Knowledge for teaching reading comprehension:
Mapping the terrain

by

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We are like sailors who on the open sea must reconstruct their ship but are never able to start afresh from the bottom. Where a beam is taken away a new one must at once be put there, and for this the rest of the ship is used as support. In this way, by using the old beams and driftwood, the ship can be shaped entirely anew, but only by gradual reconstruction.

- Otto Neurath

To mom and dad, my first teachers

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Teaching is simultaneously a tremendous honor and a tremendous challenge. It is this duality that fuels my passion for this work. To my students and the eight brave teachers who participated in this study, thank you.

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In addition to playing a significant role in guiding this dissertation project, Annemarie has also nurtured my scholarly and professional identities over the course of my tenure as a graduate student. In the earliest stages of brainstorming my dissertation project, I had a litany of far-flung ideas – most were simply impossible dissertation projects. Annemarie listened carefully to each and every one of them. She patiently entertained my desire to learn Finnish so that I could study literacy in Finland and laughed with me as I explained one idea that involved driving around the United States, Jack Kerouac style, collecting a nationally representative sample of reading comprehension lessons.

In addition to Annemarie, I have had the good fortune to have many excellent academic mentors. I would not have been a student at the University of Michigan had it not been for Professor Joanne Carlisle. I was accepted at Michigan after meeting with Joanne in the summer of 2002 just as she was awarded funding to evaluate the implementation of Reading First (RF) in Michigan. I worked on Joanne's project for three years and it was on this project that I learned what it meant to be an educational researcher. Joanne allowed me try out ideas and learn from my mistakes and reminded me that you have to love what you do when you wake up each day. And I do.

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dissertation. His feedback and perspective was thorough and pressing. I am still struggling with many of the difficult and important questions Hyman posed about this work and am thrilled I had the chance to work with such a careful and thoughtful scholar.

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The University of Michigan School of Education is a tremendous place to do graduate study. The number of scholars engaged in research on teaching and learning – research that has the potential to affect the lives of teachers and students in America's classrooms – makes Michigan a rare gem among education graduate schools. While they are not my formal advisors, scholars such as Carla O'Connor, Deborah Ball, Jeff Mirel, Patricio Herbst, Ed Silver, Mary Schlepegrell, and Addison Stone manage to provide a tremendous level of leadership and vision for what educational research should be. The community of scholars that comprise the school of education community makes me proud to know that I will always be able to say I received my Ph.D. at the University of Michigan.

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I am grateful to have such supportive parents, family, and friends. Both my parents grew up in the state of Ohio and met while students at Ohio State University. Thus, supporting their daughter's attendance at the University of Michigan presented a bit of a conflict of interest. Luckily my father, a very practical man, was happy to support any institution that was willing to pay the bills for my education. My brother Dave and his wife Christine have been proud supporters of this work. Though my two nieces are still too young to understand what it is I do each day, I hang on to the far-flung hope that they will somehow benefit from improved instruction as a result of this work.

One does not complete a dissertation without the support of friends and colleagues. To the numerous friends and colleagues who made this work possible and supported me throughout the many years of graduate study – friends I met at Michigan, Chicago, Duke TIP, Harvard, and The College of New Jersey - thank you. I feel so lucky to have such amazing people in my life. Finally, to Jonah, the most creative young scholar I know, thank you for being my best friend and a constant source of support.

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Abstract

The persistent underachievement of U.S. students in the area of reading comprehension has been documented in numerous high profile reports. While there are likely many factors that contribute to this underachievement, it is significant that studies repeatedly demonstrate that U.S. children are not taught how to comprehend text and that teachers report feeling unprepared to teach students to do so.

This dissertation examines reading comprehension instruction in seven 4th and 5th grade classrooms. The purpose of the study is to closely investigate what teachers know and do in the course of teaching reading comprehension in order to hypothesize why it is that most U.S. students do not learn to comprehend text well and what teachers would need to know and be able to do in order to feel prepared to teach reading comprehension skillfully.

Drawing from a corpus of videotaped lessons, interviews with teachers about their work, and artifacts that purport to define the knowledge base for teaching reading comprehension, the study is organized around the following key questions:

1. *What is it that a small sample of teachers are doing when they say they are teaching reading comprehension?*

2. *What are potential constraints and influences on teachers' enactment of reading comprehension instruction?*

3. *How has the field of reading conceptualized the knowledge base for teaching reading comprehension?*

Findings from the study highlight several notable trends. First, while analysis of classroom data suggest considerable variability regarding what counts as reading comprehension instruction, this variability can, in part, be attributed to the ways in which reading comprehension instruction has been characterized in policy, assessments, and the resources that are available to teachers. Importantly, analyses expose a fundamental disjuncture between how leading literacy scholars define reading comprehension and how reading comprehension is conceptualized in other resources. Analyses also suggest that the knowledge base for teaching reading comprehension has been articulated in superficial ways and without the guidance of a coherent theoretical framework. The dissertation ends with a proposal of a theory of knowledge for teaching reading comprehension.

Chapter I.
Introduction

Overview

The persistent underachievement of U.S. students in the area of reading comprehension has been well documented (Becoming a Nation of Readers: Anderson, Hiebert, Scott, & Wilkinson, 1985; National Assessment of Educational Progress: Lee, Griff, & Donahue, 2007; Progress in International Reading Literacy Study: Baer, Baldi, Ayotte, Green, 2007; RAND, 2002). Despite repeated attempts to improve reading outcomes in the United States, on the 2007 NAEP only 34 percent of eighth graders scored at or above the proficient level, while 42 percent scored at the "basic" level, and 26 percent scored below the basic level (Lee, Grigg, & Donahue, 2007). This means that in the United States less than one third of eighth graders demonstrate competency in the area of reading comprehension on standardized measures.

Importantly, significant numbers of students learn to decode text and identify main ideas but most never advance beyond basic levels of comprehension (Biancarosa, et al., 2006; Buly & Valencia, 2002; Leach, Scarborough, & Rescorla, 2003; Lesaux, Lipka, & Siegel, 2006). Black and Hispanic students and students living in poverty are disproportionately represented in this group. Furthermore, when compared to other nations, U.S. students perform poorly on reading measures that demand high levels of content-specific or subject area knowledge (RAND, 2002).

A closer inspection of these standardized test data offers even more reason to worry. A profile of the American high school sophomore in 2002 (Ingels, Burns, Chen, Cataldi, & Charleston, 2005) revealed that while 89 percent of sophomores had mastered the skills of simple reading comprehension and 46 percent were able to make relatively simple inferences beyond the author's main idea, only 8 percent could make complex inferences. Even more troubling is the fact that among high school sophomores only 2 percent of Black students and 3 percent of Hispanic students made complex inferences on the 2002 National Educational Longitudinal Survey. This means that on standardized measures, 92% of all students in U.S. high schools did not demonstrate competency with regard to making complex inferences while only 46% demonstrate competency with regard to simple inferences. Across race, class, and gender, the available test data suggest that U.S. students are not learning to comprehend text well.

While there are likely many factors that contribute to this underachievement, it is significant that studies repeatedly demonstrate that U.S. children are not taught how to comprehend text, and teachers report feeling unprepared to teach students to comprehend text (Bryant, Linan-Thompson, & Ugel, 2001; Vaughn, Hughes, & Schumm, & Klingler, 1998).

During the 2007-2008 school year I undertook a study of reading comprehension instruction in seven 4th and 5th grade classrooms. The purpose of the study was to closely investigate what teachers know and do in the course of teaching reading comprehension in order to hypothesize why it is that most U.S. students do not learn to comprehend text well and what teachers would need to know and be able to do in order to teach reading comprehension skillfully.

Goal and rationale for study

The ultimate goal of this line of research is to improve the quality of comprehension instruction so that students are better prepared to engage in proficient use of text. In this study I explore two levers for improving the quality of instruction: (a) classroom practice, examined for the purpose of indentifying learning opportunities for students, and (b) teacher knowledge, examined for the purpose of understanding the specialized knowledge required to teach reading comprehension that is different than simply knowing how to read. I have focused this study on instructional practice and teacher knowledge because of the potential of these two levers for improving student outcomes. Reading comprehension outcomes cannot improve if students are not taught to comprehend text and if teachers continue to feel unprepared to teach children to comprehend text.

How this study differs from previous research efforts

There is no shortage of research devoted to the topic of reading comprehension. In fact, literacy scholars might look at the problem space outlined above and rightly argue that there is an abundance of research on the topics I am exploring. For example, there are many studies of teaching practice (Beck, McKeown, Hamilton, & Kucan, 1997; Gambrell & Bales, 1986; Gambrell & Jawitz, 1993; Laberge & Samuels, 1974; Levin & Pressley, 1981; Palincsar & Brown, 1984) and even studies of "best practice" (Allington, 2002; Block, et al. 2002; Bogner, et al., 2002; Morrow, et al., 1999; Pressley, et al., 1998; Pressley, et al., 2001; Wharton-McDonald et al., 1998). However, there are no close studies of what teachers do in the name of comprehension instruction, specifically. In this study seven fourth and fifth grade teachers nominated a set of lessons that they felt were

representative of their teaching of reading comprehension. In that sense, this dissertation study is oriented from the perspective of teaching practice and provides the literacy community with a contemporary understanding of what teachers are doing when they say they are teaching reading comprehension.

The issue of "grain size' is also an important way in which this study differs from previous studies of reading comprehension. Many studies – even those oriented from the perspective of practice – consider reading comprehension as one part of reading or literacy instruction. This means that the studies are not adequate to the task of identifying the specific learning opportunities available for students in the area of reading comprehension.

A third dimension of this work is that, from the perspective of practice, I am able to hypothesize about constraints and influences on reading comprehension instruction. Numerous research efforts have documented that instruction in U.S. classrooms is far from ideal, but few have attempted to explain why. Furthermore, no such research is available on the topic of reading comprehension instruction, specifically.

Finally, there is enormous interest in the topic of teacher knowledge as a lever for improving the quality of instruction in classrooms. Specific to reading comprehension instruction, efforts to define the terrain of knowledge for teaching reading comprehension have resulted in a number of instruments that purport to measure the specialized knowledge as well as text-based resources that purport to define the terrain for teachers interested in learning to teach reading comprehension. An analysis of three extant measures and four text-based resources provides insight into how the field of literacy has conceptualized the terrain of knowledge for teaching reading comprehension.

Study design

The study reported herein is an attempt to respond to three key questions:

Question one: *What is it that a small sample of teachers are doing when they say they are teaching reading comprehension?*

Question two: *What are potential constraints and influences on teachers' enactment of reading comprehension instruction?*

Question three: *How has the field of reading conceptualized the knowledge base for teaching reading comprehension?*

Theoretical and empirical foundation

The building blocks for this dissertation have been carefully established by reading researchers over the past three decades. Research on comprehension began by investigating the learner – specifically, the skills and knowledge that proficient readers demonstrate (e.g., Adams & Collins, 1979; Baker and Brown, 1984; Collins, Brown, & Larkin, 1980; Rumelhart, 1980) and sources of reading comprehension difficulty for students who struggle to read well (Gersten, Fuchs, Williams, & Baker, 2001; Pearson & Dole, 1987; Williams, 1993). An understanding of the learner vis-à-vis text comprehension led to research on how to teach the learner to comprehend text. Various programs of research sought to a) identify the kinds of learning opportunities that advance the development of proficient reading comprehension knowledge and skill (e.g., Beck, McKeown, Hamilton, & Kucan, 1997; Gambrell & Bales, 1986; Gambrell & Jawitz, 1993; Laberge & Samuels, 1974; Levin & Pressley, 1981; Palincsar & Brown, 1984), and b) characterize the classrooms of exemplary teachers (e.g., Allington, 2002; Block, et al. 2002; Bogner, et al., 2002; Morrow, et al., 1999; Pressley, et al., 1998; Pressley, et al., 2001; Wharton-McDonald et al., 1998). This research has been indispensable to our understanding of the complexity of the reading process and the

characteristics of classrooms in which most students are achieving at high levels. However, these research programs have largely been individual programs of research whose chief focus has not been on understanding the complexity of reading comprehension instruction from the perspective of the teacher. In 2002 the Rand Reading Study Group characterized the research base in reading comprehension as "sizeable but sketchy, unfocused, and inadequate as a basis for reform in reading comprehension instruction" (p. 2).

Recently, research efforts have focused on improving the field's understanding with regard to the specialized knowledge that teachers use in the course of teaching reading comprehension (Ball, Phelps, Rowan, & Schilling, 2003; Hapgood, Kucan, Palincsar, under review; Kucan, Palincsar, Khasnabis, & Chang, in press; Phelps & Schilling, 2004; Phelps, 2005; Schilling & Hapgood, 2006). That literacy scholars have recently turned their attention to the topic of teacher knowledge should come as no surprise. The educational research community writ large has increasingly focused its attention on the quality of teaching in U.S. elementary and high school classrooms, due in large part to a growing awareness of the direct impact teachers have on student achievement (Rowan, Correnti, & Miller, 2002; Sanders & Rivers, 1996). Research on teacher quality has taken on many forms and methodologies – investigations into who becomes a teacher, what they know, how they develop their professional identity, and what paths they take from the university to the K-12 classroom. Many of these efforts are, at their core, attempts to study teacher knowledge – on the assumption that what a teacher knows matters for teaching (e.g., Hill, Rowan, & Ball, 2005).

Increased attention to the study of knowledge is often attributed to the conceptual

turn offered by the introduction of pedagogical content knowledge (PCK). A landmark moment in the study of knowledge for teaching occurred in the mid-eighties when Shulman and his colleagues (1986) coined the phrase *pedagogical content knowledge* and called upon researchers to focus on the ways that teachers need to know their subject matter that is different from the ways in which well-educated adults know subject matter. Specifically, PCK refers to the knowledge that teachers have about their subject matter that allows them to transform common content knowledge into representations, explanations, and learning opportunities that make the content accessible to learners. At the time this theory was presented, it ran counter to the popular notion that teachers simply needed to take more courses in a subject area in order to teach more effectively.

Efforts to understand the specialized knowledge required to teach reading comprehension have been primarily focused on (a) establishing that there is knowledge for teaching reading that is different than reading skill alone (Phelps, 2005), and (b) designing survey items aimed at measuring teacher knowledge as a way to begin to understand the specialized knowledge for teaching reading comprehension is and how it can be measured productively. These efforts have yielded three distinct measures: Content Knowledge for Teaching Reading (CKT-R, Phelps & Schilling, 2004), Comprehension and Learning from Text Survey (CoLTS, Hapgood, Kucan, & Palincsar, under review), and Video Viewing Task (VVT, Kucan, Palincsar, Khasnabis, & Chang, in press). Each of these measures serves as a hypothesis of the specialized knowledge for teaching reading comprehension.

Theoretical framework

The two levers for improving reading comprehension instruction that are explored

in this dissertation - teaching practice and teacher knowledge - provide unique theoretical frames that shape the inquiry reported herein.

Perspective on teaching practice

Numerous theoretical and empirical research efforts in the area of reading make it possible to construct a vision of what "ideal" reading comprehension instruction might look like. However, given that most of these efforts have not been chiefly oriented towards teaching practice, the implications of these models for instruction are unclear. I begin this dissertation by aiming to understand what research suggests is "ideal" reading comprehension instruction because it (a) provides an important touchstone to compare and contrast with the reality of classroom practice and (b) shapes the ways in which I, as a researcher, interpret and analyze the data included in this study.

Defining reading comprehension

The construct at the center of this dissertation study is reading comprehension. The RAND Reading Study Group (2002) defined reading comprehension as "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (p. 11). The idea that reading is an interactive process was not introduced by the RAND group – in fact, scholars have been operating with this idea for decades (Jenkins, 1979; Moje, 1997; Rosenblatt, 1969; Rumelhart, 1977). While it is tempting to simply adopt this definition to guide this work, it is not clear how this definition applies to reading comprehension *instruction*. In other words, what does it mean to *extract* and *construct* meaning in practice? And what do I mean by meaning after all?

Extracting and constructing meaning

The RAND definition focuses on reading comprehension as a *process*. Philosophers who concern themselves with metaphysics are very concerned about the distinction between a *process* and a *state*. It is easy to consider this distinction in sports: The Michigan football team can be in the *process* of winning the game; after the game is over, they are in the *state* of having won the game. In the area of reading comprehension instruction, the *process* of *constructing* and *extracting* meaning is what ideally goes on during instruction; at the end of this process, students and teachers are ideally in a *state* of understanding with regard to the text in question and students are have grown in the process with regard to their capacity and disposition to engage in the *process* of constructing and extracting meaning in subsequent interactions with other texts.

By studying reading comprehension *instruction,* I am mostly concerning myself with understanding the instructional *processes* that support individuals in *constructing* and *extracting* meaning. I am not suggesting, however, that the purpose of instruction is to extract and construct *any* meaning. Wittgenstein (1953/1997) and other analytic philosophers suggest that an individual cannot "construct" a meaning. Sentences and the terms with which they are constructed are emergent, tacitly agreed to, and socially negotiated. If the sentence reads “The cat is grey” the *constructed* and *extracted* meaning cannot be “The dog is grey” because “cat” refers to something that is distinctly not a dog and this distinction has been agreed upon by those who play in the “language game.” This is perhaps what the RAND group was referring to when deciding to use the term “extraction” in so far as the sentences on the page have some meaning apart from the readers “constructed” meaning.

This is not to disregard an individual’s “constructions” of meaning. Readers

almost always imbue their linguistic interactions with connections to their personal and social lives. Texts offer the reader the opportunity to relate social, emotional, and psychological experiences to their lives and in this sense they are "constructing" meaning in a way that is unique to their lived experiences. The reader is also "constructing meaning" given the information in the text – text that includes terms and sentences that have been socially constructed and mutually negotiated.

By situating reading comprehension as a process of *extracting* and *constructing* meaning, the RAND group reminds us that the process of making meaning is not a passive endeavor. Many texts do not include the totality of information that would be necessary in order to successfully "construct" meaning. That is, the reader must make referential and causal/logical inferences that are not explicitly made in the text. This is the "constructing" part of the process (van den Broek, 1994). The process of making meaning, then, suggests a dance between the information that is available in the text and the information the reader already knows in order to *construct* meaning.

