it was applied in Rosenblatt's (2004) transactional model of reading. According to Rosenblatt (2004), the transactional model of reading is just one way in which the construct of transaction can be applied. Thus while I use Rosenblatt's definition of the term transaction, I framed this study according to the key principles discussed by Dewey and Bentley (1949).

Socio-cultural and socio-cognitive perspectives on reading and learning also framed this study. Both of these stances provide a way to better understand classroom transactions by developing understandings of: (a) the cognitive processes students do/do not apply to the reading task demands of their classroom, (b) the situational factors that influence the ways students approach this, and (c) teachers' understandings of these areas and how such understandings impact their transactions with students. For this study I viewed reading as both a social and a cognitive process where students and teachers regularly interact with each other and text in an attempt to achieve a variety of cognitive and social goals (Purcell-Gates, Jacobson, & Degener, 2004; Ruddell & Unrau, 2004).

Within this frame, students and teachers are seen as constructing and reconstructing what it means to be a reader within a classroom, what counts as literacy and being literate, and the norms for which students should engage with the reading task demands of the classroom (Bloome & Kinzer, 1998). While these constructions can be influenced by many factors, one way is through the transactions that take place between teachers and students (Bloome & Green, 1992). Students may construct their ideas about the ways they should transact with the reading task demands of the classroom based on conversations with a teacher and/or discussions and lessons about text.

In addition, the ways students decide to transact with the reading task demands of their classroom can also be influenced by their socially situated identity (Gee, 1996). This means that the ways in which students choose to approach their tasks with text, and how they choose to transact with their teachers and peers in relation to this, can be influenced by how they see themselves and how they want others to view them. These identities can be reconstructed based on students' transactions with teachers, peers, and the reading demands of the classroom.

The ways in which teachers choose to transact with students can also be influenced by a number of things. Teachers may construct beliefs about a student's abilities, motivation, behavior, and knowledge of content based on conversations they have with the student and their understandings of the decisions and actions that students engage in. The transactions that result between teacher and student can be impacted by these beliefs. These meanings and decisions that students and teachers make are situational and can look different across classrooms (Gee, 1996; Santa Barbara Discourse Group, 1994).

Though social and cultural influences can impact students' transactions, cognitive processes play a role as well. Students' transactions with the reading task demands of their classrooms can be influenced by background knowledge, vocabulary knowledge, understanding of how/when to apply comprehension strategies, and their ability to interpret and make sense of text (Kintsch, 2004; Ruddell & Unrau, 2004). Theoretically, students should be able to learn new information from text by applying this knowledge as they read. Teachers can help students improve in these areas by being aware of their strengths and weaknesses and recognizing where more instruction is needed.

However socio-cognitive theories state that these processes will be influenced by the social and cultural contexts of the classroom (Langer, 2004). For example, students may understand how and when to apply comprehension strategies to text, but may avoid doing so within a specific context based on their socially situated identity (Gee, 1994). Students may feel that using such strategies may cause their teachers/peers to view them in a way that they do not wish to be seen. This may result in students choosing not to understand a piece of text in order to maintain a particular identity.

In order to gain a more accurate view of how students transact with the reading task demands of their classroom it is important to have an understanding of all these factors. By only having knowledge of, for example, the social and cultural context of the classroom, the complete situation within with students are a part of is not taken into account and a limited understanding will most likely be reached. Therefore, this frame provides a way for looking at how students' knowledge of specific cognitive processes as well as their understandings of the social and cultural environment they are a part of

influences their approaches to the textual demands of their classrooms and the ways in which they learn.

Finally, this framework also provides a more detailed look into how teachers transact with students. These theories allow for an examination of teachers' understandings of students' cognitive abilities and how such understandings impact the ways in which they transact with them. It also allows a way to look at teachers' understandings of how socio-cultural contexts impact the decisions that their students make with text and the ways in which these understandings influence their transactions.

Struggling Readers: A Definition

I use the term *struggling reader* to describe Alisa's reading abilities. Over the years, research literature has used a wide range of labels to describe students like Alisa. These include *poor readers* (Zabrucky & Ratner, 1992), *disabled readers* (Ford & Ohlhausen, 1988), *retarded readers* (Neville & Hoffman, 1981), and *remedial readers* (Allington & Shake, 1986; Duffy-Hester, 1999).

Despite the difference in terminology, the literature on struggling readers provides us with a description of the variety of strengths and weaknesses students in this category may have. For example, some struggling readers may be able to decode words easily even though they do not comprehend what they are reading (Worthy & Invernizzi, 1995). Others may not even be aware that they are having comprehension problems at all (Kim & Goetz, 1994). For the purposes of this study, a student is considered to be a struggling reader if he/she has (a) been documented on norm-referenced tests as reading one or more years below his/her current grade level and (b) has shown to need additional support in reading comprehension from his/her classroom teacher.

Related Research

Research studies have suggested that there are methods teachers can use that can help students comprehend content area texts (Guastello, Beasley, & Sinatra, 2000; Klingner, Vaughn, & Schumm; 1998; Lederer, 2000; Montali & Lewandowski, 1996; Musheno & Lawson, 1999; Spence, Yore, & Williams, 1999). These studies have found that students' comprehension of expository texts can be improved when: (a) they are taught how to use graphic organizers, (b) when they are explicitly taught how to be metacognitive and apply specific comprehension strategies, and (c) when students are able to hear text read aloud as they follow along with it.

Though this research has helped both teachers and teacher educators consider ways to increase students' comprehension of content area texts, few studies have asked us to think about other factors that may influence how students, and in particular struggling readers, approach text and the degree to which they are able to learn from it (Brozo, 1991). In addition, a limited number of studies address how content area teachers respond to the needs of middle school struggling readers and the degree to which these interactions are successful (Bintz, 1997; Kinney-Sedgwick & Yochum, 1996; Muth, 1993).

The studies that have examined this have often found that teachers are likely to find ways to help struggling readers learn content without reading text. These studies have also suggested that while content area teachers can recognize cognitive difficulties students may be having with text, they do not appear to consider how other factors, such as a student's beliefs about him/herself as a reader or as a student, may influence them as well. This study focuses on further developing these understandings since it is potentially

a variety of factors that may affect the ways in which struggling readers learn content and/or how they improve as readers of content area text (McCarthey, 2002).

The Roles of Content Area Reading

Researchers have examined content area textbooks and have concluded that they are often poorly written and disorganized, can be difficult to comprehend, and may not provide enough substantive information on the topics they discuss (Armbruster & Anderson, 1988; Beck, McKeown, Sinatra, & Loxterman, 1991; Engelmann, Carnine, & Steely, 1991; Graesser, Leon, & Otero, 2002). In addition, these texts often contain content specific vocabulary that may be unknown to readers and/or may present familiar words that take on new meanings within a particular subject area (Freebody & Anderson, 1983; Fuentes, 1998; Stahl, Jacobson, Davis, & Davis, 1989).

Despite these critiques, textbooks are common in content area classes at the middle school level (Bulgren & Scanlon, 1998). This means that, for many students, their ability to learn course content may depend on their ability to comprehend textbooks (Klingner et al. 1998). Regardless of individual reading ability, it is believed that the majority of students will encounter regular comprehension difficulties when reading textbooks that will most likely inhibit their ability to learn (Graesser et al.; Hill, 1984).

However, helping students to learn factual information is only one role that text may play. The role of reading in the content areas has been criticized for not helping students move beyond the stating of basic facts (Hurd, 1997; Norris & Phillips, 2002; Wineburg, 2001). This argument states that students need to learn that a text is not the final answer in a discipline. Instead, students need to know how to analyze and evaluate information as well as identify the biases in the texts that they read. They also need to

learn how to communicate this information to others (Holliday, Yore, & Alvermann, 1994). These arguments suggest that this type of engagement with text can help prepare students to become critical consumers of text after they leave school.

This type of reading places specific demands on students. In order to move beyond stating basic facts, students must have sufficient background knowledge in their subject matters. Information cannot be evaluated and analyzed if a student does not have the necessary information to engage in these behaviors. In addition, students must also become more metacognitive about the ways in which they read and interact with text. Reading in this manner does not allow students to remain passive and repeat facts.

Struggling Readers & Content Area Reading

Given the information above, it is not surprising that students who are considered to be struggling readers face a multitude of challenges when expected to read content area texts. While these students each have their own unique strengths and weaknesses, typical problems that they may face include: (a) difficulty decoding the texts (Swanson, 1986), (b) poor metacognitive skills (Paris & Oka, 1989), (c) difficulty comprehending what they read (Worthy & Invernizzi, 1995), and (d) understanding how to appropriately apply comprehension strategies (Bakken, Mastropieri & Scruggs, 1997).

A review of the literature provides some insight into how struggling readers may react when faced with difficult text. Johnston and Winograd's (1985) literature review on passive and poor readers suggested that these students might struggle with the problems of passivity, lack of motivation, and low self-esteem. These problems may result in students behaving in a helpless manner when they encounter reading tasks, failing to monitor their performance and/or apply strategies appropriately and effectively, and may

leave some students feeling as though they are not in control of their learning and cannot succeed.

Other students may feel that they cannot do well because of their perceived low abilities as readers. These perceptions can potentially influence the ways students choose to engage with texts (Dillion & Moje, 1998; McCarthey, 1998; McCarthey, 2002). Finally, Brozo's (1991) study of high school struggling readers suggested that these students might rely on others for help, engage in disruptive behaviors, and/or try not to stand out in class.

Taken together, these studies suggest that struggling readers may not engage with texts, or seek help with texts, in ways that might help them develop their comprehension skills, particularly of content area texts. A bleak picture of the ways in which struggling readers engage with texts emerges from these studies. While some of these students might seek assistance, the overall portrait suggests that these are students who do not see themselves as capable of improving as readers. Rather than actively try to make changes in their academic life, struggling readers may be seeking ways to lay low and get by or to create diversions intended to distract people from noticing their reading difficulties (Brozo, 1991).

Content Area Teachers

How content area teachers decide to work with struggling readers may be largely influenced by their beliefs. Many studies have examined content area teachers' beliefs towards teaching reading in their subject area (Bintz, 1997; Donahue, 2000; O'Brien & Stewart, 1990). While content area teachers may hold a variety of beliefs about their roles as teachers of reading, three main, and somewhat contradictory categories, emerged

from the existing literature. These are: (a) others are to blame if their students cannot read (Bintz, 1997), (b) they would like to teach reading but do not know how (Crisuolo, Vacca, & LaVorgna, 1980; Jackson & Cunningham, 1994); and (c) teaching reading in the content areas is important (Stieglitz, 1983; Yore, 1991).

It has also been suggested that, when content area teachers do teach reading, they do so in a simplistic manner (Norris & Phillips, 2003). This means that they are likely to place importance on decoding and locating facts from the text. They are less likely to teach students how to analyze and evaluate the information that they read. Because teachers are likely to use only a single textbook, they may inadvertently promote the idea that the text is a true and completely accurate account of what students are reading (McKeown & Beck, 1994). These types of interactions with text are likely to promote the idea that reading in the content areas is a passive process that requires nothing more than memorization of facts and ideas.

However, it is important to note that content area teachers face a multitude of outside constraints and influences when considering how to incorporate reading instruction into their practice. These issues may include the curriculum they are expected to teach, the ways in which they have been instructed to teach reading, and their schools' culture and attitude towards these topics (O'Brien, Stewart, & Moje, 1995). Such areas can be difficult and tenuous for teachers to navigate. In addition, pre and in-service content area teachers typically receive little instruction in how to teach reading and may not be afforded the opportunities to consider how to integrate such instruction into their curriculum. Therefore, it is not surprising that they may not know how to consider the

complexities of incorporating reading instruction into their classrooms when faced with the above issues.

Based on this previous work, it is apparent that content area teachers hold a wide range of beliefs regarding the roles and responsibilities towards teaching reading. However, it is important to understand that the participating teachers in past studies were never asked to specifically consider their beliefs towards teaching struggling readers in a content area. It is possible that content area teachers may hold a different set of beliefs, and may respond differently, when working with struggling readers.

Though these studies do not say how teachers might work with struggling readers in their classrooms, they do provide some ideas about how teachers might approach teaching reading to students in general. Some teachers explained that they determined the purpose(s) for reading texts, decided what concepts should be learned, and told the students the main ideas to be found within a specific text (Kinney-Sedgwick & Yochum, 1996). Other teachers attempted to make content area readings more authentic by trying to find ways to connect it with their students' lives (Bintz, 1997). Finally, other teachers dealt provided their students with lectures on the content presented by the textbook. These teachers stated that they lacked the knowledge about how to respond to this problem. Therefore, they dealt with it by having lectures or discussions on the content being taught (Muth, 1993). This allowed them to still help their students learn the required content, but did not require any reading on the part of the students.

In summary, the existing literature suggests that content area teachers are unlikely to provide their students with reading instruction due to their personal beliefs as well as the difficulties of providing said instruction. However, these studies do not consider how

content area teachers address the needs of struggling readers specifically. It is possible that content area teachers may respond differently when interacting with students who consistently have comprehension difficulties with text across the academic year. These studies also do not take an in-depth look across time that considers both how struggling readers engage with content area texts and their rationales for doing so.

Research Questions

The following research questions framed the data collection and analysis for this study:

1. How does a middle school struggling reader transact with the reading task demands of a 6th grade social studies class?
2. How does this student's social studies teacher transact with this student's reading/task challenges?

Method

Study Design

I designed this study using a descriptive, case study approach (Yin, 1994). This allowed me to gather descriptive information about the ways in which a struggling reader transacted with the content and demands of her social studies classroom over time. It also allowed me to collect data within the context of the classroom and to document events as they naturally occurred. Finally, I chose to conduct my observations over the period of one school year so that I could document and analyze any changes in behavior for each participant over time.

Participants

This study was conducted in a sixth grade social studies classroom The class was situated in a middle school, grades 6-8, in a suburban area just outside of a medium sized, Midwestern city. Twenty-five students were enrolled in this particular class.

The participants in this case study were Sarah, a 12-year-old sixth grader, and her teacher Claire O'Reilly. Sarah had just entered her first year of middle school when I started collecting data. She is white, and her family would be considered middle class. I chose to observe Sarah after preliminary inquiry revealed her to be reading below grade level and she and her parents agreed to participate. I confirmed Sarah was a struggling reader with the following: (a) her reading scores on the state reading test and (b) her scores on an informal reading inventory administered at the end of her fifth grade year. Sarah received a failing score for her performance on the state reading test. According to the informal reading inventory, her comprehension abilities were at a fourth grade level. However, Sarah's fifth grade teacher did not feel that she struggled with word recognition or fluency. Sarah was considered to be on par with grade level expectations in these areas.

Claire O'Reilly was in her 16th year of public school teaching. For her first 13 years, she taught special education classes in grades 7-12. For the last three years, she had been teaching language arts and social studies to sixth graders at the middle school that Sarah attended. Mrs. O'Reilly decided to switch to a middle school, regular education class because she, "wanted a change," and it had been something she had always wanted to do.

Sarah was in Mrs. O'Reilly's homeroom, language arts, and social studies classes. Her day consisted of six 50-minute classes. She had the standard, core academic subjects of science, math, social studies, and language arts. In addition to these classes she also had gym and Success. Success was a class created for students with academic difficulties and served as an elective. During this time, students could receive extra help for any of their classes. Students were required to take Success if they were failing any of their courses. Sarah was always failing at least one academic class per semester, which required her to be there.

Mrs. O'Reilly was aware of Sarah's reading scores from the fifth grade. She also knew that Sarah was considered to be a struggling reader. Initial conversations with Mrs. O'Reilly indicated that she expected Sarah might have some difficulties comprehending the social studies text used in her classroom.

Mrs. O'Reilly was told that this study would center on how Sarah interacted/responded to the texts used in her social studies class and the type of instruction that she received. I also told Mrs. O'Reilly that I would be unable to help her plan and teach lessons and that I would not be able to provide her with feedback on the lessons and activities that I observed in her classroom. Finally, I told Mrs. O'Reilly that I would not be able to discuss Sarah, or any data that I collected on her, during the study. I chose this route because I believed that I might influence Mrs. O'Reilly's instructional decisions and the results of this study if I discussed these issues with her. However, I did tell Mrs. O'Reilly that I would be able to share the results of the study after it was complete, at which time we could also discuss strategies for working with students like Sarah.

Setting

During the study, Sarah was expected to learn specific content, complete written assignments, and read social studies texts. The social studies curriculum was divided into two major topics: Canada and Latin America. From August through December, Sarah was expected to learn about Canada. From January through April, Sarah was expected to learn about Latin America. For each of these topics Sarah was expected to learn about the physical geography, history, and culture of that region.

The social studies curriculum was framed within the context of the five themes of geography. This content was presented to Sarah in four ways. Sarah was expected to understand the content and the readings being discussed in relation to these themes, which were: (a) location, (b) place, (c) human-environmental interactions, (d) movement, and (e) regions. Each of the five themes was taught in the beginning of the year. Content and assignments were then related back to these themes throughout the year.
Sarah was expected to use to a variety of texts in order to gain information and complete assignments. These texts included encyclopedias, informational packets, the Internet, posters, and textbooks. Though a range of texts was used, the majority of the readings, 38%, came from the district adopted social studies textbook, "World Explorer," (Prentice Hall, 2003).

I analyzed the readability of each page of text, from the textbook or otherwise, that Sarah was expected to read using the Flesch-Kincaid readability formula. According to this formula, the text that Sarah was expected to read measured between a 7th to 10th grade reading level. The majority of this text measured at an 8th grade reading level.

Data Collection

Data was collected between August 27th, 2002 and April 24th, 2003. I gathered data through bi-weekly field observations, teacher and student questionnaires and interviews, student comprehension assessments, and collection of student work. All classroom observations, interviews, and comprehension assessments were audio-taped. I took field notes (see appendix A for the field note observations form) during each observation. Overall, 52 classroom observations, each 50 minutes in length, were conducted.

I scheduled observations so that I could see a variety of classroom events. I spoke with Mrs. O'Reilly weekly in order to learn what was being taught in the upcoming days. This allowed me to arrange to observe when I would see activities that expected Sarah to use a wide range of texts and to participate in both individual and group assignments and presentations. It also allowed me to ensure that I was present if Mrs. O'Reilly planned to teach reading/comprehension skills to her social studies class.

I documented the time that different activities, lessons, and interactions started and ended. This allowed me to state how long specific activities, such as reading a piece of text, occurred for over the course of the study. I documented the time in two different ways. First, I noted the time whenever a new lesson or activity began. I also noted the time when the lesson/activity ended. Within this time frame I made note of the time whenever Sarah and Mrs. O'Reilly interacted with each other. I also noted the time when Sarah started and stopped participating in a particular event. Second, I recorded what Sarah and Mrs. O'Reilly were doing in five-minute intervals. This prevented me from becoming too engrossed in either Sarah or Mrs. O'Reilly.

My role during the field observations was to act as a non-participant observer. I did not participate in class activities or interact with any of the students, including Sarah. I chose this form of observation because it allowed me to closely document both what Sarah and Mrs. O'Reilly. I felt that if I had acted as a participant observer, I might have engaged in activities that distracted me from my data collection and/or might have limited what I saw. In addition, I believed that if I shared information I collected about Sarah with Mrs. O'Reilly I could potentially affect how she interacted with Sarah in regards to text and reading instruction. This would have affected the validity and reliability for the second research question.

Questionnaire Data

Both Sarah and Mrs. O'Reilly completed a questionnaire in October. The purpose of the questionnaires was to provide me with general background information about each participant. Sarah's questionnaire (see appendix B) contained both short answer and multiple-choice questions. The short answer questions asked her to describe what classes she liked most and least, why she felt this way, and how she felt about herself as a reader and a writer.

The multiple-choice questions asked Sarah how she responded when she was expected to read both difficult and easy social studies texts and how she responded to assignments that required her to answer questions about text she had read. For the multiple-choice questions, Sarah was given a list of ways she might react in a given situation to choose from. This list contained a wide range of actions. I asked Sarah to circle all the behaviors that she believed she engaged in.

I did several things to ensure that Sarah understood how to complete her questionnaire. First, I gave Sarah her questionnaire in a private setting. I explained the purpose of the questionnaire and read the directions and each question out loud to her. Then I asked Sarah if she had any questions about the questionnaire. Before she took the questionnaire home, Sarah stated that she understood how to complete the document. She was given seven days, which included one weekend, to complete the questionnaire.

Mrs. O'Reilly's questionnaire (see appendix C) also contained both short answer and multiple-choice questions. The short answer questions asked her to discuss her areas of certification, how long she had been teaching, what grades she had taught, the level of difficulty she believed the social studies material to be for her students in general, and the ways in which she helped her students understand difficult text. The multiple-choice questions asked how often she assigned text for students to read, what types of text she had students read, and the different ways in which she had students read social studies text (i.e. silently, with a partner, etc). Mrs. O'Reilly was asked to circle all the answers that were applicable. Beneath two of the multiple-choice questions was a place for Mrs. O'Reilly to write in anything I may have omitted from the answer choices.

I met with Mrs. O'Reilly privately to administer the questionnaire. I explained the directions to her and she indicated that she understood. I gave Mrs. O'Reilly seven days, including one weekend, to complete the questionnaire.

Interview Data

I privately interviewed Sarah and Mrs. O'Reilly in October, January, and April (see appendix D for Sarah's questions and appendix E for Mrs. O'Reilly's). The interviews were semi-formal and consisted primarily of open-ended questions (Seidman,

1998). These questions provided both Sarah and Mrs. O'Reilly with the opportunity to discuss the events I had observed in the classroom. This allowed me to have a deeper understanding of what I had seen. It also allowed me to clarify any questions that I had from the questionnaires, previous interviews, and observations. Finally, these interviews allowed me to document and understand any changes that may have taken place in the way that the participants felt and responded to any of the things that occurred within the context of the social studies class.

I asked Sarah and Mrs. O'Reilly new questions at each interview in order to better understand what I saw them doing in the classroom. However, I also continued to ask them to discuss what they had said in previous interviews. This allowed me to clarify if any of their beliefs or behaviors had changed during the course of the study and, if so, to understand why.

I did not ask Mrs. O'Reilly any specific questions about Sarah, or struggling readers in general, during the interviews in October and January. For example, I did not ask her how she thought Sarah was doing in her class and I did not ask her to explain her interactions with Sarah. This was done to minimize any effect my presence my have had on Mrs. O'Reilly's behavior or that might cause her to alter her teaching practices towards Sarah. These questions were asked at the final interview in April once all of the observations had been completed.

Comprehension Assessment Data

Informal comprehension assessments (Bader, 2002) were administered to Sarah in October, January, and April in order to determine her growth, or lack of, as a reader of social studies text. Sarah read and answered comprehension question from the social

studies text that is found in the Bader assessment. To assess growth in her ability to read specific social studies text, I also gave Sarah a reading comprehension test that I constructed using the textbook from her social studies class, *World Explorer*, (Prentice Hall, 2003) at each of the three assessment time points. These assessments were modeled after the ones created by Bader.[2]

Each assessment required Sarah to read three passages from her textbook that ranged from 150-200 words each. Passages were selected based on two criteria: (a) Mrs. O'Reilly had not previously assigned the pages to be read and (b) the passages were on a topic that had been discussed in class within the last two months. The first criteria increased the likelihood that Sarah had not previously read and discussed the selected passages in class. The second criteria were set to ensure that Sarah had at least been exposed to the prior knowledge that she may have needed in order to comprehend the passages.

During the assessment, Sarah was given the textbook opened to the page of the first passage. I explained all of the directions to Sarah before she began to read the text. First, I told Sarah the topic that she would be reading about and asked her to tell me what she knew about this subject. Then, I showed her the section(s) of the text that I wanted her to read. I told Sarah that she would first read the text silently to herself. She was instructed to let me know when she had finished reading. After she had read silently, Sarah read the passage out loud to me while I completed a running record. Next, I had Sarah retell to me what she had just read.

Finally, Sarah was asked a set of comprehension questions based on what she had read. Sarah was told both before and after she read each passage that she was allowed to

[2] Contact the author for copies of this assessment.

use the text in order to answer the questions. I asked Sarah 6-8 questions per passage. With the exception of the last question, each of the answers could be found directly in each passage. The last question for each passage was a higher-order thinking question that required Sarah to analyze, draw conclusions, or make inferences based on what she had just read. This assessment allowed me to gain a better understanding of Sarah's successes and struggles with the classroom textbook and her abilities to comprehend it.

Class Work Artifact Data

I collected a copy of all graded work that was completed by Sarah. This allowed me to gain a better understanding of her content knowledge and to monitor her responses to assignments. In addition, I was able to see how Sarah performed on assignments that required her to use texts with assignments that did not require her to use texts.

Inter-Rater Reliability

Inter-rater reliability on (a) the type and amount of reading instruction provided by Mrs. O'Reilly and (b) the ways in which Sarah interacted with text was conducted in March. A trained doctoral student in education, Cathy, accompanied me to Mrs. O'Reilly's classroom two times. Both of us noted: (a) the length of time Mrs. O'Reilly provided Sarah with reading instruction, (b) the type of reading instruction Mrs. O'Reilly provided Sarah, and (c) the ways in which Sarah interacted with the texts she was assigned to read.

Inter-rater reliability analyses indicated that there were acceptably high levels of agreement on the length of time Mrs. O'Reilly provided Sarah with reading instruction ($k = .95$), the type of reading instruction Mrs. O'Reilly provided Sarah ($k = .90$), and the ways in which Sarah interacted with the texts she was assigned to read ($k = .92$).

Data Analysis

Data analysis procedures followed methods recommended by Miles and Huberman (1994). Guided by the research questions, I first began by reading and rereading field notes in order to identify initial themes in the data. Next I generated pattern codes as a way to group these themes together. As I coded the data, I regularly wrote memos (Glaser, 1978) that summarized my work, identified questions I needed to address, and theorized about the relationships I was discovering.

Initially, I coded the data based on my research questions. I identified the ways in which Sarah transacted with text and how Mrs. O'Reilly attempted to facilitate Sarah's comprehension of text. While working through this process, it became clear that the codes could be categorized under much larger and broader themes. Interviews and field notes suggested that Mrs. O'Reilly had three goals that she wanted her students to achieve in relation to text. These were: (a) learn how to get information from the textbook, (b) become active readers, and (c) learn the required content.

I returned to my data and categorized it according to these goals. Within this I examined the ways in which Mrs. O'Reilly attempted to help her class, and specifically Sarah, met these goals. I then considered the ways in which Sarah transacted with Mrs. O'Reilly, her peers, assignments, and text, how these transactions may or may not have helped her to meet these goals, and her rationales for doing so. Classroom observations provided support for Sarah's explanations of what she did and why. However, the primary data source for this level of analysis was interviews.

With the exception of comprehension assessments and student work, all data was categorized under the theme of goals. This allowed me to triangulate my findings and

offered a deeper and more thorough understanding of what had been observed in the classroom. Comprehension assessments and student work were used to better understand the patterns and codes I found in the field notes, questionnaires, and interviews.

As I analyzed my data, I regularly returned to the memos I had previously written. This allowed me to make sure that any questions that had risen during the analysis had been addressed. It also allowed me to clarify the patterns I had discovered. I discussed with Mrs. O'Reilly any questions that I could not answer, or thoroughly understand, by looking at the data. I emailed specific questions to Mrs. O'Reilly as they arose. She answered my questions within 48 hours.

Results

The above analyses revealed a portrait of good intentions but crossed transactions between a teacher, Mrs. O'Reilly, and a struggling reader, Sarah. These transactions seemed to lead to unfulfilled opportunities for Sarah to learn new strategies for comprehending social studies text, improving her abilities as a reader, and learning the required content.

Mrs. O'Reilly had three goals in relation to text that she wanted her students to achieve: (a) learn how to get information from the textbook, (b) become active readers, and (c) learn the required content. Sarah was aware of these goals and tried to do at least some of the things that Mrs. O'Reilly asked of her students. However, Sarah was also aware of her strengths and weaknesses as a reader and was sensitive about how both Mrs. O'Reilly and her peers might view her as a reader. Sarah's own interpretation of her abilities as a reader, as well as the images she wanted to project, influenced the ways in which she transacted with text, Mrs. O'Reilly, and her peers.

Mrs. O'Reilly was aware of Sarah's cognitive abilities as a reader. However, she did not appear to be aware of the ways is which Sarah made decisions about text or how she might approach it if she did not understand it. Instead, Mrs. O'Reilly expressed confusion over Sarah's transactions with text and explained that she could not understand why she did not transact with text in ways that might have been more useful to her achieving the goals listed above.

The following sections elaborate and develop these conclusions. Each section is organized around one of the goals that Mrs. O'Reilly was trying to address. I begin by discussing how Mrs. O'Reilly attempted to help students learn how to get information from the textbook and the ways Sarah responded to this. Next, I discuss how Mrs. O'Reilly provided instruction intended to help her students become active readers and the reasons why Sarah rejected these strategies. This is followed by a discussion of how Mrs. O'Reilly attempted to help students learn content from text and the degree to which Sarah was successful at this. I conclude by discussing the implications of this study in terms of literacy theory, previous research, teacher education, and future research.

"I don't know why she didn't ask": Helping Students Get Information from the Textbook

In October, Mrs. O'Reilly expressed to me that she was concerned about her students' abilities to read and learn from the informational texts that were used in her social studies class. She stated that the majority of the sixth grade population struggled, or was unable, to locate information from these texts. In her opinion this challenge was not due to difficult texts, but that the students had not been taught, or perhaps did not understand, how to apply strategies that would help them gain information. She explained:

> ...kids are coming to us and they are struggling with reading and then we're sending them off into this black void. Their biggest challenge is that many of them don't know how to get information out of the book. I still see kids that shutdown when we open the book to read. A real biggie is to help them figure out how you decipher information that is so dense. How do you just pluck out what you need? I can see that they need help with reading not just in language arts, but when they are reading any text.

Mrs. O'Reilly explained that she used three techniques she believed could help students learn how to locate specific information from social studies texts. These included: (a) discussing with students how to locate information in a piece of text, (b) asking comprehension questions about text, and (c) giving assignments that required students to locate information in a piece of text (see figure 1.1 in appendix F). Mrs. O'Reilly said that she believed the students in her class were capable of participating in these things regardless of their reading ability. She said:

> Of course it will be difficult for some of them. It's not always going to come easy to everyone. But I know that. I don't expect them to become better overnight or from just one lesson. I do expect that they will try their best and do what I ask of them. That's the only way they're going to improve.

Mrs. O'Reilly explained to me that these lessons were designed to help students learn how to identify information in texts. However, Sarah told me that she had limited success participating in them and in some cases felt frustrated. I noticed that this appeared to be particularly true when Mrs. O'Reilly asked the class comprehension questions about a

piece of text they had read. I never saw Sarah attempting to answer these questions. When I asked her about this she explained:

> It's hard. She [Mrs. O'Reilly] asks the question and then gives us like twenty seconds to answer it and I'm still thinking. And all of a sudden a kid blurts out the answer and I try not to listen because I'm trying to answer it myself. I never have time to get the answer. I want to get it, but I can't ever find it.

There were times when Mrs. O'Reilly called on Sarah even though she had not volunteered. However, Sarah was never able to provide a correct answer even when Mrs. O'Reilly told her where to look in the text. Sarah explained that she found this frustrating:

> I hate that. Like I just know everyone's looking at me which just makes it more difficult. And I'm trying to find the answer. I want to get it. But I can't. And then she'll [Mrs. O'Reilly] say, 'Look on this page' or 'Look in that paragraph.' And I do look on there but I never see it. And I just – I never know the answers.

Though these instances were challenging to Sarah, she did tell me that assignments which required her to locate definitions for vocabulary words or to answer comprehension questions whose answers could be found verbatim in the text were "sometimes ok." Sarah explained, "All I have to do is find the answer and copy it down." However, Sarah noted that she skipped questions whose answers could not be found verbatim in the text or if she had problems locating the necessary information.

For example, in February Sarah was expected to read posters that had been created by class members on different South American countries. Mrs. O'Reilly had given students a worksheet that they were expected to complete as they read the posters.

I watched Sarah as she approached a set of informational posters about Guatemala. She looked over the posters for a moment and then began to mutter, "Culture. Culture. Where is culture?" She glanced over the posters for just a moment more, shrugged her shoulders, and walked away. At the end of this particular class period, I asked Sarah to discuss what I had seen. She said:

> I was trying to find out about their culture. Because that's what the question [on the worksheet] was about. But I couldn't find it. I looked all over and then I just decided to skip it. I don't think I'm getting a good grade on this.

When I asked Sarah why she did not approach Mrs. O'Reilly or a friend for help she said: My questions are ones that everyone already knows the answer to. I should know the answers, but I don't. How hard should it be to find culture? I don't want to ask because then everyone will know I'm not as smart as them.

The next day Mrs. O'Reilly gave me a copy of this assignment. "She didn't do very well," she said. "I mean, she got a 70%. That's almost failing. If she needed help I don't know why she didn't ask."

"There it is. Right in front of her": Creating Active Readers

Sarah wrote her name on her worksheet and opened up her textbook. She turned to Chapter Three and began looking at the first page. She glanced over the words and then turned the page. Once again she briefly scanned the text before flipping back to the first page. Now she put her finger on the book and ran it along underneath several words. She mumbled to herself and skipped ahead several pages in the chapter. She skimmed over the page, sighed, and slumped down into her seat.

When I talked to Sarah about how she approached using text in Mrs. O'Reilly's class, she explained that she would usually "jump in and start reading" without considering what she was reading or why. This particular approach to text was not one that Mrs. O'Reilly appeared to support. In our interview in February, Mrs. O'Reilly expressed that she wanted to help all her students become "active readers."

According to Mrs. O'Reilly, becoming an active reader meant that all students should be continuously applying different strategies to texts before, during, and after they read in order to increase their comprehension and locate information. These strategies included: (a) setting a purpose, (b) previewing the text, (c) activating prior knowledge, (d) asking questions, (e) visualizing, (f) asking questions, and (g) making connections. To help students meet this goal, Mrs. O'Reilly provided them with instruction on these different strategies. In addition, these strategies, along with a brief explanation about how and why to apply them, were listed in the front of Sarah's textbook and could be referenced at any time.

Sarah told me that though she understood how to use these strategies, she would not do so. I asked Sarah to discuss these strategies with me in order to (a) get a better sense of how well she understood them and (b) to learn why she would not apply them to text. I sat down with Sarah one day in Mrs. O'Reilly's room while everyone was gone to their elective classes. I placed a copy of the textbook on the table between us.

"Mrs. O'Reilly has taught you about different strategies you can use to help you understand what you read," I said to her.

"Uh-huh," answered Sarah.

"Which strategies do you know how to use?" I asked her.

"I think one of them's questioning," she said.

I opened the textbook to Chapter Four. "Let's say that Mrs. O'Reilly tells you to read this chapter on natural resources. How would you apply the questioning strategy?"

Sarah looked over the text and then began to talk. "Well I would probably look at the pictures. Like what is this machine and why is there fire there? What is that machine doing in the water or whatever? That's basically all I would do."

"How would you go about answering those questions?" I asked.

"I probably wouldn't."

"Why not?"

"Because," explained Sarah, "I would fall behind. Like if she [Mrs. O'Reilly] said read all the way to the bottom of page 23 I would and when I would get like almost there she'd say ok and she'd ask a question. A whole bunch of kids would just answer the question and I wouldn't be able to because I'd still be trying to answer my own questions."

I showed Sarah the list of comprehension strategies in the front of her book. "Do you use any of these?" I asked her.

Sarah looked over the page. "No. I don't understand them."

"I thought you said you understood how to use these strategies when you read?"

"I understand how to ask questions," said Sarah. "I guess that's it."

"So what do you do if you don't understand what you've read?"

"I get people to help me," said Sarah.

"I thought you didn't want people to know when you didn't understand something."

"I ask my friends," said Sarah. "I know they won't make fun of me. I can trust them."

Two weeks later I watched as Sarah sat in a corner with her best friend Janelle. Together, the girls hovered over their textbook occasionally whispering as they filled in their worksheet, an assignment about the Mexican government and economy.

Sarah turned to Janelle, "What are we supposed to do? For number 6?"

Mrs. O'Reilly approached the girls before Janelle could answer and asked, "How are we doing over here?"

"Fine," answered Janelle. Sarah said nothing.

When Mrs. O'Reilly left Sarah again turned to Janelle, "Number six?" she asked holding up her paper.

Janelle looked at Sarah's paper. "Draw a picture of a good that is made in Mexico. Color it. Make it pretty."

"Ok," answered Sarah. She sketched her picture and then held it up for Janelle to see. "Is this pretty?"

"Huh?" asked Janelle squinting at the paper. "No. That's a service. You need a good. Look right here," she took Sarah's book away from her and turned the page. "Here. There's lots of examples. Just pick one. Erase that," she said referring to Sarah's first picture. Sarah erased what she had done and began to draw a new picture.

Though I regularly saw Mrs. O'Reilly encourage her students to ask each other for help, relying solely on others to provide information and assistance did not seem to be what she had in mind. She told me:

I want them to know that they can ask me – that they can ask anyone – for help when they need it. But I also want them to know how to solve these problems on their own. One thing I do is after we [the students] do research, and sometimes with assignments, is to say, 'How did the research go? What strategies did you use? Where did you find the best stuff and how did you do that?' And I hope by doing that they can learn from each other and get ideas about how to apply strategies to help them get information. Most of them have really improved. They're so much more independent and know how to select and apply strategies on their own. But a few of them, Sarah being one of them, will call me over and say, 'I can't find anything about trade winds,' and you know there it is right in front of her. And those kids don't seem to know how to choose what works best for them. They need more help. They can't just keep relying on other people.

"The smart people will take over": Learning the Social Studies Content

While Mrs. O'Reilly wanted to help her students become better readers, she also wanted them to learn the required social studies content. In October, she discussed with me some of the specific goals she had for her students in this area:

We spend half the year studying Canada and half the year studying South America. And while I want them to learn specific facts about these areas, I don't want social studies to be all about regurgitating what they looked up in a book. I want to see them going more towards focusing on a problem. So like when we study the Aztecs and the Mayans, I want them to know where these people lived, but I also want them to think about why they chose to live in these areas. I want

them to really be thinking more about the country and the problems and the issues of that country and of specific people and cultures.

Mrs. O'Reilly told me that she used three techniques she believed could help students learn the required content: (a) reading and discussing text, (b) asking comprehension questions about text, and (c) having students complete assignments. Though Mrs. O'Reilly explained to me that she believed these things were helpful in getting students to learn content, Sarah appeared to interpret such instances as threatening:

> We have to read out loud in class and I don't like that. I get nervous when reading so I don't like to read in front of the whole class or in a big group. If we were reading something, I wouldn't want to read. Sixth graders are supposed to know how to read good, but I can't. A lot of words are really hard for me and I don't know how to say them. I don't want them [the students] to find that out because they will make fun of me.

Though she did not want to read aloud, I did observe Sarah looking at the text as other students read it. She explained to me that she did try to pay attention during these times, but that she usually did not understand the text. She said, "I try to [pay attention] but it's really hard. I just don't understand much, Most of the time I just sit there and listen and look at pictures in the book."

I also did not see Sarah communicating to Mrs. O'Reilly, or her peers, that she did not understand these readings. Sarah explained that though she did have questions about the readings and assignments, she did not want to ask them. "If I ask them then they'll know I didn't get it. They'll know I can't read."

Sarah' limited understanding of text appeared to influence her participation in class discussions. When Mrs. O'Reilly held discussions around a reading, I often saw Sarah lower her head and look at the book. I never saw her raise her hand or try to participate. Sarah explained:

> I hate it when we do that [talk about text]. Like I never knew what was going on when we read it. So how am I going to have anything to say? I just try to look at the book when they talk about it. Maybe I can figure something out.

Mrs. O'Reilly also noticed Sarah's lack of participation and expressed her concern about it in April:

> I've noticed that when we get into discussions about the book she just sits there. She never raises her hand and she never participates. And I wonder, how is she going to learn anything if she just sits there? I can't even tell if she's listening. I think her lack of participation, even if she is listening, really influences how much she learns in here.

Besides discussing text, Mrs. O'Reilly also expected her class to learn content through assignments. I knew from earlier discussions with Sarah that she felt she could rely on a small network of friends to help her when she could not find answers to these assignments. However, sometimes Sarah was expected to complete group projects and was assigned to a group that did not contain any of her friends. For example, in October, Sarah was assigned to a group that was locating information about the natural resources of Canada. The group was expected to learn and then teach this information to the entire class.

As soon as her group got settled Sarah asked, "Is anyone good at reading? We gotta read to find this stuff. Who's a good reader?"

Her group members did not respond. Instead, they began to divide up the work and create a plan for what each member would be responsible for. Sarah sat quietly and watched as her group began to read and take notes. She had not been assigned a task.

"Hey guys," she said, "You want me to make a tic-tac-toe board? We can use it to teach the class." Sarah's group agreed this sounded like a good idea.

Sarah located materials for making the board and began to draw it. While she worked on this, she told the rest of the group that they should be designing questions, based on the information in the text, which could be used to play the game. Once she had finished this task, Sarah announced to the group that she would draw a map of Canada. When a group member pondered why they would need such a thing, Sarah insisted that it was necessary in order to make their presentation "pretty." When I asked Sarah why she chose to make a tic-tac-toe board she explained:

> If I don't do something then the smart people will take over. They'll take over and us people who aren't as bright or as quick answering as them – they'll just have us sit back and not do anything related to the work. I wanted to do something. I know I can't read, but I can draw. I'm good at that and everyone says so. So that's what I did.

However, when it came time to present this information to the class it appeared that Sarah had learned very little. During the presentation, Sarah's group was expected to discuss and answer questions about the natural resources of Canada. Sarah did not share any information with her peers. Her involvements with the presentation included changing

overheads and pointing to them as other members talked. When it came time to play the tic-tac-toe game she had designed, Sarah called on students who raised their hands but did not ask the questions or judge the answers.

At the end of the presentation, Mrs. O'Reilly allowed the class to ask Sarah's group questions. Sarah stood to one side while her group, standing together in the center of the room, answered these. Finally, Mrs. O'Reilly asked some questions and directed one to Sarah.

"Sarah," she said, "what are the three natural resources found in Canada?"

Sarah looked at the ground. "Ummm..." she paused and looked around the room.

"I can tell you," said a member stepping in. "Farmland, minerals and energy, and forests."

"Sarah?" asked Mrs. O'Reilly, "Do you agree with that?"

"Uh, yeah," answered Sarah.

I talked about this presentation with Sarah. She explained that she was not bothered that she could not answer Mrs. O'Reilly's question:

> I made the tic-tac-toe board. That's what I did. And it looked pretty. I didn't read about Canada or those resources or whatever. I didn't have to. I didn't know the answer [to Mrs. O'Reilly's question] but that's ok. Because I did other stuff to help my group.

Mrs. O'Reilly explained to me that she felt Sarah did not learn the content for this project. She said:

> I asked her an easy question on purpose because I thought she would be able to answer it and then she might feel good about herself. But she didn't even try. I

> can't tell that she contributed anything to her group. Based on her performance today, I don't think she learned much.

Mrs. O'Reilly's concern that Sarah didn't learn much appeared to apply across the academic year. At the end of April, Mrs. O'Reilly explained to me that she did not think Sarah had met the academic goals she had set for her class. To some extent, Mrs. O'Reilly said that this was tied to her reading abilities:

> The content isn't easy. Most things are pretty challenging. But I think she could accomplish it. She needs to be pushed to stay focused and read. Reading is serious business and she will avoid it if she can. And of course the reading is not a snap for her. She does need more help than most. But I think she's capable of doing the reading, with assistance, and learning the material if she gets rid of those avoidance techniques that are holding her up.

Comprehension Assessment Results

The results from the Bader (2002) comprehension tests administered in October indicated that Sarah could be expected to read and comprehend social studies text written at a 4.5 grade level. Throughout each assessment, these results did not change. Sarah started and ended her sixth grade year at a 4.5 reading level. These tests also indicated that while Sarah was able to locate specific facts and definitions that could be found word for word in the text, she was unable to answer higher-order thinking questions that required her to analyze the text and/or make inferences.

The results from the textbook assessments found similar results. This assessment indicated that Sarah was capable of using the classroom text, written primarily at an 8th grade reading level, to locate specific facts and definitions of vocabulary words.

However, Sarah was never able to answer questions that called for her to analyze text or make inferences. The results of both these assessments suggest Sarah's abilities to go beyond stating basic facts may be limited. It also raises questions about how well Sarah understood the material she was expected to learn from texts and how well she may have been able to apply and make use of this information. Both assessments suggested that Sarah did not have difficulty with word recognition or fluency.

Discussion

This analysis of the case study data reveals a complex portrait of the lived experiences of a struggling reader transacting with texts, assignments, instruction, and peers in a 6th grade content area class than ever before documented. Sarah's beliefs about herself as a reader and as a student affected the ways in which she was willing to interact with texts, Mrs. O'Reilly, peers, assignments, and content. In addition, Mrs. O'Reilly's interactions with Sarah showed that it is possible for content area teachers to recognize and attempt to help struggling readers. However, this analysis also shows that these interactions may not always help struggling readers for a variety of reasons. In this section I first present the limitations of this study. Next, I discuss how these findings help add to what we know about middle school struggling readers, literacy theory, and content area teaching. I conclude by offering questions for future research.

Limitations

The results, and insights gained from this study should be considered in light of several limitations. First, this study examined one teacher and one struggling reader in the context of a 6th grade social studies class. Therefore, the findings are specific to only Sarah and Mrs. O'Reilly in the context of their social studies class. We cannot make

generalizations about other 6th grade struggling readers or middle school social studies teachers. Other struggling readers in Mrs. O'Reilly's classroom may have experienced the year differently and, if they had been included in this study, may have produced different results.

Second, the only thing that can be concluded from the reading assessments that Sarah was administered is that she did not make any progress as a reader of social studies text. The data that was gathered in this study does not allow me to provide specific reasons for why she did not improve. This study did not examine how specific pedagogical techniques may have helped or hindered Sarah's progress as a reader of social studies text and her ability to learn content from it. While their may be many questions about the instruction that Sarah received, this study is unable to suggest if Mrs. O'Reilly's instruction and/or her interactions with Sarah prevented Sarah from becoming a better reader of social studies text.

Finally, the data that was collected on Mrs. O'Reilly was limited. In order to minimize any influence I might have had over Mrs. O'Reilly's instruction and/or interactions with Sarah. I did not ask her questions about Sarah in the first two interviews. I did ask Mrs. O'Reilly questions about the reading instruction that I observed her providing to the entire class as well as reading instruction that she told me she intended to provide. However, I was unable to gather rich, detailed information about Mrs. O'Reilly's interactions with Sarah and the ways in which she considered Sarah's needs when planning for reading instruction over the course of the year.

Identity, Rationales, and Text Comprehension: Understanding the Interactions

Findings from this study support the argument that students' perceptions of themselves as readers could determine the ways in which they choose to participate in class and engage with texts (Dillion & Moje, 1998; McCarthey, 1998; McCarthey, 2002). These perceptions may be constructed based on transactions with others and with text (Ruddell & Unrau, 1994; Santa Barbara Discourse Group, 1994). For example, Sarah's experiences in Mrs. O'Reilly's class continued to provide her with evidence that she was correct about her reading abilities and her status in the class. The text was usually too difficult for her to understand. She had difficulty locating answers she believed should be relatively easy to find. She saw that other students routinely were able to comprehend and locate information that she could not. Rarely did Sarah have an experience that contradicted this or that cast her in a different light.

Though Sarah routinely had negative experiences with text, she did not appear to be any less motivated to try to comprehend it and use it to complete assignments. This offers additional insight related to self-efficacy and motivational theories. Students may be motivated to read and learn information for a variety of reasons (Guthrie & Wigfield, 2000). However, students' beliefs about their capabilities to accomplish a task may also influence the ways in which they approach it (Bandura, 1986; Schunk, 1991). Students who believe that they are unable to accomplish an academic task, or that it will be extremely difficult, may believe they have little change of learning from it and/or completing it (Schunk, 1989). Those who feel this way may not believe it is worth their time and effort to try to learn the material and thus may be less motivated.

Though Sarah's self-efficacy appeared to be low, she continued to state in interviews that she liked social studies and wanted to learn the content. Observations showed that Sarah always completed her assignments and never copied answers from other students. She also stated that she tried to pay attention and make sense out of text when it was read aloud and discussed in class. This pattern of behavior and beliefs continued to exist through the entire study even though Sarah's efforts to comprehend text and learn content were consistently met with failure. This suggests that while her fears and perceptions of her reading abilities, along with her difficulties in comprehending text, influenced her transactions with text, these issues did not affect her desire to comprehend text or learn the content.

Content Area Teachers: Believing is Not Enough

Results from this study suggest that teachers may not be aware of how students' transactions with text may be influenced by how they see themselves as readers and how they view their social position in the classroom. Mrs. O'Reilly expressed that Sarah needed additional help in reading and that she did not seem to understand how to apply comprehension strategies. While this was true to some extent, interviews with Sarah showed that she refused to use comprehension strategies because she believed they would slow her down and reveal her inabilities to her peers. However, this last piece of information went unrecognized by Mrs. O'Reilly.

This finding is particularly relevant to teacher education. One way that a teacher like Mrs. O'Reilly might respond to the above situation could be to provide students with more instruction on comprehension strategies and how to apply them. Though this might increase students' understandings of such strategies, it would not necessarily convince

students to use them. In addition, students may reject using comprehension strategies for a variety of reasons and the assumption cannot be made that such instruction will always be applied (Dole, Brown, & Trathen, 1996).Therefore, it is important that teachers learn to examine student learning through a transactional lens and understand how a variety of factors come together to impact a total situation (Rosenblatt, 1985). This means developing insights about students that go beyond their academic abilities and understandings.

In order to do this, teachers must figure out how to navigate the social and cultural world that their students occupy and consider the ways in which these things impact the decisions their students make about their use of text. This means that teachers will have to consider more than the content they are going to teach and the methods and materials they will use. Teachers will have to begin to talk to their students and find ways to develop their understandings of the social and cultural influences that exist within their classroom. Though teachers may feel this goes beyond the scope of their job (i.e. they may believe that teaching content is the more important thing to address) Sarah's experiences in Mrs. O'Reilly's class suggest that having such information is a vital and possibly a necessary component to providing better instruction and helping students become better readers of text.

Though such understandings may help to improve instruction the question still remains regarding how to help teachers develop and apply such insights. While Mrs. O'Reilly was certified to teach reading and work with special education students, neither of these backgrounds appeared to help her think about the above issues. In addition, Mrs.

O'Reilly expressed at the end of the study that she struggled to meet the needs to Sarah and other students with similar instructional needs.

Research has also shown that content area teachers who previously did not understand how to provide their students with reading instruction can be taught how to do so (Dupuis, Askov, & Lee, 1979; Wedman & Robinson, 1988). However, such research, along with Mrs. O'Reilly's preparation, does not appear to take socio-cultural theories of learning into account. Though teachers may feel better equipped to teach reading, the extent to which students will learn and/or make use of such instruction may be compromised by how they see themselves as readers and how they view themselves socially within their classrooms.

Questions for Future Research

Sarah's case suggests that her own agendas may have prevented her from learning and/or using any of the instruction that Mrs. O'Reilly provided. Since Sarah limited her engagements with Mrs. O'Reilly and her peers, and since she did not use the comprehension strategies Mrs. O'Reilly taught, this may have contributed to the fact that she did not improve as a reader during the year. Rather than consider issues of methodology/strategy instruction and students' identities as readers separately, future research may wish to consider how these two resist and/or work together. For example, future research might examine how teachers take students' beliefs about themselves as readers into account when working with them and when providing them with texts and reading instruction. Additional research may also wish to address how students' acceptance or rejection of comprehension/instructional strategies influences their growth as readers.

Previous research has considered the ways in which (a) content area teachers' beliefs about reading affect their instruction and (b) how struggling readers may respond to difficult text. While this work contributes significantly to our understanding of these issues, more work needs to be done that considers how other struggling readers and teachers respond to these situations. In addition, it is also necessary to consider how these students and teachers transact with each and with text in different content areas such as science and mathematics. Doing so will help to create a more generalizable data base as well as continue to contribute to the theories in this area.

In conclusion, this study suggests that a content area teacher's decisions about how to teach reading may not be the only influence on how a student progresses as a reader and/or chooses to transact with text. In working with struggling readers in this context, we need to consider how their beliefs and identities help or prevent them from growing as readers. It is in the ongoing transactions of all these factors that reading and learning from text takes place.

Chapter 3

"Sometimes I'm Not That Good a Reader": An Eighth Grade Struggling Reader's Perspectives and Experiences on Reading in Science

"I don't think Alisa[3] did well in science this year." Mrs. Baker had a concerned look on her face as she discussed her student with me.

"Why do you think that is?" I asked.

"I think part of it is due to her reading difficulties, she does have comprehension problems, and some of it is due to the fact that she didn't take time to do things," she answered. "There's some laziness there." Mrs. Baker tapped her pencil on the desk. "I don't know. She just needs so much help. I don't even know where to begin."

It was the end of May when I had this conversation with Mrs. Baker, an eighth grade science teacher. The purpose was to discuss how Alisa, a student in her class, had done in terms of learning the content and improving as a reader of science text. I had spent the year observing and talking to both Mrs. Baker and Alisa about the class and the ways they transacted with text and each other in this context. Now, at the end of the year, Mrs. Baker told me she was frustrated that Alisa had neither learned the content nor improved in her abilities to read text. To compound this, Mrs. Baker explained that she did not know what she could have done differently to have helped Alisa in these ways.

Alisa's struggles to comprehend the text in her science class are not unusual. According to the recent scores from the 2003 NAEP reading exam, struggling readers are common at the middle school level. Forty-two percent of the eighth graders tested were considered to be reading at a basic level. This meant they had only partially mastered the reading skills for their grade level. In addition, another 26% were considered to be below

[3] All names are pseudonyms.

the basic level. Alisa's seventh grade reading scores on the 2003 Michigan Evaluation and Assessment Program and independent reading assessments administered by her seventh and eighth grade language arts teachers suggested that she read on a fifth grade level and belonged to this population of students as well.

This case study examined how Alisa transacted with the texts she was expected to read during one academic year in her eighth grade science class. It also reports on the ways in which Alisa's science teacher, Mrs. Baker, attempted to facilitate Alisa's understandings of these texts. Previous research has suggested that students like Alisa may find ways to circumvent the reading requirements in her content area classes due to the difficulties they have with text (Brozo, 1991). Research has also suggested that content area teachers are unlikely to provide their students with reading instruction and are not sure how to meet the needs of students with comprehension difficulties (Hall, in press).

However, case study methodology shows that the difficulty of a piece of text, and Alisa's abilities as a reader, were not the only things that influenced the ways in which she transacted with text. Alisa's perceptions of herself as a reader, and in particular a reader of science, influenced many of the decisions she made about text. This study also shows how Mrs. Baker's views on reading in science, and the ways in which she believed all students should transact with text, influenced how she thought about reading instruction and the ways in which she worked with Alisa. These findings suggest that while difficult text may have played a role in Alisa's transactions with it, text difficulty was only one factor. Finally, these findings suggest that content area teachers may not be

aware of how students perceive themselves as readers and/or how these perceptions influence their transactions with text.

Theoretical Framework

Three theoretical frames informed the conceptualization, design, and methodology of this case study. First, I used a transactional lens to examine how meaning between students and teachers is constructed. A transactional lens allows one to view learning in the classroom as involving more than only teachers' behaviors or only student responses to teacher behaviors. As Rosenblatt (1985; 2004) explained, transactions are, "an ongoing process in which the elements of parts are seen as aspects or phases of a total situation."

Rosenblatt drew on Dewey and Bentley's (1949) discussion of the term. They argue that studying the decisions and behaviors that people make and engage in through a transactional lens provides a more detailed and explicit understanding of what took place. According to Dewey and Bentley (1949), this lens recognizes and considers how multiple factors in an environment motivate and influence the ways in which people engage with each other and their surroundings. A critical aspect of this lens is an understanding of the decisions people make. Developing such understandings involves more than observations alone.

Viewing teaching and learning through a transactional lens recognizes that people cannot be separated from the situation they are in. Multiple factors will influence the ways in which students and teachers engage with each other and their surroundings. Until an understanding of these factors is gained, the sense that can be made from initial observations is tentative at best. Prior knowledge about teachers, students, and learning

will be useful in understanding the transactions between students and teachers, but that knowledge alone is not adequate enough to fully understand a given situation.

A transactional lens allows one to view teaching and learning as complex and multi-layered. To understand how teachers and students decide to work with each other requires an understanding of these layers and how they influence a given situation. These layers may look different across classrooms and contexts as the people involved change and bring new/different motivations and influences to bear on the situation.

Considering how students and teachers *transact* with each other and their surroundings allows for a broader and more accurate view of the situation as opposed to considering how they *interact* with these things. According to Rosenblatt (1985), the term transaction is more inclusive than the word interaction. Interactions, she states, consist of two or more entities acting upon each other. This term takes a behaviorist stance by seeing the events that transpired as a stimulus/response interaction.

It is important to note that I use the term *transaction* as a way to describe and understand the actions that take place between students and teachers. I am not using the term as it was applied in Rosenblatt's (2004) transactional model of reading. According to Rosenblatt (2004), the transactional model of reading is just one way in which the construct of transaction can be applied. Thus while I use Rosenblatt's definition of the term transaction, I framed this study according to the key principles discussed by Dewey and Bentley (1949).

Socio-cultural and socio-cognitive perspectives on reading and learning also framed this study. Both of these stances provide a way to better understand classroom transactions by developing understandings of: (a) the cognitive processes students do/do

not apply to the reading task demands of their classroom, (b) the situational factors that influence the ways students approach this, and (c) teachers' understandings of these areas and how such understandings impact their transactions with students. For this study I viewed reading as both a social and a cognitive process where students and teachers regularly interact with each other and text in an attempt to achieve a variety of cognitive and social goals (Purcell-Gates, Jacobson, & Degener, 2004; Ruddell & Unrau, 2004).