What do I mean by meaning?

A necessary condition of meaning is the existence of terms or concepts. Thus, a reader interacting with a text is making meaning from terms or concepts that exist in a world beyond the text – this is the "extraction" part of the process of constructing meaning. But humans cannot simply extract meaning -- they have to do something with these extractions. This complicated fact is best explained by Wittgenstein in the text Philosophical Investigations (1953/1997). He writes:

> "But can't the meaning of a word that I understand fit the sense of a sentence that I understand? Or the meaning of one word fit the meaning of another? – Of course, if the meaning is the *use* we make of the word, it makes no sense to speak of such 'fitting.' But we *understand* the meaning of a word when we hear or say

> it; we grasp it in a flash , and what we grasp in this way is surely something different from the 'use' which is extended in time!
>
> ---
>
> Must I *know* whether I understand a word? Don't I also sometimes imagine myself to understand a word (as I may imagine I understand a kind of calculation) and then realize that I did not understand it? ("I thought I knew what 'relative' and 'absolute' motion meant, but I see that I don't know.") (p 138)

Here Wittgenstein grapples with the meaning of a word that is apprehended 'in a flash' and the use that a reader makes over time – what happens *after* this instant response. In later Philosophical Investigations Wittgenstein grapples with the idea that the "after" constructions are dependent on the meaning that is made 'in a flash' and therefore the processes of extracting and constructing meaning are dialectical, not linear.

Perspective on teacher knowledge

What I call "knowledge for teaching reading comprehension" throughout this dissertation is grounded in the idea that teaching requires specialized knowledge unique to the profession of teaching. That a teacher has to know subject matter differently in order to teach it is an idea that has been readily taken up in the fields of mathematics and science but has only recently received attention in the area of reading comprehension. Specifying the knowledge required to teach reading comprehension – what one needs to know that is different than simply knowing how to read – has been difficult because of the perceived lack of disciplinary grounding in this area and because few are concerned with teachers' ability to read, in contrast with, for example, their ability to solve mathematics problems or understand scientific phenomena.

Understanding the specialized knowledge required to teach reading comprehension that is different than reading skill alone is a potentially important avenue for understanding how teachers can feel better prepared to teach reading comprehension.

Currently our understanding of the knowledge base for reading comprehension instruction, in a way that could fruitfully inform classroom practice, is relatively lean. The teaching of reading comprehension cannot improve without significant attention to understanding this knowledge.

Contextualizing this work

Over the course of this dissertation the reader will become familiar with the work of seven fourth and fifth grade teachers who were nominated for inclusion in this study. The study began by asking university-based researchers, district-wide professional development coordinators, teacher educators, and literacy coaches to identify teachers who were skillful at teaching reading comprehension. The teachers who were ultimately selected for participation in the study were considered literacy leaders in their school and district. Virtually all were in some leadership role in the area of literacy; they mentored teacher education students and new teachers, worked on curriculum development committees, conducted school-level professional development, and served as model classrooms for other teachers to visit and learn from.

While the study – as a piece of research – examines their teaching of reading comprehension vis-à-vis the specific theoretical framework identified above, the reality of teachers lives is that there are numerous constraints on their work (Kennedy, 2005). Furthermore, their perspectives on reading comprehension may differ or stand at odds with the theoretical framework guiding this work. Understanding these potential influences or constraints is an important dimension towards understanding reading comprehension instruction from the perspective of teaching practice.

Importantly, this dissertation study was undertaken at a time in U.S. history when federal and state policy provided unprecedented prescriptions for teachers' work at the school and classroom level (e.g., U.S. Department of Education, 2002). However, despite the ever increasing level of federal and state involvement in what happens at the local level, the U.S. system of schooling is still extremely decentralized when compared with models of schooling worldwide. In France and Singapore for example, centralized educational agencies are powerful and influential. In these settings, coherence is built by systems of central power and what happens in classrooms is a direct reflection of the prescriptions of the state (Cohen & Spillane, 1992). The decentralized nature of the U.S. system of schooling is an important consideration as one encounters the variability in practice that will be revealed in this study.

Pathway to this dissertation project

As is the case with most dissertation projects, this work is rooted in my own experiences as a student and teacher. As an undergraduate elementary education and sociology major at what was reputed to be the best teacher education program in the state of New Jersey, I experienced teacher education that was not unlike the teacher education programs that are currently the subject of much criticism (e.g., Levine, 2006). Though the principal at my student-teaching site viewed me as a very capable teacher candidate and hired me to teach first grade, had I taken the job I would have entered the classroom with next to no knowledge about how to teach reading. This meant that very likely I would have taught in the way I was taught (Cohen, 1989). Given that I was a child that stayed up way past my bedtime reading, I had no personal understanding of the needs of the

struggling reader and was given no opportunity to develop this understanding through teacher education.

As a teacher education student I was introduced to knowledge about teaching that felt sufficiently disconnected from instructional practice that I learned it for the sake of doing well on assessments but had little understanding of the implications of that knowledge once I was in "the field." The one university course about reading instruction that I was required to take prepared me to diagram sentences, make accurate diacritical markings in words, and identify diphthongs and digraphs in commonly used words. Little attempt was made to help me understand, as a novice, why (or if) this knowledge was useful for teaching practice. In short, teacher education did not prepare me for the many challenges of *enacting* reading instruction. As a master's student in the language and literacy program at Harvard's Graduate School of Education, I had a similar experience. While I learned about the processes that underlie proficient reading skill, the range of reasons why children might have reading difficulties, how to assess children's reading abilities, and what resources could be used to teach children to read, I learned very little about what I was supposed to do in interaction with children and how I could support students to comprehend text.

My lack of knowledge became apparent when I began to teach and did not know how to support my students who were struggling to learn to read. I tried to transform what I knew about reading processes into knowledge of *how* to teach reading but what I learned at the university wasn't always usable – or "translatable" - to teaching practice. I was frustrated that, despite extensive training, I still did a sub-par job of teaching children

to comprehend text. Why didn't any of my university coursework target knowledge for teaching reading in ways that would be usable for my work as a teacher?

Overview of dissertation chapters

In subsequent chapters I utilize videotapes of teachers' practice, interviews with teachers about their work, instruments designed specifically to measure knowledge for teaching reading, and text-based resources that attempt to define the terrain of knowledge for teaching in order to answer the three key research questions. Each research question is taken up in a single chapter and each chapter includes a literature review and complete description of the research methodology.

In chapter two I address the question "What is it that a small sample of teachers are doing when they say they are teaching reading comprehension?" To characterize teachers' work I devise a detailed coding scheme that makes it possible to identify trends in teaching practice across the corpus of 42 teacher-nominated reading comprehension instruction lessons.

The question "What are potential constraints and influences on teachers' enactment of reading comprehension instruction?" is answered in chapter three. Through the use of illustrative moments and interviews with teachers about their work, I proffer a number of hypotheses regarding what enables and constrains "ideal" reading comprehension instruction.

Chapter four is an exploration of the terrain of knowledge for teaching reading as defined by three extant measures of knowledge for teaching reading and four text-based resources. A textual analysis of these artifacts provides insight regarding how the field has defined the terrain of reading comprehension and provides a foundation for a

hypothesis regarding a more comprehensive theory of knowledge for teaching reading comprehension.

I conclude the dissertation in chapter five with a review of the key findings, discussion of the limitations of this research and directions for future research, including implications of this work for teacher education, the design of instructional resources, and the creation of measures of teacher knowledge in the area of reading comprehension.

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Chapter II.
Mapping the instructional terrain of reading comprehension

Ralph Gentles is a mapmaker who lives in New York City. Each summer Mr. Gentles and members of his staff map every inch of New York City's sidewalks. Every crack, obstruction, protrusion, and depression is carefully recorded in a 5,000-page document that is eventually submitted to the city and used in lawsuits that are brought against the city for sidewalk related personal injuries. Importantly, the map contains information only about sidewalks, and nothing else. Any mapmaking task requires decisions about what to include, and what to not include. Ralph Gentles work highlights the idea that to make a map means to focus on that which you are mapping – while ignoring everything else (Purnick, 2002).

This study is a mapping task that focuses on reading comprehension instruction in 4th and 5th grade classrooms. I use the metaphor of mapping to document what it is teachers do in a small sample of lessons they've nominated as representative of their teaching of reading comprehension. Many research efforts in the area of reading comprehension instruction suggest that there is a dearth of reading comprehension instruction in U.S. classrooms (e.g., Durkin 1978/1979; Taylor, Pearson, Clark, & Walpole, 2000). But teachers are doing something that they label reading comprehension instruction. What are they doing? This study maps what it is teachers do when they say they are teaching reading comprehension. The "map" that is a result of this study offers

the literacy community the opportunity to take stock of comprehension instruction in a small sample of U.S. classrooms.

Rationale for this study

Much like Ralph Gentle's map of New York City sidewalks, the focus of my observation is narrow. However, the need to understand the current landscape of reading comprehension instruction is urgent given that, in the United States, significant numbers of students learn to decode text and identify main ideas but many never advance beyond basic levels of comprehension (Biancarosa, et al., 2006; Buly & Valencia, 2002; Leach, Scarborough, & Rescorla, 2003; Lesaux, Lipka, & Siegel, 2006).

Research questions

This study is guided one key question: What is it that a small sample of 4th and 5th grade teachers are doing in lessons they have nominated as representative lessons of their teaching of reading comprehension? By understanding what teachers do when they say they are teaching reading comprehension, I will be able to characterize the learning opportunities available in a small sample of 4th and 5th grade classrooms. This will (a) provide literacy scholars with a baseline understanding of current elementary reading instruction with regard to the topic of reading comprehension, and (b) be useful for considering the design of instructional interventions that could potentially improve reading comprehension instruction.

Baumann and colleagues (2000) noted that what has been missing from all the scholarly debates in the field of literacy is a baseline understanding of current elementary reading instruction. That is, discussion and debate are not grounded by data that describe contemporary practices. This is problematic because, as researchers in the area of

mathematics have demonstrated (e.g., Silver, Ghousseini, Gosen, Charalambous, & Strawhun, 2005), interventions that are able to bridge what teachers are doing in practice with what teachers should ideally be doing have been successful in realizing instructional change.

Theoretical framework

Map metaphors have been used by scholars across a number of disciplines for decades. However, these metaphors are not without criticism. In an international journal documenting the history of cartography, the field of literacy is taken to task for using the term semantic mapping without any discussion of what, exactly, is being mapped. Edney (1996) writes, "The sub-discipline as a whole is underpinned by an unexamined assertion, and authors rely on the communal understanding of what maps are." (p. 187).

Thus, the map-mapping task undertaken in this paper must be interpreted in terms of the theories that directed the mapmaking. The design of the coding scheme around which this study is organized is divided into three sections: text, reader, and activity. Focusing on these three categories capitalizes on the idea that reading comprehension is an interactive process and that reading comprehension instruction is an interaction between students and teachers as they negotiate text**.** The idea that reading is an interactive process is a theoretical lens that has guided literacy scholars for decades (Jenkins, 1979; Moje, 1997; Rosenblatt, 1969; Rumelhart, 1977) and an idea that is core to this study.

What would "ideal" reading comprehension instruction look like?

In many ways this study is unusual because it leads with practice. However, it would be short-sighted to claim that I began the study without a conception of what

reading comprehension instruction should look like. The idea that reading comprehension is an interactive process that involves the text, the reader, and the activity implicitly suggests that reading comprehension instruction should support this interactive process. In 2002 the RAND Reading Study Group defined reading comprehension as "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (p. 11). Reading comprehension instruction, then, ideally supports students in the *process* of *constructing* and *extracting* meaning. But what meanings should instruction target?

Numerous philosophers make a distinction between literal meaning or semantic content and other kinds of meaning such as figurative meaning and implicature (e.g., Augustine's Confessions, Aristotle's Poetics). This suggests that, while the sentences on the page have a specific semantic content, they also convey a lot more based on the context in which they are embedded, who authored them, and what remains unsaid. Given this distinction, reading comprehension instruction should, ideally, attend to both aspects of meaning; that is, reading comprehension instruction ideally supports individuals in the process of extracting and constructing both literal and non-literal meaning through interaction with written language.

Observation research in literacy

Literacy-related research in classrooms during the 1960s was characterized by attempts to understand what individuals are doing when reading and to find the "one best way" to teach children to read. The first-grade studies were the cornerstone of these efforts (Bond & Dykstra, 1967). In the first grade studies students were assigned to treatment categories based on the reading programs in their classrooms (basal, initial

teaching alphabet, basal plus phonics, language experience, and linguistic), but no attention was paid to what, exactly, was going on during instruction in the similarly grouped classrooms. Had researchers observed instruction in all of the basal classrooms, they would have likely found that similarly labeled classrooms were qualitatively distinct (c.f., Cohen, Raudenbush, & Ball, 2003; Nuthall & Alton- Lee, 1990). The fact that the first-grade studies found that there is no one best way to teach all children how to read was a serendipitous finding for the literacy research community because researchers turned their attention to what was actually going on inside classrooms.

The research that followed the first-grade studies can be characterized by a move inside classrooms with more attention to fidelity of treatment and the adaptations and judgments that teachers made in situ. While these studies have taken many forms – from ethnographic and interpretive studies, to large-scale systematic observation studies – they are unified by their focus on documenting and interpreting various aspects of instruction and interaction in U.S. classrooms (e.g., Alvermann and colleagues, 1996; Bloome, 1989; Cazden, 2001; Moje, 1997). Since the first-grade studies numerous observation and coding schemes have emerged as tools for systematically documenting instruction using a standardized instrument (e.g., Brophy & Good, 1986; Taylor & Peterson, 2006; Waxman, 1995). To date, however, observation with the use of a systematic coding scheme has not been used to document reading comprehension instruction at the fine-grained level of detail employed in this study. The findings from this study, as well as the coding instrument that is a result of these efforts, represent attempts to provide a map and mapping tool that will be useful to the literacy community in efforts to both understand and improve reading comprehension instruction.

Existing observation instruments

In general, instruments designed for observation studies in the area of literacy provide a broad understanding of literacy instruction in U.S. classrooms, where reading comprehension is one aspect of the suite of literacy constructs that researchers are concerned with observing and documenting. Furthermore, numerous observation instruments focus on early elementary (K-3) classrooms (Connor, Morrison, & Petrella, 2004; Durkin, 1987; Foorman, Schatschneider, Eakin, Fletcher, Moats, & Francis, 2006, Taylor & Peterson, 2006) or attempt to investigate reading across the K-8 spectrum (e.g., Instructional Content Emphasis Instrument, Edmonds & Briggs, 2003). Several other instruments focus on related aspects of literacy instruction, such as the literacy text environment (Hoffman, Sailors, Duffy, & Beretvas, 2004). Of the small number of instruments that are available for use in upper elementary 4th and 5th grade classrooms, none focuses exclusively on reading comprehension instruction.

For example, the High Quality Teaching (HQT) measure (Valli, Croninger, Alexander, Chambliss, Graeber, & Price, 2004) is designed for investigating math and literacy instruction in 4th and 5th grade classrooms and includes comprehension as one item in a list of literacy-related instructional foci (comprehension, decoding, spelling, vocabulary, conventions, fluency). Comprehension episodes are further categorized as reading: focused on genre, theme/main idea, story elements, personal response, and literacy response; strategy (explicit); fluency; and processing text. For my purposes, these categories did not provide enough detail about what was going on instructionally as students and teachers interacted with text and thus I decided not to use to the HQT measure.

The Classroom AIMS Instrument (Roehrig, Pressley, Dolezal, Mohan, Bohn, under revision) focuses broadly on literacy instruction; the name is devised from the instrument foci: atmosphere, instruction/content, management, and student engagement. The instrument is designed for documenting literacy instruction in kindergarten through fourth grade and includes a checklist of classrooms practices that can be surveyed through observation, or, if necessary, interview. The four categories included in the name and the focus of the instrument were devised after the authors combed the research literature and identified a list of 185 teaching practices that characterized engaging, effective classrooms. After an iterative review process, the categories were reduced to 170. While this measure captures important dimensions of reading instruction, it does not focus specifically on comprehension. Furthermore, it was developed from the perspective of the existing literature and not from the perspective of contemporary practice – an important dimension of the map that I set out to create.

Thus, after a review of available instruments I determined that no available instruments seemed sufficiently appropriate or adaptable for this study and so I began developing an instrument that focused on reading comprehension instruction in significant detail.

Learning from previous video studies

Observation studies have been bolstered by the increasing presence of audio and video tools to document instructional practice. Prior to widespread use of these tools, researchers often made assertions about teaching with scant observational evidence (Nuthall & Alton-Lee, 1990).

Notably, several ambitious research efforts have been undertaken in the fields of mathematics that have utilized videos of classroom practice in order to understand instruction. I used these efforts to guide the design of this study.

The *Trends in International Mathematics and Science* (TIMSS) Mathematics Video Study (Stigler & Hiebert, 1999) is a seven-country study that investigated mathematics teaching through videotapes of classroom practice that were systematically collected in each country using standardized procedures. The corpus of videotaped lessons allowed researchers to compare teaching practices across countries using a systematic coding scheme and excerpts of videotaped lessons have been used to stimulate discussion of teaching practice among educators, policy makers, and the general public.

More recently the *Learning Mathematics for Teaching Project* developed the *Mathematics Quality of Instruction* (MQI) rubric, an instrument designed to capture a detailed portrait of the work of teaching mathematics with regard to mathematical content, curriculum materials, and students (Learning Mathematics for Teaching, 2006). The instrument consists of 83 codes organized into five sections. Both the TIMSS study and QMI rubric provided useful guidance with regard to data collection and coding decisions, which are detailed below.

Methods

In this section I provide information about how this observation study unfolded, including a detailed account of the sample of teachers, the data collection, and the video coding procedures.

Recruitment of teachers

Teacher recruitment efforts began by targeting fourth- and fifth-grade teachers

who were considered skillful teachers of reading comprehension. I began by contacting university-based literacy professors, researchers, teacher educators, building principals, district-level professional development coordinators, teacher leaders, and literacy coaches working at the district level. Individuals either contacted potential participants with a recruitment email sent on my behalf or I initiated recruitment directly via email. I sent an email message directly to 36 teachers; I do not have data on how many teachers were contacted via recruitment emails sent on my behalf. I did not know or have contact with any of the teachers prior to this study.