Within this frame, students and teachers are seen as constructing and reconstructing what it means to be a reader within a classroom, what counts as literacy and being literate, and the norms for which students should engage with the reading task demands of the classroom (Bloome & Kinzer, 1998). While these constructions can be influenced by many factors, one way is through the transactions that take place between teachers and students (Bloome & Green, 1992). Students may construct their ideas about the ways they should transact with the reading task demands of the classroom based on conversations with a teacher and/or discussions and lessons about text.

In addition, the ways students decide to transact with the reading task demands of their classroom can also be influenced by their socially situated identity (Gee, 1996). This means that the ways in which students choose to approach their tasks with text, and how they choose to transact with their teachers and peers in relation to this, can be influenced by how they see themselves and how they want others to view them. These identities can be reconstructed based on students' transactions with teachers, peers, and the reading demands of the classroom.

The ways in which teachers choose to transact with students can also be influenced by a number of things. Teachers may construct beliefs about a student's

abilities, motivation, behavior, and knowledge of content based on conversations they have with the student and their understandings of the decisions and actions that students engage in. The transactions that result between teacher and student can be impacted by these beliefs. These meanings and decisions that students and teachers make are situational and can look different across classrooms (Gee, 1996; Santa Barbara Discourse Group, 1994).

Though social and cultural influences can impact students' transactions, cognitive processes play a role as well. Students' transactions with the reading task demands of their classrooms can be influenced by background knowledge, vocabulary knowledge, understanding of how/when to apply comprehension strategies, and their ability to interpret and make sense of text (Kintsch, 2004; Ruddell & Unrau, 2004). Theoretically, students should be able to learn new information from text by applying this knowledge as they read. Teachers can help students improve in these areas by being aware of their strengths and weaknesses and recognizing where more instruction is needed.

However socio-cognitive theories state that these processes will be influenced by the social and cultural contexts of the classroom (Langer, 2004). For example, students may understand how and when to apply comprehension strategies to text, but may avoid doing so within a specific context based on their socially situated identity (Gee, 1994). Students may feel that using such strategies may cause their teachers/peers to view them in a way that they do not wish to be seen. This may result in students choosing not to understand a piece of text in order to maintain a particular identity.

In order to gain a more accurate view of how students transact with the reading task demands of their classroom it is important to have an understanding of all these

factors. By only having knowledge of, for example, the social and cultural context of the classroom, the complete situation within with students are a part of is not taken into account and a limited understanding will most likely be reached. Therefore, this frame provides a way for looking at how students' knowledge of specific cognitive processes as well as their understandings of the social and cultural environment they are a part of influences their approaches to the textual demands of their classrooms and the ways in which they learn.

Finally, this framework also provides a more detailed look into how teachers transact with students. These theories allow for an examination of teachers' understandings of students' cognitive abilities and how such understandings impact the ways in which they transact with them. It also allows a way to look at teachers' understandings of how socio-cultural contexts impact the decisions that their students make with text and the ways in which these understandings influence their transactions.

Struggling Readers: A Definition

In this study the term *struggling reader* is used to describe Alisa's reading abilities. Historically, the research literature has used a number of terms to describe students like Alisa. These include *poor readers* (Zabrucky & Ratner, 1992), *disabled readers* (Ford & Ohlhausen, 1988), *retarded readers* (Neville & Hoffman, 1981), and *remedial readers* (Allington & Shake, 1986; Duffy-Hester, 1999).

Though researchers have used a number of terms to describe these students, the literature provides us with a description of the variety of strengths and weaknesses students in this category may have. For example, some struggling readers may have poor meta-cognitive skills (Williams, 2001). Others may have problems understanding the

texts they are expected to read (Allington, 2001; Ivey, 1999). Finally, some struggling readers may believe that they are comprehending text even when they are not (Kim & Goetz, 1994). For the purposes of this study, a student is considered to be a struggling reader if he/she has (a) been documented on norm-referenced tests as reading one or more years below his/her current grade level and (b) has shown to need additional support in reading comprehension from his/her classroom teacher.

Related Research

Research studies have suggested that that struggling readers' comprehension of science texts can be improved when they are explicitly taught how to apply comprehension strategies to text (Bakken, Mastropieri, & Scruggs, 1997; Spence, Yore, & Williams, 1999). These studies found that such instruction improved comprehension of text as well as meta-cognitive awareness. In addition, students improved in their abilities to summarize text and identify main ideas.

Outside of science, other research has found that students' comprehension of expository texts can be improved when they: (a) read revised texts (LeSourd, 1985; Weiss, 1983), (b) use study guides (Horton, Lovitt, Givens, & Nelson, 1989; Horton, Boone, & Lovitt, 1990), (c) participate in reciprocal teaching (Palinscar & Brown,; Lederer, 2000), and (d) are provided with vocabulary instruction (Bos, Anders, Filip, & Jaffee, 1989). These studies suggest that there are potentially a variety of ways in which comprehension can be increased for struggling readers in content area classrooms.

Though this research has helped both teachers and teacher educators consider ways to increase students' comprehension of content area texts, few studies have asked us to think about other factors that may influence how students, and in particular struggling

readers, approach text and the degree to which they are able to learn from it. For example, several studies have examined how students' cultural and social lives influence the ways in which they read and write in classrooms (Dyson, 2003; McCarthey, 2002). At the middle school level research has explored the social nature of literacy in students' and how this is typically not valued or considered a form of literacy by teachers (Finders, 1997). However, studies have not considered how cultural and social influences might affect the ways in which students are willing to engage with texts used in school and how it might impact their comprehension of them. This study focuses on further developing these understandings since such influences have the potential to affect the ways in which struggling readers learn content and/or how they improve as readers of content area text

Reading in the Content Areas

For many middle school students, their ability to learn course content may depend on their reading comprehension abilities (Klingner et al.). Textbooks start to become more common at this grade level along with the expectation that students should know how to comprehend with minimal difficulty (Bulgren & Scanlon, 1998). Though we might expect struggling readers to have problems comprehending these texts, it is believed that the majority of students will encounter regular comprehension difficulties regardless of their individual reading ability (Graessar et al.; Hill, 1984).

Researchers who have examined content area textbooks have concluded that textbooks are often poorly written and disorganized, can be difficult to comprehend, and may not provide enough substantive information on the topics they discuss (Armbruster & Anderson, 1988; Beck, McKeown, Sinatra, & Loxterman, 1991; Engelmann, Carnine, & Steely, 1991; Graesser, Leon, & Otero, 2002; Kesidou & Roseman, 2002). In addition,

these texts often contain content specific vocabulary that may be unknown to readers and/or may present familiar words that take on new meanings within a particular subject area (Freebody & Anderson, 1983; Fuentes, 1998; Stahl, Jacobson, Davis, & Davis, 1989).

In addition to examining textbooks, scholars have also pointed out that reading in the content areas is often limited to helping students learn how to identify specific facts (Hurd, 1997; Norris & Phillips, 2002; Wineburg, 2001). Though this is considered to be an important skill, these researchers argue that students also need to be taught how know how to analyze and evaluate information as well as identify the biases in the texts that they read. Finally, they need to learn how to communicate this information to others (Holliday, Yore, & Alvermann, 1994).

The purposes for engaging students in this broad array of behaviors are two-fold. First these arguments suggest that this type of engagement with text can help prepare students to become critical, rather than passive, consumers of text after they leave school. Second, such instruction has the potential to help students learn the specific nuances that accompany subject matter reading. While one obvious goal of reading, regardless of subject matter, is to gain meaning from text, the ways and purposes for this can differ across content areas. For example, in science students may read texts in order to learn about specific scientific facts, laws, and principles. However, not everything written in a science text is intended to be taken as a fact or absolute. Therefore, students also need to learn to identify and understand the difference between facts and theories and the role they play in the field of science (Norris & Phillips, 2003; Vansledright & Frankes, 1998).

This type of reading places requires students to move beyond stating basic facts. Students must be able to evaluate and analyze the information they are presented with. This requires having sufficient background knowledge in their subject matters, an area that struggling readers are likely to be lacking in. Reading in this manner does not allow students to remain passive and repeat facts though it has been shown that this is often what occurs in content area classrooms (Norris & Phillips, 2002).

Struggling Readers and Content Area Reading

Struggling readers can face a variety of challenges when reading content area texts in schools. While students in this category have their own unique strengths and weaknesses, each tends to have similar problems when attempting to comprehend texts in science. These problems can include: (a) having difficulty decoding the texts (Swanson, 1986), (b) having poor metacognitive skills (Paris & Oka, 1989), (c) not comprehending what they read (Worthy & Invernizzi, 1995), and (d) struggling to apply comprehension strategies appropriately (Bakken, Mastropieri & Scruggs, 1997).

Though struggling readers are at a high risk for not learning content, few studies have addressed this topic within the context of science. Studies that have focused on this area have typically addressed how to increase comprehension of science text. However, this research needs to continue to grow if we wish to improve struggling readers' opportunities to become better readers and scientifically literate citizens.

One way to approach working with struggling readers is to first consider how they think about transacting with the texts teachers ask them to read. Johnston and Winograd's (1985) literature review on passive and poor readers suggested that these students might struggle with the problems of passivity, lack of motivation, and low self-esteem. These

problems may result in students behaving in a helpless manner when they encounter reading tasks, failing to monitor their performance and/or apply strategies appropriately and effectively, and may leave some students feeling as though they are not in control of their learning and cannot succeed.

Some struggling readers may feel that reading is a pointless task given that they regularly cannot make sense out of what they read. This perception may influence the decisions they make regarding text. For example, Brozo's (1991) study of high school struggling readers suggests that students with these perceptions are likely to engage in a variety of negative behaviors when faced with text. These can include relying on others for help, engaging in disruptive behaviors, and/or trying not to stand out in class. Brozo's study suggested that students with a history of reading difficulties may give up and not believe that they can improve their reading abilities.

Taken together, these studies suggest that struggling readers may not be likely to engage with texts, or seek help with texts, in ways that might help them develop their comprehension skills, particularly of content area texts. A bleak picture of the ways in which struggling readers engage with texts emerges from these studies. While some of these students might seek assistance, the overall portrait suggests that these are students who do not see themselves as improving as readers. Rather than actively try to make changes in their academic life, struggling readers may be trying to find ways to lay low and get by or even create diversions intended to distract people from noticing their reading difficulties (Brozo, 1991).

Content Area Teachers

Research has suggested that the ways in which content area teachers provide reading instruction to their students may be largely influenced by their beliefs (Hall, in press; Bintz, 1997; Donahue, 2000; O'Brien & Stewart, 1990). While these students suggest that a variety of beliefs can exist, three main categories that emerged from this literature included: (a) others are to blame if their students cannot read (Bintz), (b) teachers would like to teach reading but do not know how (Crisuolo, Vacca, & LaVorgna, 1980; Jackson & Cunningham, 1994); and (c) teaching reading in the content areas is important (Stieglitz, 1983; Yore, 1991).

This research suggests that it is unlikely content area teachers will provide reading instruction to their students. It also suggests that the instruction they do provide may not be effective because of their lack of knowledge. However, it is important to consider two things when thinking about these findings. First, the teachers who participated in these studies were never asked to specifically consider their beliefs towards teaching struggling readers in a content area. Therefore, it is possible that content area teachers may hold a different set of beliefs, and may respond differently, when working with struggling readers.

Second, content area teachers' decisions about how and/or when to teach reading may be influenced by a number of constraints. They may feel they do not have enough time to teach reading because of curriculum demands and/or they may feel that their school provides them little support in thinking about this area (O'Brien, Stewart, & Moje, 1995). Such areas can be difficult and tenuous for teachers to navigate and may leave

them unsure as to how to best incorporate reading instruction and/or question if such instruction is appropriate.

Though these studies suggest content area teachers may not provide their students with reading instruction, other research has found that teachers are thinking about the text their students are expected to read and how they might best learn from it. For example, some teachers, rather than having their students read text, determined the purpose(s) for the readings, decided which concepts should be learned, and told the students the main ideas to be found within a specific text (Kinney-Sedgwick & Yochum, 1996). Other teachers attempted to make content area readings more authentic by trying to find ways to connect it with their students' lives (Bintz, 1997).

Finally, some teachers did recognize that their students were having comprehension difficulties. These teachers stated that they lacked the knowledge about how to respond to this problem. Therefore, they dealt with it by having lectures or discussions on the content being taught (Muth, 1993). This allowed them to help their students learn the required content, but did not require any reading on the part of the students. While none of these teachers attempted to provide reading instruction, they were cognizant that their students might need additional help in learning the content and appeared to try to help them do just that.

Some content area teachers do provide their students with reading instruction. However, it has been suggested that when teachers do this they are likely to stress decoding and locating facts from the text (Norris & Phillips, 2002). Teachers are less likely to help students learn how to analyze and evaluate the information that they read. This can result in students seeing reading as a passive process and one that requires little

engagement or thought on their part. In addition, because teachers are likely to use only a single textbook, they may inadvertently promote the idea that the text is a true and completely accurate account of what students are reading (McKeown & Beck, 1994).

Research Questions

The following research questions framed the data collection and analysis for this study:

1. How does a middle school struggling reader transact with the reading task demands of an 8th grade science class?
2. How does this student's science teacher transact with this student's reading/task challenges?

Method

Study Design

This study was designed using a descriptive, case study approach (Yin, 1994). I gathered descriptive information about the ways in which a struggling reader transacted with the textual demands of her science classroom over a period of one academic year. Collecting data for this length of time provided several benefits. First, I was able to collect data within the context of the classroom and to document events as they naturally occurred. Second, I was able to document and analyze any changes in behavior for each participant over time.

Participants & Setting

Mrs. Baker's 8th grade classroom was situated in a middle school that served grades 6-8. It was located in a suburban area on the outskirts of a mid-sized city in the Midwest of the United States. Twenty students were enrolled in Alisa's class.

The participants in this case study were Alisa, a 13-year-old eighth grader, and her teacher, Robyn Baker. Alisa had just entered her third year of middle school when I started collecting data. She is white, and her family would be considered middle class. I chose to observe Alisa after preliminary inquiry revealed her to be reading below level and she and her parents agreed to participate. I confirmed Alisa was a struggling reader with the following: (a) her seventh grade reading scores on the state reading test and (b) her scores on an informal reading inventory administered at the end of her seventh grade year. According to these assessments, Alisa read on a fifth grade level in the fall of her eighth grade year. However, Alisa's seventh grade teacher did not feel that she struggled with word recognition or fluency. Alisa was considered to be on par with grade level expectations in these areas.

Robyn Baker was in her seventh year of public school teaching. During her first year of teaching, Mrs. Baker taught sixth grade science and drama. For the last five years she had been teaching eighth grade science at the middle school that Alisa attended. In addition to this class, Mrs. Baker also co-taught taught an elective course on criminology with one other teacher. Mrs. Baker's science class covered three units: cells and heredity; motion, forces, and energy; and sound and light. Each unit lasted approximately three months. The content of these units was presented in four ways: (a) through videos, (b) through labs, (c) through assigned readings, and (d) through assignments.

Mrs. Baker volunteered to participate in this study. She responded to an ad I placed on a local list-serve for science and mathematics teachers. Her principal approved of her participation in this study and told me that Mrs. Baker was considered to be one of the best science teachers in the school.

Alisa was in Mrs. Baker's homeroom and science class. Her day consisted of six 50-minute classes: the standard, core academic subjects of science, math, social studies, and language arts. In addition to these classes she took gym and one elective, art. Mrs. Baker explained to me that she was aware of Alisa's reading scores from the seventh grade. She also told me that Alisa's test scores classified her as being a struggling reader. My conversations with Mrs. Baker at the beginning of the study indicated that she expected Alisa might have some difficulties comprehending the text used in her classroom. According to Mrs. Baker, students like Alisa were most likely to have problems explaining what they had read and understanding how that information could be applied outside of school (Interview, February 2004).

Mrs. Baker was told that this study would center on how Alisa interacted/responded to the texts used in her science class and the type of instruction that she received. Mrs. Baker understood that I would be unable to help her plan and teach lessons and that I would not be able to provide her with feedback on the lessons and activities that I observed in her classroom. Finally, I told Mrs. Baker that I would not be able to discuss Alisa, or any data that I collected on her, during the study. I chose this route because I believed that I might influence Mrs. Baker's instructional decisions, and the results of this study, if I discussed these issues with her. However, I did tell Mrs. Baker that I would be able to share the results of the study with her at which time we could also discuss how to work with students like Alisa.

Data Collection

Data was collected between August 25th, 2003 and May 27th, 2004. I gathered data through bi-weekly field observations, teacher and student questionnaires and

interviews, student comprehension assessments, and collection of student work. All classroom observations, interviews, and comprehension assessments were audio-taped. I took field notes during each observation.

During August 25th, 2003 through September 23rd, 2003, I focused primarily on Mrs. Baker. The data collected during this time included such information as which texts were used, how reading instruction was provided to the entire class, and the kinds of assignments that were given. I did not collect data on how Alisa responded to the textual requirements of the class or how Alisa and Mrs. Baker interacted with each other.[4] From September 25th, 2003 through May 27th, 2004 I collected data on both Mrs. Baker and Alisa. In total, 13 visits were conducted that included data on only Mrs. Baker and 46 visits were conducted that included data on both Mrs. Baker and Alisa. Each observation was 50 minutes in length.

I scheduled observations so that I could see a variety of classroom events. I spoke with Mrs. Baker at the end of each week in order to learn what she expected to teach in the upcoming days. This allowed me to see activities in which Alisa was expected to use a wide range of texts and to participate in both individual and group assignments and presentations. It also allowed me to ensure that I was present if Mrs. Baker planned to teach reading/comprehension skills to her science class.

I also documented the time that different activities, lessons, and interactions started and ended. This allowed me to state how long specific activities, such as reading a piece of text, occurred for over the course of the study. I documented time in two different ways. First, I noted the time whenever a new lesson or activity began. I also

[4] At the beginning of this study a different focal child, Jennifer, had been chosen to participate. Alisa joined the study when Jennifer began to have extensive absences from school.

noted the time when the lesson/activity ended. Within this time frame I made note of the time durations when Alisa and Mrs. Baker interacted with each other. I also noted the time when Alisa started and stopped participating in a particular event. Finally, I recorded what Alisa and Mrs. Baker were doing in five-minute intervals. This prevented me from becoming too engrossed in either Alisa or Mrs. Baker.

My role during the field observations was to act as a non-participant observer. I did not participate in class activities or interact with any of the students, including Alisa. I chose this form of observation because it allowed me to closely document both Alisa and Mrs. Baker. I felt that if I had acted as a participant observer, I might have engaged in activities that distracted me from my data collection and/or might have limited what I saw. In addition, I believed that if I shared information I collected about Alisa with Mrs. Baker I could potentially affect how she interacted with Alisa in regards to text and reading instruction. This could have affected the validity and reliability for the second research question.

Types and Uses of Text

Mrs. Baker used two types of text in her classroom: informational and procedural. Informational text consisted of the textbook and handouts about the topics being studied. These handouts came from workbooks owned by Mrs. Baker.

Assignments accompanied each reading. These assignments required students to use informational text in order to define content specific vocabulary, answer comprehension questions about text, and/or label diagrams. If students did not finish their assignment in class they were expected to finish it at home that evening.

Procedural texts were used to complete labs the students conducted in class. Labs were hands-on activities that provided students the opportunity to explore and learn more about a specific concept based on their current unit of study. The procedural texts did not provide students with any information about the topic they were studying. Instead, they gave students step-by-step instructions for doing the lab.

When doing labs, students worked in assigned groups at tables in the back of the room. Groups were allowed to work together to complete their lab assignments. However, students were expected to turn in their own assignment for an individual grade. I analyzed the readability of each page of text, from the textbook or otherwise, that Alisa was expected to read using the Flesch-Kincaid readability formula. According to this formula, the informational text that Alisa was expected to read ranged from a fifth to twelfth grade reading level. The majority of this text measured at an eighth grade reading level. The procedural text consistently measured at an eighth grade reading level.

Questionnaire Data

Both Alisa and Mrs. Baker completed a questionnaire in October. These questionnaires provided me with general background information about each participant. Alisa's questionnaire (see appendix G) contained both short answer and multiple-choice questions. The short answer questions asked her to describe which classes she liked most and least, why she felt this way, and how she felt about herself as a reader and a writer.

The multiple-choice questions asked Alisa how she responded when she was expected to read both difficult and easy science texts and how she responded to written assignments in science. For the multiple-choice questions, Alisa was given a list of ways

she might react in a given situation to choose from. This list contained a wide range of actions. I asked Alisa to circle all the answers that she believed she engaged in.

I did several things to ensure that Alisa understood how to complete her questionnaire. First, I gave Alisa her questionnaire in a private setting. I explained the purpose of the questionnaire and read the directions and each question out loud to her. Then I asked Alisa if she had any questions about the questionnaire. Before she took the questionnaire home, Alisa stated that she understood how to complete the document.

Mrs. Baker's questionnaire (see appendix H) also contained both short answer and multiple-choice questions. The short answer questions asked her to discuss her areas of certification, how long she had been teaching, what grades she had taught, the level of difficulty she believed the science material to be for her students in general, and the ways in which she helped her students understand text. The multiple-choice questions asked how often she assigned text for students to read, what types of text she had students read, and the different ways in which she had students read science text (i.e. silently, with a partner, etc...). Mrs. Baker was asked to circle all of the answers that were applicable. Beneath two of the multiple-choice questions was a place for Mrs. Baker to write in anything I may have omitted from the answer choices.

I met with Mrs. Baker privately to administer the questionnaire. I explained the directions to her and she indicated that she understood. I gave Mrs. Baker seven days, including one weekend, to complete the questionnaire.

Interview Data

I privately interviewed Alisa and Mrs. Baker at the beginning, middle, and end of the study (see appendix I for a list of Alisa's questions and appendix J for Mrs. Baker's

questions). The interviews were semi-formal and consisted of primarily open-ended questions (Seidman, 1998). These questions provided both Alisa and Mrs. Baker the opportunity to discuss the events I had observed in the classroom. This allowed me to better understand what I saw in the classroom as well as gain a more in-depth understanding of Alisa's and Mrs. Baker's perspectives. I was able to clarify any questions that I had from the questionnaires, previous interviews, and observations. Finally, these interviews allowed me to document and understand any changes that may have taken place in the way that the participants felt and responded to any of the things that occurred within the context of the science class.

I asked Alisa and Mrs. Baker new questions at each interview in order to better understand what I saw them doing in the classroom as well as any changes that I might have noticed. However, I also continued to ask them to discuss what they had said in previous interviews. This allowed me to clarify if any of their beliefs or behaviors had changed during the course of the study and, if so, to understand why.

I did not ask Mrs. Baker any specific questions about Alisa, or struggling readers in general, during the first two interviews. For example, I did not ask her how she thought Alisa was doing in her class and I did not ask her to explain her interactions with Alisa. This was done to minimize any effect my presence may have had on Mrs. Baker's behavior or that might cause her to alter her teaching practices towards Alisa. These questions were asked at the final interview in May once all of the observations had been completed.

Comprehension Assessment Data

Informal comprehension assessments (Woods & Moe, 2003) were administered to Alisa in December, February, and May in order to determine her growth, or lack of, as a reader of science text. Alisa read and answered comprehension questions from the science text that is found in the Woods and Moe assessment. To assess growth in her ability to read the text that was assigned in her classroom, I also gave Alisa a reading comprehension assessment that I constructed using the textbook from her science class, *Science Explorer*, (Prentice Hall, 2000) at each of the three assessment time points. These assessments were modeled after the ones created by Woods and Moe.[5]

Each assessment required Alisa to read three passages from her textbook that ranged from 150-200 words each. Passages were selected based on two criteria: (a) Mrs. Baker had not previously assigned the pages to be read and (b) the passages were on a topic that had been discussed in class within the last two months. The first criterion increased the likelihood that Alisa had not previously read and discussed the selected passages in class. The second criterion was set to ensure that Alisa had at least been exposed to the prior knowledge that she may have needed in order to comprehend the passages.

During the assessment, I gave Alisa the textbook opened to the page of the first passage. I explained all of the directions to her before she began to read the text. First, I told her the topic of the passage that she would be reading and asked her to tell me what she knew about this subject. Then, I showed her the section(s) of the text that I wanted her to read. I told Alisa that she would first read the text silently to herself. She was instructed to let me know when she had finished reading. After she had read silently,

[5] Contact the author for copies of this assessment.

Alisa read the passage out loud to me while I completed a running record. Next, I had Alisa retell to me what she had just read. Finally, Alisa was asked a set of comprehension questions based on what she had read. Alisa was told both before and after she read each passage that she was allowed to use the text in order to answer the questions. I asked Alisa six to eight questions per passage. With the exception of the last question, each of the answers could be found directly in each passage. The last question for each passage was a higher-order thinking question that required Alisa to analyze, draw conclusions, or make inferences based on what she had just read. This assessment allowed me to gain a better understanding of Alisa's successes and struggles with the classroom textbook and her abilities to comprehend it.

Class Work Artifact Data

I collected a copy of all graded work that was completed by Alisa. This allowed me to gain a better understanding of her content knowledge and to examine her responses to assignments. This allowed me to compare how Alisa performed on assignments that required her to use texts with assignments that did not require her to use texts.

Inter-Rater Reliability

Inter-rater reliability was conducted in March. A trained doctoral student in education, Cathy, accompanied me to Mrs. Baker's classroom two times. We coded (a) the type and amount of reading instruction provided by Mrs. Baker and (b) the ways in which Alisa transacted with text was conducted in March. Both of us noted: (a) the length of time Mrs. Baker provided Alisa with reading instruction, (b) the type of reading instruction Mrs. Baker provided Alisa, and (c) the ways in which Alisa transacted with the texts she was assigned to read.

Inter-rater reliability analyses indicated that there were acceptably high levels of agreement on the length of time Mrs. Baker provided Alisa with reading instruction (k = .93), the type of reading instruction Mrs. Baker provided Alisa (k = .95), and the ways in which Alisa interacted with the texts she was assigned to read (k = .90).

Data Analysis

Data analysis procedures followed methods recommended by Miles and Huberman (1994). Guided by the research questions, I first began by reading and rereading field notes in order to identify emerging initial themes in the data. Next I generated pattern codes as a way to group these themes together. As I coded the data, I regularly wrote memos (Glaser, 1978) that summarized my work, identified questions I needed to address, and theorized about the relationships I was discovering.

Initially, I coded the data based on my research questions. I identified the ways in which Alisa interacted with text and also how Mrs. Baker attempted to facilitate Alisa's comprehension of text. While working through this process, it became clear that the codes could be categorized under much larger and broader themes. Interviews and field notes suggested that Mrs. Baker three goals that she wanted her students to achieve in relation to text. These were: (a) being able to apply strategies to text, (b) using text to learn content, and (c) becoming a better reader of science text.

I returned to my data and categorized it according to these goals. Within this I examined the ways in which Mrs. Baker attempted to help her class, and specifically Alisa, met these goals. I then considered the ways in which Alisa transacted with Mrs. Baker, her peers, assignments, and text and how these transactions may or may not have

helped her to meet these goals and her rationales for doing so. Classroom observations provided support for Alisa's explanations of what she did and why.

With the exception of comprehension assessments and student work, all data was categorized under the theme of goals. This allowed me to triangulate my findings and offered a deeper and more thorough understanding of what had been observed in the classroom. Comprehension assessments and student work were used to better understand the patterns and codes I found in the field notes, questionnaires, and interviews.

Results

Mrs. Baker had three goals in relation to text that she wanted her students to achieve: (a) being able to apply strategies to comprehend text, (b) reading text to learn content, and (c) to become better readers of science text. Alisa attempted to work towards these goals and tried to do the things that Mrs. Baker requested. Alisa seemed to be aware to some extent of her strengths and weaknesses with text and was concerned about how she would learn content when she could not comprehend the readings. Alisa's own interpretation of her abilities, along with a desire to learn, influenced how she transacted with text, Mrs. Baker, and her peers.

Mrs. Baker revealed also had an awareness of Alisa's abilities as a reader. However, she was unaware of the ways Alisa made decisions about text and how she attempted to learn content when she could not comprehend it. Instead, she believed that Alisa's transactions with text were based on a lack of initiative and, to some degree, laziness. What resulted was a misunderstanding of how and why Alisa transacted with text in her classroom and the reasons for why she did not understand content and how to apply strategies that had been taught.

The following sections elaborate and develop these conclusions. I begin by discussing Alisa's and Mrs. Baker's different understandings of how and when to apply strategies in order to comprehend text. Next, I discuss the ways in which Alisa attempted to circumvent the text in her classroom in order to learn content and Mrs. Baker's understandings of what was taking place. This is followed by a discussion of Alisa's and Mrs. Baker's beliefs about the extent to which Alisa improved as a reader of science text and what circumstances created this situation. I conclude by discussing the implications of this study in terms of literacy theory, previous research, teacher education, and future research.

"They want it fed to them": Applying Strategies to Text

Mrs. Baker walked up and down the rows of her classroom handing out worksheets. "You'll want to look at pages 42-45 to complete today's assignment. Read over those pages before you begin. If you get stuck, if you don't understand something..." she paused and then asked the class, "What are some things you can do if you don't understand the book?"