In total, ten teachers agreed to meet with me to find out more about participating in this study. I arranged an in-person meeting with each teacher at their school and, whenever possible, watched him or her teaching reading comprehension. This was possible in all but two cases. Ultimately, eight teachers signed on to participate in the study. Given the need to pilot the study design and research protocols, one of the eight participated in a pilot study and thus data from seven teachers are reported herein.

I elected to study fourth- and fifth-grade teachers for this investigation because students at these grade levels typically have proficient decoding skills but less-developed comprehension skills. Most fourth and fifth grade teachers are elementary school generalists (i.e., they teach all school subjects), rather than content area specialists (e.g., science teacher).

Description of Study Participants

Six of the seven participants lived within a ninety minute driving distance from Ann Arbor, Michigan and no more than two teachers from any one district were included in the study. The teacher not within driving distance worked in a public school in a major

east coast city, which was the closest urban school to which I was able to gain access for a videotape study in a relatively short amount of time.

The teachers in this study worked in a range of school district types – urban (1), urban-fringe (4), rural (1), and suburban (1). Six of seven had a master's degree and all but one teacher received his or her initial teacher certification through a traditional four-year university-based teacher education certification program. Classroom teaching experience at any grade level ranged from 6-18 years with an average of 10.14 years. Classroom teaching experience at the 4th or 5th grade levels ranged from 1-9 years, with an average of 5.3 years. Six of the seven participants were female and all but one of the participants' self-reported race was white; the non-white participant self-identified as bi-racial. These demographics are summarized in Table 2.1.

Table 2.1: Teacher demographics

Name[1]	Race	Grade	School setting	Total years teaching experience		Initial cert.	Highest degree
				Any grade	4th/5th		
Ms. Woods	Bi-racial	4th	Urban-fringe	9	1	University	Master's
Ms. Cannon	White	5th	Urban-fringe	18	7	University	Master's
Ms. Spencer	White	4th	Suburban	12	5	University	Master's
Mr. Oliver	White	4th/5th	Urban	7	4	Alternative	Master's
Ms. Avery	White	4th	Urban-fringe	9	9	University	Bachelor's
Ms. Gaines	White	4th	Urban-fringe	10	7	University	Master's
Ms. Palacios	White	5th	Rural	6	4	University	Master's

[1] All participants are identified using pseudonyms.

Procedures

The seven teachers in the study participated in a range of observation, interview, and measurement tasks aimed at documenting and understanding their teaching of reading comprehension. Data collection began in January 2007 and proceeded until the end of the school year. In conversations with participants I explained that the purpose of my study was to understand reading comprehension instruction more fully, including the specialized knowledge required to teach reading comprehension as well as influences on their teaching practice. Participants in the study agreed to nominate six lessons that they considered representative of their teaching of reading comprehension and that they were willing to have videotaped. Teachers were videotaped six times, in three two-day chunks. The only exception to this was a teacher who worked in the east coast city, whose teaching was videotaped in two three-day chunks because of the cost of travel.

After each videotaped lesson teachers were interviewed about the lesson in an attempt to understand the instructional decisions and specialized knowledge in play during the lesson enactment. Finally, after all of the lessons were videotaped, teachers completed a number of measures designed to assess knowledge for teaching reading comprehension. Only the corpus of videotaped lessons is utilized in this study

Lesson corpus

The videotape corpus consists of 42 teacher-nominated reading comprehension lessons. In establishing the videotaping schedule, teachers were asked to identify lessons in which the primary focus would be reading comprehension and which they considered representative of their teaching of reading comprehension. These lessons could occur in any subject area except mathematics, and the only requirement was that they involved the

teacher and students together negotiating a written text.[2] The unit of the lesson provided a rich site of inquiry and a meaningful unit of study for documenting and theorizing about the teaching of reading comprehension. Lessons in the corpus ranged from 20 to 80 minutes, with an average of 51.3 minutes of instruction.

Design of coding instrument

When I began designing the coding instrument, my main goal was to be able to characterize what it is teachers are doing when they say they are teaching reading comprehension in a more fine-grained way than is currently possible using existing coding instruments.

I designed a draft of the coding instrument by viewing the entire corpus of 42 videotaped lessons. Although I already had in mind broad categories such as capturing the type of text used, and specific focus of instruction (e.g. strategy instruction, vocabulary instruction), the details of the coding scheme were developed using grounded theory (Strauss & Corbin, 1990). To design the instrument, I coded each video in five-minute segments, taking the lead from other video studies such as the TIMMS (Hiebert & Stigler, 2000) and the LMT Project (2006). As video episodes (5-minute segments) revealed events that did not fit into the existing coding scheme, a new category was added. The initial coding scheme included 66 codes in 10 categories.

The decision to parse instruction into five-minute segments was guided by the TIMSS and QMI studies. The coding instruments utilized in both studies divided each videotaped lesson into five-minute instructional segments. Parsing complex instructional

[2] While I am sympathetic with many arguments made regarding the ever-increasing role of the written word in developing mathematical literacy, it did not seem wise to conflate numerical and textual proficiency and initial conversations with teachers made it clear that mathematics lessons were not viewed as reading comprehension lessons.

practice into 5-minute segments provided researchers with an opportunity to characterize trends across lessons. More practically, the designers of the QMI instrument found that it was difficult to hold more than five minutes of instruction in their working memory at any given point and thus reliability suffered.

In an effort to move beyond the individual five-minute segments, the QMI study organized analyses by aggregating codes to the lesson level, then to the teacher level. The analyses for this study are organized similarly. Thus the analyses reported herein describe a teacher-level, rather than lesson-level or segment-level portrait of each teacher's practice across the six videotaped lessons.

After the initial coding scheme was drafted, I sent it to twenty external reviewers including leading literacy scholars and classroom teachers.[3] Their feedback resulted in a considerably revised coding scheme. Most notably, organizing the coding scheme with a focus on text, reader, and activity, was not included in the initial draft. Suggestions by reviewers that the coding scheme was theoretically weak, paired with the critique of other scholars who claimed that systematic observation often lacks a theoretical/conceptual framework and merely focuses on discrete categories (Ornstein, 1991), made it important that the coding scheme reflect the theoretical bias with which the observation scheme was constructed. In addition to shifting the broad organizational structure, instructional focus emerged as a single category and what the teacher is doing versus what the student was doing -- originally conflated into one category -- was separated into two. Furthermore, several additional categories – for example, text-to-text

[3] Thank you to Dr. Rita Bean, Dr. Joanne Carlisle. Karen Corvino (middle school teacher). Dr. Nancy DeFrance, Dr. Amanda Godley, Dr. Susanna Hapgood, Dr. Debi Khasnabis, Dr. Linda Kucan, Dr. Moddy McKeown, Dr. Elizabeth Moje, Dr. Annemarie Sullivan Palincsar, Dr. Cathy Reischl, Judi Reynolds (4th grade teacher) & Kristine Schutz for their generous and constructive feedback.

connections - were included because several popular teacher resources suggest text-to-text connections are an important aspect of reading comprehension (e.g., Harvey & Goudvais, 2007; Miller, 2002). Finally the initial coding scheme made an explicit attempt to delineate between instruction and assessment. Research over the past several decades has shown that teachers routinely assess whether or not students have comprehended a given text, but seldom address the processes of reading comprehension by means of engaging in explicit comprehension instruction (Durkin 1978/1979; Taylor, Pearson, Clark, & Walpole, 2000). I initially wanted the coding scheme to capture this distinction. However, given the iterative and dialectic nature of instruction and assessment, the video records simply did not make it possible to accurately capture this distinction; feedback from literacy scholars supported this change. The final coding scheme, included in Appendix A and detailed in a coding glossary in Appendix B, includes 85 codes in eight categories.

Once the feedback was incorporated into the coding scheme I coded the entire video corpus again, using the new coding scheme. Additionally, slightly less than 25 per cent of the videos (10 lessons total) were selected at random and recoded by another trained researcher. The first three videos were coded independently but coders discussed each coding immediately after it was viewed for the purposes of fine-tuning the coding scheme. The remaining seven videos were each coded independently and discussed after all coding was completed. Inter rater reliability resulted in a kappa coefficient of .84. Importantly, the type of text category (Section A) was not included in the calculations because this information was often obtained through other sources; also, the large number of categories in this section – eighteen – artificially inflated the reliability.

It is important to note that this instrument has not been validated with live-classroom teaching. Although it is possible that the codes could be used to capture live teaching, it is currently designed and validated for use with video records. Using the current coding scheme was only possible with the affordances of the video record, including the ability to stop, rewind, and pause when necessary.

Reminder to the reader

As is the case with any classroom research endeavor, the mere presence of a researcher may change the classroom context. The teachers in this study were asked to participate in a study of reading comprehension and were told many times that I was studying them, not the students. Therefore it is quite possible that the lessons I viewed – though remarkably stable in form across the six lessons I videotaped for each teacher – were designed with me in mind. For example, over the course of my investigation, I observed almost 36 hours of instruction in which very little instructional time was spent reading texts. Teachers might have decided that this was in fact not "teaching" and that I did not come to videotape children simply reading silently to themselves.

Furthermore, I have no information about the achievement of the students in the classrooms I studied. And so, the descriptions of teaching reported herein can only be evaluated vis-à-vis a theory of comprehension instruction and not in terms of student outcomes or growth in reading comprehension skill over the course of the school year. It is important to keep these two considerations in mind while reading the data reported herein.

Findings and Discussion

Recall that the primary goal of this investigation was to understand what it was that a sample of 4th and 5th grade teachers did in a set of lessons they nominated as representative of their reading comprehension instruction. Using the video coding observation instrument, I coded 35 hours and 55 minutes of instruction from a corpus of 42 teacher-nominated reading comprehension instruction lessons. If these findings represent an initial representation of the terrain of reading comprehension instruction, the terrain is vast and variable. At their core, these findings highlight variability regarding what counts as reading comprehension instruction and begin to tell a story about the myriad instructional decisions involved in teaching reading comprehension.

Recall also that I utilize the definition of reading comprehension put forth by the RAND Reading Study Group (2002). To recap, the RAND group defined reading comprehension as the process of extracting and constructing meaning through interaction with written language. Ideally, then, instruction supports individuals in the process of extracting and constructing meaning through interaction with text. I will use this definition as a touchstone for the analyses reported below.

Overall trends in lesson corpus

Across the lesson corpus there are several salient trends with regard to what counts as reading comprehension instruction in the set of nominated lessons. Reading comprehension instruction happens largely in whole group instruction, is controlled by the teacher, and involves some combination of listening and speaking with very little explicit teaching and modeling. All teachers in the study focus on discussion of the reading process at some point during their nominated lessons, while only three teachers

ever focus on discussing concepts or ideas in the text. Those teachers that do focus on text concepts do so for, on average, no more than 4 percent of lessons. A summary of these trends is presented in Table 2.2.

Table 2.2: Salient trends in Comprehension Instruction in Seven Classrooms *(% of 5-minute instructional segments in which item is marked, on average over 6 lessons)*

	Ms. Woods	Ms. Cannon	Ms. Spencer	Mr. Oliver	Ms. Avery	Ms. Gaines	Ms. Palacios
How instruction is organized	Small group (100%)	Whole group (90%)	Whole group (70%)	Whole group (34.77%) Individual (23.61%)	Whole group (98.48%)	Whole group 39.70% Small group (50.67%)	Whole group (74.66%)
Students are reading text	0	8.18	18.32	40.17	8.14	52.67	14.56
Students are listening/speaking	30.12	45.76	63.85	18.41	70.98	62.46	49.81
Teachers are explicitly teaching/modeling	0	11.06	11.13	25.15	0	8.70	0
Teachers are facilitating discussion	4.17	0	10.72	9.29	0	5.91	8.33
Teacher is in control of instruction	100	100	90.77	35.59	100	97.69	62.15
Instruction focused on discussion of the reading process	29.77	3.02	18.26	3.33	2.18	37.18	19.45
Instruction is focused on discussion of concepts or ideas in the text	2.38	0	2.38	0	0	3.33	0

A closer look: A story of variability

The trends reported above could be considered a political map – defining the boundaries of reading comprehension instruction in the set of nominated lessons. The boundaries seem relatively well-defined. However, the more fine-grained analysis presented below provides the literacy community with a topographical map – a map that suggests much more variability than stability in the terrain of reading comprehension instruction.

The story of variability begins simply: the length of the reading comprehension lessons ranged from 20 to 80 minutes. The average lesson length for the entire corpus was 51.31 minutes. This variability is documented in Table 2.3.

Table 2.3: Variability in length of average length of reading comprehension lessons

Teacher	Avg. minutes of instruction N=6 lessons per teacher
Ms. Woods	28.83 min (SD: 5.49)
Ms. Cannon	51.83 min (SD: 2.97)
Ms. Spencer	44.17 min (SD: 7.36)
Mr. Oliver	58 min (SD: 11.49)
Ms. Avery	47.5 min (SD: 10.36)
Ms. Gaines	70 min (SD: 8.37)
Ms. Palacios	61.67 min (SD: 9.31)

The length of each lesson was defined by the teacher; teachers were given no guidance regarding how long I hoped to stay in their classrooms. Kennedy (2005) notes the ways in which time acts as one constraint on teaching. The materials that guide teachers' work are also likely to serve as a constraint. For example, if a lesson involved reading one short story, and the story was relatively straightforward, the process of extracting and constructing meaning perhaps required a relatively short amount of instructional time. Other lesson lengths were likely dictated by the realities of the school schedule. If the nominated lesson was sandwiched between library and lunch, as was the case in one classroom, the lesson was likely to last forty-five minutes regardless of the content.

While the topic of time has received considerable research attention in the instructional research literature (e.g., Brophy & Evertson, 1976; Durkin, 1978/79), recent research efforts suggest that amount of time spent in instruction is less explanatory than understanding what is happening during that time (Perry, Turner, & Meyer, 2006). It is

this topic to which I now turn.

How is instruction organized?

In understanding how reading comprehension instruction is organized I have focused broadly on the distribution among whole group, small group, partner, and individual work. While there is good evidence that what goes on *inside* instructional is what matters (Cohen, Raudenbush, & Ball, 2003), understanding the broad organizational patterns provides insight into how learning opportunities are shaped and provides a forum for hypothesizing about the ways in which reading comprehension instruction potentially is or is not meeting diverse learning needs.

In Table 2.4 the varying patterns of instructional organization are summarized. Given the data decision rule that all patterns of organization were coded for, the table below includes some classrooms where the averages sum to more than 100%. Ms. Gaines's classroom, for example, utilized a workshop model of instruction in which some students were meeting with the teacher for small group instruction while others were reading independently; because of this organizational pattern, the sum of the percentages in Ms. Gaines's classroom is above 100%.

Table 2.4: How is instruction organized? *(% of 5-minute instructional segments in which item is marked, on average, over 6 lessons)*

	Whole group	Small group	Partner	Individual
Ms. Woods	0	100%	0	0
Ms. Cannon	90.76%	4.55%	4.98%	8.28%
Ms. Spencer	70.01%	0	15.83%	20.17%
Mr. Oliver	34.77	8.98	8.43	23.61
Ms. Avery	98.48%	0	0	1.52%
Ms. Gaines	39.70%	50.64%	1.04%	60.79%
Ms. Palacios	74.66%	12.73%	4.52%	13.81%

Implied in the RAND definition of reading comprehension is the idea that students need to be able to access the texts from which they are constructing and

extracting meaning. Given the heterogeneity of student reading abilities likely present in fourth and fifth grade classrooms (Leach, Scarborough, & Rescorla, 2003), some distribution among all four organizational structures is likely necessary in order to meet the instructional needs of all students in the class. Despite the likely heterogeneity of student needs, whole group instruction represents a majority of instruction in four of seven teachers classrooms; this raises questions about how or if the needs of struggling readers are being met.

Additionally, research on teaching in early elementary classrooms suggests that expert teachers include small group instruction for at least some part of their literacy instruction (Wharton-McDonald, Pressley, & Hampston, 1998). Small group instruction is absent or scarce in three of the seven classrooms in this study. While it is possible that small group instruction characterized other parts of instruction throughout the school day, it is notable that for several teachers in this study, reading comprehension instruction was done only through instruction with the entire group. Again, given the heterogeneity of reading skill that is likely present in fourth and fifth grade classrooms, it seems that the organization of reading comprehension instruction solely as a whole class endeavor makes the work of supporting students to construct and extract meaning especially challenging.

The role of reading in reading comprehension lessons

Across the entire corpus the teacher and students engaged in variable amounts of reading during lessons that teachers nominated as representative of their teaching of reading comprehension. In Table 2.5 I summarize the percentage of time that students

were engaged in reading and interacting with text. The category of round-robin reading refers to instruction in which one student read aloud while others follow along silently.

Table 2.5: Characterizing reading instruction *(% of 5-minute instructional segments in which item is marked, on average, over 6 lessons)*

Teacher	% of lessons instructional time spent with no reading	% of lessons spent independent reading	% of lessons spent round robin reading	% of lessons spent teacher reading aloud
Ms. Woods	60.53%	0	39.63%	2.93%
Ms. Cannon	86.74%	3.11%	3.2%	7.26%
Ms. Spencer	64.81%	12.34%	0%	16.60%
Mr. Oliver	37.93%	42.67%	6.29%	2.67%
Ms. Avery	89.48%	1.59%	5.12%	2.15%
Ms. Gaines	56.71%	35.27	0	8.02%
Ms. Palacios	76.25%	15.72%	1.39%	4.42%

The variability in independent reading, ranging from as low as 1.59% to as high as 42.67% of instructional time, paired with the percentage of instructional time that involves no reading at all, replicates findings from previous instructional studies. In his oft-cited 1977 article *"If they don't read much, how they ever gonna get good?,"* Allington noted that struggling readers did not read much during whole class or small group instruction. He strongly urged teachers to consider the idea that reading instruction – for all readers, but especially for struggling readers – should provide students with more opportunity to read connected text. The findings of the current study suggest that students' opportunities to read connected text independently are rare. While it is possible that independent reading time took place at some other point during the school day, it still seems noteworthy that, in lessons nominated as representative reading comprehension instruction lessons, students had few opportunities to read connected text. If reading comprehension is ideally focused on extracting and constructing meaning in negotiation

with written text, these finding raise questions regarding what students are extracting and constructing meaning from, if anything.