The class was silent. Alisa looked down at her desk. Then a hand went up. "We can ask you for help?"

"Right," answered Mrs. Baker. "Remember, we've talked about this. You can ask me to come help you or you can ask each other for help. You can also reread these pages and see if that helps." Mrs. Baker returned to her desk and the students began their assignment.

Throughout the study, I observed Mrs. Baker explaining to the entire class what they needed to do if they had problems comprehending text (see figure 1.2 in appendix

K). Mrs. Baker felt that all students should be able to engage in these behaviors and successfully comprehend text regardless of their reading or cognitive abilities. According to Mrs. Baker:

> Some of these students have a low reading ability. They're not taking the time to read. They want it fed to them and I'm not a feeder. On the flip side though, when they do take time to read and ask questions, I find that they are getting the information and understanding what they read.

According to Mrs. Baker, students who did not engage in these behaviors ran the risk of not comprehending text. She explained that, for these students, difficulties with text were created when they did not engage in some or all of the above behaviors and/or they did not engage in them enough to make an impact.

Alisa appeared to be aware of at least some of the behaviors Mrs. Baker thought she should use with text. In February she explained:

> I know that she [Mrs. Baker] wants us to ask questions and stuff when we don't understand. And I try to do that. And I know she wants us to read the book. I do that too. But I would do that anyways without her telling us. I just think that helps.

Alisa also told me that she agreed these behaviors could help her to comprehend text. However, she felt it was better to direct questions to Mrs. Baker rather than her peers. She explained this by saying, "Sometimes I ask someone else [a student] maybe, if Mrs. Baker is busy. But I like to ask her [Mrs. Baker] because she's the teacher and teachers know more."

Though she held this belief, Alisa explained that she sometimes chose not to employ these behaviors when she did not understand text. This was not based on Mrs. Baker's assumption that some students wanted the text "fed" to them and did not want to take the time to make sense of it. First, Alisa wanted to be thought of as a successful reader and student of science. She explained that if a text had already been read and discussed in class she should know what it meant. To ask questions about it would allow either Mrs. Baker or her peers to realize that she did not. This, Alisa said "would be embarrassing."

Second, Alisa did not feel it was necessary to employ these strategies if the text was too difficult for her to understand. Unlike Mrs. Baker, Alisa did not believe that there was a specific behavior she could use to help her understand text that she believed was beyond her abilities to comprehend. In this context, Alisa's decisions about how to transact with text appear to be linked to her identity as a reader. Theories on identity suggest that how students' engage with text may be based on how they perceive themselves as readers and how they want others to view them (Dillion & Moje, 1998; Gee, 1996; McCarthey, 2002).

"You know what a wave is": Using Text to Learn Content

While students in Mrs. Baker's class could learn science in variety of ways, the primary way that they were expected to learn was through text (see figure 1.3 in appendix L). Mrs. Baker explained that she believed engaging in the behaviors described above would also contribute to this learning. However, she told me she was frustrated by what she believed was a lack of initiative on her students' part to read text and apply

appropriate behaviors. She explained that their failure to do this affected the degree to which they learned the course material:

> We did a lab. I went through it step by step with them, broke it down, and demoed how I wanted them to do each part of it. And I was still amazed at the number of kids who completely messed it up. They didn't understand that all they had to do was go back to that first page and re-read the directions. It's like, if they couldn't remember what I said or weren't paying attention then that was it. There was no other way to get the information. They don't ask for help and they don't take the time to reread the directions. I try to keep things simple and they won't take the initiative to help themselves. That's frustrating.

Mrs. Baker noted how Alisa often failed to take the type of initiative she expected from her students, a behavior she believed contributed to Alisa's failure to learn the course content:

> She needs to take more initiative. She doesn't work in groups well. She sits off by herself. She doesn't get involved. And that's not something you can force on a student. I've seen her socialize with her friends out in the hallway or in the lunchroom. But in class, she just doesn't get involved. She got the lowest MEAP [state assessment] score out of all the kids I tested. She probably did not learn the content.

Alisa though had a different view of her behaviors. Alisa acknowledged that when she was expected to read procedural text to complete labs she rarely looked at the text, engaged with the materials, or spoke to her lab partners. During labs, I often observed Alisa standing off to the side of her group watching what they were doing. Alisa

explained to me that this was just one way she attempted to learn the content being taught through the labs:

> I don't do well in labs. They're really hard. I don't understand them, and I just mess up all the time. I don't bother to ask [questions] about them 'cause I know it won't really help me. I figure the best thing to do is pay attention when we [the group] do them. That usually helps.

In addition to watching what her group was doing, Alisa explained, and my observations confirmed, that she always paid attention when Mrs. Baker or another student read, explained, and/or modeled the labs to the class. Alisa told me she felt paying attention during these times was the only method she had for making sense out of the procedural texts used in Mrs. Baker's class. Alisa explained that she believed these texts were beyond her comprehension abilities. She said:

> Well like the labs, they're too hard. I never get them. I pay attention when she [Mrs. Baker] goes over them and sometimes that helps a little bit. Like sometimes I might understand what I'm supposed to do for one of the steps or I might know what stuff [materials] I'm supposed to use when we do them. So it helps if I listen to Mrs. Baker. I probably won't get any of it [the text] if I don't.

There were times, though, when Alisa believed that she did comprehend the text and learned science content. Alisa told me that the textbook was "pretty easy to read" and that it did not usually present her with comprehension difficulties. I rarely saw Alisa asking questions about assignments that accompanied the textbook and I never saw her communicating to anyone that she did not understand this text. Alisa explained that she did not need to engage in these behaviors because she understood what she had read and

the assignments were not difficult to do. She explained that assignments that required her to define vocabulary words were easy because, "I go to the back of the book. That's where all the definitions are in the glossary. That's where I get them and I write them down." She also felt that answering comprehension questions was easy if the answers could be found in the textbook.

> They're easy [the comprehension questions] if it's in the book because all you have to do is copy down the whole sentence. If it's not in the book, if you have to describe and explain it, then it's hard because you have to put it in your own words. That's hard because I don't know what to put down.

While Mrs. Baker felt Alisa could locate answers from the text, she recognized that Alisa struggled to do more than that:

> When I listen to her read out loud, [from the textbook] she can pronounce the words very well. I don't think there's much by the way of comprehension there. I don't think she's able to stretch ideas. You know if the answer is not in the textbook it's hard for her to try and pull together previous pieces of information to put an answer down. She needs so much help.

My conversations with Alisa supported Mrs. Baker's idea that, though she could copy answers from a book, she was not comprehending and learning much of what she read. At each interview I asked Alisa to tell me what she had been studying in science and what she had learned about the topics she named. In May, Alisa told me she had been learning about sound, wavelengths, and frequency all of which I had observed Mrs. Baker talking to the class about.

> "What are some things you have learned about sound?" I asked her.

"Sound is like what you speak and that's a sound. Like an echo is a sound. And I guess that's it," she said.

"Ok," I answered. "You also said you learned about wavelengths. What did you learn about wavelengths?"

"It's like the length of a wave. Like it has a crest and the trough and the amplitude. It's a wave," she said and began moving her hand up and down in a wavy motion. "You know what a wave is. Like a beach wave."

Though this interview format may not have been adequate enough to address Alisa's understandings of the science content, Mrs. Baker's judgment, along with Alisa's test scores on the science MEAP provide, evidence that suggests she did not develop deep knowledge of the subject matter.

Becoming a Better Reader of Science Text: "I'm a science teacher. A straight, factual science teacher"

A third goal that Mrs. Baker had for her students was for them to become better readers of science text. This was something she recognized would be useful to them both now and as they progressed through the grades:

> I'm trying to get them to ask more questions [about the text] and to specify their questions more. Instead of saying, 'I don't get this,' what specifically don't you understand? If you don't understand it, you need to go back and try it on your own, write something down, and then I will help you with it. I expect them to take responsibility. I'm not trying to be the lazy one where I sit up here and drink coffee and eat doughnuts. It's not that. As they progress through the grade levels they're going to get less and less help. They're going to be expected to do more

> stuff on their own. I want them to get out there and to take risks and try stuff on their own.

I observed Mrs. Baker using six methods that could be viewed as both facilitating students' comprehension of text as well as helping them become better readers. These were: (a) providing vocabulary instruction, (b) teaching students how to locate important information in text, (c) giving demonstrations on concepts discussed in the text, (d) explaining what a piece of text meant, (e) referring the class to a specific part of a text to gain information, and (f) having students preview a piece of text prior to reading it.

Though Mrs. Baker used the above methods, she questioned her ability to provide reading instruction to her class. In January she explained:

> I don't know all the comprehension strategies. And I don't have time to go back and teach them [the students] how to read. I don't even know how to teach that really. I believe in a variety of instructional methods and teaching reading is one of them. But I just don't know how to break it down.

Although Mrs. Baker thought that she could do a better job at teaching reading, she nevertheless expected her students to be able to use a strategy once it had been taught. She explained that she was frustrated when students, and in particular Alisa, did not apply these strategies correctly after she had gone over them. For example, in January Mrs. Baker distributed a piece of informational text and a highlighter to each student. As students read the text aloud, Mrs. Baker would periodically stop them and tell them to highlight specific words or sentences. My interviews with Mrs. Baker indicated that she believed she was teaching students how to identify and mark important terms and information with this lesson.

In February, Mrs. Baker repeated the above lesson. Instead of telling students what to highlight, she asked them to read the text and state what should be highlighted. Afterwards, students did not receive any additional instruction on this skill. In May, Mrs. Baker asked students if they would like to use highlighters as they read a piece of text aloud. Alisa indicated that she would like one. However, instead of highlighting important terms and ideas, Alisa began to highlight the entire text. Mrs. Baker noticed this ten minutes into the reading. She went over to Alisa and said, "Do not highlight everything – just the important stuff." Alisa stopped highlighting for a minute only to continue on with this same behavior. Later, Mrs. Baker explained that she found this frustrating:

> I've done activities where I've literally told the kids what to highlight. I've offered highlighters to them as we've discussed certain chapters. But I watched Alisa the other day and she highlighted the entire three pages. And I was like "Alisa, the highlighters need to be for highlighting only those key pieces of information." We've been over this in class and it's like she just wasn't listening which is frustrating. I mean, she seemed to get it at the time.

The frustrations that Mrs. Baker may have felt over not knowing enough about teaching reading and not understanding what to do when Alisa did not use a strategy as it was intended are not uncommon for content area teachers (Jackson & Cunningham, 1994; Yore, 1991). Research literature has documented how content area teachers often feel unprepared to provide reading instruction and help their students become better readers (Hall, in press; Bintz, 1997). Though these studies suggest that content area teachers could benefit from extended and more specialized instruction in this area, these

studies do not examine how reading instruction might be impacted if teachers were to have more in-depth conversations with their students around reading and the sense they make from different strategies.

For example, had Mrs. Baker asked Alisa to discuss why she highlighted the entire text she would have learned that it was not because she had not been listening during the time the instruction took place. Rather she may have discovered that Alisa did not understand it to the degree that she originally thought she did back in January and February and that she was in fact confused about what needed to be highlighted. Alisa explained this confusion in May when I discussed this incident with her. She told me:

> I like it when we get to use the highlighter. But, I don't know, I guess I marked the whole sheet because it all looked important. And like Mrs. Baker told me not to highlight everything, only important things, so I tried that but then I got confused. I didn't know what to do. It all looks important.

I asked Alisa why she did not go to Mrs. Baker for help if she did not know what to highlight. She said:

> I won't ask stupid questions. Like, if Mrs. Baker already explained something and I'm supposed to know how to do it then I'm not gonna say, 'How do you do this?' That's stupid because I'm supposed to already know the answer. Sometimes I forget I have a stupid question and I ask and people get all mad at me. They'll be like, 'We already said that,' so I'm like "Ok, sorry!" So I try not to ask.

While Mrs. Baker hoped that her students would become better readers of science, at the end of the year she told me she believed Alisa had not improved:

To me, I don't think her reading has improved. Even though we interact with the textbook maybe four, five times a unit, and then we do other stuff, I don't think she understands. But I don't know why.

Alisa concurred. In May, I asked her if she thought she had gotten better at reading in science. She began by telling me that the procedural texts were still "too difficult" for her to understand and that she continued to engage in the strategies described earlier in order to attempt to learn content from them. She still believed that she could comprehend the textbook, but also said that she still could not discuss things that were not written word for word in the text. When I asked her if she felt she had improved, stayed the same, or gotten worse at reading in science she answered, "I guess I stayed the same."

Mrs. Baker stated that she did not know why Alisa did not improve in her abilities to comprehend science text. However, she suggested that this may have had to do with her own experience and training:

> She [Alisa] needs so much help and I'm not a reading teacher. I don't even know where to begin because that's not my area of expertise. And that's where it frustrates me when I do have kids with special needs in here who have a reading disability or a comprehension – whatever. How do I help them? Because I'm not trained in that. I'm a science teacher. A straight, factual science teacher.

In addition, she also placed some of this responsibility on Alisa:

> She didn't improve and I think part of it is due to the fact that she didn't take time to do things. I think there was some laziness there. She does try, and I give her a lot of credit for that. She is by no means apathetic. Like I said before, she needs to take more initiative. She needs to get involved in groups. She sits off by herself

and she shouldn't do that. And she just let's everyone else do the work. And I think those things contribute to her not getting any better as a reader.

Comprehension Assessment Results

The results from the Woods and Moe (2003) comprehension test administered in October indicated that Alisa could be expected to comprehend science text written at a fifth grade level. These results did not change throughout the study. The tests also showed that Alisa was able to answer factual questions and define vocabulary terms if these things could be found word for word in the text. She was unable to answer higher-level thinking questions that asked her to make inferences or to use evidence from the reading to support an opinion.

The results from the textbook assessments found similar results. This assessment indicated that Alisa was capable of using the classroom text, written primarily at an 8th grade reading level, to locate specific facts and definitions of vocabulary words. However, Alisa was never able to answer questions that called for her to analyze text, make inferences, or describe and explain particular concept/phenomena in science and this did not change over the course of the study. The results of both these assessments suggest Alisa's abilities to go beyond stating basic facts may be limited. It also raises questions about how well Alisa understood the material she was expected to learn from texts and how well she may have been able to apply and make use of this information.

Discussion

This case study reveals significant insights about the experiences of an 8th grade struggling reader transacting with texts, assignments, instruction, and peers in the context of her science class. It also documents how one teacher's beliefs and understanding about

the reading process and struggling readers influenced her instructional decisions. Alisa's beliefs about herself as a reader, and her understandings about how and why she should transact with text, affected the ways she approached readings, Mrs. Baker, peers, assignments, and content. In addition, Mrs. Baker's interactions with Alisa appeared to be guided by her understandings of the reading process, what she felt struggling readers were capable of doing, and her expectations for Alisa. In this section I first present the limitations of this study. Next, I discuss how these findings help add to what we know about middle school struggling readers, literacy theory, and content area teaching. I conclude by offering questions for future research.

Limitations

The results and insights gained from this study should be considered in light of several limitations. First, this study examined one teacher and one struggling reader in the context of an 8th grade science class. Therefore, the findings are specific only to Alisa and Mrs. Baker in the context of their science class. Generalizations cannot be made about other 8th grade struggling readers or middle school science teachers. Other struggling readers in Mrs. Baker's classroom may have experienced the year differently and, if they had been included in this study, may have produced different results.

Second, the only thing that can be concluded from the reading assessments that Alisa was administered is that she did not make any progress as a reader of science text. The data that was gathered in this study does not allow me to provide specific reasons for why she did not improve. This study did not examine how specific pedagogical techniques may have helped or hindered Alisa's progress as a reader of science text and her ability to learn content from it. While their may be many questions about the quality

of instruction that Alisa received, this study is unable to suggest if Mrs. Baker's instruction and/or her interactions with Alisa prevented Alisa from becoming a better reader of science text.

Finally, the data that was collected on Mrs. Baker was limited. In order to minimize any influence I might have had over Mrs. Baker's instruction and/or interactions with Alisa, I was unable to ask her questions about Alisa in the first two interviews. I did ask Mrs. Baker questions about the reading instruction that I observed her providing to the entire class as well as reading instruction that she told me she intended to provide. However, I was unable to gather rich, detailed information about the ways in which Mrs. Baker considered Alisa's needs when planning for reading instruction over the course of the year.

Student Identity & Reading

Alisa's case adds support to the theory that students' interactions with text may be based on their socially situated identities, how they perceive themselves as readers, and how they want others to view them (Dillion & Moje, 1998; Gee, 1996; McCarthey, 1998; McCarthey, 2002). This suggests that students are less likely to engage with text if they hold a negative image about themselves as readers, and are more likely to interact with it if they believe they are good readers. Though Alisa thought herself to be a good reader, she explained that she had difficulties with the texts used in Mrs. Baker's class. These perceptions influenced how she interacted with informational and procedural text.

For example, Alisa believed that she generally understood the informational text she was assigned to read. Therefore, she said she would ask questions and/or reread the text if she did not understand. She engaged in these behaviors because she believed they

would further her comprehension. However, Alisa did not employ these behaviors when expected to read procedural text. This was because Alisa believed she was a poor reader of these texts and that such efforts would be wasted.

These ideas expand on what we know about struggling readers. Though it has been suggested that struggling readers may behave in a helpless manner when they encounter text (Johnston & Winograd, 1985), Alisa's case suggests that struggling readers may engage with difficult text if they believe they can be successful at comprehending it. Second, Alisa's case also suggests that even when struggling readers believe they cannot comprehend a text, they may attempt to find other ways to learn the content discussed in it.

However, Alisa did not engage in many of the coping behaviors discussed by Brozo (1991). The majority of these behaviors were negative and included engaging in disruptive behavior, having others complete assignments, and not bringing required materials to class. Alisa's case suggests that struggling readers are not always trying to avoid the expectations of their classes or prevent themselves from learning content. Her behaviors suggests that struggling readers can sometimes recognize their limitations and attempt to engage in behaviors that they believe will help them learn.

Defining Success

Findings from this study support the theory that students will construct their beliefs about themselves as readers based on their interactions with text, students, and teachers (Mishler, 1999; Ruddell & Unrau, 1994; Santa Barbara Discourse Group, 1994; Sarup, 1996; Tatum, 1997). Students whose interactions suggest that they are comprehending text and doing well on assignments may construct the belief that they are

good readers and/or have few comprehension problems. They may also believe that they are learning the information that they read about in texts. Students who experience consistent problems in these areas may feel that they are poor readers and/or that they have been unable to learn from text.

Alisa's interactions helped to support two separate beliefs about herself as a reader of science text. First, her belief that she could comprehend informational text was based, to some extent, on the grades she received for assignments that accompanied it. These assignments allowed Alisa to answer factual questions from the text. Alisa was able to locate and copy these answers verbatim from the text. Since Mrs. Baker accepted these as correct, Alisa assumed that she understood what she had read. However, Alisa recognized that she had difficulty answering high-level thinking questions and could not complete assignments herself that were related to procedural text. These experiences helped Alisa to construct the belief that she was a poor reader in some contexts of her science class.

This suggests that some teachers may not realize that the experiences struggling readers have in class can: (a) help to support their beliefs about themselves as readers and (b) potentially create false impressions of how well they have comprehended text and learned content. Though Mrs. Baker appeared to believe that Alisa had comprehension problems in spite of the regular occurrence of passing grades, Alisa did not recognize this. Therefore, this may explain why some struggling readers do not seek assistance from others when interacting with text. They may feel, and have evidence to support, that they do understand and are learning what they are reading.

Being a Reader

The results from this study add to what we know about how content area teachers provide reading instruction to their class as a whole as well as to struggling readers. Previous research has suggested that content area teachers hold a wide range of beliefs about their role in providing students with reading instruction (Bintz, 1997; Donahue, 2000; Jackson & Cunningham, 1994; Yore, 1991). In particular, some studies have suggested that content area teachers may not teach reading because they feel that they lack the knowledge to do so (Jackson & Cunningham, 1994; Crisuolo et al. 1980; Yore). However, findings from this study suggest that while content area teachers may recognize that their knowledge about comprehension instruction is limited, they may still have developed ideas about what it means to be a good reader and how students should address comprehension difficulties.

For example, Mrs. Baker held specific ideas about what students needed to do in order to comprehend text and what they should do if they had comprehension difficulties. While some of these strategies, such as asking questions and rereading text, are supported by the research literature (Beck, McKeown, Hamilton, & Kucan , 1997; Bossert & Schwantes, 1996; Millis & King, 2001; van den Broek & Kramer, 2000), they were not necessarily implemented in a way that may have helped students, and specifically struggling readers, understand how and why they should use them. In addition, Mrs. Baker did not take into account that struggling readers such as Alisa may need additional help and/or strategies in order to comprehend the text.

This suggests that while content area teachers may have developed ideas about what students should do in order to comprehend text, these ideas may be incomplete

and/or inaccurate. In addition, they may not take the specific needs of students who have reading difficulties into account. This is important in how we think about preparing and working with teachers. While all teachers may benefit from more explicit instruction about how to work with struggling readers in the content areas, content area teachers, who often lack extensive knowledge about reading, may need additional help in learning how to differentiate instruction to meet the needs of their students.

Finally, this study suggests that content area teachers may not be aware of how students' identities and perceptions of themselves as readers influence their interactions with text. Mrs. Baker was able to recognize that some of the ways in which Alisa interacted with text, and her resulting comprehension difficulties, may have been related to her cognitive abilities. However, Mrs. Baker did not seem to understand Alisa's beliefs about herself as a reader and how this influenced the ways she approached informational and procedural text. This suggests that teachers may need specific help in learning how to: (a) understand students' identities as readers and (b) consider how to use this information when planning for instruction.

Questions for Future Research

The results from this study suggest that struggling readers' interactions with text may largely be influenced by their perceptions of themselves as readers. Findings also suggest that content area teachers may be unaware of how students perceive themselves and/or how such perceptions influence the ways in which they interact with text. Therefore, future research may wish to consider: (a) how to help teachers identify and understand students' identities as readers, (b) the degree to which such understandings

influence instructional decisions, and (c) the impact that teachers' understandings of this issue can have on students' development as readers.

This study also documented the frustration that Mrs. Baker felt when trying to consider how to provide reading instruction to her class in general and to students who, like Alisa, needed additional support. Though it is likely that content area teachers need more information about how to work with struggling readers, they may also need assistance in considering how to provide reading instruction in classes where students have a range of strengths and weaknesses. While research has identified effective comprehension strategies content area teachers can use to help improve their students' comprehension (Armbruster & Gudbrandsen, 1986; Freebody & Anderson, 1983; Guastello, Beasley, & Sinatra, 2000; Lederer, 2000; Montali & Lewandowski, 1996; Musheno & Lawson, 1999; Spence, Yore, & Williams, 1999; Tregaskes & Daines, 1989), more work needs to be done that considers how teachers can approach applying these strategies in their classrooms.

Chapter 4

Bringing Television Back to the Bedroom: Transactions Between a Seventh Grade Struggling Reader and her Mathematics Teacher

"I have to get all A's on my report card. If I do I'll get a TV in my room. I used to have one, but my mom took it out and put in a desk. That wasn't really a fair trade. But I want that TV so I'll do whatever I need to." Nicole; 7th grade mathematics student[6]

Nicole made this statement during our first interview in October. In each subsequent one, she reported to me that, though she failed to make straight A's on her report card, she continued to work towards this goal. While Nicole may have faced a variety of challenges as she tried to achieve this, her reading ability was potentially a primary one. Nicole was labeled as a struggling reader based on independent reading assessments given by her sixth grade language arts teacher as well as her scores on the Michigan Evaluation and Assessment Program administered in the fourth grade (2001). These scores suggested that Nicole read on a fifth grade reading level and could be expected to have at least some difficulty comprehending the texts used in her classrooms.

I first met Nicole the previous April when she was in sixth grade. In our first meeting, I explained to her that I was interested in learning more about her experiences as a student in mathematics during her seventh grade year. I told her that I would want to hear her thoughts about the content, the assignments, and the book she would be expected to read.

"Why would you want to know about that?" Nicole asked me.

I explained to Nicole that I thought I could learn a lot from her, and that what I learned might help teachers improve their instruction.

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[6] All names are pseudonyms.

"Ok," said Nicole giving me an odd look, "but math is easy. You just open the book, look at the pages, and then answer whatever questions the teacher gives you. It's not hard and I'm good at it."

I assured her that this was fine and whatever she thought about math and wanted to share would be more than helpful. Nicole agreed to participate, took her consent forms, and bounced back to class. I did not see her again until her first day of seventh grade.

This case study followed Nicole, a seventh grade struggling reader, and her mathematics teacher, Paige Harding, for one academic year. Previous research has suggested that struggling readers like Nicole may face many obstacles in their content area courses. However, during the eight months I spent in Mrs. Harding's classroom, I observed how Nicole could make passing grades, be considered successful and smart, and yet leave a course without improving their reading abilities and/or learning the required content. I also observed how Mrs. Harding's beliefs about reading instruction and students' individual reading abilities influenced her interactions with Nicole.

The findings from this case challenge the ideas of what it means to be successful and to learn in a content area classroom as well as our assumptions about the ways in which struggling readers like Nicole interact with difficult text. They also show that some students, in spite of their reading difficulties, will do whatever it takes in order to complete assignments, maintain high grades, and bring television back to the bedroom.

Theoretical Framework

Three theoretical frames informed the conceptualization, design, and methodology of this case study. First, I used a transactional lens to examine how meaning between students and teachers is constructed. A transactional lens allows one to view

learning in the classroom as involving more than only teachers' behaviors or only student responses to teacher behaviors. As Rosenblatt (1985; 2004) explained, transactions are, "an ongoing process in which the elements of parts are seen as aspects or phases of a total situation."

Rosenblatt drew on Dewey and Bentley's (1949) discussion of the term. They argue that studying the decisions and behaviors that people make and engage in through a transactional lens provides a more detailed and explicit understanding of what took place. According to Dewey and Bentley (1949), this lens recognizes and considers how multiple factors in an environment motivate and influence the ways in which people engage with each other and their surroundings. A critical aspect of this lens is an understanding of the decisions people make. Developing such understandings involves more than observations alone.

Viewing teaching and learning through a transactional lens recognizes that people cannot be separated from the situation they are in. Multiple factors will influence the ways in which students and teachers engage with each other and their surroundings. Until an understanding of these factors is gained, the sense that can be made from initial observations is tentative at best. Prior knowledge about teachers, students, and learning will be useful in understanding the transactions between students and teachers, but that knowledge alone is not adequate enough to fully understand a given situation.

A transactional lens allows one to view teaching and learning as complex and multi-layered. To understand how teachers and students decide to work with each other requires an understanding of these layers and how they influence a given situation. These

layers may look different across classrooms and contexts as the people involved change and bring new/different motivations and influences to bear on the situation.

Considering how students and teachers *transact* with each other and their surroundings allows for a broader and more accurate view of the situation as opposed to considering how they *interact* with these things. According to Rosenblatt (1985), the term transaction is more inclusive than the word interaction. Interactions, she states, consist of two or more entities acting upon each other. This term takes a behaviorist stance by seeing the events that transpired as a stimulus/response interaction.

It is important to note that I use the term *transaction* as a way to describe and understand the actions that take place between students and teachers. I am not using the term as it was applied in Rosenblatt's (2004) transactional model of reading. According to Rosenblatt (2004), the transactional model of reading is just one way in which the construct of transaction can be applied. Thus while I use Rosenblatt's definition of the term transaction, I framed this study according to the key principles discussed by Dewey and Bentley (1949).

Socio-cultural and socio-cognitive perspectives on reading and learning also framed this study. Both of these stances provide a way to better understand classroom transactions by developing understandings of: (a) the cognitive processes students do/do not apply to the reading task demands of their classroom, (b) the situational factors that influence the ways students approach this, and (c) teachers' understandings of these areas and how such understandings impact their transactions with students. For this study I viewed reading as both a social and a cognitive process where students and teachers

regularly interact with each other and text in an attempt to achieve a variety of cognitive and social goals (Purcell-Gates, Jacobson, & Degener, 2004; Ruddell & Unrau, 2004).

Within this frame, students and teachers are seen as constructing and reconstructing what it means to be a reader within a classroom, what counts as literacy and being literate, and the norms for which students should engage with the reading task demands of the classroom (Bloome & Kinzer, 1998). While these constructions can be influenced by many factors, one way is through the transactions that take place between teachers and students (Bloome & Green, 1992). Students may construct their ideas about the ways they should transact with the reading task demands of the classroom based on conversations with a teacher and/or discussions and lessons about text.

In addition, the ways students decide to transact with the reading task demands of their classroom can also be influenced by their socially situated identity (Gee, 1996). This means that the ways in which students choose to approach their tasks with text, and how they choose to transact with their teachers and peers in relation to this, can be influenced by how they see themselves and how they want others to view them. These identities can be reconstructed based on students' transactions with teachers, peers, and the reading demands of the classroom.

The ways in which teachers choose to transact with students can also be influenced by a number of things. Teachers may construct beliefs about a student's abilities, motivation, behavior, and knowledge of content based on conversations they have with the student and their understandings of the decisions and actions that students engage in. The transactions that result between teacher and student can be impacted by these beliefs. These meanings and decisions that students and teachers make are

situational and can look different across classrooms (Gee, 1996; Santa Barbara Discourse Group, 1994).

Though social and cultural influences can impact students' transactions, cognitive processes play a role as well. Students' transactions with the reading task demands of their classrooms can be influenced by background knowledge, vocabulary knowledge, understanding of how/when to apply comprehension strategies, and their ability to interpret and make sense of text (Kintsch, 2004; Ruddell & Unrau, 2004). Theoretically, students should be able to learn new information from text by applying this knowledge as they read. Teachers can help students improve in these areas by being aware of their strengths and weaknesses and recognizing where more instruction is needed.

However socio-cognitive theories state that these processes will be influenced by the social and cultural contexts of the classroom (Langer, 2004). For example, students may understand how and when to apply comprehension strategies to text, but may avoid doing so within a specific context based on their socially situated identity (Gee, 1994). Students may feel that using such strategies may cause their teachers/peers to view them in a way that they do not wish to be seen. This may result in students choosing not to understand a piece of text in order to maintain a particular identity.

In order to gain a more accurate view of how students transact with the reading task demands of their classroom it is important to have an understanding of all these factors. By only having knowledge of, for example, the social and cultural context of the classroom, the complete situation within with students are a part of is not taken into account and a limited understanding will most likely be reached. Therefore, this frame provides a way for looking at how students' knowledge of specific cognitive processes as

well as their understandings of the social and cultural environment they are a part of influences their approaches to the textual demands of their classrooms and the ways in which they learn.

Finally, this framework also provides a more detailed look into how teachers transact with students. These theories allow for an examination of teachers' understandings of students' cognitive abilities and how such understandings impact the ways in which they transact with them. It also allows a way to look at teachers' understandings of how socio-cultural contexts impact the decisions that their students make with text and the ways in which these understandings influence their transactions.

Struggling Readers: A Definition

I use the term *struggling reader* to describe Nicole's reading abilities. Research literature has described students like Nicole using a variety of terms such as *poor readers* (Zabrucky & Ratner, 1992), *disabled readers* (Ford & Ohlhausen, 1988), *retarded readers* (Neville & Hoffman, 1981), and *remedial readers* (Allington & Shake, 1986; Duffy-Hester, 1999).

Though a number of labels have been used, the literature on this topic suggests that students who fall into this category may have a variety of strengths and weaknesses. For example, some struggling readers may have comprehension difficulties, but may be able to decode words easily (Worthy & Invernizzi, 1995). Others may believe that they understand what they read even when evidence exists that suggests otherwise (Kim & Goetz, 1994). For the purposes of this study, a student is considered to be a struggling reader if he/she has (a) been documented on norm-referenced tests as reading one or more

years below his/her current grade level and (b) has shown to need additional support in reading comprehension from his/her classroom teacher.

Related Research

In mathematics, research related to reading has focused on a broad range of topics which include: (a) vocabulary instruction (Johnson, 1944; Linville, 1976; Lyda & Duncan, 1967; Vanderlinde, 1964), (b) text readability (Heddens & Smith, 1964; Paul, Nibbelink, & Hoover, 1986; Smith, 1971), (c) transactional reading strategies (Borasi, Siegel, & Fonzi, 1998.), and (d) the role of reading in the mathematics classroom (Siegel & Fonzi, 1995; Siegel, Borasi, & Fonzi, 1998). These studies have made specific recommendations for how teachers should provide vocabulary instruction as well as pointed out the problems with the ways mathematics text is written and used in classrooms.

Although this research has helped both teachers and teacher educators consider ways to increase students' comprehension of mathematics texts, it is important to note that relatively few studies focus on reading in mathematics. In addition, little consideration has been given to the issue of struggling readers in mathematics and the ways in which mathematics teachers can effectively work with them. However, studies have examined the ways in which middle school science and social studies teachers approach working with struggling readers. These studies have often found that teachers are likely to find ways to help struggling readers learn content without reading text (Bintz, 1997; Kinney-Sedgwick & Yochum, 1996; Muth, 1993). This research has also suggested that while content area teachers can recognize cognitive difficulties students may be having with text, they do not appear to consider how other factors, such as a

student's beliefs about him/herself as a reader or as a student, may influence the ways in which they read and use text in classrooms.

Reading Textbooks in Mathematics

Historically, mathematics textbooks have been criticized for their high readability levels (Heddens & Smith, 1964; Lambert, 1996; Paul, Nibbelink, & Hoover, 1996). Researchers have argued that these texts are often difficult for students who would be considered capable of reading grade level material. However, there appears to be little discussion regarding how to address this problem. Current studies have examined the degree to which mathematics textbooks are aligned with the NCTM standards (Martin, Hunt, Lannin, Leonard, Marshall, & Wares, 2001; Pickreign & Capps, 2000). While researchers have found that the mathematics textbooks examined were in agreement with these standards, this does not address the difficulties that any student, and in particular struggling readers, may have with these texts. Less emphasis appears to be placed on the type of reading students of all abilities would have to do in order to meet these standards and the degree to which the textbook does/does not contribute to helping all students be successful at this.

Despite these critiques, textbooks are common in content area classes at the middle school level (Bulgren & Scanlon, 1998). This means that, for many students, their ability to learn course content may depend on their reading comprehension abilities (Klingner et al.). Regardless of individual reading ability, it is believed that the majority of students will encounter regular comprehension difficulties when reading textbooks that will most likely inhibit their ability to learn (Graesser et al; Hill, 1984).

Reading in Mathematics

It might be assumed that learning mathematics requires little reading on the part of the student or that it would require less reading than a student would need to do in other content area classes. Historically, reading in mathematics has focused primarily on students' abilities to comprehend numbers, symbols, vocabulary, and word problems (Earle, 1976; Hater, Kane, & Byrne, 1974). Students were expected to comprehend these elements and know how to apply them to algorithms and/or word problems in order to gain a solution. While this is still considered a necessary part of reading mathematics (Fuentes, 1998, Pugalee, 1999; Witherspoon, 1999), the ways in which students currently read in mathematics has undergone some transformation.

With the publication of the NCTM standards in 1989, the purposes and ways in which students were expected to read and learn mathematics has shifted. Students are now expected to go beyond the memorization of specific facts and procedures and instead are required to have an in-depth understanding of the skills that they use and how to apply them from one mathematical setting to another. Instead of learning only how to read number and symbols, students now read in mathematics in order to learn about the discipline (Siegel & Borasi, 1992).

Recent textbooks which have been judged to meet the NCTM standards such as *Transition Mathematics* (2000), *Middle Grades Math* (1997) and *Mathscape* (1998) provide students with specific information about (a) the history of mathematics, (b) written explanations for how to solve word problems/algorithms, and (c) discussions regarding how mathematics can be applied in everyday life. This means that some students will need to be able to comprehend informational text in order to learn at least

some of the curriculum. In this sense, students are reading to learn new information in ways that are similar to how they would read in other content areas. Though each content area may have different demands and purposes for reading text, students in mathematics must now read not only to solve mathematical problems but also to learn about the discipline of mathematics more broadly.

Struggling Readers & Content Area Reading

It is not possible to describe the strengths and weaknesses of a struggling reader. Each student will be unique in these areas making their challenges somewhat individualized. However, typical problems that these students may face include: (a) difficulty decoding the texts (Swanson, 1986), (b) poor metacognitive skills (Paris & Oka, 1989), (c) comprehending what they read (Allington, 2001; Worthy & Invernizzi, 1995), and (d) appropriate application of comprehension strategies (Bakken, Mastropieri & Scruggs, 1997). Given this information, it is not surprising that struggling readers will face a multitude of challenges when expected to read content area texts.

Though there has been much research in the literature on struggling readers, there has been little focus on this within the context of mathematics classrooms. This is critical since, as described above, students have to read for a variety of purposes in mathematics. Without developing a better understanding of how to work with struggling readers in mathematics classrooms these students may continue to be at risk for not improving as readers and not learning the content.

Despite this lack of information, Johnston and Winograd's (1985) literature review on struggling readers provides us with some insight regarding how these students may respond to difficult text. Their work suggests that passive and poor readers may

struggle with problems of passivity, lack of motivation, and low self-esteem. This may result in a series of negative behaviors such as students behaving in a helpless manner when they encounter reading tasks, failing to monitor their performance and/or apply strategies appropriately and effectively, and may leave some students feeling as though they are not in control of their learning or cannot succeed.

It may be possible that some struggling readers recognize that they have reading difficulties and may believe that this will prevent them from being able to comprehend text. These perceptions can potentially influence the ways students choose to engage with texts (Dillion & Moje, 1998; McCarthey, 1998; McCarthey, 2002). For example, students may resist reading because they feel it is a wasted effort on their part since they never understand the text.

Finally, Brozo's (1991) study of high school struggling readers suggested that struggling readers may create coping strategies when faced with reading and/or discussing text in school. Brozo's study showed several ways that students tried to get around text in several ways including relying on others for help, engaging in disruptive behaviors, and/or trying not to stand out in class. Though students reported that they used these behaviors their rationales for these decisions was not provided.

Taken together, these studies suggest that struggling readers may not engage with texts, or seek help with texts, in ways that might help them develop their comprehension skills, particularly of content area texts. A bleak picture of the ways in which struggling readers engage with texts emerges from these studies. While some of these students might seek assistance, the overall portrait suggests that these are students who do not see themselves as improving as readers. Rather than actively try to make changes in their

academic life, struggling readers may be seeking ways to lay low and get by or to create diversions intended to distract people from noticing their reading difficulties (Brozo, 1991).

Content Area Teachers & Reading Instruction

Previous research has suggested that content area teachers may hold a variety of beliefs about their roles as teachers of reading (Bintz, 1997; Donahue, 2000; O'Brien & Stewart, 1990). Three main sets of beliefs, through somewhat contradictory in nature, emerged from this literature. These are: (a) others are to blame if their students cannot read (Bintz), (b) teachers would like to teach reading but do not know how (Crisuolo, Vacca, & LaVorgna, 1980; Jackson & Cunningham, 1994); and (c) teaching reading in the content areas is important (Stieglitz, 1983; Yore, 1991). This research has also suggested that the decisions that content area teachers make about the reading instruction they do or do not provide may be heavily influenced by the beliefs they hold in this area.

Though this research seems to suggest that content area teachers might provide little instruction geared to help increase students' comprehension of text, it is important to note two things. First, teachers participating in these studies were never asked to specifically consider their beliefs towards teaching struggling readers in a content area. Therefore, it is possible that content area teachers may hold a different set of beliefs, and may respond differently, when working with struggling readers.

Second, content area teachers may also be influenced by outside constraints that impact how they incorporate reading instruction into their practice. For example they may feel pressure to cover their curriculum, may not have been prepared to meet the needs of diverse readers in their classroom, and/or by in a school that does not see it as

their job to provide students with reading instruction (O'Brien, Stewart, & Moje, 1995). Such areas can be difficult and tenuous for teachers to navigate and may leave them unsure as to how to best incorporate reading instruction and/or question if such instruction is appropriate.

Research has also addressed how content area teachers think about providing reading instruction to their students and, in some cases, to struggling readers specifically. First, not all teachers attempted to help their students comprehend text on their own, but instead took on the responsibility of providing the meaning for them. Kinney-Sedgwick and Yochum (1996) found that some content area teachers determined the purpose(s) for reading texts, decided which concepts should be learned, and told the students the main ideas to be found within a specific text (Kinney-Sedgwick & Yochum, 1996). Other teachers tried to find ways to connect text with students' lives in an attempt to make the content more authentic for them (Bintz, 1997).

Finally, some teachers did recognize that their students were having comprehension difficulties. These teachers stated that they lacked the knowledge about how to respond to this problem. Therefore, they dealt with it by having lectures or discussions on the content being taught (Muth, 1993). This allowed them to help their students learn the required content, but did not require any reading on the part of the students.

Though providing students of all reading abilities with reading instruction is an important issue, a second issue has been raised about how teachers approach this and what they promote as reading in their classrooms. Norris and Phillips (2002) have suggested that when content area teachers do teach reading they do so in a simplistic

manner. Special importance is likely to be placed on decoding and locating facts from the text. Teachers are less likely to emphasize and teach students how to analyze and evaluate the information that they read. Because teachers are likely to use only a single textbook, they may inadvertently promote the idea that the text is a true and completely accurate account of what students are reading (McKeown & Beck, 1994). These types of interactions with text are likely to suggest that reading in the content areas is a passive process that requires nothing more than memorization of facts and ideas.

Overall, this literature suggests that we know relatively little about struggling readers in mathematics classrooms and how their teachers can best work with them. The research that has been done in this and/or related areas has not taken an in-depth look at these issues over time. This study addresses this issue by considering how a mathematics teacher transacts with a struggling reader and how this student transacts with text in her mathematics class over the period of one academic year. In doing so, this study provides us with a better understanding of the decisions such students make about texts and provides us with more information about the ways in which teachers and researchers can address this issue.

Research Questions

The following research questions framed the data collection and analysis for this study:

1. How does a middle school struggling reader transact with the reading task demands of a 7th grade mathematics class?
2. How does this student's mathematics teacher transact with this student's reading/task challenges?

Method

Study Design

I designed this study using a descriptive, case study approach (Yin, 1994). This approach provided me the opportunity to gather descriptive information about the ways in which a struggling reader transacted with the textual demands of her mathematics classroom over time. I was able to collect data within the context of the classroom and to document events as they naturally occurred. By conducting my observations over the period of one academic year I was able to document and analyze any changes in behavior for each participant over time.

Participants

This study was conducted in a seventh grade mathematics classroom. The class was situated in a middle school, grades 6-8, in a suburban area just outside of a medium sized, Midwestern city in the United States. Twenty-five students were enrolled in this particular class.

The participants in this case study were Nicole, a 12-year-old seventh grader, and her teacher Paige Harding. Nicole had just entered her second year of middle school when I started collecting data. She is white, and her family would be considered middle class. I chose to observe Nicole after preliminary inquiry revealed her to be reading below grade level and she and her parents agreed to participate. I confirmed Nicole was a struggling reader with the following: (a) her reading scores on the state reading test administered in the fourth grade and (b) her scores on an informal reading inventory administered at the end of her sixth grade year. According to these assessments, Nicole read on a fifth grade level in the fall of her seventh grade year. Nicole's sixth grade

teacher did not feel that Nicole had any difficulties with word recognition or fluency. For these areas, Nicole was considered to be meeting grade level expectations. It was only in the area of comprehension that Nicole was considered to have reading difficulties.

Paige Harding was in her 15th year of public school teaching. For her first six years, she taught sixth and eighth grade math. For the last nine years, she had been teaching mathematics to seventh graders at the middle school that Nicole attended. Mrs. Harding asked to be moved to a seventh grade class because she "liked the math book and the curriculum" at that grade level. Mrs. Harding was recommended for this study by her principal. According to the principal, she is considered to be an exemplary mathematics teacher.

Nicole was in Mrs. Harding's homeroom and math class. Her school day consisted of six 50-minute classes. She was taking the standard, core academic subjects of science, math, social studies, and language arts. In addition to these classes she also took gym and choir. Mrs. Harding was aware of Nicole's reading scores from the sixth grade. She also knew that Nicole was considered to be a struggling reader. Initial conversations with Mrs. Harding indicated that she expected Nicole might have some difficulties comprehending the text used in her classroom.

I told Mrs. Harding that this study would center on how Nicole interacted/responded to the texts used in her math class and the type of instruction that she received. I also told Mrs. Harding that I would be unable to help her plan and teach lessons and that I would not be able to provide her with feedback on the lessons and activities that I observed in her classroom. Finally, I told Mrs. Harding that I would not be able to discuss Nicole, or any data that I collected on her, during the study. I chose this

route because I believed that I might influence Mrs. Harding's instructional decisions and the results of this study if I discussed these issues with her. However, I did tell Mrs. Harding that I would be able to share the results of the study with her at which time we could also discuss how to work with students like Nicole.

Setting

During the study, Nicole was expected to learn specific kinds of mathematical knowledge, read mathematics text, and complete daily assignments. The text used in Mrs. Harding's class was *Transition Mathematics* (Prentice Hall, 2002) and was the only text from which students were assigned readings. I considered this text to be informational (Duke, 2000). It provided specific facts about mathematical content, definitions of content specific vocabulary, and examples/explanations of how to solve algorithms, word problems, and read charts, graphs, and number lines.

Mrs. Harding's class engaged in a variety of instructional activities. However, the class followed a predictable pattern throughout the year. For half of the observations, class began with the students completing a warm-up activity and then discussing it. This warm-up activity was meant to serve as a review of content that had been previously taught. The remaining class periods began with Mrs. Harding allowing students to ask questions about their homework from the day before. If a warm-up was given first, this question and answer period immediately followed afterwards. Once these questions had been addressed, Mrs. Harding put the correct answers to the homework on the overhead. She then gave students the opportunity to correct any problems they got wrong on their papers. Students could continue to ask questions as they corrected their work. Once

students finished correcting their papers, they were expected to calculate a grade for it based on the number they got right.

If the class were beginning a new chapter or topic, Mrs. Harding would next have them take notes. In this class, "notes" were vocabulary terms and their corresponding definitions. These notes were placed on the overhead and students were expected to copy them down. Once these definitions had been copied, Mrs. Harding instructed the class to read from specific pages in the textbook. Once the reading was completed, students were instructed to work on their next homework assignment.

Students could ask their peers or Mrs. Harding any questions that they had about an assignment. If they finished an assignment before the end of class they could do what they liked, such as read a book or talk to a friend, so long as they did not distract others. If they did not finish their assignment in class they were expected to complete it at home that evening.

There were occasions when students spent two days working on a topic. This occurred for 10 of the 81 topics studied. When this happened, the first day progressed as described above. However, students were only expected to complete a portion of the assignment problems given at the end of the section. On the second day, students immediately began finishing the remaining problems after the homework had been corrected and any questions had been answered. Notes and readings from the previous day were not reviewed and/or discussed. Additional readings and notes about the topic being studied were not given.

All assignments, quizzes, and tests received a grade. Students were given a grade of 100% if they turned in all their homework and warm-up assignments at the end of each

chapter. Though each student graded his/her own assignments in class, full credit was given despite how many were correct. This counted for 30% of the overall grade. Mrs. Harding did not collect any homework or warm-up activities until the entire chapter was completed.

Students were allowed to retake any tests or quizzes if they were unsatisfied with their grade. These tests/quizzes had to be retaken before or after school within one week after they had been returned. The tests/quizzes were exactly the same as the ones that had been taken the first time. However, Mrs. Harding always went over the answers to the tests/quizzes in class. This meant that all students had been exposed to the correct answers and ways to solve the problems before retaking the quiz/test.

Textual Demands of the Classroom

During the study, Nicole was assigned text to read on 32 out of 53 days. She was expected to read an average of three pages on each of these days. I analyzed the readability of each page of text that Nicole was assigned to read using the Flesch-Kincaid readability formula. According to this formula, the text that Nicole was expected to read ranged from a fourth to eleventh grade reading level. The majority of this text measured at an eighth grade reading level.

Nine chapters were covered from this text during the study. On average, each chapter was made up of nine topics. For example, a chapter on measurement included such topics as measuring lengths, measuring angles, and the metric system. Other chapters discussed during the study included decimal notation, problem solving strategies, graphing, and geometry. Two quizzes were given per chapter with a final test at the end of each chapter.

Homework assignments required Nicole to answer comprehension questions and/or compute algorithms based on the concepts/skills discussed on the pages she had been assigned to read that day. Forty-five homework assignments were given during the course of the study. Some assignments were as few as 10 questions while others were as long as 40 questions.

The problems/questions that Nicole was given as part of her assignment were analyzed and classified into three main categories. Nicole's assignments asked her to answer primarily comprehension questions whose answers could be found directly in the text.

Data Collection

Data was collected between August 28th, 2003 and April 27th, 2004. I gathered data through bi-weekly field observations, teacher and student questionnaires and interviews, student comprehension assessments, and collection of student work. I audio-taped all classroom observations, interviews, and comprehension assessments. I took field notes during each observation. Overall, I conducted 53 classroom observations, each 50 minutes in length.

I scheduled observations so that I could see a variety of classroom events. This was made easy by the fact that Mrs. Harding prepared a schedule of instruction and assignments for each chapter in the math book. These schedules listed what would be taking place on each day of class. The information on the schedules included: (a) pages that were to be read in class that day, (b) dates that notes were given out, (c) test and quiz dates, and (d) planned activities that were going to be conducted. My observations indicated that this schedule was reliable. Whenever I entered the classroom, I always

observed exactly what was on the schedule, nothing more and nothing less. At the end of a chapter, Mrs. Harding would hand out the schedule for the next one.

I documented the beginning and end times of the different activities, lessons, and interactions. I documented the time in two different ways. First, I noted the time whenever a new lesson or activity began. I also noted the time when the lesson/activity ended. Within this time frame I made note of the time whenever Nicole and Mrs. Harding interacted with each other. I also noted the time when Nicole started and stopped participating in a particular event. In addition to this, I also recorded what Nicole and Mrs. Harding were doing in five-minute intervals. This prevented me from becoming too engrossed in either Nicole or Mrs. Harding.

My stance in the classroom was as a non-participant observer. I did not participate in class activities or interact with any of the students, including Nicole. Mrs. Harding introduced me to the class on the first day of school. I explained to the class that I would be there for the year and that I was going to be observing the different ways Mrs. Harding taught math. This explanation was offered in order to protect Nicole's privacy. The students were also told that I was not allowed to help them with their class work or answer any of their questions. When students did approach me with questions, I reminded them that I could not assist them.

Questionnaire Data

Both Nicole and Mrs. Harding completed a questionnaire in October. The purpose of the questionnaires was to provide me with general background information about each participant. Nicole's questionnaire (see appendix M) contained both short-answer and multiple-choice questions. The short-answer questions asked her to describe what classes

she liked the most and the least, why she felt this way, and how she felt about herself as a reader and a writer. The multiple-choice questions asked Nicole how she responded when she was expected to read both difficult and easy mathematics texts and how she responded to assignments that required her to solve problems in math.

For the multiple-choice questions, Nicole was given a list of ways she might react in a given situation to choose from. This list contained a wide range of actions. I asked Nicole to circle all the behaviors that she believed she engaged in. These included: (a) reading assigned text, (b) asking the teacher for help, (c) asking a friend to read text to her, and (d) choosing not to read assigned text.

I did several things to ensure that Nicole understood how to complete this questionnaire. First, I gave it to her in a private setting. I explained the purpose of the questionnaire and read the directions and each question out loud to her. Then I asked Nicole if she had any questions about it. Before she took the questionnaire home, Nicole stated that she understood how to complete the document. I gave her seven days, which included one weekend, to complete the questionnaire.

Mrs. Harding's questionnaire (see appendix N) also contained both short-answer and multiple-choice questions. The short-answer questions asked her to discuss her areas of certification, how long she had been teaching, what grades she had taught, the level of difficulty she believed the mathematics material to be for her students in general, and the ways in which she helped her students understand difficult text. The multiple-choice questions asked how often she assigned text for students to read, what types of text she had students read, and the different ways in which she had students read mathematics text (i.e. silently, with a partner, etc). Mrs. Harding was asked to circle all the responses that

were applicable. Beneath two of the multiple-choice questions was a place for Mrs. Harding to write in additional information.

I met with Mrs. Harding privately to administer the questionnaire. I explained the directions to her and she indicated that she understood. I gave Mrs. Harding seven days, including one weekend, to complete and return the questionnaire.

Interview Data

I privately interviewed Nicole and Mrs. Harding in October, January, and April (see appendix O for a list of questions I asked Nicole and appendix P for questions I asked Mrs. Harding). The interviews were semi-formal and consisted primarily of open-ended questions (Seidman, 1998). These questions provided both Nicole and Mrs. Harding the opportunity to discuss the events I had observed in the classroom. This allowed me to have a deeper understanding of what I had seen. It also allowed me to clarify any questions that I had from the questionnaires, previous interviews, and observations. Finally, these interviews allowed me to document and understand any changes that may have taken place in the way that the participants felt and responded to any of the things that occurred within the context of the math class.

I asked Nicole and Mrs. Harding new questions at each interview in order to better understand what I saw them doing in the classroom. However, I also continued to ask them to discuss what they had said in previous interviews. This allowed me to clarify if any of their beliefs or behaviors had changed during the course of the study and, if so, to understand why.

I did not ask Mrs. Harding any specific questions about Nicole, or struggling readers in general, during the interviews in October and January. For example, I did not

ask her if she thought Nicole comprehended the text in her class or discuss how she considered Nicole when planning for instruction. This was done to minimize any effect my presence may have on Mrs. Harding's behavior or that might cause her to alter her teaching practices towards Nicole. In April, once all the observations had been completed, I Mrs. Harding to discuss her thoughts on Nicole as a reader and a student of mathematics.

Comprehension Assessment Data

Informal comprehension assessments exist that measure students' abilities to read narrative text as well as science and social studies text (Bader, 2002; Woods & Moe, 2003). However, such assessments do not exist in mathematics. It was necessary, though, to examine how well Nicole could comprehend mathematics text in order to assess growth in her ability to read mathematics text.

To do this, I designed comprehension assessments using expository assessments in science and social studies, created by Woods and Moe (2003),[7] as a model (see appendix Q). These assessments required students to read aloud a passage ranging from 150-200 words. This passage is then followed with six to eight comprehension questions. With the exception of the last question, each of the answers could be found directly in the passage. The last question for each passage was a higher-order thinking question that required analysis, drawing conclusions, or inferences to be made based on what was just read.

I needed to supply the text for the assessment since no formal reading tests exist in mathematics. I used text from Nicole's fifth grade math book, *Everyday Mathematics* (McGraw-Hill, 2002). Passages that were used for this assessment were analyzed using

[7] Contact the author for copies of this assessment.

the Flesch-Kincaid readability formula. I chose only those passages that were measured at a fifth grade reading level, the level which Nicole read at.

In addition to this, I had Nicole read passages from the textbook she used in Mrs. Harding's class, *Transition Mathematics* (Prentice Hall, 2002). This was done to gain a better understanding of Nicole's abilities to comprehend the classroom text. The selected passages were also 150-200 words each and were followed by a set of six to eight comprehension questions. Each passage was on a topic that had been discussed in class within the last two months. However, the passages had not been read in class. This was to ensure that Nicole had at least been exposed to the prior knowledge that she might have needed in order to comprehend the passages, but had not previously discussed the text itself.

Class Work Artifact Data

I collected a copy of all graded work that was completed by Nicole. This allowed me to gain a better understanding of her content knowledge. I was also able to analyze her responses to assignments. Collecting these documents allowed me to contrast how Nicole performed on assignments that required her to use texts with those that did not.

Inter-Rater Reliability

Inter-rater reliability on (a) the type and amount of instruction provided by Mrs. Harding that might have facilitated Nicole's comprehension of text and (b) the ways in which Nicole transacted with text was conducted in March. Cathy, a trained doctoral student in education, accompanied me to Mrs. Harding's classroom two times. Both of us noted: (a) the length of time Mrs. Harding provided Nicole with instruction that might have facilitated her comprehension of text, (b) the type(s) of instruction Mrs. Harding

provided Nicole in this area, and (c) the ways in which Nicole transacted with the texts she was assigned to read.

Inter-rater reliability analyses indicated that there were acceptably high levels of agreement on the length of time Mrs. Harding provided Nicole with instruction that might have facilitated comprehension of text ($k = .95$), the type(s) of instruction in this area provided to Nicole ($k = .98$), and the ways in which Nicole transacted with the texts she was assigned to read ($k = .95$).

Data Analysis

Data analysis procedures followed methods recommended by Miles and Huberman (1994). Guided by the research questions, I began by reading and rereading field notes in order to identify emerging initial themes in the data. Next I generated pattern codes as a way to group these themes together. As I coded the data, I regularly wrote memos (Glaser, 1978) that summarized my work, identified questions I needed to address, and theorized about the relationships I was discovering.

Initially, I coded the data based on my research questions. I identified the ways in which Nicole transacted with text and also how Mrs. Harding attempted to facilitate Nicole's comprehension of text. While working through this process, it became clear that the codes could be categorized under much larger and broader themes. Interviews and field notes suggested that Mrs. Harding had a clear idea of what students needed to do in order to comprehend text. This belief and theme seemed to permeate her instruction and interactions, or lack of, with Nicole.

Based on this, I returned to my data and categorized it according to the theme of what it meant to be a successful reader. I was then able to connect the decisions that Mrs.

Harding made regarding Nicole and text back to this larger theme. Within this, data was analyzed to determine not only what Mrs. Harding did, but also how often and within which contexts these actions occurred. Interviews allowed me to analyze why Mrs. Harding did or did not provide Nicole with specific kinds of instruction as well as to analyze why other instructional actions were not observed.

I also categorized the data I collected from Nicole under this theme. Though Nicole herself did not hold specific beliefs about what she needed to do to comprehend text, field notes showed that she regularly engaged in the behaviors that Mrs. Harding believed would allow her to comprehend text. Coding Nicole's actions action according to this theme allowed for a broader understanding of what it meant to be considered both a successful and a struggling reader.