Interestingly, round robin reading, a form of oral reading where one student reads a passage aloud while others follow along silently, plays a prominent role in only one classroom (Ms. Woods's). For many years round robin reading was a widely used mode of instruction (Hoffman, 1987) that has fallen out of favor because of the ways in which it can be a source of anxiety and embarrassment for students who are asked to read aloud and provides the reader with an unrealistic view of the reading process (Opitz & Rasinski, 1998). In the set of nominated lessons included in this study, teachers have broken from this "old sawhorse" mode of reading comprehension instruction.

What are students doing?

Given that the set of nominated lessons does not include students doing very much reading during reading comprehension instruction, it is important to know what they are doing instead. In Table 2.6 I summarize what students are doing during each five-minute segment. Note that the code "combined reading or listening to text and speaking" came about because so many instructional segments involved students reading for less than one minute and then talking about the text. Thus, without this code, a significant number of lessons would appear to involve no reading.

Table 2.6: What are students doing? *(% of 5-minute instructional segments in which item is marked, on average over 6 lessons)*

	Reading	Writing	Listening	Sharing work	Combined reading or listening to text and speaking	Listening/ Speaking	Other
Ms. Woods	0	0	0	0	77.42%	30.12%	0
Ms. Cannon	8.18%	16.06%	28.33%	1.52%	17.42%	45.76%	1.52%
Ms. Spencer	18.32%	33.2%	25.62%	0	6.25%	63.85%	0
Mr. Oliver	40.17%	2.56	2.67	6.73	38.65	18.41	0
Ms. Avery	8.14%	36.51%	1.52%	0	16.89%	70.98%	2.08%
Ms. Gaines	52.67%	11.48%	28.21%	0	2.15%	62.46%	1.11%
Ms. Palacios	14.56	6.67	13.85	10.35	24.03	49.81	5.56

The predominance of lesson segments that involved reading or listening to text and then talking about text or simply talking/listening suggests a strong "script" that reading comprehension instruction involves talk. This does not contradict the RAND definition of reading comprehension and suggests that talk is an important aspect of what should go on during reading comprehension instruction – in other words, talk is part of the process of extracting and constructing meaning. Discussion approaches to comprehension instruction, in which students and teachers talk about the text *during* the process of reading, have been endorsed as an effective method for promoting student understanding (National Reading Panel, 2000, Palincsar & Brown, 1986; Wolf, Crosson, & Resnick, 2005). Data from this study suggest, however, that teachers are not yet clear regarding how to appropriately intertwine approaches to reading comprehension

instruction that favor discussion during the reading process with participation structures that involve opportunities to negotiate text independently.

What is the teacher doing?

While the RAND definition of reading comprehension suggests that instruction should support the process of constructing and extracting meaning, the definition provides little guidance regarding what - specifically - the teacher should be doing in support of this goal. In fact, the RAND Reading Study Group (2002) noted that when a sixth-grade teacher turns to research in order to understand what she or he should do with their students who don't understand their history texts, there is no consensus answer available. The partial knowledge base, with little attention to the realities and complexities of classroom practice, does not provide clear instructional frameworks to guide teachers' actions (RAND, 2002).

Across the lesson corpus, teachers engaged in a range of teaching practices including reading aloud, modeling, facilitating discussion, and circulating throughout the room to talk with students individually or in small groups. These various roles and how they were distributed across the set of nominated lessons are summarized in Table 2.7.

Table 2.7: What is the teacher doing? *(% of 5-minute instructional segments in which item is marked, on average over 6 lessons)*

	Explicit teaching/ Modeling	Facilitating discussion	Circulating and/or conferring with students	Reading	Making students' work public	Posing questions	Talking/ lecturing	Other
Ms. Woods	0	4.17	0	2.38	0	91.67	2.78	8.33
Ms. Cannon	11.06	0	23.79	6.36	7.88	38.03	41.52	9.55
Ms. Spencer	11.13	10.72	35.67	11.91	16.35	7.38	22.97	3.70
Mr. Oliver	25.15	9.29	65.26	6.15	10.29	0	10.69	1.28
Ms. Avery	0	0	7.07	0	22.41	71.39	27.49	30.42
Ms. Gaines	8.70	5.91	24.19	4.24	6.68	31.23	42.71	7.22
Ms. Palacios	0	8.33	28.63	9.05	11.54	27.82	35.18	10.44

Across the corpus of nominated lessons, there is variability with regard to the role of the teacher. However, the combination of teachers engaged in talking/lecturing, modeling, circulating, conferring, and making students' work public supports the idea that the teacher plays an active role during reading comprehension instruction – at least in this lesson corpus.

Talking and lecturing were present in at least a quarter of instruction for five of the seven teachers. Talking and lecturing segments are instructional segments in which the teacher is talking/lecturing with very little interaction with students – a "telling" mode of instruction. The purpose of the talk is not to model something to the students but rather is designed to provide information; "telling" segments that involved modeling were coded as modeling.

While talking and lecturing dominate the instructional landscape of the lessons in this study, facilitating discussion is relatively absent. Facilitating discussion involves the teacher working to orchestrate students' contributions and includes teacher moves such as

"uptake" or "revoicing." Given that talking/lecturing stands in contrast to facilitating discussion – talking and lecturing is primarily teacher driven, while students' ideas and contributions play a more prominent role in discussion – it seems important to understand what teacher roles – or combination or teacher roles – are supportive of students' constructing and extracting meaning.

The scarcity of explicit modeling by the teacher replicates other research studies (Durkin 1978/1979; Taylor, Pearson, Clark, & Walpole, 2000). However, it is possible that much of the explicit modeling occurred while teachers were circulating and conferring with students one-on-one, rather than in whole group instruction. Circulating and/or conferring with students took place for at least a quarter of the instructional time in five of the seven teachers' classrooms. The practice of conferring, made popular by workshop models of teaching such as reader's workshop (Fountas & Pinnell, 2001), as well as representations of teaching in other subject areas (Lampert, 2001), is captured with only the broadest strokes on this coding scheme. This means that the specific content of the conferences, which are often tailored to students' specific instructional needs, was not captured given the methodological challenges of capturing the content of instruction that often happens in whispers.

Who is in control of instruction?

Considering who is in control of instruction is a different way of considering the role of the teacher during reading comprehension instruction. In a study of literacy instruction in first-grade classrooms, Connor, Morrison, & Katch (2004) coded instruction as either teacher managed or student managed. The results of the study demonstrated that children who began first grade with weaker decoding skills

demonstrated greater growth in classrooms with more teacher-managed explicit instruction, while students with stronger decoding skills did not achieve as much growth in the same classroom. Table 2.8 suggests that a majority of instruction in the set of nominated lessons is teacher initiated and sustained – or "teacher managed."

Table 2.8: Who is in control of instruction? *(% of 5-minute instructional segments in which item is marked, on average over 6 lessons)*

	Teacher initiated/ Sustained	Student initiated/ Sustained	Teacher and student initiated/sustained	Independent work
Ms. Woods	100%	0	0	0
Ms. Cannon	100%	0	0	1.67%
Ms. Spencer	90.77%	0	11.6%	0
Mr. Oliver	35.59	13.74	16.83	44.02
Ms. Avery	100%	0	0	0
Ms. Gaines	97.69%	7.5%	2.58%	0
Ms. Palacios	62.15%	0	25.23%	13.81%

The issue of who should control instruction is rooted in differing theoretical perspectives on education and learning. *Teacher controlled/sustained* instruction is generally aligned with "direct instruction" while *student and teacher initiated/sustained* and *student initiated/sustained* are generally aligned with contemporary perspectives on constructivism.

A key tenet of direct instruction is the active and direct role assumed by the teacher who maintains control of the pace, sequence, and content of the lesson. Baumann (1988) notes:

> "The teacher, in a face-to-face-reasonably formal manner, tells, shows, models, demonstrates, teaches the skill to be learned. The key word here is teacher, for it is the teacher who is in command of the learning situation and leads the lesson, as opposed to having instruction "directed" by a worksheet, kit, learning center, or workbook." (p. 714)

While research regarding direct instruction suggests that it is an effective means of teaching factual content, there is less evidence that this instruction transfers to higher-order cognitive skills, such as reasoning and problem solving. Moreover, research suggests that direct instruction teaching often does not provide students with the necessary skills to use what is learned in novel contexts (Peterson & Walberg, 1979). In terms of reading comprehension instruction, this potentially means that while students may learn a tremendous amount about a particular text during a lesson that is largely teacher-controlled, there is little evidence that students are then able to take what is learned from that particular lesson and apply it to new texts in novel contexts.

While direct instruction and constructivist approaches to teaching are often presented as contrasting and even incompatible approaches to teaching, for three of the seven teachers, specifically Mr. Oliver, Ms. Gaines, and Ms. Palacios, instruction included lessons where instruction was controlled and sustained by both the teacher only and the teacher and students simultaneously, suggesting that, in fact, who is in control of instruction is a dynamic issue both within and across lessons in a single classroom.

What is the dominant discourse pattern?

Classroom discourse, or the role of talk in classrooms, has been an important area of inquiry for educational researchers. Examinations of classroom discourse have played an important role in identifying the ways in which literacy practices reproduce or challenge structures of power or domination (Delpit, 1988; Gee, 1996; Ogbu, 1999; Street, 1993). While a careful micro-analysis of the classroom discourse is beyond the scope of this study, Table 2.9 documents several interesting trends.

Table 2.9: What is the dominant discourse pattern? *(% of 5-minute instructional segments in which item is marked, on average over 6 lessons)*

	Interactive discussion	I-R-E (predominantly lower order questions)	I-R-E (predominantly higher order questions)	Serial sharing	Not applicable	Teacher talking to students (very limited interaction)	Students talking to each other
Ms. Woods	4.17%	90.28%	0	5.56%	0	5.56%	0
Ms. Cannon	1.57%	23.64%	5%	28.94%	26.82%	37.88%	9.39%
Ms. Spencer	11.61%	20.45%	2.38%	14.19%	15.48%	36.3%	17.35%
Mr. Oliver	26.02%	0%	0%	2.78%	42.74%	14.76%	29.15
Ms. Avery	0%	59.46%	0%	29.6%	35.97%	12.58%	0%
Ms. Gaines	3.33%	19.37%	3.33%	10.85%	47.65%	47.06%	15.49%
Ms. Palacios	9.72	16.72	8.33	13.73	25.08	18.33	25.11

Discourse patterns among classrooms vary widely. The I-R-E pattern of discourse, defined as instructional segments in which the teacher *initiates* talk by posing question, a student *responds* to the question, and the teacher then *evaluates* the student's response, was present in some form for every teacher except Mr. Oliver. This is not to say that IRE was entirely absent from Mr. Oliver's teaching, just that it never persisted for over 20% of any five-minute lesson segment (one minute of instruction).

Research on classroom discourse has demonstrated that the IRE pattern is a prevalent form of classroom talk (Cazden, 2001), and this study suggests that the IRE pattern remains prevalent for some teachers. In Ms. Woods' classroom, for example, over 90 percent of instructional segments included discourse coded as following the IRE format. Some have suggested that the IRE pattern is a much less than ideal form of instruction because it implies that teachers are assessing whether or not students have comprehended without ever teaching children how to skillfully comprehend text (Durkin 1978/1979; Taylor, Pearson, Clark, & Walpole, 2000). However, others have suggested

that this format isn't inherently bad. In fact, given that teaching and learning must be interactive, and that teachers' must constantly use forms of assessment to gauge student learning, the focus should not be on whether or not IRE is or is not ideal but on understanding the ways in which the traditional IRE format can be manipulated to create a more dialogic classroom (Vaish, 2008).

While IRE played a prominent role in teachers' instruction, interactive discussion, defined as discussion that did not solely follow the IRE discourse pattern but instead included some uptake of ideas from one contribution to the next, was largely absent with the exception of Mr. Oliver's teaching. Despite the predominance of talk reported earlier, the discourse patterns in this section suggest that while there is lots of talk that goes on *during* instruction, this talk rarely takes the form of interactive discussion. The absence of interactive discussion in the corpus of nominated lessons complements findings from other research efforts focused on the implementation of discussion in classrooms. Previous research findings suggest that interactive text-based discussions are a challenging instructional approach for classroom teachers to implement (Sandora, Beck, & McKeown, 1999). If interactive discussion is to be part of reading comprehension instruction, we must support teachers in implementing this difficult practice.

Serial share, a public display of work in which students share their ideas, questions, writing, etc., but in which there is no discussion or interaction about what has been shared, was present at some level for every teacher in this study. In a serial share a teacher might ask students to brainstorm questions about a text and then call on several students to share their questions. The teacher might acknowledge or record the students' questions but there is no discussion of the students' ideas. The omnipresence of serial

sharing raises questions about the role of making public individual student contributions with no discussion. For example, how does serial sharing contribute to individuals' ability to construct and extract meaning during instruction that takes place largely as a whole group? How does the teacher know if students are constructing and extracting meaning during a serial share?

What is the instructional focus?

The range of instructional foci in the area of reading comprehension makes the task of mapping reading comprehension instruction somewhat difficult. The variability of foci present in this relatively small corpus of lessons suggests a vast terrain of reading comprehension instruction. A table summarizing instructional foci for the entire lesson corpus is included in Appendix C; salient trends are discussed below.

Overall, the variability in instructional foci has three prominent trends: reading comprehension instruction involves discussion of the processes required of skilled readers, with a specific focus on strategy instruction, and scant attention is paid to the text (e.g., text structure, cohesion) or the development of higher order inferential thinking skills.

The role of strategy instruction in nominated lessons

Across the corpus of teacher-nominated lessons there is variable attention to general discussion of the reading process and comprehension strategy instruction. These results are summarized in Table 2.10 below.

Table 2.10: Instructional foci: Strategy instruction, metacognition, and self-regulation *(% of 5-minute instructional segments in which item is marked, on average over 6 lessons)*

	Ms. Cannon	Ms. Spencer	Ms. Avery	Ms. Woods	Ms. Gaines	Mr. Oliver	Ms. Palacios
General discussion of the reading process	29.77	3.02	18.26	3.33	2.18	37.18	19.45
Inferencing	13.33	0	0	0	18.16	0	0
Note-taking strategies	0	47.2	0	0	0	16.67	0
Visualizing	0	29.63	0	0	0	0	5.56
Summarizing	0	0	20.42	2.38	0	0	0
Self-questioning/Question posing	32.27	4.76	33.65	0	30.21	0	0
Making predictions about text	0	0	11.89	0	0	0	2.78
Identifying and repairing comprehension breakdown	0	0	4.17	0	28.17	0	0
Making text to text connections	0	0	0	0	0	0	0
Making text to world connections	0	0	0	0	0	0	0
Making text to self connections	3.03	0	0	0	0	0	0

Given the attention that the topic of strategy instruction has received in both the research literature (e.g., National Reading Panel Report, 2000) and popular teacher professional development texts (e.g., *Strategies that Work*, Harvey & Goudvais, 2007) and teacher education textbooks, it is not surprising that strategy instruction plays some role in every teachers' classroom.

The data presented in Table 2.10 highlight that across the lesson corpus some strategies were emphasized more than others and many strategies were not attended to at all. It is interesting to note that many teachers focused on no more than two strategies across their entire set of nominated lessons; while the analyses are aggregated for the entire set of lessons for a particular teacher, the fact that teachers typically focused on only two strategies suggests that students are not being taught a repertoire of strategies and perhaps are being taught strategies in isolation. Numerous scholars have raised

questions regarding the ways in which strategy instruction is typically implemented, noting that strategies are often presented in isolation or are treated without any complexity (Afferbach, Pearson, & Paris, 2008; Palincsar, 2003).

Questioning is the most prominent strategy. Instruction focused on questioning, for example, is an instructional focus for at least 30 percent of instruction for Ms. Cannon, Ms. Avery, and Ms. Gaines. Strategies that require higher order thinking, such as inferencing and summarizing, were, comparatively, absent. The omnipresence of questioning and relative absence of strategies requiring higher order thinking raises questions about what would need to happen in classrooms in order to make attention to these more complex strategies a more prominent part of the terrain of reading comprehension instruction.

General discussion of the reading processes or "what good readers do" was present in every teacher's classroom, albeit in variable roles - ranging from 2.18 % in Ms. Gaines's classroom to 37.18% in Mr. Oliver's classroom. An overwhelming emphasis on general discussion of the reading processes contradicts converging evidence that elementary literacy instruction must emphasize both skill and meaning (Guthrie, Wigfield, & colleagues, 2004; Hirsch, 2006; Palincsar, 2007). Neuman (2001) notes that achieving this balance is not always easy. "Although early literacy skills are improving, higher level processes are not. It could be argued that early childhood programs have emphasized process to the exclusion of content, placing the utmost importance on how children learn rather than on what they learn, instead of striking a better balance" (p. 470). It is disappointing that this imbalance seems to persist even in upper elementary

grades at a point in literacy development when students typically have stronger decoding skills.

What about the content of the text?

Across the corpus of nominated lessons, teachers spent relatively little time developing conceptual understanding of the ideas in the text. In four of seven classrooms no attention was paid to the content of texts in nominated lessons; in the remaining three classrooms, developing an understanding of ideas in the text represented less than five percent of instructional time. Given that the rules for coding allowed for numerous instructional foci to be marked simultaneously, the simultaneous presence of strategy instruction and absence of time spent developing knowledge of content suggests a sharp cleave between learning content knowledge and becoming felicitous in the use of strategies that support skilled reading.

This cleave is not supported by the research literature. For example, there is good evidence that learning content while reading serves as a powerful motivational tool. Research on Content Oriented Reading Instruction (CORI), an approach to comprehension instruction that is focused on motivating students to read independently while simultaneously learning cognitive strategies and learning science content, has demonstrated the powerful role that learning content plays in becoming a strategic reader. Not only is the content motivating for young readers, but readers in CORI classrooms also demonstrate that they are more strategic readers when compared to readers in control classrooms (Guthrie, Wigfield & colleagues, 2004).