With the exception of comprehension assessments and student work, all data was categorized within the theme of what it meant to be a successful reader. This allowed me to triangulate my findings and offered a deeper and more thorough understanding of what had been observed in the classroom. Comprehension assessments and student work were used to better understand the patterns and codes I found in the field notes, questionnaires, and interviews.

Results

Nicole and Mrs. Harding co-constructed an environment of teaching and learning that neither facilitated Nicole's text comprehension nor provided formative feedback for Mrs. Harding regarding Nicole's strengths and needs in ways that could inform her instructional decisions. Instead, they created an environment where reading

comprehension and learning were measured by (a) specific behaviors that Nicole engaged in, (b) Nicole's ability to copy answers verbatim from text, and (c) report card grades.

The ways in which Mrs. Harding attempted to facilitate Nicole's comprehension of text were influenced by her beliefs regarding what it meant to be a successful reader of mathematics text. Though Mrs. Harding believed that struggling readers such as Nicole might have difficulty understanding the mathematics text, she felt that they could still successfully comprehend it and learn the required content if they employed specific behaviors. Mrs. Harding based her decisions about Nicole's needs as a reader, as well as how she should interact with Nicole, on how often Nicole engaged in these behaviors as well as the grades she received on her assignments, quizzes, and tests.

Second, the ways in which Nicole chose to engage with text were motivated by her desire to earn high grades and finish assignments quickly. Observations and interviews confirmed that Nicole routinely engaged with text in ways that Mrs. Harding believed would allow her to comprehend it. However, Nicole's uses of these behaviors were always tied to the motivations given above. She never acknowledged how these behaviors, or others, might have helped or not helped her comprehend mathematics text. Mrs. Harding's observation of these behaviors in Nicole supported her belief that Nicole understood how to interact with text and was learning content from it. However, results suggested that Nicole neither comprehended the text nor learned much of the mathematics content.

The following sections elaborate and develop these conclusions. I begin by describing Nicole and Mrs. Harding's understandings of what it means to successfully comprehend text. Next, I discuss how Nicole viewed herself as a reader, how Mrs.

Harding viewed her, and the extent to which these beliefs influenced their transactions with each other and text. Then I discuss Nicole's understandings of the text and the ways in which Mrs. Harding attempted to facilitate these understandings. Finally, I discuss the implications of this study in terms of literacy theory, previous research, and future research.

What it Means to be a Successful Reader: Shared Understandings between Nicole and Mrs. Harding

"We need to read pages 16-18 today," said Mrs. Harding as she opened up her math book. "Who wants to start?" Nicole's hand was one of several that shot up into the air. "Nicole? Go ahead." Nicole started to read and the class went silent. After Nicole, four more students read until the assigned pages had been completed. Mrs. Harding looked at the class, "Any questions on this?" No one responded.

"Ok, then," she continued. "Your assignment for today starts on the bottom of page 18 and goes to page 20. Numbers 1-20. If you have questions remember you can always ask a neighbor for help." Mrs. Harding closed the book and walked back to her desk.

Throughout the study I saw Mrs. Harding communicate to her students what they should do if they did not understand the book or had questions about an assignment According to her, they should: (a) take and reread their notes as necessary, (b) read the assigned text, and (c) ask questions about text and assignments (see figure 1.4 in appendix R). In interviews, Mrs. Harding explained to me that she expected all students to use these strategies regardless of their reading abilities. According to Mrs. Harding, students who used these strategies were not necessarily *good* readers. However, by

engaging in these behaviors Mrs. Harding said that they should increase their comprehension of text and learn the required content.

Mrs. Harding explained to me that she regularly observed Nicole engaging in these behaviors and thus had few concerns about her ability to comprehend text. She told me:

She does the readings and she takes notes. I see her asking for help when she needs it. She does have comprehension problems from time to time. But I see her using these strategies to help her figure that stuff out. So while I would say that she does have more problems with the readings than most, she is doing what she needs to in order to comprehend. She obviously gets it in the end because, I mean, look at her grades. She's got an A- average.

My observations and interviews with Nicole confirmed that she did do these things. In our interviews, Nicole explained that there were several reasons why she used these behaviors:

> Reading helps me do the [assignment] problems. Like out of the book, there's a section to read before you have to do the homework. Sometimes it helps me to understand 'cause they'll be questions referring to the reading. And sometimes, when I don't read, I won't be able to answer the questions. Then I'll be like, duh, I didn't read. So then I have to go back and read so I understand.

Though comprehending text and learning content appeared to be the mark of a successful reader, the ways in which this was measured by Mrs. Harding and Nicole was through grades. Mrs. Harding explained to me:

> She [Nicole] got all A-minuses in math [on her report card]. So again, that goes back to my theory that low readers can be successful in math. So mathematically, she did fine. I think she's done a nice job comprehending the book and the mathematical concepts. Like I said, she does have difficulties but she'll be up here asking for help to make sure she gets it. Overall, I think she gets it. These grades show it.

Nicole also confirmed that she believed she was learning the content. She said, "Yeah, I get what we do in math. I couldn't get good grades if I didn't understand it [the book] or if I didn't read it."

While Mrs. Harding's overall goal may have been for her students to learn the mathematical content, Nicole's purpose for reading text, and using the above behaviors, seemed to be rooted in achieving high grades. In each interview, Nicole repeatedly reminded me that her parents would reward her if she received all A's on her report card. And while she never did obtain this goal, she continued to stress to me how important it was for her to keep working at it so she could get a television set in her bedroom.

This suggests that Nicole's approach to reading text was grounded in obtaining a specific performance goal (Dweck & Leggett, 1988) rather than learning content. According to Alexander and Jetton (2000), students who focus on performance goals are interested in completing a specific task, such as an assignment. Students may also be interested in obtaining a specific grade or, as in the case of Nicole, interested in receiving a reward for their work. When students work towards a performance goal, they often choose to engage in behaviors that they believe will allow them to achieve it. Learning

content, or becoming a better reader, is considered secondary to completing the task and achieving the performance goal.

"I'm a good reader": Perceptions of Nicole's Ability to Comprehend Text

In October, Nicole explained to me that she believed she was a good reader, but that she sometimes had problems with text. According to Nicole, "I'm a good reader because I like to read, but I'm not the best at it." When I asked her to explain this statement further Nicole responded, "Well, I read a lot but there's some words in books that I don't understand. And sometimes there's long words and I don't know how to pronounce them." Though she said she sometimes had problems with text, Nicole felt that she generally understood the assigned readings from the math book. She claimed, "I know what's going on. I get it." I never observed Nicole communicating to anyone that she did not understand text.

Though Nicole may have felt she had few comprehension difficulties, Mrs. Harding held a different view:

> I've observed how she doesn't hesitate to volunteer to read. She's not embarrassed of her reading. She can read, but I do find little gaps in her comprehension. Like she doesn't get what she reads all the time. I would say she's probably the lowest of my regular ed. [education] kids. My reading disabled students struggle with comprehension and so does she. She gets it, eventually, but sometimes she just needs a little more clarification than most.

Nicole's perception of herself as a good reader appeared to influence her interactions with text. When working on assignments, I rarely saw Nicole looking back at the pages

that accompanied them. She explained to me that she rarely needed to reread any or all of the text because she had read it once and had understood it.

My conversations with Nicole suggested that she did not appear to be aware that her teachers, and in particular Mrs. Harding, considered her to be a struggling reader. She also appeared confident in her abilities to read and comprehend text. Nicole entered Mrs. Harding's class with an already constructed identity that she was a good reader. The interactions I saw her have with Mrs. Harding and her peers did not seem to communicate that they believed Nicole was a struggling reader. Research has suggested that students create identities about themselves based on their interactions with people, text, and their surroundings (McCarthey, 2002; Mishler, 1999; Sarup, 1996). My observations of Nicole suggested that the majority of her transactions supported her belief that she was a good reader.

Though Nicole believed this, I regularly observed her asking for help with her assignments (see figure 1.5 in appendix S). Most of her difficulties were in answering comprehension questions found at the end of the chapters, the answers to which could usually be found word for word in the reading she had been assigned. At no point did I observe Nicole saying that her inability to answer these questions was a result of not understanding the text.

For example, one day in early January Nicole asked Mrs. Harding a question about an assignment problem. Nicole had been working on her homework for approximately five minutes when she took her book to Mrs. Harding's desk and said, "How do you do number five? I don't get it."

This particular assignment question asked Nicole to, "State and give an example of the Slide Model for Addition." Five paragraphs and three examples, which covered two full pages of text, explained this concept on the pages Nicole had been assigned to read. Though Nicole had presumably read these pages only minutes before, she did not seem aware that the answer to her question could be found here. She also did not indicate if her confusion with this problem stemmed from a lack of understanding the text.

Mrs. Harding responded by explaining to Nicole what the Slide Model for Addition was and discussing an example of it with her. However, Mrs. Harding did not make any reference to the previous pages of text that provided this information. This response was typical for Mrs. Harding when interacting with Nicole. Though she always assisted Nicole with her assignment questions, I never observed her discussing and/or referring Nicole to the mathematics text nor did I see her explaining how to use any strategies that might help Nicole make sense of the text.

In May, Mrs. Harding explained that though Nicole may have needed additional assistance, overall she did not have any significant comprehension difficulties:

There were times where – I can't think of a specific example right now – she would read something and then be totally off. And she would ask a question and I would be like, oh, she does not have a clue about that! So then she would just need some additional explanations. I never really saw her struggle a ton.

Though Mrs. Harding appeared to recognize that Nicole had some comprehension difficulties, she did not seem to recognize that it might be helpful to Nicole if she explained and/or modeled how to use the strategies she expected might help her to comprehend text. Her lack of awareness that some students, and in particular struggling

readers, may need additional assistance in this area is not uncommon for content area teachers who typically have received little information about reading instruction (Jackson & Cunningham, 1994; Yore, 1991). Though she recognized that she was lacking information in this area, Mrs. Harding told me that she still believed what she requested of her students was reasonable, beneficial, and could be done by everyone.

"I wouldn't know how to do that!" The Role of Calculators, Text, and Reading Instruction

As shown earlier, Mrs. Harding believed that students could successfully comprehend text by using specific strategies. My conversations with Nicole showed that she did believe she was able to use the strategies Mrs. Harding provided in order to comprehend the text. In addition to the strategies mentioned above, I observed Mrs. Harding using three additional methods that may have helped to facilitate Nicole's comprehension of the text. These were: (a) explaining examples in the book, (b) explaining activities in the book, and (c) explaining the text as it was being read aloud.

Though Mrs. Harding did not use these methods very often, she did believe that they helped her students comprehend the text and learn the content. She explained:

> I've found that if I can go over the readings and some of the examples then they have a better understanding of what's in the book. So I try to go over some examples, sometimes before they read, and sometimes I explain the book to them as we read it out loud. So then, as they read, I hope that their comprehension gets a little bit better. I think it does.

That Mrs. Harding provided little reading instruction, and that no observed instances of strategy instruction, is not surprising. Researchers have documented numerous strategies

that content area teachers can use to help improve their students' reading comprehension (Guastello, Beasley, & Sinatra, 2000; Lederer, 2000; Montali & Lewandowski, 1996; Musheno & Lawson, 1999; Spence, Yore, & Williams, 1999). However, limited work has been done that is aimed at helping content area teachers implement these strategies given the complex system that they must operate in (Hall, in press; Moje, Dillon, & O'Brien, 2000). While teachers might be aware of strategies they can use, they may be unsure as to how to incorporate them into their instruction (Bintz, 1997).

In my interviews with Nicole, she agreed that these methods helped her to comprehend the text and learn the content. In May she told me:

> Reading the book out loud is good because Mrs. Harding will explain to us what stuff in it means. And sometimes I don't always get it right away so when she tells us it helps. And then that helps when I have to do my homework. I think it helps me get good grades.

Though Nicole and Mrs. Harding believed that the methods/strategies Nicole applied to text helped her to successfully comprehend the text and learn the content, my observations and interviews with Nicole caused me to question this.

Throughout the study I regularly observed Nicole, as well as most students in Mrs. Harding's class, using a calculator in order to complete assignments. Students were allowed to use calculators to complete all assignments, tests, and quizzes. In October, I asked Mrs. Harding to explain the role of calculators in her classroom. She said:

> I think using a calculator is great for kids because we can do more math than we were ever able to do before without a calculator and that makes it more interesting and more realistic. It's not like we all have to sit and multiply double-digit

> numbers in our head when we're out and about in our real worlds. We just don't have to do that. I think they need to understand the concept and how to do it, but when do they ever really have to do that? Eventually, in eighth grade, in ninth grade, they know that they can do that in their head faster than they can do it on their calculator.

My conversations with Mrs. Harding continually suggested that she believed Nicole was learning the content and that the use of the calculator was not a hindrance in any way. However, my discussions with Nicole on this subject suggested that she might have struggled to do mathematics without her calculator and in fact did not understand how to set up and solve the algorithms explained in the text. The readings that Nicole was assigned always provided explanations and examples for how to set up and solve word problems and compute algorithms by hand. However, my observations showed that Nicole relied primarily on her calculator in order to achieve these answers. When I asked Nicole to discuss her thoughts on using calculators she said:

> Well I like it because it helps me answer the questions. Like if I had to do 135 divided by a big number. I wouldn't know how to do that! I know there'd be a lot of steps and it would probably take a long time and I don't want to have to figure that out. So I just use my calculator.

When I pointed out to Nicole that she could use her book to learn how to solve these problems by hand she responded:

> Oh yeah. The book gives examples. But I just skip those. They don't really help. I don't get what they're saying. If I ask a friend for help they'll just show me how to get it [the answer] on my calculator. That's easy.

Nicole also explained that if the calculator were to be taken away, she would probably struggle to finish her assignments and maintain an A average. She said, "I'd maybe do ok without it [the calculator]. It would take me longer to do my work and I don't think I would get all A's. It helps me out a lot."

Comprehension Assessment Results

The results from the comprehension assessments suggested that Nicole had difficulty comprehending the mathematics text and may not have learned the content as well as both she and Mrs. Harding believed she had. Each of the three assessments consistently showed that: (a) Nicole was always able to answer questions if the answers could be found word for word in the text, (b) Nicole was unable to answer questions if the answers were not in the text and (c) Nicole was unable to solve algorithms, which were explained in the text, without using a calculator.

It is possible that Nicole might have been lacking the necessary background knowledge and/or skills that she needs to solve mathematical problems. However, these assessments also suggest that the above results may be due, in part, to her abilities as a reader. While Nicole was able to identify and repeat specific facts and figures located word for word in the text, she appeared to be able to do little more than that. However, Nicole did demonstrate a basic understanding of how to solve mathematical problems if given a calculator. This suggests that, to some degree, she comprehends algorithms and word problems and knows how to set up and solve algorithms on a calculator. Regardless, Nicole appeared to be unable to comprehend and apply explanations on how to set up and solve algorithms.

Discussion

The analysis of this case study reveals a complex portrait of the experiences of a struggling reader and a content area teacher in a seventh grade mathematics classroom. It documents how Nicole's beliefs about herself as a reader influenced her transactions with text, Mrs. Harding, peers, assignments, and content. This study also documents how Mrs. Harding's understandings about the reading process, as well as her beliefs about Nicole's abilities as a reader, influenced her transactions with Nicole. In this section I first present the limitations of this study. Next, I discuss how these findings help add to what we know about middle school struggling readers, literacy theory, and content area teaching. I conclude by offering questions for future research.

Limitations

The results and insights gained from this study should be considered in light of several limitations. First, this study examined one teacher and one struggling reader in the context of a 7th grade mathematics class. Therefore, the findings are specific to only Nicole and Mrs. Harding in the context of their mathematics class. We cannot make generalizations about other 7th grade struggling readers or middle school mathematics teachers. Other struggling readers in Mrs. Harding's classroom may have experienced the year differently and, if they had been included in this study, may have produced different results.

Second, the only thing that can be concluded from the reading assessments that Nicole was administered is that she did not make any progress as a reader of mathematics text. The data that was gathered in this study does not allow me to provide specific reasons for why she did not improve. I did not examine how specific pedagogical

techniques may have helped or hindered Nicole's progress as a reader of mathematics text and her ability to learn content from it. While there may be many questions about the quality of instruction that Nicole received, this study is unable to suggest if Mrs. Harding's instruction and/or her interactions with Nicole prevented Nicole from becoming a better reader of mathematics text.

Finally, the data that was collected on Mrs. Harding was limited. In order to minimize any influence I might have had over Mrs. Harding's instruction and/or transactions with Nicole, I was unable to ask her questions about Nicole in the first two interviews. I did ask Mrs. Harding questions about the reading and mathematics instruction that I observed her providing to the entire class as well as the types of instruction she told me she intended to provide. However, I was unable to gather rich, detailed information about Mrs. Harding's transactions with Nicole and the ways in which she considered Nicole's needs when planning for reading instruction over the course of the year.

Comprehension and Reading Instruction in Content Area Classrooms

The findings from this study add to what we know about content area teachers and how they approach literacy instruction. Previous research has suggested that we can expect content area teachers will not provide reading instruction to their students for a variety of reasons (Author, in press; Bintz, 1997; Vigil & Dick, 1987; Yore, 1991). However, these studies did not take into account the ways in which struggling readers and their needs impacted how content teachers think about reading instruction and text. This case study suggests three important things in regards to this.

First, content area teachers may not believe they are ignoring the needs of struggling readers. Interviews with Mrs. Harding suggested that she believed, based on her own observations and interactions with Nicole, that Nicole generally comprehended the text and did not need further assistance. However, Mrs. Harding also repeatedly stated that she did not possess enough knowledge about the reading process and how she could help students become better readers of mathematics text. Given this lack of information, it is reasonable to suspect that (a) Mrs. Harding might not have been able to recognize any comprehension difficulties Nicole might have had and (b) that she most likely would not have known what to do about it had she known. This suggests that content area teachers may not understand how to attend to the needs of struggling readers and/or identify any comprehension problems they may have.

Second, content area teachers may not understand what it means to comprehend and/or how to determine if a student understands a piece of text. In the case of Mrs. Harding, comprehension appeared to mean that students could answer comprehension questions about the text and solve mathematical problems correctly. It is not uncommon for content area teachers across disciplines to give assignments that require students to answer questions/solve problems based on text that they have read. However, some students complete assignments by copying answers verbatim from the text. Though these may be considered to be correct, they do not necessarily mean that the student was able to comprehend and understand what was read.

Finally, Mrs. Harding's views on reading instruction and struggling readers did not seem to be affected by outside influences. Though she maintained that reading instruction was an important, and difficult, task for her to provide her students, Mrs.

Harding never noted how in-services, conferences, classroom materials, other teachers, curriculum, or school policy might have either influenced or constrained her abilities to teach reading. It has been noted that these issues may prevent or limit content area teachers from providing students with reading instruction (O'Brien et al).Mrs. Harding's lack of awareness of these issues suggests that either they were non-existent in this context or they supported her beliefs about reading instruction.

Students' Perceptions of Themselves as Readers

Findings from this study support the argument that students' perceptions of themselves as readers could determine the ways in which they choose to engage with texts (Dillion & Moje, 1998; McCarthey, 1998; McCarthey, 2002). Though it might be expected that struggling readers would hold negative connotations about themselves, Nicole's case shows this is not always true. Nicole thought she was a good reader who had little difficulty comprehending the mathematics text she was expected to read. This resulted in her believing she understood the content discussed in the text and resulted in her never asking for assistance in comprehending it. This suggests that the ways in which struggling readers transact with text can be influenced by their beliefs about themselves as readers.

This has implications for how we help teachers think about providing struggling readers comprehension instruction. Struggling readers who do not recognize that they have comprehension difficulties may not understand and/or believe that they need to apply specific strategies to help them understand text. Therefore, it is important that teachers be aware that these students may need some additional help in becoming more meta-cognitive about what they read and the degree to which they understand it.

However, Mrs. Harding's case suggests that it might be necessary to help content area teachers think about how students' identities and beliefs about themselves as readers and students affect the ways they approach text.

When Mrs. Harding discussed Nicole, she talked about her abilities as a reader and a mathematics student from a cognitive perspective only. Mrs. Harding did not appear to recognize the beliefs that Nicole had about herself in these areas and how they might have influenced the ways she read text and completed assignments. This suggests that content area teachers may not be aware that a variety of socio-cultural factors can influence students' behaviors in classrooms and with text. Teachers may need assistance in learning how to identify these factors and make use of them when planning for instruction.

What Counts as Success? The Role of Reading in the Content Areas

This study leads us to question what counts as success both in terms of reading and in learning content. In this study, being successful in mathematics meant acquiring specific performance goals (Dweck & Leggett, 1988), such as engaging in specific behaviors and maintaining passing grades. Nicole's ability to do these things meant that she was labeled as part of this group.

However, Nicole's experiences suggest that these instances of success may be superficial for struggling readers or for any student who works toward a performance goal. It was not necessary for Nicole to improve her reading abilities, to comprehend text, or to understand how and why she should engage in specific behaviors in order to be considered successful. This suggests that it is possible for other struggling readers to experience similar things.

Nicole's case also demonstrates that some students are capable of moving through the school system without learning content and without improving their abilities as readers. Yet because these students have met an individual teacher's or school's definition of success, their lack of understanding and/or reading difficulties may go unnoticed. Their problems are masked by their abilities to engage with the system they are a part of. While some students may consciously understand how to manipulate such a system in order to be labeled successful, others, such as Nicole, may participate without the full knowledge of what it taking place.

Questions for Future Research

Findings from this study suggest that struggling readers' transactions with text are not based solely on (a) the difficulty of a piece of text and (b) their cognitive abilities as readers. While both of these issues can contribute to how struggling readers approach text, how a student perceives him/herself as a reader also appears to play a significant role. Though students may have developed, and might even be able to articulate, their identities as readers and how this influences their actions with text, teachers may not be aware of this. Therefore, future research may wish to focus on (a) how to help teachers become aware of students' identities as readers and (b) how to interact with students once they have this knowledge. In addition, research may also want to take into consideration how teachers' understandings of students' identities affect the ways in which they work with students as well as the impact that such understandings can produce in teacher/student interactions around text and reading instruction.

This study also suggests that teachers are likely to need assistance in thinking about comprehension and reading instruction in the content areas. While many studies

have helped us understand effective methods/strategies teachers can use to increase text comprehension (Armbruster & Gudbrandsen, 1986; Freebody & Anderson, 1983; Guastello et al.; Lederer, 2000; Montali & Lewandowski, 1996; Musheno & Lawson, 1999; Spence et al.; Tregaskes & Daines, 1989) few studies have considered how to help teachers implement these strategies and in particular how to apply them in diverse settings. In addition, little research has examined the successes/struggles that content area teachers have when they try to provide reading instruction based on the individual needs of students. Given the many complexities that teacher face when implementing such instruction (O'Brien et al), such research is likely to inform how teacher educators can better work with teachers as well as illuminate difficulties in this area that we may be unaware of.

Chapter 5

Conclusions

This study sought to develop a deeper understanding of the ways in which (a) struggling readers transacted with content area texts and (b) how content area teachers transacted with them in relation to text. Several key findings emerged from this research. First, each teacher was able to recognize, to some extent, the strengths and weaknesses that the students had as readers. The teachers expressed an understanding that the students in this study would be likely to have comprehension difficulties and may need additional help from them. Though research has documented that content area teachers may resist providing such help (Hall, in press; Bintz, 1997; Donahue, 2000), the teachers in this study felt that they should find ways to teach reading to all their students.

However, each of the teachers struggled with how to implement reading instruction in their classroom and how to attend to the specific needs of struggling readers. This further supports research that has documented the lack of preparation and understanding content area teachers often believe they have about the reading process (Crisuolo Vacca, & LaVorgna, 1980; Jackson & Cunningham, 1994; Yore, 1991). Though content area teachers may benefit from receiving better preparation in this area, this does not mean that such assistance will allow them to provide better reading instruction. Even Mrs. O'Reilly, who was certified to teach reading, taught language arts during the study, and was a former special education teacher, had difficulties in attempting to find ways to incorporate reading instruction into her social studies class and meeting Sarah's needs. This suggests that providing content area teachers with

knowledge about the reading process and students with reading difficulties will not necessarily be sufficient in helping them be successful at teaching reading.

Finally, the teachers in this study appeared to only consider the cognitive factors involved in the reading process when working with the students in this study. For example, Mrs. Baker recognized that Alisa was unable to answer comprehension questions in science that required her to analyze or explain the concepts being studied. Mrs. Harding seemed to believe that having her students copy vocabulary definitions and providing them with explanations of the text increased their abilities to understand it.

None of the teachers seemed to recognize the socio-cultural factors that impacted the ways in which each student transacted with text. Instead, the teachers expressed frustration if the students were not engaging in behaviors they believed were necessary in order to comprehend text. Though each student had rationales for why she did or did not engage in these behaviors, the teachers did not appear to develop, or even recognize, that these rationales existed and had an influence on the ways they transacted with text. Instead, the teachers labeled the students as successful or hard working if the student did as she was told and lazy and uncaring if she did not.

The students that consistently did poorly in class, Sarah and Alisa, continuously explained that they did want to learn and attempted to find ways to do this and be successful in their class the best way that they knew how. Nicole, who maintained an A-average in math, never suggested that she was interested in learning the content. Instead she remained focused on doing whatever was necessary to receive high grades and complete her assignments in class. Despite this difference in approach to school, it was Nicole who was seen as motivated by her teacher and labeled as being successful in

comprehending text and learning content. Though Sarah and Alisa did express that it would be nice to make better grades, their overall focus appeared to be on learning the subject matter. This went unrecognized by their teachers.

While each student had her own approaches for transacting with text, these were grounded in how she saw herself as a reader. For Sarah and Alisa, who felt they were poor readers, these approaches were also influenced by: (a) how they wanted to be viewed by their teacher and peers and (b) what they felt they had to do in order to learn content. These last two transactions were not shared by Nicole who believed she was a good reader, did not express concern about how others might view her, and felt that her high grades meant she was learning the content. This supports the theory that students' transactions with text may be based on their socially situated identities, how they perceive themselves as readers, and how they want others to view them (Dillion & Moje, 1998; Gee, 1996; McCarthey, 1998; McCarthey, 2002). Furthermore, these identities may be altered or supported based on these transactions (Mishler, 1999; Ruddell & Unrau, 1994; Santa Barbara Discourse Group, 1994; Sarup, 1996; Tatum, 1997).

Cross-Case Analysis Plans

I analyzed each case individually for my dissertation. Once my dissertation is complete I plan to do a cross-case analysis. Doing this analysis will help to deepen the findings found from this study and to strengthen its generalizability (Miles & Huberman, 1994). It can be argued that the purpose of this research is not to generalize. However, Miles and Huberman state that cross-case analysis can help demonstrate that the findings from my research were not specific to one case and thus could be found in other cases beyond my work.

In order to do this analysis, it will be necessary for me to identify themes that cut across all three cases. Currently, science and social studies have similar themes. Both Mrs. O'Reilly and Mrs. Baker had a set of goals that they wanted their students to achieve in relation to text. Though the teachers used slightly different terminology, essentially these goals were to: (a) learn content from text, (b) be able to apply comprehension strategies to text, and (c) improve students' reading abilities. In mathematics, with Mrs. Harding, these goals did not exist and the instruction that she provided was not focused in these ways. Therefore, I will need to identify a different set of themes relevant to all three cases.

At this point it is difficult to say what these themes might be. However, based on my findings, I have come up with a list of possibilities. First, each teacher struggled to teach reading and to meet the needs of the students in this study. Therefore, I plan to examine these struggles more closely to see what, if any, commonalities exist. The students also expressed their own struggles, though these were somewhat minimal for Nicole. It is possible that some commonalities are there as well. I could then examine how the students and teacher transact around these struggles.

Second, each teacher held specific perceptions about the students in terms of what they were like as readers and students as well as why they did or did not enact specific behaviors. Each student also held her own perceptions about these things as well. In some cases these perceptions transacted well with each other (as in the case of Nicole and Mrs. Harding). In others cases, such as Mrs. Baker and Alisa, they did not. Exploring these perceptions and seeing how each student and teacher transacted within them might be one way to go.

Finally, it is possible that both these themes may be useful and worth pursuing. It is also possible that neither of these ideas will work and that a new set of themes I had not considered will arise. Regardless, this is the set of ideas I plan to begin working with next.

Once these themes have been identified I will write my results up in a book format. Currently I have applied for the *Nila Banton Smith Research Dissemination Support Grant* through the International Reading Association. If awarded this grant of $5000.00 I plan to spend this summer working fulltime on this work. If I don't get the grant I'll probably still work fulltime on the book anyways and just be poor!

Future Research

The process of doing this study, as well as my findings, has influenced the research that I plan to do in the future. As a researcher, my interests center on several broad topics: (a) struggling, middle school readers, (b) content area literacy, and (c) teacher education as it relates to these areas. The research literature in these areas suggests that much work has been done in terms of identifying effective comprehension strategies that teachers can use to increase students' comprehension of content area texts. However, this literature does not provide us with enough information on how to help teachers incorporate these strategies in situations were they might have students with a diverse range of reading abilities and/or the materials needed to conduct such instruction successfully.

Given this, I have identified several specific areas where I would like to conduct research. First, I think it is important that research examine how teachers can implement effective reading practices into their content area classrooms. Content area teachers have

repeatedly indicated that they are unsure as how to incorporate these practices in their classrooms. My research will take an active stand in this by working with and documenting how teachers are (or are not) able to do this and the effect that this has on the students involved.

Within this context, I am also interested in addressing the ways in which students' perceptions about themselves as readers play a role in their ability to successfully comprehend text. The findings from my dissertation suggest that these perceptions might be critical to students' development as readers. Therefore, my future research will also examine (a) how teachers can become aware of students' perceptions of themselves as readers, (b) the ways in which this knowledge can inform their instructional practices as it relates to literacy, and (c) the effect that these changes in practice have on students as readers.

Finally, I am interested in the role that text plays in content area classrooms and, in particular, with struggling readers. Struggling readers are often expected to read textbooks that are recognized by the literature as being too difficult for them to comprehend. However, struggling readers are not the only group of students effected by thus. Expository texts can be difficult for students of all abilities (Daniels & Zemelman, 2004; Ivey, 1999). To address this, I plan to examine what happens when: (a) students are afforded the opportunity to read informational text written on their instructional levels and (b) they are also provided with systematic reading instruction.

I see each of these three topics as informing the next and building on each other. I also see them as being informative to a wide audience which includes researchers, teachers, and teacher educators. It is my belief that my research findings should be

communicated as broadly as possible so that they may be applied in the classroom and impact instruction and student achievement.

APPENDICES

Appendix A

Date:
Reading:

Time	Topic	Teacher Talk/Activity	Student Talk/Activity

Notes:

Appendix B

Sarah's Questionnaire

1. How old are you?_____

2. What classes at school do you enjoy the most?_____
_____

3. Why do you enjoy these classes?_____
_____
_____

4. What classes at school are your least favorite?_____
_____

5. Why do you not like these classes?_____
_____
_____

6. Do you think you are an excellent reader, a good reader, or a poor reader?_____
_____Why?_____
_____
_____
_____

7. What kinds of things do you like to read in school?_____
_____

8. What kinds of things do you like to read at home?_____
_____

9. How often do you read outside of school (circle one)?

Not at all/hardly ever	Less than 30 minutes a day
30-60 minutes a day	More than 60 minutes a day

10. In general do you think you are an excellent writer, a good writer, or a poor writer?_____Why?_____
_____
_____
_____

11. What are some things you like about social studies?_____
_____

12. What are some things you dislike about social studies class?_____

_____

_____

13. Do you enjoy reading in social studies class? Why/why not?_____

_____

_____

_____

14. When you are assigned to read something in social studies that is hard to read, what do you do (circle all that apply)?

Try my best to read it by myself	Ask the teacher for help
Ask a friend for help	I don't read it
Ask someone to read it to me	Ask someone to tell me what it says

15. When you are assigned something to read in social studies that is easy for you to read, what do you do (circle all that apply)?

I read it	Ask a friend to read it to me
I don't read it	Ask someone to tell me what it says

16. How often does your teacher ask you to write at least one paragraph in social studies (circle all that apply)?

3-5 times a week	less than 3 times a week
hardly ever	

17. When your teacher asks you to write at least one paragraph in social studies, what do you do (circle all that apply)?

I do the writing to the best of my ability
I ask a friend to do the assignment for me
I ask a friend to help me with the assignment
I copy off of someone's paper
I don't do the assignment
I ask the teacher for help

Appendix C

Mrs. O'Reilly's Questionnaire

1. How long have you been teaching sixth grade?_____
   _____
2. What other grades have you taught?_____
   _____
3. What subjects do you currently teach besides social studies?_____
   _____
4. What subjects have you previously taught that you are not teaching now?_____
   _____
5. What degree(s) do you hold?_____
   _____
6. What is your area of certification?_____
   _____
7. Are you currently working on any other areas of certification? If so, what are they?
   _____
   _____
8. Does you district have a textbook that you can use for science?____
   If yes, answer questions 9-10. In no, continue to question 11.
9. What is the title of the book(s)?_____
   _____
   _____
10. On average, how often do you assign sections of the textbook for students to read (circle the best description)?

    Every class period 3-5 times a week
    Less than three times a week Never

11. Besides a textbook, what other forms of text do students read in your social studies classroom (circle all that apply)?

Novels	Information Books	Encyclopedias
Maps/Graphs/Charts	Posters	Pamphlets
Internet Resources	Worksheets	Notes/Outlines

Other (please describe):_____
_____
_____
_____

12. Which of the following ways do you have students read social studies material (circle all that apply)?

Students read silently in class
Students read material out loud to whole class
Teacher reads out loud to class
Students read material at home
Students read material together in pairs or small groups during class
Students read material silently as they listen to it being read on tape

Other (please describe):_____
_____
_____
_____
_____

13. In an average period, how much time do you think students spend reading materials in any of the ways stated above (circle the best description)?

30 minutes or more
20-30 minutes
15 minutes or less

14. In your opinion, is the social studies material presented in your class challenging, about right, or easy for the majority of your students to read?_____
_____

15. How do you help students understand text that is difficult?_____
_____
_____
_____

Appendix D

Sarah's Interview Questions

October

1. What do you think of sixth grade so far?
2. So you like changing classes because?
3. What do you think of social studies this year?
4. Is reading newspapers hard?
5. You read the newspaper in class the other day. How did that go for you when you did that?
6. Does that make it hard when the article is on more than one page?
7. When you did the article the other day, and you wrote the summary on the boarder patrol, was that easy?
8. What made it easy?
9. So you think social studies this year is easier than social studies last year because so far you haven't had to do a lot of reading?
10. On your questionnaire you said that sometimes you think social studies is hard (I show her questionnaire). What would you say is hard about social studies in general?
11. So some of the assignments are hard.
12. How about, I know you did other things, like when you had a worksheet and you worked with a partner. How has that gone?

13. If you're in a group with people you don't know real well do they make fun of you then if you don't get a word right?
14. Because you're nervous about reading in front of the class?
15. You don't think that you can read and spell good?
16. What makes reading in social studies interesting? [referring to an answer on the questionnaire]
17. You said that you liked band and social studies the most this year. You like social studies because you like history?
18. What's fun about band? What do you play?
19. How long have you been playing the clarinet?
20. Did you play any other instrument before you played the clarinet or is this your first instrument?
21. So you know how to read music?
22. For classes you like least you said success, math, and gym. What is it that you don't like about these three classes?
23. What do you do in Success?
24. What's been your favorite assignment so far this year in social studies? [I show her a list of all the assignments she has done so far]
25. Do you like art?
26. Do you have art in school?
27. Does everybody have Success?
28. But you haven't gotten any grades this year.

29. What was that like?

30. What's an E?

31. So an E is essentially an F.

32. How did you get an E in social studies?

33. So you had a D and you were missing papers, you turned them in, and then your grade went down?

34. Which of these assignments has been your least favorite? [shows list again]

35. But that has art in it. How come you didn't like it?

36. What was hard about the definitions?

37. Has the teacher assigned you a partner to work with yet?

38. How did that go?

39. How do you feel when you have to sit in your seat and work by yourself?

40. Do you feel you get the same amount of work done when you work by yourself as when you work with a partner?

41. So why don't you work with someone else?

42. You could work with someone else in that same area, right?

43. In your questionnaire, you talk about you like to read non-fiction and fiction. What kinds of books have you read recently that you have enjoyed?

44. You like to write. And you're an excellent writer [referring to her answer on questionnaire], but earlier didn't you say you had problems writing?

45. Explain to me how someone can be an excellent writer and have problems.

46. What about grammar and punctuation? Do you think you are good at things like that?
47. What kinds of things do you do in language arts?
48. Have you read any novels yet in language arts yet on your own?

January

1. So what do you think of sixth grade now? You're in January.
2. So do you still think that social studies is easier in sixth grade than in fifth grade given all the work that you've done since the last time we talked?
3. What's hard about the current events book?
4. What's hard about the summary?
5. Is it hard to read the article and pick out the who, what, where, when, why?
6. The last time we talked you said that you didn't think you were a good reader and that this sometimes made school hard for you. Do you think you have gotten any better as a reader or do you still think that you're not a good reader?"
7. Now when you read to yourself do you feel that you understand what you read or do you recognize the words but you don't always know what they mean?
8. Ok, but do you understand what the words mean? Even when you're reading it in your head, do you understand what they mean?
9. Ok..so sometimes you read it in your head and you understand what you've read and sometimes you read it in your head and you don't understand what you've read. Is that right?

10. So when you read it in your head and you don't understand it, what do you normally do?
11. Ok. When you ask a friend or someone who's around you do they try to help you normally or what do they usually do?
12. So do you find that asking someone is generally helpful or not helpful?
13. So sometimes it might be helpful and sometimes it might not be helpful?
14. So you also said last time that sometimes social studies is hard.
15. Do you still think that social studies is sometimes hard?
16. Ok. What do you think makes it hard?
17. What makes thing easier?
18. Sometimes the teacher reads things out loud and sometimes other kids read things out loud and sometimes you watch stuff on video and you hear that. Is that easier or harder for you to understand than if you just read it by yourself?
19. Do you have any favorite assignments from social studies this year?
20. Do you have assignments that you don't enjoy?
21. For some of your assignments you have to use the textbook and you have to answer questions either at the end of a chapter or your teacher gives you worksheets and you have to answer those questions. Sometimes you have to define vocabulary words. What do you think of those?
22. So you have to look up the book to find the answers to those questions. Is it easy for you to find the answers to the questions in the book?
23. So do you use the index and the table of contents to help you find the answers?

24. What did you think about your Canada project? I was here the day you went to the library. You had questions to answer on region. You used encyclopedias and different books on Canada. What did you think of that assignment?
25. Now when I saw you in the library you said that you had trouble with region because you didn't understand region. So you weren't quit sure what you were looking for.
26. Did you ever figure out what you were looking for?
27. Now I asked you a second ago about when you watch videos in class. You just watched one about economics and you had your worksheet to answer questions about the video. What did you think about that in terms of the difficulty of the assignment?
28. When the teacher or another student in the class is reading out loud – let's say from the social studies book – sometimes you'll read one or two paragraphs. Then your teacher will stop and she'll ask some questions to the whole class about what you just read. When the students are reading out loud, do you normally pay attention?
29. If another student is reading out loud and you're listening, are you just sitting there looking straight ahead and listening or are you listening and reading along in the book with them?
30. Do you feel that you understand the material better when it's read out loud as opposed to having to read it by yourself?

31. So this year you all spent a lot of time studying the five themes of geography. I'm just curious because I know you spent a lot of time doing this. Without looking back there can you name the five themes of geography?
32. And last time we talked you were in success. Are you still in success?
33. So how are your grades right now?
34. So in social studies you might have a lot of vocabulary words like region or movement and last time we talked you said that finding definitions to these words was sometimes hard for you. Not just for region – but for vocabulary words in general. Do you still think it is hard for you to find definitions to vocabulary words that you don't know?
35. You can list like you just listed for me but you couldn't give me the definitions of them.
36. So when you're reading in social studies and you don't know what a word means what do you do?
37. Since October, I've seen your teacher talk to your class about reading actively in social studies. Do you remember what this means?
38. She's also talked about different reading strategies to use when you read social studies. She talked about what you might do before you read – prereading. Do you remember any strategy that you might use before you ever read?
39. Do you know what that means?

40. Let's say that your teacher tells you that you have to read Chapter Three here on natural resources (book is open to this). Before you read how would you apply the questioning strategy to this?
41. Do you ever apply that strategy before you read or do you just jump in and start reading?
42. Do you find that the question strategy you just described to me helps you? If you did use it do you think it helps you understand at all what you've read?
43. Do you remember any strategies that the teacher has taught you about applying when you do read?

May

1. So now that the school year is almost over what do you think of sixth grade? How has the year gone for you in general?
2. What do you like most about sixth grade?
3. What do you like least about sixth grade?
4. How do you currently feel about social studies?
5. Do you still like the subject of social studies? What is something you enjoyed learning about this year?
6. How are your grades in social studies right now? Why are they this way?
7. Do you still think that social studies in sixth grade has been easier than social studies in fifth grade?
8. Last time we talked you said that social studies was sometimes hard. Do you still feel this way?

9. Most of the assignments that you've done this year you've had to do on your own. How do you feel about working alone versus working with a partner or with a group?
10. Last time we talked you told me how hard the current events project had been for you. Have there been any other assignments or projects that have been hard for you since we last talked?
11. Since January you've been to the computer lab several times and used the internet to do assignments. How do you feel about using the internet to complete assignments for social studies? Is it an easier or harder for you to use or do you think it really is about the same?
12. Since January I've also seen your class make posters about specific topics. What did you think of that assignment? What was it like to have to get information off of other people's posters? Did you like this assignment?
13. One thing I've noticed is that sometimes you are almost always on-task. That means you are doing what your teacher wants. Sometimes though you are off-task. This means that you are not following the directions your teacher gave you. You might be talking, drawing, or passing notes. Is there a reason for why you stay on task and why you might be off-task? For example, whenever you have to use the internet you are usually on-task. Do you know why? Sometimes when you read the textbook you are off-task. Do you know why?
14. Last time we talked you said that you thought you were getting better at reading when you were able to read it to yourself, but you didn't think you were a good reader when you had to read out loud. Do you still feel this way?

15. What do you think of yourself as a reader?

16. Last time you said that if you read something and don't understand it you will ask a friend to help you. Do you still do this? Is it helping you? Is there anything else that you do when this happens?

Appendix E

Mrs. O'Reilly's Interview Questions

October

1. How long did you teach high school? Seventh grade?
2. Did you teach special education at each of these grade levels?
3. What subjects did you teach special education for?
4. How did you feel about teaching special education?
5. How come you do not teach in this area any more?
6. Why did you decide to teach sixth grade?
7. Why did you decide to teach language arts and social studies?
8. What are your thoughts/feelings about teaching at this level?
9. How do you feel the year is going so far?
10. What seems to be going well for your students in this class?
11. What do you think is challenging to your students in this class?
12. How do things like state tests and the curriculum effect these decisions?
13. In general, what challenges do you feel your class poses to students?
14. What teaching techniques do you like to use when teaching social studies?
15. Are there any teaching techniques that you prefer not to use in teaching social studies?
16. Earlier you told me that you had adopted a new social studies textbook and atlas for the school year. What do you think about these things?
17. What kinds of assignments do you typically give? Why?

18. I have noticed that sometimes students work with a partner or in a self selected group. How do you feel about students working together? What do you see as the strengths and weaknesses of this?
19. How do you decide if students should work together or alone?
20. In your questionnaire, you stated that the material becomes more challenging for students as the year progresses. In what ways do you think it challenges them? How have you addressed this in the past? What might you do this year?

January

1. How do you think the year has gone so far?
2. What do you think is going well for your students overall this year?
3. In October you said that one of the challenges you faced was that some of your students had behavior problems. Do you feel that these problems have gotten in better, stayed the same, or gotten worse in general? Why do you think this? What do you think contributed to this?
4. In October you also stated that you felt that for your students, understanding directions was a challenge. You were concerned that they be focused when you were giving directions. Do you still feel concerned about this? Has it improved? What do you think has contributed to this?
5. Are there any other challenges that you think your students are facing in this social studies class? What are they and how are you addressing them?
6. Back in October you said that you work a lot with prereading activities. At the time, you said you hadn't done much with that yet and that you were just getting started. Do you feel that you do prereading activities with your students? What

are some that you do? How often would you say you do them? Why do you do prereading activities?

7. You also said in October that you do reading activities with your students. You also said that at that time you had not done many of these but that you would be getting into more of them in the future. Do you feel that you do reading activities with your students? What are some examples? Are there some activities you have done that you feel worked well for your students? What were they and what made them work well? Were there some that didn't work so well? What were they and what do you think made them not work so well? Do you think that when something worked well it worked well for the majority of the class or just some students? What about when it didn't work well?
8. I know that all the sixth grade social studies teachers are pretty much in the same place at the same time in terms of content. You said that you liked this and that it worked to your advantage because there were four of you thinking about how to present the material. Do you still feel that following the same pace is an advantage?
9. In your last interview you briefly touched on vocabulary in social studies. In what ways does social studies vocabulary get addressed in your class? How do you feel about this? Is it working well or not?
10. On at least one occasion I observed you talking to students about reading actively and what it means to be an active reader of social studies. As a class you listed strategies that connected to this. Do you feel that your students apply these

strategies on either a regular basis or that they know how to apply them if they need to?

11. I know there have been assignments where students have had to use the textbook or other reference materials to locate information or answers to questions. Do you think that students come to sixth grade generally prepared to know how to do this? In what ways do you help them become better at it? Do you think these ways have been effective?
12. Sometimes the class reads social studies text out loud. Sometimes you ask them questions after various parts have been read. What is your reason for doing this? In what ways do you think it benefits your students?
13. Are there students in your class who are struggling with social studies? This could mean that they are failing but not necessarily so. They may just have a difficult time with the subject matter for a variety of reasons. In thinking about these students, in what ways do you think they struggle with this class? What do you do with students who seem to repeatedly struggle in class? Does this seem to be helping or not? Why do you think this?
14. Since we last spoke, have you read any books, attended any conferences, or been to any inservices that relate to social studies instruction or content area reading? If so, describe. Do you have any plans to do any of these things in the future? If you have done these things since October, what did you do? What do you feel you got out of these things? Have you applied any of the ideas to your class and if so how and how do you think they have worked out?

15. Last time I asked you how you liked your new social studies book. You told me you had not really started using it yet. Now that you have, what do you think? Do you think the textbook is easy, about right, or difficult for the majority of your students? What do you do in cases where students are having a difficult time understanding the text? Do you plan to continue to use the textbook for the remainder of the year? Do you think you will use any other sources? If so, what and why?
16. In October you said that the material becomes more challenging as the students go through the year. What do you think has been challenging for your students so far? In what ways have you addressed this?

<u>May</u>

1. How do you feel about this year as a whole?
2. In January you said you felt that you were doing a much better job assessing your students this year. Have you tried any new assessments this year? What assessments do you think you learn the most from? Which ones do you feel have not given you the kind of information you wanted?
3. Back in October you said that you felt student's behavior was presenting a challenge to you. In January you said that you felt this problem was improving. How do you feel about the overall behavior of your students in the class that I have observed?
4. We know that no student can be perfect all the time – do all their work, always pay attention, etc..If you think that your class is 50 minutes long, how much of

that time do you expect your students to be engaged (on task, doing what you ask)? What would be an unacceptable amount of time?

5. In January you said that you felt the textbook was appropriate for most kids to read. However, you said your bigger problem was getting kids to actually do the reading or pay attention while it was being read out loud. Do you still find this is a problem?
6. Just recently you shared a book with me that you got from attending an inservice. Have you gotten a chance to use any of the ideas in that book? Discuss.
7. Can you discuss this inservice? What did you think of it? In what ways was it helpful? In what ways was it not helpful?
8. Have you been to any other inservices or read any books related to teaching since we last spoke in January?
9. In January you said that you were going to make a word wall to help you students with their social studies vocabulary. Do you feel that this has benefited your students? Have there been any drawbacks to it?
10. In January you said that you considered 1/3 of you class to not be reading actively. You thought that these students might not understand how to apply specific reading strategies. Do you still see this problem occurring? In what ways do you feel you have attempted to address this issue?
11. I noticed that sometimes you have your students use the internet to learn new information. Is this a new strategy or have you done this in previous years? What do you think of letting the kids use the internet to get information? How do you feel they are doing with it? Are there any challenges that the students have when

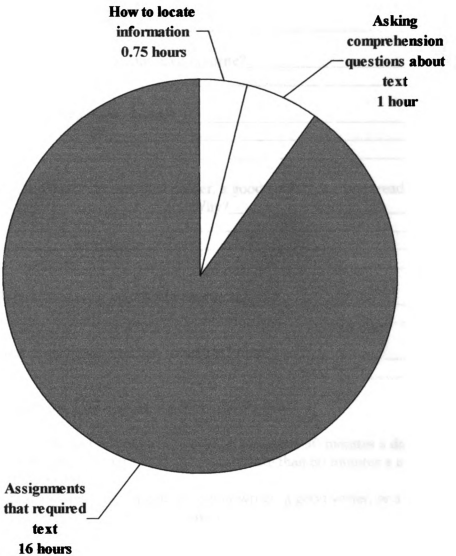
they use the internet this way? What do you think the benefits are? Will you continue to do this in the future?

12. One activity I saw students doing was making informational posters and the doing the gallery walk. What is your overall impression of this activity? Do you think it helped students learn the information that you wanted them to learn?
13. You know that I've spent a lot of time observing Sarah this year. However, we never talk about her in the interviews. What is your general impression of Sarah as a student of social studies? You also have her from English. What is your impression of her as a student in that class? Do you see any similarities or differences across subject areas? What do you think she is like as a reader of social studies text? Of English text? How would you describe her general behavior and attitude in social studies class?

Appendix F

Figure 1.1

Techniques Mrs. O'Reilly Believed Could Help Students Learn to Locate Information in Text



Appendix G

Alisa's Questionnaire

1. How old are you?_____

2. What classes at school do you enjoy the most?_____
_____

3. Why do you enjoy these classes?_____
_____
_____

4. What classes at school are your least favorite?_____
_____

5. Why do you not like these classes?_____
_____
_____

6. Do you think you are an excellent reader, a good reader, or a poor reader?_____
_____Why?_____
_____
_____
_____

7. What kinds of things do you like to read in school?_____
_____

8. What kinds of things do you like to read at home?_____
_____

9. How often do you read outside of school (circle one)?

Not at all/hardly ever	Less than 30 minutes a day
30-60 minutes a day	More than 60 minutes a day

10. In general do you think you are an excellent writer, a good writer, or a poor writer?_____Why?_____
_____
_____
_____

11. What are some things you like about science?_____
_____

12. What are some things you dislike about science class?_____
_____
_____

13. Do you enjoy reading in science class? Why/why not?_____
_____
_____
_____

14. When you are assigned to read something in science that is hard to read, what do you do (circle all that apply)?

Try my best to read it by myself	Ask the teacher for help
Ask a friend for help	I don't read it
Ask someone to read it to me	Ask someone to tell me what it says

15. When you are assigned something to read in science that is easy for you to read, what do you do (circle all that apply)?

I read it	Ask a friend to read it to me
I don't read it	Ask someone to tell me what it says

16. How often does your teacher ask you to write at least one paragraph in science (circle all that apply)?

3-5 times a week	less than 3 times a week
hardly ever	

17. When your teacher asks you to write at least one paragraph in science, what do you do (circle all that apply)?

I do the writing to the best of my ability
I ask a friend to do the assignment for me
I ask a friend to help me with the assignment
I copy off of someone's paper
I don't do the assignment
I ask the teacher for help

Appendix H

Mrs. Baker's Questionnaire

1. How long have you been teaching eighth grade?_____
   _____
2. What other grades have you taught?_____
   _____
3. What subjects do you currently teach besides science?_____
   _____
4. What subjects have you previously taught that you are not teaching now?_____
   _____
5. What degree(s) do you hold?_____
   _____
6. What is your area of certification?_____
   _____
7. Are you currently working on any other areas of certification? If so, what are they?
   _____
   _____
   _____

16. Does you district have a textbook that you can use for science?____
    If yes, answer questions 9-10. In no, continue to question 11.
17. What is the title of the book(s)?_____
    _____
    _____
18. On average, how often do you assign sections of the textbook for students to read (circle the best description)?

Every class period	3-5 times a week
Less than three times a week	Never

19. Besides a textbook, what other forms of text do students read in your science classroom (circle all that apply)?

Novels	Information Books	Encyclopedias
Maps/Graphs/Charts	Posters	Pamphlets
Internet Resources	Worksheets	Notes/Outlines

Other (please describe):_____
_____
_____
_____

20. Which of the following ways do you have students read science material (circle all that apply)?

Students read silently in class
Students read material out loud to whole class
Teacher reads out loud to class
Students read material at home
Students read material together in pairs or small groups during class
Students read material silently as they listen to it being read on tape

Other (please describe):_____
_____
_____
_____
_____

21. In an average period, how much time do you think students spend reading materials in any of the ways stated above (circle the best description)?

30 minutes or more
20-30 minutes
15 minutes or less

22. In your opinion, is the science material presented in your class challenging, about right, or easy for the majority of your students to read?_____
_____

23. How do you help students understand text that is difficult?_____
_____
_____
_____

Appendix I

Alisa's Interview Questions

December

1. So let's first of all talk about how the year is going so far for you. How's eighth grade?
2. How is your grades in science?
3. What do you think of science class. Do you like it? Do you not like it? What do you think of science?
4. Now there's other things that you do in science, like you watch videos, sometimes you read some things, answer questions, how about those kinds of assignments?
5. I know that your teacher has talked to your class as a whole about making sure they do their homework. Do you do your homework?
6. So when you don't understand something in class, what do you do?
7. Do you ask other students to help you with things?
8. Why would you decide to ask, like maybe the teacher over a student?
9. So when you ask students, do they help you?
10. And if you ask a student something and they don't know the answer or they can't help you, what do you do?
11. What about the science book. What do you think of the science, I have it actually, I don't know if you want to look at it, but what do you think of this book that you all have been using?

12. So when you read out loud in class, or when other kids are reading out loud in class, then you feel that you understand it better then when you read silently to yourself?
13. Now, I've seen Mrs. Lewinsky have people read out loud from the book or read worksheets or whatever, stuff out loud in class, and she'll ask for volunteers, but I've never seen you volunteer to read out loud. Why is that?
14. You read things at home like magazines, right?
15. Are you reading that right now?
16. How often do you read outside of school, you said hardly ever. Is that still pretty true?
17. Now here, I asked you what are some things you like about science class and you said I like doing labs.
18. What's been your favorite lab this year?
19. So you put some of things you dislike about science are that you have to do a lot of stuff and it's hard.
20. What do you mean by that?
21. Is there anything else that you think is hard in science?
22. You said things you dislike about science, you have to do a lot of stuff. So is there anything else that we haven't talked about in terms of stuff that you dislike?
23. So is there anything else, because we won't do this again until about February, is there anything else that you would like for me to know? About science class? Anything?

February

1. How is the year going for you?
2. How are your grades?
3. How is science class going?
4. Last time, you said that science was your worst subject. But you also said that you were starting to like it. Do you still feel this way? Why do you like it? Is it still your worst subject? Why?
5. Last time you also said that science was hard. Do you still feel this way? If so, what makes it hard? What goes well for you in science?
6. What do you think of the assignments that you have to do in class? Do you have any favorites?
7. Often you have to do notes where you use the book to answer questions. What do you think of these assignments? Last time you said you had a hard time answering the questions on the worksheets. Is this still a problem?
8. Last time you said that when you read to yourself, in your head, you often don't understand what you read. Is this still happening to you? What do you do when you have this problem?
9. Sometimes you read out loud in class. You said you liked this better because you thought you understood the book when it was being read this way. Do you still feel this way? How do you feel about reading out loud in class? How come you have never volunteered to read out loud?

10. Last time we talked you said you thought you were a good reader, but that you sometimes have trouble with long words. Do you still feel that you are a good reader? Do long words still give you problems? What makes you a good reader?
11. Last time you said that you were thinking about reading at home more often. Have you started to do that? (why/why not; if so, what kind of response has she gotten from her parents?)
12. What do you think of the labs? Any favorite labs?
13. Since we last talked I've seen you do some labs in class. One lab had you put a ball on a piece of glass and roll it. Do you remember that? When I saw you do this lab one thing that I noticed was that you did not participate. You did not touch any of the materials. You rarely spoke to your lab partners. Why was that?
14. In class your teacher asks questions about things. She might ask questions about a video you watched or something you read. How do you decide if you are going to raise your hand to volunteer an answer or not?
15. I've only seen you raise your hand to volunteer an answer once. Why is that?
16. Sometimes, when your teacher gives an assignment, she tells you that you can work with a partner if you want to. What do you think of that? I've never seen you work with anyone. Why?
17. Do you ever have to go to extended day because of science class?

<u>May</u>

1. So how is school going? How are you doing?
2. How are you doing in science?
3. What is your grade in science?

4. Last time we talked, in February, you had an F in science. But you said you were going to bring your grade up. How have you done that OR how come this hasn't happened?
5. Last time you said that you thought you would do more in class in order to raise your grade. Have you been doing more in class? What have you done? Has this idea worked for you?
6. Last time you also said that you were going to do extra work to raise your grade. Have you done any extra work in science? If so, what was it? Did this help your grade any?
7. What are some things you have learned in science this year?
8. Last time we talked some about the labs. I said that one thing I noticed was that when you do labs you don't usually touch the lab materials and you don't usually talk to your group members. At the time you usually did your labs in a group with Troy and Amber. You said that you felt like Troy and Amber really wanted to do the labs so you just let them do it. But since then, I have seen you assigned to groups with totally different people. However, you still don't usually touch the lab materials or talk much with the people in your group. Why is that?
9. What are some things you have learned from doing labs this year? What has been your favorite lab?
10. Let's talk for a minute about the instrument you were supposed to make. You didn't bring yours to school on the day of the presentations. How come?
11. Did you make an instrument? What did you make?
12. How did it change pitch?