It is unclear how the view that strategy instruction should focus only on the processes of skilled reading came about. The notion of providing instruction in strategies

arose from research in educational and developmental psychology that recognized that learning involves the ever-increasing use of strategies such as rehearsal, elaboration, summarization, and clustering (Bransford, Brown, & Cocking, 2000). A close look at early research in the area of comprehension strategy instruction recognizes that the active use of strategies was not meant to be the end goal of reading comprehension instruction. For example, Palincsar and Brown (1984) wrote:

> "It is generally agreed that given reasonable facility with decoding, reading comprehension is the product of three main factors: (1) considerate texts, (2) the compatibility of the reader's knowledge and text content, and (3) the active strategies the reader employs to enhance understanding and retention, and to circumvent comprehension failures" (p. 188).

Palincsar and Brown's explanation suggests that the compatibility of the reader's knowledge and text content is an important dimension of reading comprehension instruction. While it is possible that the texts used in nominated lessons involved content that was familiar to students and therefore did not warrant instructional attention, the trend towards learning strategies to the exclusion of learning content during reading comprehension instruction is an area that is worthy of further investigation.

Understanding how texts work

In addition to noting the important role that reader's knowledge plays in comprehending text, Palincsar & Brown (1984) also note that "considerate texts" play an important role in facilitating comprehension. A text that is well-organized and coherent is called a "considerate text" while one that is poorly organized and difficult to follow is considered an "inconsiderate" text. The more inconsiderate the text, the more demanding the text is for the reader to comprehend. Unfortunately, many texts that students encounter in schools are inconsiderate (Beck, McKeown, Hamilton, & Kucan, 1997).

This suggests that instruction should attend to text construction and issues of cohesion in order to facilitate students' learning to mediate inconsiderate texts. Unfortunately, in the corpus of nominated lessons, relatively little attention was paid to text and text parts. These results are summarized in Table 2.11 below.

Table 2.11: Instructional Foci: Text and text parts *(% of 5-minute instructional segments in which item is marked, on average over 6 lessons)*

	Ms. Cannon	Ms. Spencer	Ms. Avery	Ms. Woods	Ms. Gaines	Mr. Oliver	Ms. Palacios
General text features (use of bold, captions, italics, headers)	0	0	9.24	0	0	11.91	0
Genre specific text features	5	0	0	0	0	33.33	36.03
Relationship between sentences: cohesion	0	0	0	0	0	1.28	0
Synthesis of text ideas	0	0	0	0	0	0	1.11

Two of the seven teachers spent, on average, approximately ten percent of instructional segments in each lesson focused on general text features such as bold, captions, italics, and headers. Mr. Oliver spent one-third of instruction discussing genre specific text features while Ms. Cannon spent 5% of lessons discussing genre specific text features. Besides these outliers, attention to the text is virtually absent. Six of seven teachers never discussed issues related to the cohesion of text while Mr. Oliver spent only 1.28% of instructional time focused on cohesion.

Attention to text is also absent in instruction that could be characterized as strategy instruction. Text-to-text connections for example, are noticeably absent as an instructional focus in the lesson corpus despite scholars' insistence that I include this category in the coding scheme. The absence of text-to-text connections seems notable given evidence that U.S. sophomores had difficulty making connections across texts on standardized measures (Lee, Grigg, & Donahue, 2007). If we expect students to be able

to make text-to-text connections on standardized measures, it makes good sense that this also be a focus of reading comprehension instruction.

What types of texts are being used in lessons?

In a society characterized by an explosion of print and multimedia resources, paired with calls for elementary classrooms to diversify the types of texts that are available to students (Duke, 2000), it is important to note the types of texts that are being utilized in reading comprehension instruction lessons. Table 2.12 details the types of texts used across the corpus of nominated lessons. All of the texts used were print materials; no lessons involved students reading or interacting with online texts in any form.

Table 2.12: What genre of text is being utilized?

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Ms. Woods	Realistic fiction	Realistic Fiction	Realistic fiction	Realistic fiction	Realistic Fiction	Realistic Fiction
Ms. Cannon	Historic fiction	Historic fiction	Non-fiction news article	Non-fiction news article	Poetry	Poetry
Ms. Spencer	Science oriented trade book	Science oriented trade book	Science oriented news article	Science oriented news article	Science oriented news article	Science oriented news article
Mr. Oliver	Historic Fiction/ Varied	Realistic fiction	Realistic Fiction	Mystery	Mystery	Mystery
Ms. Avery	Social studies textbook	Social studies textbook	Social studies textbook	Social studies textbook	Social studies textbook	Social studies textbook
Ms. Gaines	Varied	Varied	Varied	Varied	Varied	Varied
Ms. Palacios	Varied fiction and non-fiction	Varied + Social Studies/ Science trade book	Poetry	Poetry	Poetry	Poetry

Eighteen of the 42 lessons, or 42.86 percent of lessons, involved non-fiction text in some way. It has long been thought that the lack of attention to meaning making in early elementary classrooms is confounded by the omnipresence of narrative texts and simultaneous lack of attention to non-fiction genres such as informational texts. Palincsar and Duke (2004) remind us that students' reading "diet" in early elementary classrooms has been historically dominated by narrative texts. These data suggest that calls for balancing the reading "diet" in elementary classrooms have, to some extent, been taken up. However, the presence of non-fiction texts paired with the relative inattention to text features gives reason to pause. The increased focus on non-fiction texts is not likely to bring about improved reading outcomes if *how* the texts are used remains unchanged (Cohen, Raudenbush, & Ball, 2003).

Limitations of current study

This study is not without significant limitations. As stated earlier, the lesson corpus includes lessons that were nominated for observation and recording by a university researcher, which leaves questions regarding how instruction would have differed if the researcher was not present. Additionally, without any data on student learning, it is impossible to comment on the variation between teachers vis-à-vis student achievement.

In addition to these two caveats, it is important to note the areas of reading comprehension that this map does not attend to. While the map of the terrain I have constructed attends primarily to instructional focus and the organization of instruction, there are certainly many other areas that would be fruitful for future investigations. For example, there is no attention to the ways in which teachers promote equity in their

diverse classrooms and there is no documentation regarding the ways in which lesson goals are connected to broader curriculum themes. These foci are, for the moment, beyond the scope of this current study but are crucial dimensions of improving text comprehension instruction in the United States.

Conclusion: What does the map look like?

While the data reported in this study suggest some trends regarding what teachers do in the service of teaching reading comprehension, overall the topographical map of reading comprehension instruction is most accurately described as variable. Given that with the exception of one teacher, all teachers were working in the same state and country, I expected to see much less variability. The TIMMS mathematics video study (Hiebert et al, 2003; Hiebert & Stigler, 2000) found strong evidence for cultural scripts guiding the design of mathematics lessons within countries. These scripts illuminated patterns of teaching that were present across a majority of lessons within a single country. In other words, lesson scripts made it possible to paint a stable portrait of mathematics instruction within a country (intra-country stability) while highlighting variation across countries (inter-country variation). Data from this study, by contrast, do not present clear cultural scripts for the teaching of reading comprehension, except around the topic of posing questions, which all teachers seem to do with some regularity.

Perhaps variability in teacher roles should come as no surprise given the relatively weak guidance teachers are given with regard to their work in a system of U.S. schooling that is characterized by decentralization and teacher autonomy (Cohen & Spillane, 1992). The RAND definition of reading comprehension is not an instructional framework, and the guidance provided by state level standards, commercially published curriculum

materials, and district curriculum guides that potentially shape teachers' work are still very general with regard to what teachers should do in class during instruction – giving teachers quite a bit of latitude in the design and implementation of reading comprehension instruction. These potential influences on teachers' work are discussed more fully in chapter 3.

In his 1976 article "Educational Organizations as Loosely Coupled Systems" Karl Weick describes a scenario in which a soccer game is happening, but the rules of the game are rather unconventional – the field is round, people can enter and exit the game as they please, and people can make claim to any goal that is made. And yet, the entire game is played as if there is a clear set of rules (p. 1). Rather than casting the scenario as absurd, Weick urges the reader to consider the following: how can it be that even though the activities in the situation is only modestly connected to "soccer," the situation is still recognizable and nameable?

Reading comprehension instruction in the United States might as well be Weick's soccer game – loosely held together under the umbrella term "reading comprehension instruction," while what counts as reading comprehension instruction varies considerably across classrooms. Given the soccer game like-ness of reading comprehension instruction, it is reasonable to ask, what contributes to this variability.

In addition to the decentralized and autonomous system of schooling mentioned earlier, there are few instructional frameworks that provide teachers with specific ideas about how to realize instruction that focuses on *extracting* and *constructing* meaning. At the early elementary level instructional activities such as guided reading and storybook read aloud provide teachers with more robust lesson "scripts" than are currently available

for teachers at the upper elementary levels. For example, the literacy community has endorsed "discussion" as a productive format for reading comprehension instruction – a mode of instruction that many teachers are already likely using but perhaps in ways that do not support reading comprehension. The literacy community needs to support teachers, then, in understanding how something they already do can be transformed into instruction that is more well-aligned with a robust vision of reading comprehension instruction.

Furthermore, the lack of an instructional framework or strong lesson "scripts" means that there is little shared language available to describe practice; Grossman and McDonald (2008) suggest that the lack of common language in the profession of teaching holds us back. The problem in reading comprehension is even more complicated in that broad labels are common, but shared meaning is not. While as a field there is little controversy regarding whether or not you should teach children higher order reasoning skills such as inferencing, a shared definition of inferencing is lacking. In this study one teacher defined inferencing for her students as taking information from pictures and relating it to the text while a different teacher defined inferencing as fusing what you know with what is provided in the text in order to build a coherent understanding of text ideas.

Every period of intellectual inquiry undergoes periods of reflection and reform. In the field of reading comprehension, Dolores Durkin's study (1978/1979) and subsequent follow-up studies, paired with important work on strategy instruction, have put reading comprehension front and center to a number of reform efforts in schools. As a field it is time to pause, to take stock, and to think seriously about how we can use what we know

to make it useable by and accessible to teachers. Complex as it is, the ability to teach students to comprehend text is a practice that can be learned. But what knowledge and skill do we target? Mapping the terrain of instruction is an important step towards understanding the ways in which we could systematically improve the preparation of teachers in order to improve reading outcomes in upper elementary classrooms.

Appendix A: Knowledge for Teaching Reading Comprehension Project Observation Instrument for video study

Text
Section A: What text is being read or discussed?
A1: Non-fiction: child-oriented news article, human interest (e.g., National Geographic, Time for Kids ®, Weekly Reader) A2: Non-fiction: social studies textbook A3: Non-fiction: science-oriented trade book A4: Non-fiction: social studies oriented trade book A5: Non-fiction: science oriented news article A6: Non-fiction: biography/autobiography/memoir A7: Non-fiction: science textbook A8: Fiction: Realistic fiction A9: Fiction: Short story (fiction) A10: Fiction: Mystery A11: Fiction: Historic fiction A12: Fantasy A13: Science fiction A14: Poetry A15: Play A16: Students reading multiple text types (e.g., workshop) A17: No text present A18: Other
Reader
Section B: Who is doing the reading?
B1: Teacher is reading text aloud, students are listening B2: Teacher is reading text aloud, students are following along silently B3: Student is reading text aloud, peers are following along silently B4: Students are reading text silently to themselves B5: Students are reading text chorally B6: Students are reading with a partner B7: Not applicable
Activity
Section C: How is instruction organized?
C1: Whole group C2: Small group C3: Partner C4: Individual work

Section D: What is the instructional focus?
D1. Activating and/or building prior knowledge
D2. Developing conceptual understanding of text ideas
D3. Words and word meanings
D4. Word learning strategies (not morphological analysis)
D5. Morphological analysis
D6. Language used in text/author's craft (figurative language, pronouns):
D7. Working with a dictionary or glossary
D8. General text features (use of bold, italics, captions, headers)
D9. Identifying genre specific text features
D10. Relationship between sentences (cohesion, how ideas in the text fit together)
D11: Synthesizing text ideas
D12: General discussion of reading processes
D13. Inferencing
D14. Note-taking strategies
D15. Visualizing
D16. Summarizing
D17. Self-questioning/Question posing
D18. Making predictions about text
D19. Identifying and repairing comprehension breakdown
D20. Making text connections: Text-to-text connections
D21. Making text connections: Text-to-world connections
D22. Making text connections: Text-to-self connections
D23. Identifying the gist or main idea
D24. Storymapping and use of graphic organizers
D25. Questions about text: Analysis and interpretation of text
D26. Questions about text: Literal or simple recall of text:
D27. Literature appreciation/Personal response to literature
D28. Other
Section E: Who is in control of instruction?
E1. Teacher-generated
E2. Student-generated
E3. Teacher and student generated
E4. Independent work
Section F: What is dominant discourse pattern?
F1. Interactive discussion
F2. I-R-E (predominantly lower-order questions):
F3. I-R-E (predominantly higher order questions)
F4. Serial sharing
F5.Teacher talking to students (very limited interaction, e.g.: lecture)
F6. Students talking to each other
F7. Not applicable
Section G: What are the students doing?
G1. Reading
G2. Writing

G3. Listening G4. Working with a partner/small group G5. Sharing work G6. Combined reading or listening to text and speaking G7. Listening/speaking: G8: Other
Section H: What is the teacher doing?
H1. Explicit teaching/modeling H2. Facilitating discussion H3. Circulating and/or conferring with student(s): H4. Reading H5. Making students' work public H6. Posing questions H7. Responding to student-generated questions H8. Talking/lecturing H9. Other

Appendix B: Directions for using the instrument and coding glossary, Knowledge for Teaching Reading Comprehension Project Observation Instrument for video study

Directions for using the observation instrument:

Code in 5-minute segments. Begin coding when the lesson begins. The beginning of lesson is marked by the first "public talk" of the teacher that requires all students' attention, e.g. the teacher saying," OK, now we will begin …,

For each 5-minute segment, code all formats and instructional foci are present in the classroom; if a shift in format occurs during the five-minute segment, **code for all formats that are present for 20% of the segment (at least one minute).** In many instances it might appear as if there are contradictory codes. For example, Section B (Who is doing the reading) might be coded as "not applicable," Section G might indicate that the students are reading or listening to text and speaking. Because G6 is a combination of speaking, listening, and reading, the code captures the combination of activities and that these must happen for at least a minute. Thus it is possible that students are doing a minimal amount of reading in instances that are coded as no reading according to section B.

Each 5-minute segment is discrete: timing of whether or not the activity occurred for at-least one minute means that it must happen for *one full minute within the 5-minute segment*. An activity that begins 30 seconds before the end of segment 1 and ends 30 seconds into the second segment would not be coded.

Note, this instrument is not yet designed to capture live teaching and has been used only with videotaped records of instruction.

Text
Section A: What text is being read or discussed?
A1: Non-fiction: child-oriented news article, human interest (e.g., National Geographic, Time for Kids ®, Weekly Reader) **A2: Non-fiction:** social studies textbook **A3:Non-fiction:** science-oriented trade book **A4: Non-fiction:** social studies oriented trade book **A5: Non-fiction:** science oriented news article **A6: Non-fiction:** biography/autobiography/memoir **A7: Non-fiction:** science textbook **A8: Fiction: Realistic fiction:** *A fictive story that deals with an event that could really happen or a fictive depiction of an event that really did happen.* **A9: Fiction: Short story (fiction)** **A10: Fiction: Mystery** **A11: Fiction: Historic fiction:** *Any text that portrays alternate accounts of historical events or uses historical figures in fictive situations.* **A12: Fantasy** **A13: Science fiction**

A14: Poetry
A15: Play
A16: Students reading multiple text types (e.g., workshop)
A17: No text present
A18: Other: *Mark this if the text being used in the lesson does not fit in any other the other categories.*

Reader

Section B: Who is doing the reading?

B1: Teacher is reading text aloud, students are listening: In this format students do not have a copy of the text.

B2: Teacher is reading text aloud, students are following along silently: In this format students have a copy of the text even if they do not have an individual copy of the text (e.g., the text is being projected using an overhead or LCD projector).

B3: Student is reading text aloud, peers are following along silently: In this format students have access to a copy of the text even if they do not have an individual copy of the text (e.g., the text is being projected using an overhead or LCD projector).

B4: Students are reading text silently to themselves: ***In*** *this format students have access to a copy of the text and are expected to read it to themselves. In some cases individual students might still be reading aloud to themselves; this should still be considered reading text silently if a majority of students are reading the text silently.*

B5: Students are reading text chorally: *In this format students are expected to be reading a text selection in unison.*

B6: Students are reading with a partner: *In this format pairs of students are both reading.*

B7: Not applicable: *Mark this code if no one is reading.*

Activity

Section C: How is instruction organized?

C1: Whole group: *Refers to instructional segments in which the teacher is working with all or a large majority of the class. If some students were absent or are pulled out for speech or individualized instruction, can still mark whole group. If the students briefly talk to a partner but it is in the context of the whole group, mark whole group.*

C2: Small group: *Refers to instructional segments in which the teacher is working with a small group of students. In rare cases, small group instruction is being done with all of the students are available, but the group is significantly smaller than the full class.*

C3: Partner: *Refers to instructional segments in which students are working in pairs; the*

teacher might be circulating or observing while students are working.

C4: Individual work: *Refers to instructional segments in which students are working by themselves. Conversation among nearby classmates may occur during individual work; the teacher may be circulating and interacting with students while they are working independently.*

Section D: What is the instructional focus?