13. Since you didn't bring your instrument to school on the due date you got a zero for the project. How do you feel about that?
14. You've said before that when you have a question in science class you prefer to go to the teacher because you know she'll have the answer. Is this still the case? Do you ever have questions in science that you just keep to yourself – questions that don't get asked? Discuss – if applicable find out why.
15. Talk about some recent assignments. Ask her to explain how she located answers to vocabulary terms and questions.
16. What does the rest of your school day look like? What other classes do you have?

Appendix J

Mrs. Baker's Interview Questions

October

1. So let's just talk about the year. How's it going? You said you were behind.
2. So how as a whole then is your class doing? What's going well for them?
3. So then what about, what's challenging for your class as a whole would you say?
4. Outside of labs, what other teaching techniques do you like to use in teaching science?
5. So some teacher use the textbook like everyday, so how come you choose to just use it intermittedly or maybe just in the beginning?
6. This is kind of changing a little bit, but do you have a favorite assignment that you like to give? Or favorite types of assignments that you like to give?
7. You haven't done any computer, web-based stuff with the kids as a lesson this year have you?
8. Do you have a, do they take any state tests this year, do they have take the MEAP?
9. And does that affect your teaching in any way?
10. Do they do anything else besides eighth grade science? Do they have, like, eighth grade math, reading?
11. That's it. Do you have anything else that you want to say, or that you want me to know?

February

1. How's the year going so far?
2. Last time you said that one thing you liked about this year was that you had time to modify things. For example, you said that you modified labs you thought were too difficult. Are you still doing this? Get specific examples.
3. Last time you said you were going to try some different strategies this year because the group of kids you are working with have a low reading ability. What strategies have you tried out? How have they worked? Do you have any new or different strategies that you are planning on trying?
4. As a whole, how would you say your class is doing this year?
5. What is challenging for your class?
6. Last time you said that your students were not taking the time to read – that they wanted the book fed to them. Is this still a problem?
7. I've seen you on a few occasions have your students spend ten minutes skimming a chapter or a set of pages. What do you think of this strategy? How does it work for your students?
8. Are there any other strategies you've tried with your students to get them to use the text on their own?
9. Last time you also said that you felt the students had problems with labs in that they were not going back to the directions to clarify what they should do. Is this still a problem (why? If not, what do you think helped to alleviate this problem?)

10. Last time you said that, with labs, you had a hard time putting in the analysis piece. You said they got to go through all the other steps, but stopped short of analyzing their data. Is this still happening?
11. Will anything change in your classroom now that the MEAP is over for the year?
12. How are your classes (master classes) going? Are there any ideas that you have been able to apply in teaching science this year?

May

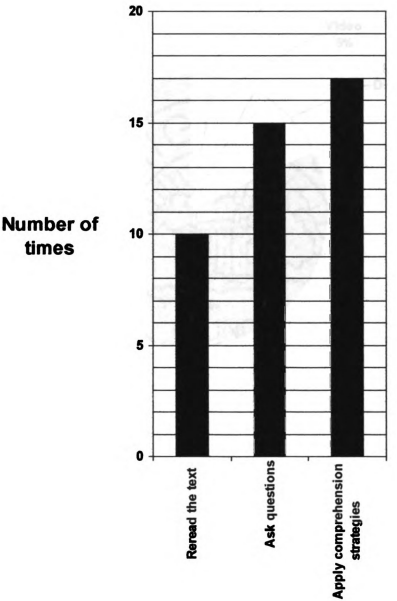
1. In general, how has Alisa done this year?
2. Has she been able to learn the science content?
3. How has she done with the assignments?
4. What are Alisa's strong points in your class? What does she do well?
5. What does she struggle with?
6. How have you addressed these struggles?
7. This year, Alisa was tested for a learning disability. She did not qualify as learning disabled, but she did qualify for special education services, correct?
8. Has this testing affected the ways you interact with Alisa?
9. Has the testing (and results) affected the ways you plan for instruction with Alisa?
10. Do you feel that Alisa has made improvements as a reader of science text? Why/why not?
11. What do you think did or did not contribute to this?
12. You've said that you rewrite the labs to try to fit the learning styles of your students. Do you think these revised labs have helped Alisa in any way?

13. You've also said that you try to incorporate techniques into your teaching that you think will help low readers like Alisa. Some of the things you named were concept maps, reading aloud, and asking students questions about text. What affect do you think these techniques have had on Alisa?
14. How do you think she does with the ten-minute silent readings?
15. During the year, you've talked a lot about using proven strategies. What are proven strategies? How important is it to you to use these types of strategies? Do you think these strategies help students like Alisa?
16. What does it mean to be literate in science?
17. What does literacy look like in science?
18. Is this literacy related only to reading and writing? Are there other ways to be literate in science?
19. Do you think Alisa is literate in science? Explain.
20. Do you think reading in science is different than reading in math, social studies, or English? Explain.
21. The lab from Tuesday was interesting. You told them they were going to read a story. Was that fiction? I'm just curious because I haven't seen you tell them they were going to be reading a story at all this year. I'm wondering what made you decide to have them read a story.
22. Have you been to any professional development sessions or conferences that have influenced your science teaching this year?

Appendix K

Figure1.2

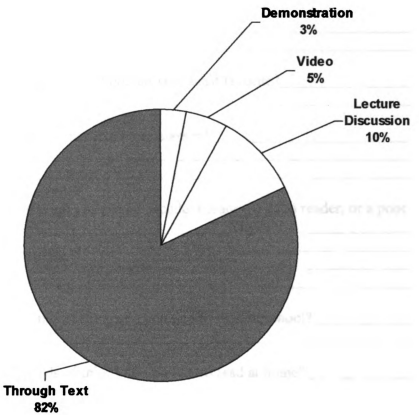
What Mrs. Baker Told Students To Do If They Did Not Comprehend the Text



Appendix L

Figure 1.3

Ways Science Content Was Presented



Appendix M

Nicole's Questionnaire

1. How old are you?_____

2. What classes at school do you enjoy the most?_____
   _____

3. Why do you enjoy these classes?_____
   _____
   _____

4. What classes at school are your least favorite?_____
   _____

5. Why do you not like these classes?_____
   _____
   _____

6. Do you think you are an excellent reader, a good reader, or a poor reader?_____
   _____Why?_____
   _____
   _____
   _____

7. What kinds of things do you like to read in school?_____
   _____

8. What kinds of things do you like to read at home?_____
   _____

9. How often do you read outside of school (circle one)?

   i. Not at all/hardly ever — Less than 30 minutes a day
   ii. 30-60 minutes a day — More than 60 minutes a day

10. In general do you think you are an excellent writer, a good writer, or a poor writer?_____Why?_____
    _____
    _____
    _____

11. What are some things you like about math?_____
    _____

12. What are some things you dislike about math class?_____
_____
_____

13. Do you enjoy reading in math class? Why/why not?_____
_____
_____
_____

14. When you are assigned to read something in math that is hard to read, what do you do (circle all that apply)?

Try my best to read it by myself	Ask the teacher for help
Ask a friend for help	I don't read it
Ask someone to read it to me	Ask someone to tell me what it says

15. When you are assigned something to read in math that is easy for you to read, what do you do (circle all that apply)?

I read it	Ask a friend to read it to me
I don't read it	Ask someone to tell me what it says

16. How often does your teacher ask you to write at least one paragraph in math (circle all that apply)?

3-5 times a week	less than 3 times a week
hardly ever	

17. When your teacher asks you to write at least one paragraph in math, what do you do (circle all that apply)?

I do the writing to the best of my ability
I ask a friend to do the assignment for me
I ask a friend to help me with the assignment
I copy off of someone's paper
I don't do the assignment
I ask the teacher for help

Appendix N

Mrs. Harding's Questionnaire

1. How long have you been teaching seventh grade?_____
   _____
2. What other grades have you taught?_____
   _____
3. What subjects do you currently teach besides math?_____
   _____
4. What subjects have you previously taught that you are not teaching now?_____
   _____
5. What degree(s) do you hold?_____
   _____
6. What is your area of certification?_____
   _____
7. Are you currently working on any other areas of certification? If so, what are they?
8. Does you district have a textbook that you can use for math?_____
9. If yes, answer questions 9-10. In no, continue to question 11.
10. What is the title of the book(s)?_____
    _____
    _____
11. On average, how often do you assign sections of the textbook for students to read (circle the best description)?

Every class period — 3-5 times a week
Less than three times a week — Never

12. Besides a textbook, what other forms of text do students read in your math classroom (circle all that apply)?

Novels	Information Books	Encyclopedias
Maps/Graphs/Charts	Posters	Pamphlets
Internet Resources	Worksheets	Notes/Outlines

13. Other (please describe):_____
_____
_____
_____
_____

14. Which of the following ways do you have students read math material (circle all that apply)?

Students read silently in class
Students read material out loud to whole class
Teacher reads out loud to class
Students read material at home
Students read material together in pairs or small groups during class
Students read material silently as they listen to it being read on tape

15. Other (please describe):_____
_____
_____
_____
_____
_____

16. In an average period, how much time do you think students spend reading materials in any of the ways stated above (circle the best description)?

30 minutes or more
20-30 minutes
15 minutes or less

17. In your opinion, is the math material presented in your class challenging, about right, or easy for the majority of your students to read?_____
_____

18. How do you help students understand text that is difficult?_____
_____
_____
_____

Appendix O

Nicole's Interview Questions

October

1. I'm going to ask you some questions about things that you wrote on here eventually, but first I just want to hear about how school is going.
2. How do you like being in seventh grade?
3. How are your grades?
4. So what do you think of math class?
5. What happens with the homework that you don't do so good on it?
6. Is there anything that you don't like about math?
7. So in math class, you have some days, a lot of days, that you get vocabulary, and you write that down and then you'll read usually out loud, someone's reading out loud, and then you do your homework. So what do you think of the vocabulary that she gives you that you write down?
8. So do you like reading out loud in class?
9. Yeah you said that on here, you said, well you said that you like to read, but that you were a good reader. And you said that "I like to read but I'm not the best at it." What does that mean?
10. Okay, and when there's words that you don't know, what do you do?
11. What do you like to read, you said you liked to read.
12. So how often do you read when you're at home?
13. What's easy for you in math?

14. So on your questionnaire, you said that you enjoy reading sometimes in math, but you didn't say why. So why do you sometimes enjoy reading in math?
15. So what are the times that you don't like to read in math?
16. So for number 14, it says when you are assigned to read something that's hard to read, what do you do. And so one thing that you do is ask the teacher for help. So when you ask the teacher for help, does that work?
17. So your first assigned seat in the classroom, what'd you think of it?
18. Alright, that's it. Do you have anything that you want to let me know about?

January

1. How's school going?
2. Last time we talked you said that school was fun. Do you still feel this way?
3. Last time we talked you said that 7th grade was not as challenging as you thought it would be. Do you still feel this way?
4. Lets' talk about your grades. How are they?
5. Last time we talked you said that if you got all A's your mom would put a tv in your room and give you 50 bucks. Did you get all A's on your report card?
6. Are you still getting paid for grades or offered any other rewards?
7. How do these offers effect what you do in your classes?
8. How are you doing in math class?
9. Last time you said math class was fun, but not too hard. Do you still think this? Has it gotten any harder?
10. Last time you said that you don't always do good on the homework assignments. How do you think you are currently doing on them?

11. What do you think about your abilities as a math student?
12. Last time we talked you said that you like to read. Do you still feel this way?
13. What are some things you are currently reading that you enjoy?
14. Las time you said that the biggest problem you had with reading was that sometimes you didn't understand all the words. Is this still a problem?
15. How do you feel about reading in math?
16. Last time you said that sometimes you don't like to read in math. Do you still feel this way? Explain.
17. What do you think about your abilities to read and understand the math textbook?
18. A lot of times when the textbook is being read you're not following along. Why is that?
19. You get to use calculators to complete most of your work. What do you think about that?
20. How do you feel about your ability to complete the math tasks without using a calculator?
21. When you are reading the math book and you don't understand something, what do you do?
22. I've noticed that when you are working on your h/w you tend to ask other student's questions more often than the teacher. Why is that?
23. I've also noticed that you rarely ask anyone questions about the vocabulary notes you take in class. Why is that?

May

1. How is school going for you?
2. How are your grades in all classes?
3. How are your grades in math?
4. Last time you said that if you got all A's you were going to get a TV/VCR/DVD. Did that happen?
5. So let's talk about math. Last time you said that you don't like to sit in the back of the room, but you've been sitting in the back for awhile. How's that working out for you?
6. Last time you said that you were doing pretty good in math. Is this still true?
7. You also said that sometimes you have questions about your homework. I see sometimes you ask questions in class about the homework. Does that help you?
8. How do you feel you do on the homework assignments? Do you think you are understanding them?
9. One thing that is different now is that your teacher expects you to read pages in the math book on your own. How do you feel about having to do that?
10. Do you read all of the pages that you are supposed to?
11. When I watch you, one thing that I notice is that you don't spend a whole lot of time on any one page. You spend about 1-2 minutes looking at 1-2 pages in the book before you turn it. Why is that?
12. Last time you said that you liked it when the class read out loud because it helps you to stay focused. Do you think you have a hard time staying focused now that you are expected to read to yourself?

13. Last time you said that when Mrs. Brooks says read to yourself you notice a lot of kids just skip the reading and start the homework. You said this makes you want to do the same thing. Do you ever do this? Why? If you do this, do you have trouble with the homework?
14. How do you feel about your ability to read and understand the math book on your own?
15. Last time you said that if you don't understand something in the book you would ask Anna and she would help you. At that time, you were sitting with Anna. Now you're not. What do you do now?
16. Do you think it's possible to make good grades in math without doing the reading?
17. Sometimes you have to take notes yourself. She doesn't always put them on the overhead for you. You have to locate them in the book yourself. How do you feel about this? Do you think you always locate all the words? How would you know if you missed on?
18. One thing that you've said to me is that you have problems understanding all the words in a book. Do you think this is still a problem?
19. I hardly ever see you asking your teacher or other students to help you figure out what a word means in math class. Why is that? Do you think you understand all the words in the math text?

Appendix P

Mrs. Harding's Interview Questions

October

1. How do you like teaching seventh grade?
2. How long have you been teaching seventh grade math?
3. Why did you decide to teach seventh grade math?
4. How many years have you been teaching total?
5. Back in September you said that the principal has a policy that effects how you teach math. You said he requires you to give the kids notes and read the text out loud in class. Is that correct? Why did the principal institute this policy? How do you feel about it? Do you feel that this policy helps your students learn the required content? Do you follow this policy?
6. How would you prefer to teach?
7. Are there any methods that you prefer not to use when teaching math? What are they and why?
8. One thing I've noticed is that kids get to use calculators a fair amount of the time. How do you feel about the use of calculators? How do you decide when kids can and cannot use them?
9. What do you think of the math book that you use?
10. What do you think is challenging for your students in this class?
11. How do things like state tests and the curriculum effect these decisions?

January

1. So, how is the year going so far?
2. At the beginning of the year you said that a lot of the topics would be at least somewhat of a review for the students. Have you moved into material now that they might not be as familiar with?
3. How do you feel this new material is going for your class?
4. What do you find you students struggle the most with?
5. What seems to come easy for them?
6. In our last interview you mentioned that you have a hard tine having kids read out loud from the text because of your values about reading. Can you say a bit more about that? What are you values about the role of reading in math class?
7. In our last interview you said that the principal wanted the kids to take notes and read out loud because he wanted to make sure they got the information. Do you feel that, generally speaking, your students are getting and understanding the information they need?
8. Last time you said that you would be attending the NCTM conference this year. Has that happened yet? Discuss.
9. Last time you said that you always keep your eye open for ways that you could incorporate reading instruction in math. Have you incorporated anything new this year that was meant to help kids become better readers of math text?
10. You also said that it was tough to teach reading in math. Do you still feel this way? Explain.

11. Last time you said that you thought it was interesting that people worried about the amount of reading kids have to do in math. You said that some people worry that a low reader will not be successful in math. In general, how do you think your low readers do in math? What do you do that supports their ability to learn the material?

May

1. How has the school year gone for you?
2. Since we last talked you went to a math conference (back in February). What was that like?
3. Did you learn anything new at the math conference?
4. Did you implement any new ideas that you got from the math conference?
5. Have you been to any in-services in math this year?
6. Did those influence your teaching?
7. Last time we talked about reading in math and what your thoughts were on it. You said that you thought kids with learning disabilities or who struggled with reading could still read the math book and learn from it. You said that these kids just needed to be shown how to read for key information. In what ways have you helped students learn how to read for key information this year?
8. One thing we haven't done in the interviews is talked specifically about Nicole. How has Nicole done in math this year?
9. During the year you have mentioned to me that you feel Nicole is your lowest reader who is not on caseload. How did you come to that conclusion?
10. Have you noticed any specific difficulties that Nicole has with reading in your class? How have you addressed this?

11. Have you noticed things that seem to come easy to Nicole when she reads the math text? What do you think contributes to that?
12. Do you feel that Nicole has improved as a reader of mathematics text? Explain
13. What do you think did or did not contribute to this development?
14. Last time you said that you thought it was difficult to teach reading in math. You said that you felt you taught some basic reading skills like looking at bold words and using pictures, but you weren't sure if you were doing it right. Do you still feel this way?
15. Do you think that reading in math is different from reading in other subject areas like science, social studies, or reading a novel in language arts? Explain.
16. What do you think it mean to be literate in mathematics? Is the idea of being literate in mathematics related to reading/writing?
17. Do you think Nicole is mathematically literate for a student her age?

Appendix Q

Math Assessments Administered to Nicole

October

5th Grade Text

Page 245

Words = 139

Directions:

1. Ask the student what she knows about scientific notation

2. Tell her she will be reading a passage about scientific notation

3. Student reads passage silently

4. Student reads passage out loud

5. Student answers questions (below).

Questions:

1. What is scientific notation?

2. Why do some calculators automatically display numbers in scientific notation?

3. In scientific notation, what number is always the base?

4. In scientific notation, a number cannot be greater than?

5. What symbol do some calculators use to show the exponent in scientific notation?

6. What do you think is beneficial about writing numbers in scientific notation?

7. Write the following numbers in scientific notation: 700,000, 50,000, 500, 340

7th Grade Text

Page 16

Words = 200

Questions:

1. What does the word estimate mean?
2. Give two reasons why you might use an estimate.
3. What is the most common method of estimating?
4. Name the three types of rounding.
5. Look at number one on page 16. Why do you think it is not necessary to always obtain an exact number?
6. Look at number two on page 16. Why do you think an estimate is sometimes easier to work with?

5th Grade Text

Page 45 (start at top of page; end at rounding up)

Words = 209

Questions:

1. What does rounding get rid of?
2. What are the three types of rounding?
3. How do you round a number down?
4. In the example given on page 45, why does the bank ignore fractions of a cent? In the example on page 45, what place did we round to?
5. Round the following numbers down to the tenths place: 2.53, 45.891, and .96

7th Grade Text

Page 68

Words = 224

Questions:

1. According to page 68, what does the word power mean?
2. Look at the following: 5 to the 2nd power. Which number is called the base?
3. In the problem 5 to the 2nd power, which number is called the exponent?
4. Write 5 to the 2nd power in exponential form.
5. Write 5 to the 2nd power in repeated multiplication form.
6. What does 8 to the 1st power equal?
7. What does 9x9x9 look like when written in exponential form?
8. Look at the box on page 68. It gives four different forms for writing numbers. Which form do you prefer to use when writing numbers? Why?

January

5th Grade Text

Page 205 (Properties sections only)

Words = 225

Questions:

1. What does the text mean by the associative property?
2. According to the text, "the sum of any number and 0 is that number." What property is this referring to?
3. (x*y)*z = x*(y*z); This is an example of which property?

4. What is the difference between the commutative property of addition and the commutative property of multiplication?
5. What is the identity for multiplication?
6. Does the commutative property work with subtraction?
7. Is it helpful to know and understand each of these properties? Why or why not?

5th Grade Text

Page 108 (Collecting Data through first example)

Words = 198

Questions:

1. According to the text, the information that you collect is called what?
2. Name three ways that you can collect data.
3. Name two ways that survey data is collected.
4. Look at the first example: During what years was this information collected? "1999-2000" During what months was this data collected?
5. Look at the first example: Read the chart. Based on this chart, what conclusions can you make about the different species of birds that were observed?
6. Do you think that collecting information from people through surveys is beneficial? Explain.

7th Grade Text

Page 145

Words = 206

Questions:

1. What is an endpoint?
2. Why can only part of a ray be drawn?
3. When writing the name of a ray, what is the first letter considered to be?
4. The union of two rays with the same endpoint is called a what?
5. What does the word vertex mean?
6. When an angle uses three letters, such as angle ABC, what is the middle letter in the name considered to be?
7. Under what circumstances must you use three letters to name an angle?

7th Grade Text

Page 214

Words = 220; 254

Questions:

1. What are the three ways that people determine probabilities?
2. According to the text, making a guess is not a great method. Why would the book say this?
3. According to the text, sometimes the only way to determine a probability is to guess. Under what circumstances would you use this method to predict an outcome?
4. The relative frequency will be closer to the probability when what happens?

5. In some cases, people assume that outcomes are equally likely. What might cause someone to consider this?
6. What is the difference between making a guess and assuming that the outcomes are equally likely

April

5th Grade Text

Page 143

Words = 220

Questions:

1. According to the text, what does the word circle mean?
2. According to the text, there are two things that are not a part of a circle. What are these two things?
3. According to the text, what does the word radius mean?
4. According to the text, all circles are similar even though some may be bigger than others. How can all circles be similar if they are not all the same size?
5. According to the text, what does the word diameter mean?
6. What is a semicircle called?
7. Why might it be important to know this information about a circle?

5th Grade Text

Page 172

Words = 237

Questions:

1. According to the text, what does the word area mean? "It's the measure of the amount of surface inside a closed volume."
2. How do you determine area? How is area reported?
3. The text lists different ways that area can be reported. What are two of these ways?
4. Look at the first example (on the far left). According to the text, the area of the field is 6,000 yards squared. How did they come up with this answer?
5. Do you think it is important to be able to figure out area? Explain.

7th Grade Text

Page 303 (starting with, "How do good problems solvers solve problems?)

Words = 191

1. What techniques do good problem solvers use?
2. One way to solve problems is to devise a plan. What are some things you might do if you were to devise a plan for a problem?
3. Another way to solve problems is to read carefully. What are some ways you might read a problem that could help you understand what it was asking?
4. Look at question 10 on page 304. What problem solving strategy should Monty have used when he could not solve his problem?
5. Read problem 19 on page 305. Solve the problem. What answer did you get?

6. Of the strategies listed on page 303, which one do you think is the most helpful? Why?
7. Do you think it is important to use these strategies? Why/why not?

7th Grade Text

Page 415

Words = 189

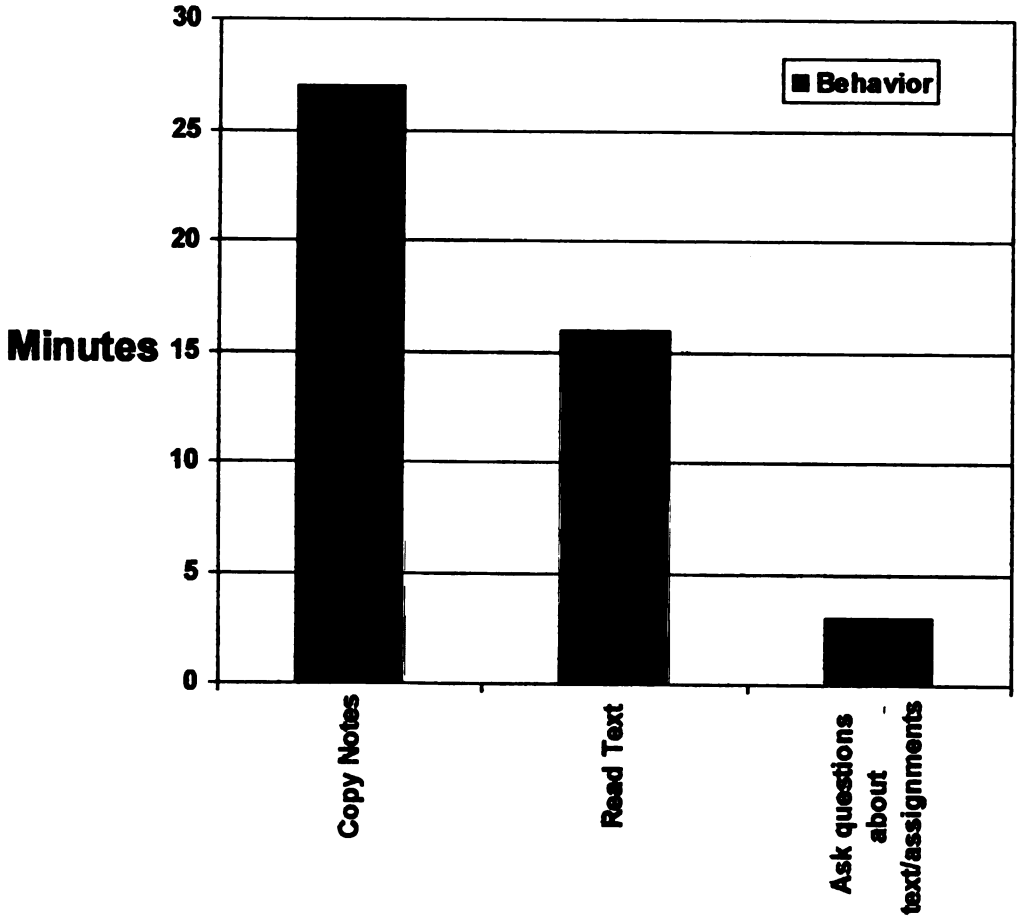
Questions:

1. According to the text, what is prose?
2. According to the text, what is a bar graph?
3. What is the difference between prose and a bar graph?
4. What information can you include in prose that you cannot include in a bar graph?
5. Look at example one on page 416. Look at the graph called, "U.S. population of Hispanic origin, 1990." What can you learn by looking at this graph?
6. Why do you think someone would decide to report information using a bar graph rather than by using prose?

Appendix R

Figure 1.4

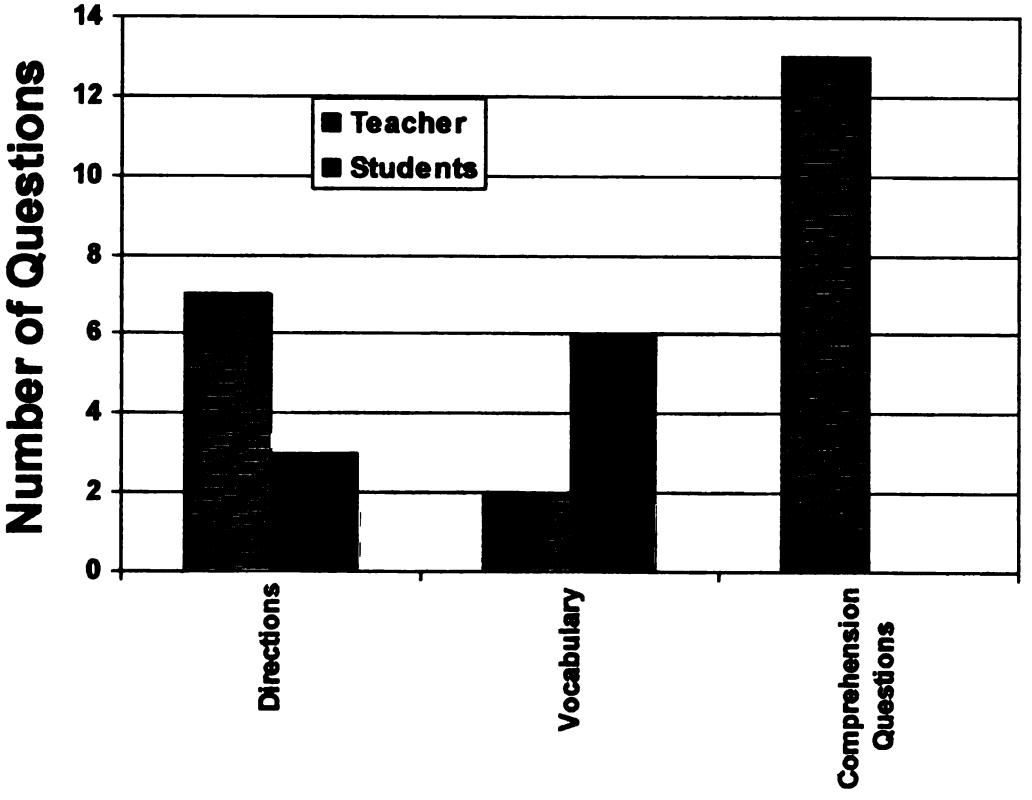
Behaviors Students Were Told to Use if They Did Not Comprehend Text



Appendix S

Figure 1.5

Number and Types of Questions Nicole Asked Mrs. Harding/Students



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