D1. Activating and/or building prior knowledge: *Instructional segments focused on providing students opportunities to activate, enrich, or build prior knowledge through discussion, experiences, or direct teaching. Importantly, these activities occur prior to reading text.*

D2. Developing conceptual understanding of text ideas: *Instructional segments focused on building children's knowledge about the topic(s) included in the text*

LANGUAGE AND VOCABULARY

D3. Words and word meanings: *Instructional segments in which teacher and students are trying to understand a word and it's meaning through discussion or through direct instruction.* ***Does not include use of dictionary or glossary*** *or using context clues to determine the meaning of an unknown word.*

D4. Word learning strategies (not morphological analysis): *Refers to instructional segments in which the focus of instruction is on figuring out the meaning of a word based on other words in the text.*

D5. Morphological analysis: *Refers to instructional segments in which the focus of instruction is the parts of any given word, such as morphemes, prefixes, or suffixes.*

D6. Language used in text/author's craft (figurative language, pronouns): *Refers to instruction segments in which the teacher and/or students are modeling, discussing, reading about or lecturing about specific language in the text.*

D7. Working with a dictionary or glossary: *Refers to instructional segments in which the teacher and/or students are working with a dictionary or glossary in any form.*

TEXT AND TEXT PARTS

D8. General text features (use of bold, italics, captions, headers): *Refers to instructional segments in which teacher and/or students are focused on general text features such as bold print, italics, headers, and captions.*

D9. Identifying genre specific text features: *Refers to instructional segments in which the teacher and/or students are focused on genre specific features, such as the use of red herrings in mystery texts or the role of dialogue in personal narratives.*

D10. Relationship between sentences (cohesion, how ideas in the text fit together): *Refers to instructional segments in which instruction is focused on cohesion (or lack of cohesion) in the text.*

D11: Synthesizing text ideas: *Instruction focused on forming new thoughts and perspectives based in multiple ideas in the text.*

STRATEGY INSTRUCTION, METACOGNITION, AND SELF-REGULATION

D12: General discussion of reading processes: *These segments include general discussion of reading processes such as schema or how readers revise their thinking.*

D13. Inferencing: *Instruction focused on forming hypotheses about the text using information that is not directly state in the text.*

D14. Note-taking strategies: *Instruction focused on students recording information from the text.*

D15. Visualizing: *Refers to instructional segments in which students are asked to make mental visualizations or drawings of what is happening in the text or in which the teacher is modeling the use of visualization to comprehend text.*

D16. Summarizing: *Refers to instructional segments in which students are asked to summarize a text or text segment or in which the teacher is modeling summarizing of texts.*

D17. Self-questioning/Question posing: *Refers to instructional segments in which students are encouraged to ask questions of themselves while reading or in which the teacher is modeling active self-questioning techniques. Question posing refers to instructional segments in which the students are posing questions about the text/making their self-questions public.*

D18. Making predictions about text (i.e., pictures, title): *In order for this code to be marked, students are not focusing on the substance of the text but are instead focused on the title or pictures. Predictions that are made based on words in the text, not pictures or text features.*

D19. Identifying and repairing comprehension breakdown: *Points of instruction when teacher and students are identifying and remedying points of confusion and misunderstanding in the text.*

D20. Making text connections: Text-to-text connections: *The teacher and/or students are discussing the relationship between two texts with which the children are familiar.*

D21. Making text connections: Text-to-world connections: *The teacher and/or students are discussion the relationship between the text and something in the world. For example, the teacher might say, "In the text Martin's Big Words, Martin uses words to solve problems instead of fighting about them. Martin reminds me of Nelson Mandela."*

D22. Making text connections: Text-to-self connections: *The teacher and/or students are discussing the relationship between a text and the students' personal lives. For example, if the book mentions a piñata, the teacher will ask students if they have ever hit a piñata.*

D23. Identifying the gist or main idea: *Refers to instructional segments in which students are writing, discussing or reading for the explicit reason of identifying the main idea or gist of the story.*

D24. Storymapping and use of graphic organizers: *The use of graphic organizers in order to document students' comprehension of text; may focus on story grammar elements such as character, setting, etc., or other formats that focus on mapping main ideas and details in the story.*

D25. Questions about text: Analysis and interpretation of text: *Refers to instructional segments in which the focus of instruction is analyzing and interpreting text.*

D26. Questions about text: Literal or simple recall of text: *Refers to instructional segments in which the focus of instruction is literal or simply recall of text.*

D27. Literature appreciation/Personal response to literature (what did you like, how did you feel?): *Instructional activities in which the overriding purpose is to enjoy what is being read or to respond personally*

D28. Other: *Decoding, focus on pictures, Management segment, non-literacy related teaching segment, unable to determine*

Section E: Who is in control of instruction?

E1. Teacher-generated: *The teacher is responsible for defining the task, the text, and the patterns of interaction.*

E2. Student-generated: *The students are responsible for defining the task, the text, and the patterns of interaction.*

E3. Teacher and student generated: *The task, text, and instructional interactions are mutually negotiated and are controlled by both the teacher and the student.*

E4. Independent work: *Students are working independently.*

Section F: What is dominant discourse pattern?

F1. Interactive discussion: *For discussion to be interactive, it cannot solely follow the I-R-E discourse pattern. Uptake, or the weaving of ideas from one contribution to the next, must also be present.*

F2. I-R-E (predominantly lower-order questions): *Teacher initiated questions in which the teacher asks a question, the student responds, and the teacher provides an evaluation. Lower-order questions consist of simple recall.*

F3. I-R-E (predominantly higher order questions): *Teacher initiated questions in which the teacher asks a question, the student responds, and the teacher provides an evaluation. Higher order questions included any questions that went beyond simple recall of text ideas or sharing personal connections about the text.*

F4. Serial sharing: *Instructional segments in which students are sharing their ideas, questions, writing, etc., but there is no discussion or interaction about whatever the student is sharing. For example, the teacher might ask students to brainstorm questions about a text. The teacher then calls on several students to share their questions. The teacher might acknowledge or record the students' questions but there is no discussion of the students ideas.*

F5. Teacher talking to students (very limited interaction, e.g.: lecture): *Instructional segments where the teacher is predominantly talking and the students are predominantly listening, as in a traditional lecture.*

F6. Students talking to each other: *Instructional segments in which peers are talking with each other, as in "turn and talk to a partner".*

F7. Not applicable: *Mark this choice if the other six choices do not describe the dominant discourse pattern.*

Section H: What are the students doing?

G1. Reading: *Students are reading (printed text or on a computer); if students do not have access to the printed word (even if it is on an overhead) it cannot be marked as reading.*

G2. Writing: *Students are writing (print or on a computer)*

G3. Listening: *Students are listening (typically to the teacher) with no talking.*

G4. Working with a partner/small group: *Students are working with a partner or in a small group.*

G5. Sharing work: *Instructional segments in which students are making public work that they have completed either independently or with other students.*

G6. Combined reading or listening to text and speaking: *Mark this segment if students listen to or read a text for less than one minute and then talk about the text.*

G7. Listening/speaking: *Students are listening and interacting, as in a whole class discussion.*

G8: Other: *Mark other is student activity cannot be accurately characterized by the other choices.*

Section H: What is the teacher doing?

H1. Explicit teaching/modeling: *Direct instruction in which the teacher is addressing a specific literacy related topic and modeling for students how to interact with texts.*

H2. Facilitating discussion: *Teacher working to orchestrate students' contributions including teacher moves such as "uptake" or "revoicing".*

H3. Circulating and/or conferring with student(s): *In these instructional segments the teacher is moving throughout the room and observing what students are doing and/or*

conferring with individual or pairs of students while they are working.

H4. Reading: *In these instructional segments the teacher is reading a text aloud, reading text silently, or reading text with another student(s).*

H5. Making students' work public: *In these instructional segments the teacher is identifying things he or she saw in student work. For example, the teacher might say "As I was walking around today, I noticed that Shakima was having a really interesting conversation with Janae. Shakima and Janae were looking back through the text to find examples of when Jacqueline Woodson was using figurative language".*

H6. Posing questions: *Instructional segments in which the teacher's role is to ask questions to students.*

H7. Responding to student-generated questions: *Instructional segments in which the teacher is answering student questions.*

H8. Talking/lecturing: *Instructional segments in which the teacher is talking/lecturing with very little interaction with students. The purpose of the talking is not to model or explicitly teach students something.*

H9. Other: *Observing students work without circulating, recording students responses onto chart paper, talking with another adult in the room, talking to a parent, etc.*

Appendix C: Summary of Instructional Foci (% of 5-minute instructional segments in which item is marked, on average over 6 lessons)

Instructional focus	Ms. Cannon	Ms. Spencer	Ms. Avery	Ms. Woods	Ms. Gaines	Mr. Oliver	Ms. Palacios
Activating prior/building knowledge	4.55	7.75	14.9	6.55	16.02	0	16.39
Developing conceptual understanding of text ideas	0	2.38	0	2.38	3.33	0	0
Language and vocabulary							
Words and word meanings	0.92	0	6.06	29.17	13.43	0	0
Word learning strategies	0	0	0	0	1.19	0	0
Morphological analysis	6.67	0	0	0	1.39	0	0
Language used in text/author's craft	0	0	0	2.38	29.72	16.67	0
Working with a dictionary or glossary	0	0	3.18	2.38	0	0	0
Text and text parts							
General text features (use of bold, captions, italics, headers)	0	0	9.24	0	0	11.91	0
Genre specific text features	5	0	0	0	0	33.33	36.03
Relationship between sentences: cohesion	0	0	0	0	0	1.28	0
Synthesis of text ideas	0	0	0	0	0	0	1.11
Strategy instruction, metacognition, and self-regulation							
Discussion of the reading process	29.77	3.02	18.26	3.33	2.18	37.18	19.45
Inferencing	13.33	0	0	0	18.16	0	0
Note-taking strategies	0	47.2	0	0	0	16.67	0
Visualizing	0	29.63	0	0	0	0	5.56
Summarizing	0	0	20.42	2.38	0	0	0
Self-questioning/Question posing	32.27	4.76	33.65	0	30.21	0	0
Making predictions about text	0	0	11.89	0	0	0	2.78
Identifying and repairing comprehension breakdown	0	0	4.17	0	28.17	0	0
Making text to text connections	0	0	0	0	0	0	0
Making text to world connections	0	0	0	0	0	0	0
Making text to self connections	3.03	0	0	0	0	0	0
Recall of text							
Identifying the gist or main idea	0	64.58	0	0	0	6.41	0
Storymapping and use of graphic organizers	4.7	0	0	0	0	0	25
Questions about text: Analytic or interpretive	6.67	0	0	4.17	3.33	48.54	12.38
Questions about text: Literal or simple recall	0	6.67	3.18	31.75	9.03	0	0
Literature appreciation	20	0	0	3.33	16.47	0	29.25
Other	7.88	5.11	5.68	6.67	18.15	2.56	5.68

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Chapter III.
A closer look: Potential influences and constraints on teachers' work

In her text *Inside teaching: How classroom life undermines reform*, Mary Kennedy (2005) notes that the educational research community has several portraits of teaching practice but little understanding regarding *why* instruction looks the way it does. In chapter two I provide the literacy research community with a detailed picture of reading comprehension instruction using a small set of lessons nominated as representative of the teaching of seven teachers. While this fine-grained analysis is potentially very useful for informing the design of professional development it still says very little about *why* instruction looked the way it did.

Rationale for this study

Scholars have noted that teachers often find themselves confronted with multiple and often competing messages about how they "should" teach and these competing messages might also compete with belief systems about teaching and learning (Coburn, 2001, Cohen & Ball, 2001). Recall that the teachers in this study were recruited for participation in a broad study focused on understanding the knowledge demands of teaching reading comprehension – specifically, what teachers know and do in interaction with students and text in the service of teaching reading comprehension.

All teachers in the study were identified as literacy leaders in their district and/or school and in interviews reiterated their commitment to constantly improving their literacy teaching; this commitment was manifested in their reading of popular texts

written for teachers about reading comprehension, attending professional development on the topic of reading comprehension, and engaging in discussions with colleagues about their teaching practice. More broadly, this study was undertaken at a time in U.S. history when federal and state policy provided unprecedented prescriptions for teachers' work at the school and classroom level (U.S. Department of Education, 2002). While many have lamented that current reform proposals do not make their ways to classrooms (Sarason 1971, 1983; Tharp & Gallimore, 1988), literacy, perhaps more than any other school subject area, has received considerable attention at the classroom level.

Research on the relationship between instructional policy and classroom practice suggests that teachers interpret, adapt, and even transform policies as they put them into place (Coburn, 2005). Each of these sources, along with other influences such as state standards, district-mandated curricula, or teachers' own beliefs about what it means to teach reading comprehension have the potential to shape instruction in classrooms.

Theoretical framework

This study is guided by two key tenets. First, this study is an attempt to understand the influences that guide teachers' design and implementation of reading comprehension instruction. I adopt the definition of reading comprehension instruction that has been used throughout this dissertation: that reading comprehension instruction is, ideally, focused on the processes of extracting and constructing meaning in negotiation with written text.

While numerous research articles have documented that reading comprehension instruction in U.S. elementary classrooms is far from what literacy scholars would consider ideal (Duffy, Lanier, and Roehler, 1980; Durkin, 1978/79; Pressley, 1995;

Taylor, Pearson, Clark, & Walpole, 2000), few have adopted the perspective of "sensemaking." Coburn (2001) is a notable exception. Furthermore, none have focused specifically on the topic of reading comprehension instruction. In this study I assume that teachers' actions in the course of teaching reading comprehension are principled and rational. Theories of sensemaking are generally put forth by organizational theorists arguing that there are several dimensions of organizations that affect an individual's ability to make sense of any given situation (Weick, 1995). Implied in this stance is the idea that an individual is constantly trying to make sense of a given situation and that teachers' actions – even when they are less than ideal – can be explained if one takes the time to understand the story more fully. Weick, Sutcliffe, and Obstfeld (2005) note, "Sensemaking involves the ongoing retrospective development of plausible images that rationalize what people are doing….Sensemaking is about the interplay of acting and interpretation rather than the influence of evaluation on choice" (p. 409).

Research questions and study goals

In the study reported in chapter two I documented what it was teachers were doing when they said they were teaching reading comprehension. I coded the corpus of 42 teacher-nominated reading comprehension lessons and "mapped" the terrain of reading comprehension. While the study provides the literacy community with a glimpse of what teachers are doing in the service of teaching reading comprehension, it does not provide the literacy community any insight into why teachers did what they did. While viewing the nominated lessons live, as well as while viewing the lessons again multiple times on video, I noted five salient patterns in the data. Specifically:

- *Use of strategies was typically disconnected from learning content;*
- *Little emphasis on learning content;*

- *Every teacher included general discussion of the reading process;*
- *Serial sharing was part of every teacher's practice;*
- *Teachers reduced the cognitive demand of the task in the face of student failure.*

With these five trends in mind I identified instructional moments that exemplified these patterns and then used interview data, as well as resources that teachers identified as influences on their work, to hypothesize about the roles of these influences in the shape of comprehension instruction across the lesson corpus.

This study is designed to hypothesize *why* teachers teach reading comprehension in the way they do. Specifically, when examined through the lens of sensemaking, I question what the learning opportunities present in a small sample of classrooms suggest are the influences on teachers' teaching and wonder how these influences support instruction focused on constructing and extracting meaning.

Utilizing transcripts of videotaped lessons, interviews with teachers about their work, and resources teachers identified as influences on their work, this study provides a forum in which to hypothesize a) why teachers are doing what they are doing in the set of lessons they've nominated as representative reading comprehension lessons and b) how resources available to teachers could support reading comprehension instruction more appropriately. Much like the map of contemporary practice detailed in chapter 2, understanding the influences on teachers' actions is a potentially important avenue for improving instruction.

Method

In this section I provide information detailing the sample of teachers, the data collection procedures, and the methods of analysis.

Recruitment of teachers

Teacher recruitment efforts began by targeting fourth and fifth grade teachers who were considered skillful teachers of reading comprehension. I began by contacting university-based literacy professors, researchers, teacher educators, building principals, district-level professional development coordinators, teacher leaders, and literacy coaches working at the district level. Individuals either contacted potential participants with a recruitment email sent on my behalf or I initiated recruitment directly via email. I sent an email message directly to 36 teachers; I do not have data on how many teachers were contacted via recruitment emails sent on my behalf. I did not know or have contact with any of the teachers prior to this study.

In total, ten teachers agreed to meet with me to find out more about participating in this study. I arranged an in-person meeting with each teacher at their school and, whenever possible, watched them teaching reading comprehension. This was possible in all but two cases. Throughout my recruitment efforts I explained to teachers my desire to understand reading comprehension more fully, especially my desire to understand what teachers need to know in order to be able to teach reading comprehension skillfully. Ultimately, eight teachers signed on to participate in the study. Given the need to pilot the study design and research protocols, one of the eight participated in a pilot study and thus data from seven teachers are reported herein.

I elected to study fourth and fifth grade teachers for this investigation because students at these grade levels typically have proficient decoding skills but less-developed comprehension skills. Most fourth and fifth grade teachers are elementary school generalists (i.e., they teach all school subjects) rather than content area specialists (e.g., science teacher).

Description of Study Participants

Six of the seven participants lived within a ninety minute driving distance from Ann Arbor, Michigan and no more than two teachers from any one district were included in the study. The teacher not within driving distance worked in a public school in a major east coast city, which was the closest urban school to which I was able to gain access for a videotape study in a relatively short amount of time.

Five of seven participants had a master's degree in early childhood, elementary education or counseling. Ms. Spencer had a master's degree in reading. All but one teacher received initial teacher certification through a traditional four-year university-based teacher education certification program. Classroom teaching experience at any grade level ranged from 6-18 years with an average of 10.14 years. Classroom teaching experience at 4th or 5th grade ranged from 1-9 years, with an average of 5.3 years. Six of the seven participants were female and all but one of the participants' self-reported race was white. The non-white participant self-identified as bi-racial. These demographics are summarized in Table 3.1.

Table 3.1: Teacher demographics

Name[4]	Race	Grade	School setting	Total years teaching experience		Initial cert.	Highest degree
				Any grade	*4th/5th*		
Ms. Woods	Bi-racial	4th	Urban-fringe	9	1	University	Master's
Ms. Cannon	White	5th	Urban-fringe	18	7	University	Master's
Ms. Spencer	White	4th	Suburban	12	5	University	Master's
Mr. Oliver	White	4th/5th	Urban	7	4	Alternative	Master's
Ms. Avery	White	4th	Urban-fringe	9	9	University	Bachelor's

[4] All participants are identified using pseudonyms.

Ms. Gaines	White	4th	Urban-fringe	10	7	University	Master's
Ms. Palacios	White	5th	Rural	6	4	University	Master's

The teachers in this study worked in a range of school district types – urban (1), urban-fringe (4), rural (1), and suburban (1). In addition to working in a range of school district types, teachers had differential curriculum guidance to shape their work. Ms. Cannon, Ms. Avery, and Ms. Woods utilized a commercially produced, district-mandated curriculum. Mr. Oliver utilized a series of units that were collaboratively developed by teachers who work in grades 3-5. The units specified the reading-related content Mr. Oliver was responsible for but the specific texts that were used were not specified in the units and were selected by Mr. Oliver. Ms. Gaines and Ms. Palacios utilized a district mandated format (reader's workshop) as well as the district curriculum guide but had tremendous latitude regarding which content to teach and which text to use in any given lesson. Ms. Spencer also had autonomy in lesson design as she had no formal curriculum and no specified instructional framework to guide her work. She utilized the district curriculum guide as she designed reading comprehension instruction and selected texts for use in lessons focused on reading comprehension.

Procedures and Data Collection

The seven teachers in the study participated in a range of observation, interview, and measurement tasks aimed at understanding their teaching of reading comprehension in 4th and 5th grade classrooms and the specialized knowledge they utilize in the course of teaching reading comprehension. Data collection began in January 2007 and proceeded until the end of the school year. Participants in the study agreed to nominate six lessons that they considered representative of their teaching of reading comprehension and that

they were willing to have videotaped. Teachers were videotaped six times, in three two-day chunks. The only exception to this was a teacher who worked in the east coast city, whose teaching was videotaped in two three-day chunks because of the cost of travel.

After each videotaped lesson I spent approximately 30-minutes interviewing the teacher about the lesson in an attempt to understand the instructional decisions, the specialized knowledge in play during the lesson enactment, and sources of this knowledge. Typically this conversation took place immediately following the lesson but in some cases there was a delay because of the teacher's schedule. In all but two interviews, the interviews took place on the same day of the lesson. These interview data provide insight into teachers' instructional decision-making and influences on their teaching.

Finally, after all of the lessons were videotaped, teachers completed a number of measures designed to measure knowledge for teaching reading comprehension. Only the corpus of videotaped lessons and interview data are utilized in this study.

Identifying Instructional Moments

After completing the study reported in chapter two, I reviewed the lessons with an eye towards identifying instructional moments that were illustrative of the five trends identified from the corpus of 42 teacher-nominated lessons. After identifying the set of instructional moments, I then read interview transcripts about the lesson from which the instructional moment was selected. While the video data from all seven participating teachers were reviewed in an effort to identify illustrative instructional moments, the final set of illustrative moments includes five teachers' work.

Findings and Discussion

Analyses are organized first by providing the reader with a brief vignette to orient the reader to the instructional moment; these vignettes are not meant be exhaustive of all instances in which the trend happened; rather, they were selected as representative instructional moments that are followed by hypotheses, drawn from interview data, of what accounted for these trends.

Trend 1: Instruction in the use of strategies is typically disconnected from learning content

Comprehension strategy instruction has been the most active area of reading research in the past two decades and has been a crucial touchstone for the field of reading comprehension. Given the attention strategy instruction has received in the research literature, it is not surprising that strategy instruction is present in a majority of lessons teachers nominated as representative of their teaching. Across the lesson corpus questioning is the strategy that received the most attention in nominated lessons and the vignettes shared below focus on the questioning strategy. However, the vignettes are typical of strategy instruction across the lesson corpus – that is, strategies are treated as the end goal of reading comprehension instruction rather than a means to an end.

Generating questions in Ms. Avery's classroom

Take, for example, a lesson in Ms. Avery's fourth grade classroom where students are negotiating a section of their social studies textbook focused on Michigan history. The students have been working on the same chapter for several days – a chapter focused on Michigan explorers and their travels from Europe to Michigan. After reading a short passage from their social studies textbook, Ms. Avery asks students to write a question - a thinking question - that they could ask someone to see if they understood the selection.

Ms. Avery has received training in reciprocal teaching (Palincsar & Brown, 1984) and evidence of this training is present in her teaching. She encourages the students to go back into the text to find their question. Students are given time to think and, after a minute, she asks two students to share their questions.

> **Ms. Avery:** Amanda, what would be a question?
>
> **Amanda:** Michigan is halfway between the north pole and the _____?
>
> **Ms. Avery:** So you're doing like a fill-in-the-blank question? Okay. There's different kinds of questions, too, that we could use. Joshua?
>
> **Joshua:** Why is Michigan halfway between the North Pole and the equator?
>
> **Ms. Avery:** Okay. Two different kinds of questions. Which one do you think requires more thought or more explanation? Joshua, repeat your question again.
>
> **Joshua:** Why is Michigan halfway between the north-pole and the equator?

After some discussion of the words that signal a question (who, what, when, where, why, and how), the conversation continues as a debate of the merits of the two questions:

> **Ms. Avery:** Did Amanda's start with any of those? No, it didn't. So she's doing a statement, but she wants you to fill in the blank. And you see that all the time on what, fill-in-the-blank type statements? You see them all the time on what, Tyra?
>
> **Tyra:** Tests.
>
> **Ms. Avery:** On tests. So that was very interesting, Amanda, that you phrased your question in terms of a fill-in-the-blank. Because you see that on tests, don't you? That's very interesting. What do we think about that? Could we use that as a question, how Amanda did that? Now, which one do you think requires more thought?
>
> **Student:** Joshua's.

Ms. Avery: Hers is a fill-in-the-blank and Joshua's was a why question. Which one do you think would require more thought and why? Doug?

Doug: Amanda's, because you have to think about what is going in that blank.

Ms. Avery: Okay. Other thoughts? Tim?

Tim: I think Joshua's.

Ms. Avery: Why?

Tim: I don't know why.

Ms. Avery: Which one do you think would be more difficult to answer as a student? You guys are students. Which one is harder for you to answer on a test? Stephanie?

Stephanie: Amanda's.

Ms. Avery: Amanda's is, fill-in-the-blank?

Stephanie: And Joshua's.

Ms. Avery: And Joshua's. Both of them? Okay. This is very interesting. What were you going to say, Marcus?

The conversation debating the merits of the two questions takes a total of nine minutes of instructional time in a thirty-minute lesson and the *content* of the question is never answered.

In conversations with Ms. Avery about her teaching it is apparent that her focus on questioning comes from her desire to pair the learning of social studies content with literacy. Hence, she utilizes the social studies text and teachers' guide – one that does not offer any guidance regarding how to pair learning social studies content with literacy learning – and her own knowledge and training in reciprocal teaching to achieve this aim. When asked specifically about the instructional episode detailed above, Ms. Avery notes:

> "Ok. So I was trying to get them to see the difference between the questions in terms of which would require more thought and work and which one wouldn't

> and that was evident to me that they weren't understanding or seeing the difference right off the bat by just looking at the two kinds of questions, but when they had to then apply and actually do them, they pretty quickly saw ooh you know Jeremiah's requires more thought and thinking. Because I wanted them to look at the kinds of questions, as a reader when they're reading, what kinds of questions should they be asking themselves that would require them to be thinking more deeply about what they're reading. I mean that's, that's the overall goal, end goal. Do they get there right from this, probably not, but at least it's a stepping point at – 'oh this question is meatier, is going to require more from me than this question'" (Interview 6).

Ms. Avery's desire to link reading comprehension instruction with learning specific content seems admirable and well-aligned with recent calls to focus reading comprehension on learning content. Scholars have noted that much of the reading comprehension instruction that does take place is routinized strategy instruction that does not place a premium on reading for knowledge building (Hirsch, 2006; Palincsar, 2007). Ms. Avery's teaching provides a powerful image of the challenge of simultaneously engaging in knowledge building while also developing strategic reading skill, especially when the guidance for these two strands (knowledge building and the teaching of strategies) comes from different sources (the social studies curriculum guide and professional development focused on reciprocal teaching). If we expect teachers to engage in strategy instruction that is also focused on learning content, we must provide teachers with guidance regarding how to achieve this aim. Hirsch (2006) notes that the view that "strategies are largely a set of general-purpose maneuvers that can be applied to any and all texts is one of the main barriers to our students' achievement in reading" (p. 14).

Learning to question in Ms. Cannon's classroom

A lesson in Ms. Cannon's fifth grade classroom instruction is also focused on the strategy of questioning. Ms. Cannon instructed students that they were going to read a

piece of historical fiction about a young African American boy who fought in the American Revolutionary war. As she introduced the text, Ms. Cannon mentioned to her students that she noticed they were having difficulty generating questions and so she wanted to work on developing this skill as they read the story. Nervous, however, that questioning would get lost as students read the story, Ms. Cannon decided to spend some time having students talk about questioning more generally. She asked students to talk in pairs about when they ask questions and why they ask questions in their daily life. After talking amongst themselves, students shared their responses in a whole class discussion. Students mentioned that they asked questions when they were confused, at school when they didn't know something, or "at nighttime" when they had a question. Ms. Cannon then modeled questioning in her own life about when she learned to ride a motorcycle. Ms. Cannon modeled the questions that she asked as she was learning, including questions about braking, the use of the clutch, and how to shift gears. Throughout her modeling Ms. Cannon explained that you don't ask questions to which you already know the answer, that some questions are more important than others, and that asking questions often results in more questions. After twenty-five minutes of discussion about questioning, Ms. Cannon and her students transitioned to reading the story about the young African American soldier. Students opened their books and were directed to read silently and take notes about questions they had as they previewed the text.

In an effort to understand this instructional episode vis-à-vis the perspective that reading comprehension instruction is ideally focused on the processes of constructing and extracting meaning in negotiation with text, I asked Ms. Cannon to explain why she focused on questioning as a pre-reading activity. Ms. Cannon explained:

> "I'm trying to get them to see that questions are helpful in your life. And just like they're helpful in your everyday life it's helpful when you're reading. I want them to make that connection…. I think that if they're making a connection um, I just think that, that they know how, if they realize you know what, I do ask questions and I do know how to ask questions, those kids who when they're reading say they don't have any questions, I'm hoping that they'll make the connection, you know what, asking questions isn't that hard and I do, and on a normal basis, yes, I can apply it to my reading….trying to get them to think about times that they've asked questions, trying to get them to see that asking questions isn't that hard, that it's a normal thing. A real-world connection to the reading [process]. (Interview 2).

Over the course of the pre-reading introduction that was focused on questioning Ms. Cannon returned to the idea that some questions are really important and some are less helpful. I asked Ms. Cannon to explain why this distinction was important. She noted:

> "At this point I'm just trying to help them get an awareness of these questions because we haven't done a whole lot with that. But just for them to get an awareness that some questions are more important than other questions and more helpful….I guess, let's see, I want them to realize that they're going to have all these questions popping up in their mind all the time, and that's what good readers do but eventually we get to the point where some of the questions we just let go and we realize there's never going to be an answer in the text, and other questions there might be an answer but it's not going to be in the text. So, but all, all those questions are good questions so I want, and I want them to get in the habit of asking, I want them to get in the habit of writing, asking questions automatically. So that's why at this point I want them writing all their questions" (Interview 2).

I was interested in understanding Ms. Cannon's decision to focus only on questions, given research evidence that presenting a suite of strategies, rather than strategies in isolation, is preferable so that teachers and students have a repertoire of ways to interact with texts on a more "natural" basis (NRP Report, 2000). I asked Ms. Cannon directly "Why did you choose just to focus on questions?" She explained:

> "Partly because, like I said this is a theme from Houghton-Mifflin that we have to do, also we have to test for North Central Association and that's part of the test is the questioning, but also because it is an important strategy that comes from

> *Strategies that Work* that I've been, some of the strategies that we've been working on this year. And as a staff the strategy, that workbook, I don't think I told you that, we um, as a staff choose our reading committee, the committee choose to use, as one of our goals to improve our reading comprehension especially informational text, we choose to focus on *Strategies that Work*" (Harvey & Goudvais, 2000). (Interview 2).

Later in the discussion I play devil's advocate and ask Ms. Cannon why she chose to focus on only one strategy rather than doing several strategies simultaneously as I've seen some teachers do. She explained:

> "I don't know, I've done it both ways and it just depends. This time I just really, because they're being tested on the questioning strategy I focused more on questioning this time….But it depends on what I'm doing cause there are times where I do them simultaneously."

When I asked her what helps her make that decision – regarding whether or not she taught one strategy versus multiple strategies, she noted:

> "A combination. For this particular one it was because it's something they're being tested on."

Here we see the influence of the Houghton Mifflin curriculum – mandated by Ms. Cannon's district, the North Central Association Accreditation Assessment, and a popular teacher professional development text – *Strategies that Work* - all shaping Ms. Cannon's decision to begin this lesson by focusing solely on questioning. If we expect teachers to teach students a repertoire of strategies, influences on their teaching such as assessments, curriculum guides, and professional development texts must also support this aim.

Given Ms. Cannon's reference to the text *Strategies that Work* (STW), (Harvey & Goudvais, 2000), I reviewed this resource in order to understand what STW had to say on the topic of questioning in order to hypothesize about how STW could have influenced the design of this instructional moment. An entire chapter of STW is focused on the topic of questioning where the strategy is identified as "the master key to understanding" (p.

81). Furthermore, Ms. Cannon's emphasis on different types of questions is supported by section titled: *Some questions are answered, Others are not*. In this section of the text teachers are encouraged to help students list and categorize questions. Later, teachers are also reminded that questions we know the answers to are assessment questions and therefore not "sincere questions." Recall that in the course of her modeling, Ms. Cannon explained to students that you don't ask questions that you already know the answer to.

Finally, in addition to curriculum, assessments, and resources for teachers, Ms. Cannon's beliefs about reading comprehension are consistent with the instructional moment about questioning – specifically, strategies provide students with the "tools" to comprehend text. She explains:

> "I would love my students to have, to be able to tackle anything and apply the strategies that work for them in order to comprehend it, ultimately that would be my goal for them for reading. And to enjoy reading, that's my goals for reading is that they can handle it, they've got tools in their toolbox to use to unlock the meaning and learn or enjoy it, whichever they need to do with it and then actually just to have a love of reading" (Interview 6)

While Ms. Cannon's instruction is much less than ideal when compared to the ideal that comprehension instruction is about constructing and extracting meaning from written text, conversations with Ms. Cannon reveal numerous examples of sensemaking. I hypothesize that the instructional moment was shaped by Ms. Cannon's perspective on how children come to understand the process of comprehending text, the assessments the children in her classroom will take, the district-mandated curriculum guide Ms. Cannon must use. Each of these influences stands at odds with the "ideal" that reading comprehension instruction is about extracting and constructing meaning from written text.

Trend 2: Understanding the role of content in reading comprehension instruction

Concomitant with the focus on strategies is the fact that relatively little attention is paid to learning specific content in the course of reading comprehension instruction. In other words, the opportunity to become a strategic reader stands as separate from opportunities to learn specific content.

Bifurcation of learning strategies and learning content: comprehension instruction Ms. Spencer's classroom

In the set of lessons Ms. Spencer nominated as representative of her teaching, she utilized scientific texts about water, volcanoes, and planets as the primary texts for instruction. For each topic it was evident that Ms. Spencer was interested in the content and knew quite a bit about these topics. However, understanding the content was never a priority. Instead, Ms. Spencer emphasized the process of skilled reading in her classroom; that is, learning specific content was secondary to Ms. Spencer's desire to provide students with opportunities to understand the strategies that skilled readers use. For example, after a two-day lesson in which students were reading a text about Saturn, the bulk of the work focused on identifying the main idea and supporting details in the piece of non-fiction text. A brief lesson excerpt is included below.

> **Ms. Spencer:** I want to talk with you and help you understand how you're going to be writing down your supporting details here. And, so giving me your attention now is going to make this that much easier for you in just a minute. We decided yesterday that this section called Long Distance Voyager was actually about this Cassini Wiggin Space Craft. So we're going to write that down. And I think most people already wrote down….Just Cassini Visits Saturn. Okay? That's the main idea of this entire section here. All the way through here, that Cassini visits Saturn. What we're going to be doing now, though, is going through this and looking for some supporting details that elaborate and tell some of the things that Cassini discovered while visiting Saturn. So I'm going to reread through this
>
> [Ms. Spencer reads text excerpt aloud].
>
> **Ms. Spencer:** Okay? Now there are a lot of supporting details in here. That's the thing about nonfiction, is practically every sentence has at least one or two

> sometimes, ideas for you to pay attention to. So, as I read this, I'm thinking to myself, well, what in here is probably important to remember? And I'm thinking, well, it's the most recent space craft to visit Saturn. Well, that's kind of in my main idea there, that it visits Saturn. So I'm just going to leave that there. You should not be writing now. I'm thinking for you right now, so I want you to listen to what I'm thinking, and that can help you when you do yours. It's a metal cylinder, the size a small school bus. Okay? Well that seems like something kind of important to write down about this. Cassini Visits Saturn. So I'm just going to write down, Metal Cylinder, and then I'm just going to put dash, School Bus. I'm not even going to copy the whole entire sentence. Not now, Cameron. That's the third time I'm saying, please just listen. I'm not even going to write everything down. I just want enough details out of this to help me remember later what this section was about. That Cassini is a metal cylinder the size of a school bus. Then I keep reading.

When I asked Ms. Spencer if she cared if students learned anything about Saturn. She responded:

> "No. You know I think it's interesting to them . . . and I knew that somebody was going to, you know, pick up on things…but it's not anything that's in our science curriculum or not even coming up next year in fifth grade or anytime soon, so no, it's just one of those things where I thought it, the way the article was laid out would do a good job of working on this idea of main idea, supporting details and text structure." (Interview 6).

The idea that reading comprehension is, in fact, not about learning content but is instead about learning strategies is at the center of Ms. Spencer's beliefs about reading comprehension instruction. She explains:

> "Well I think that there are definitely times when, I mean it is about the content. But in order to get the content I think the process has to be there, that if you're just focusing on the content then I mean I think the way the maybe the discussion, the way the activity focused around the reading is more of just a literal comprehension kind of activity or a literal comprehension discussion or even the teacher just repeating you know things that were in the text in the first place and just kind of like drilling them in. But I think the you know idea about reading is that you know the reader has to be making these choices and deciding what's important what is this really about, what is this saying, what, you know and going through that process. So yes there are times when I want them to get the content, but even when I want them to get the content the process is always in, like at the forefront of what I'm trying to get them to do and work on teach them" (Interview 6).

Importantly, Ms. Spencer's espoused views on reading comprehension instruction are consistent with her district's curriculum guide – the only mandated influence on her teaching. On the topic of reading comprehension the district language arts guide at the fourth grade level reads:

> **Comprehension**
>
> - Use essential comprehension strategies before, during, and after reading, to support proficient, independent reading. These strategies include: make connections, monitor and correct, determine order of importance, visualize, ask questions, make inferences, synthesize.

Interestingly, across the set of nominated lessons from Ms. Spencer's classroom we see some lessons focused on the processes of reading comprehension and one lesson focused on learning content. Ms. Spencer's Lesson One is one of the few lessons in the corpus that is focused on students' building of content knowledge. Over the course of the lesson, however, students do not read one word.

Ms. Spencer's students were studying weather in science and Ms. Spencer selected the text *A Drop of Water* (Wick, 1997) as the focus of one of the reading comprehension lesson she nominated to be representative of her teaching. However, because there was only one copy of the book, Ms. Spencer read the text aloud and the students "visualized" what was going on by drawing pictures in their literacy notebooks as she read aloud. The conversation about the book content offers glimpses into the potential richness of discussion about text ideas. One student, Taylor, poses a question about whether or not there is dirt in rain. The following whole-class discussion ensues:

> **Ms. Spencer:** Now, Taylor, this was your question, so let's go back to you.
>
> **Taylor:** I think it's because, like, when some water's on the ground, and when it evaporates, it's like on, pollen, and stuff.

Ms. Spencer: Ah. So it evaporates, and then it's on pollen how?

Taylor: Like if the water's gone up in the air, it would go with it.

Ms. Spencer: Oh, so when it evaporates it takes the pollen with it? Hmmm….not according to this page. Let's see, I went back here, it said, "If a cloud droplet is to be formed, water vapor must first condense on a particle of dust." You get what that means? David, what does that mean?

David: Uh,

Ms. Spencer: Did you hear the sentence? Let me read it again. "If a cloud droplet is to form, water vapor must first condense on a particle of dust.

David: Oh, it means like, the water builds up over it, and the [inaudible]

Ms. Spencer: Yeah. so the water builds up, like David said—that's a good way to describe it—builds up on a particle of dust. Just like in the picture here. We've got a piece of salt. The water builds up on it. Now your question is, what was your first question again? So there's dirt inside raindrops?

Taylor: Yeah.

Ms. Spencer: So, i*s* there dirt inside raindrops?

I include this instructional moment from Ms. Spencer's class to highlight that students in her class are learning content but, in the set of nominated lessons, there was no evidence that students were *simultaneously* learning content while also negotiating text. While Ms. Spencer models negotiating text – for example, she says "Let's see, I went back here and…." – the fact that children aren't independently negotiating text raises important questions about transfer and who is doing the extracting of meaning.

The lack of reading in the set of nominated lessons at the elementary level fits well with research on middle school, secondary, and post-secondary classrooms which suggests that content is often conveyed to students through pedagogies of telling (O'Brien, Stewart, & Moje, 1995) rather than pedagogies that provide students with opportunities to negotiate text. If reading comprehension instruction is, ideally, focused

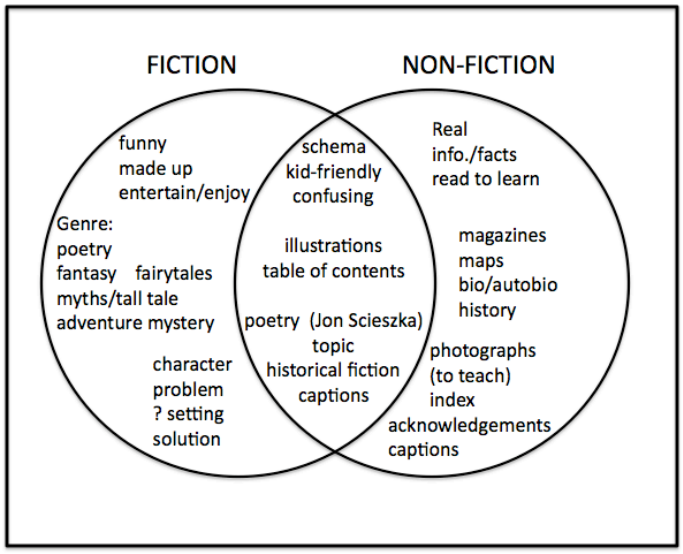
on extracting and constructing meaning through negotiation with written text, then we need to provide students with opportunities to construct meaning from text while simultaneously negotiating with written text.

Learning content in Ms. Palacio's classroom

Videotaped lessons from Ms. Spencer's classroom are not the only lessons in the corpus in which reading comprehension instruction does not focus on learning any specific content.

In lesson one of Ms. Palacios's set of nominated lessons, students are asked to consider fiction and non-fiction texts and the differences between the two. After a brief whole-group discussion on the rug, Ms. Palacios distributed a Venn diagram worksheet to each student and students worked to complete the worksheet in small groups. At tables students browsed through fiction and non-fiction books in an activity designed to catalog the differences between the two. Students recorded similarities and differences and then, after 20 minutes of working in small groups, reconvened on the rug in order to share findings from their investigation. The students shared their ideas and Ms. Palacios recorded them on chart paper. Each circle and the shared overlapping space was filled with generalizations – many incorrect – about fiction versus non-fiction. The final product is represented in Figure 3.1 below.

Figure 3.1: Public chart made in Ms. Palacios's class: Recording students' findings



While scholars in both the humanities (Lamarque & Olsen, 1994) and education (Spiro & Jehng, 1990) have offered convincing arguments that the reification of genre as a fixed entity is not productive, Ms. Palacios explored genre as though it were unproblematic and presented fiction and non-fiction as discrete, despite the ways in which the two are often blurred in texts. The problematic distinction between fiction and non-fiction becomes apparent at the very end of the conversation when one student adds his final thoughts. The following conversation ensues:

> **Student:** In non-fiction, I've noticed maps and magazines
>
> **Ms. Palacios:** Magazines?
>
> **Students:** They [magazines] could be in the middle though [of the Venn diagram]
>
> **Ms. Palacios:** Raise your hand if you think magazines could be both [almost all of the students in the class raise their hand]
> Or if you think they are just fiction [no students raise their hand]
> Or non-fiction [several students in the class raise their hand]
> I'm pretty sure that magazines are just non-fiction because they write about real things that are happening.

Despite a chorus of counter-examples and student proclamations that they have seen magazines that are fiction, Ms. Palacios continues:

> **Ms. Palacios:** I'm thinking that magazines should stay under non-fiction. We can always change it later but I'm pretty sure…..

The conversation trails off and the point of controversy is never reconciled. During the entire lesson students spend no time reading any text. While students are constructing and extracting meaning about fiction and non-fiction texts generally, at no point does instruction provide students with the opportunity to construct and extract meaning about any *specific* text.

When asked about this lesson, Ms. Palacios explained that it was taken from Debbie Miller's popular text *Reading with Meaning: Teaching Comprehension in the Primary Grades* (2002). I read through the *Reading with Meanin*g text and found the lesson, including the exact same Venn diagram, on page 146 in a section about modeling the differences between fiction and non-fiction text. Miller's text is laudable because it focuses on meaning making in the elementary grades – something that is often ignored in literacy instruction with young children (Neuman, 2001). However, it is unclear whether the Miller text is appropriate for students at the fifth grade level. In chapter four I propose a category of teacher knowledge called "horizon knowledge," which, I suggest, taps into a teachers' knowledge of reading development. It seems possible that, while exploring the differences between fiction and non-fiction is a useful distinction for first graders, developing more subtle understandings of what distinguishes various texts, such as exploring the differences between myths and fables, might be more appropriate at the fifth grade level. More in-depth discussions of genre features would provide students opportunities to more fully understand the ways in which various genres have specialized

vocabulary, unique syntax, and specific discourse structures (Kintsch, 1988; RAND, 2002).

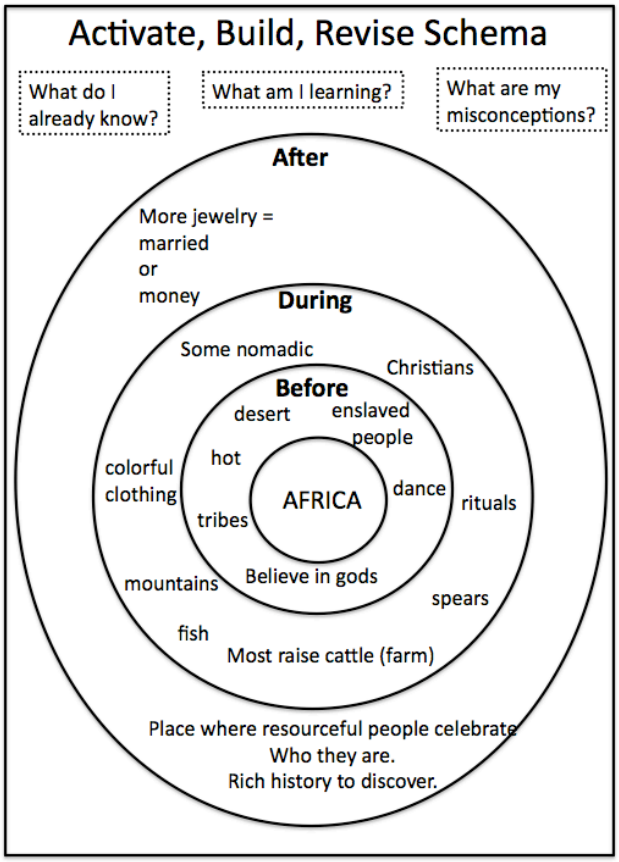
Trend 3: Understanding instruction focused on general discussion of the reading process

Thus far, I have explored two trends: instruction focused on teaching children strategies as isolated skills with little or no attention to the content of the text. A third and related trend is that all teachers in the study spent instructional time engaged in general discussion of the reading process. An instructional moment from Ms. Palacio's class is useful for illustrating this trend. In lesson two from Ms. Palacios's set of nominated lessons, the lesson focuses on the concept of "schema". Ms. Palacios's lesson begins with all of her students gathered on the rug. She has written the following on a piece of chart paper:

Schema = What you Already Know

Ms. Palacios explains that schema is what you know about a given topic – an understanding of schema that is shared by teachers across the lesson corpus. She explains that, metaphorically, how much you know, or how big your schema, is sort of like a rock. You might have a tiny pebble – just a little bit of schema; or a big boulder – a lot of knowledge. Ms. Palacios then shares her "schema" with her students. Ms. Palacios flips to a new chart – the one depictured in Figure 3.2 – and explains her before, during, and after reading "schema" regarding a book titled *Africa* published by Doring Kindersley. Ms. Palacios explains that, before she read the book, she had a "small pebble" about Africa. She then verbally reviewed each section of her chart. She began by explaining her "schema" before she began reading, how her schema changed during reading, and how after reading she realized she had cleared up some misconceptions.

Figure 3.2: Chart used in "Schema Lesson"



Throughout the discussion she used a metaphor of a rock and how, as her knowledge grew, it was like ripples on a pond getting bigger and bigger. She explained her "ripple" to students – noting that prior to reading the text about Africa she knew that "it was hot there, that there were tribes, that they danced, that people lived in the desert and she also knew that enslaved people came from there because we had studied that in social studies. And also that they believed in gods there" (Lesson 1).

Ms. Palacios went on to explain that as readers, when you start reading, you automatically activate your schema. She modeled her own thinking for students. She explained:

> "You think, *What do I already know about this topic?* Before I throw that rock in the pond. So before I throw that rock in the pond and I start reading I think what do I already know about Africa - this is my first "ripple" that I got. Then, as I

> read - I skipped around in here because it was non-fiction I can do that - and I looked and I thought wow – there's a lot of things I can read about. I started building my schema and thinking about what am I learning, oh, wow….and so I wrote down the exact thing or close to the exact thing that I was thinking in my interacting voice in my head and some of the things were, "oh, they've got mountains, too" and before I thought that it was just a desert. So I added that to my ripple. So my ripple is getting bigger. I'm learning things. When I read about their food I read about that they live off the land and after knowing that they lived in a desert and there's some mountain areas it made sense to me that they farm a lot and raise cattle and I read how some are nomadic they move around. I added all these things as I'm reading. I'm building my learning. My schema is getting bigger."

After Ms. Palacios modeled the process by which she identified and revised her "schema" on the topic of Africa, she provided students with the opportunity to complete the same chart in a whole group discussion.

The focus of the "schema" building for students' practice was tornadoes. Students first shared their "schema" about tornadoes, and Ms. Palacios wrote their collective "schema" on a public chart exactly like the one she had completed about Africa. Then, Ms. Palacios read a text excerpt about tornadoes, and students shared their "schema" from during the reading. After reading the excerpt aloud Ms. Palacios asked students if any of them had changed their thinking about tornadoes, and their revisions were included in the final outside circle of the chart. After this whole-group schema building practice session students left the rug and were given time to independently read non-fiction texts of their own choosing for the purpose of building their "schema."

When asked about the influences on this lesson design Ms. Palacios explained that it was again taken from Debbie Miller's text *Reading with Meaning* (2002). She explained:

> "So I read and read, and read this book. The section that takes like about half of a page in Debbie Miller's book and I read it and I reread it, and I'd look back at another chapter and come back to it about what schema is and I couldn't figure

> out, it wasn't making sense to me. So, until I made, I mean she did talk about it a little bit, about one of her students called it um, a ref, called it, she called it a ripple or one of her students, I think she did but she didn't go into the metaphor and so I couldn't grasp it. I couldn't grasp it until finally I thought okay, so if I threw the rock in, that's my, I guess it was just a realization that I came to using the whole visual learning style that I had that I need to be able to make the, you know, visual in my head, I needed to see the picture of, of me actually doing stuff" (Interview 2).

Ms. Palacio's description regarding how hard it was to understand the topic of schema speaks to the ways in which - as a skillful reader - Ms. Palacios doesn't need to be aware of schema and yet - as a teacher of reading - she needs to understand the reading process differently.

After Ms. Palacio explained the lesson source I was still unclear regarding the influences, specifically the relationship between the concept of schema and the metaphor of the ripple. I asked, "So this particular lesson, the design of it wasn't directly from the Debbie Miller book, but the idea was?" She clarified:

> "I pulled like bits and parts of it. Like she talked about schema in one chapter over here but then she talked about in [a different chapter] using ripple, but then she talked about like, but it wasn't in the determining importance section in the non-fiction, so I kind of like pulled parts together that I read in her book then kinda made it what made sense to me, what would make sense, cause the book is really for primary students….and so it wouldn't make sense I thought to take the baby steps that she took you know with her kids, I wanted to make it more sophisticated."

Much like the previous instructional moment involving fiction versus non-fiction, I expected to see a graphic in the Miller text that looked like the chart depicted in Figure 3.2. However, investigating the Miller text helped me understand Ms. Palacios' interview. Ms. Palacios designed the chart she used in the lesson from two different sources. The two charts, representations of the figures included in the Miller text (2002),

from which Ms. Palacios extrapolated her representations, are depicted side-by-side in Figure 3.3.

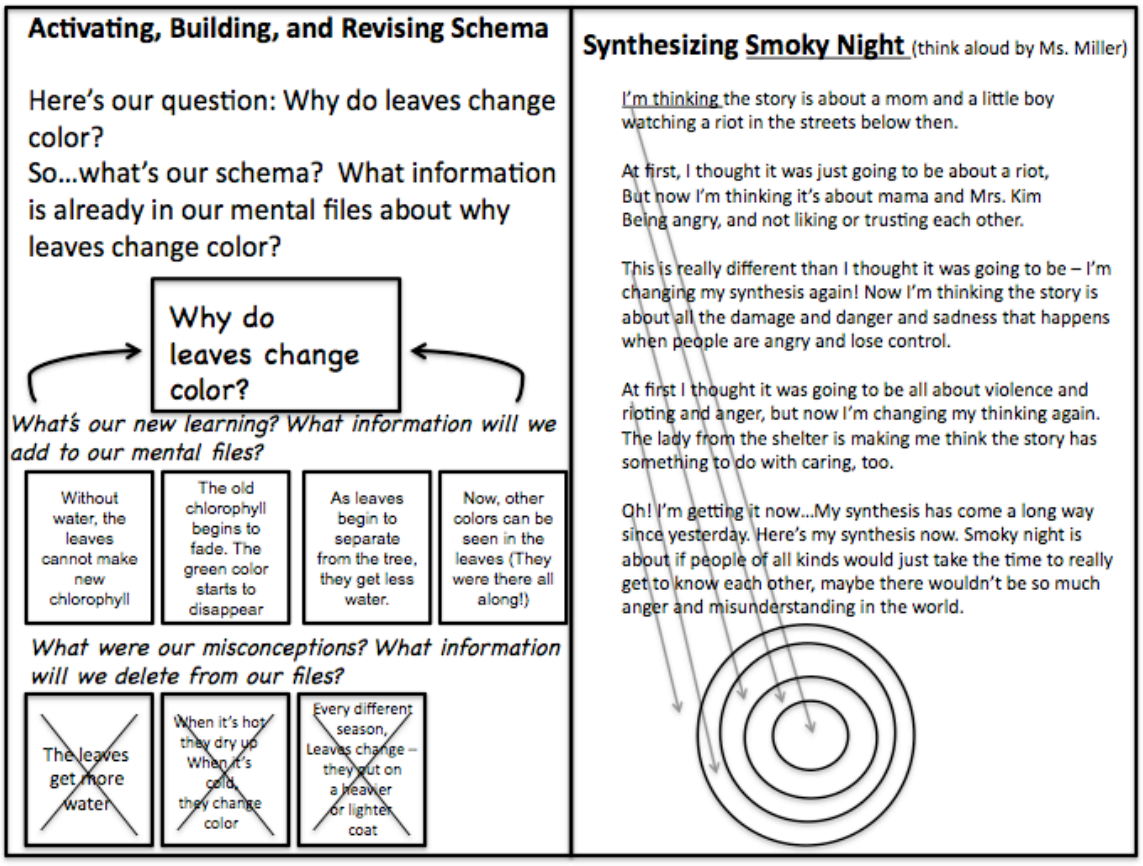


Figure 3.3: Original sources for the chart depicted in Figure 3.2

Ms. Palacios designed the lesson by drawing from two different chapters of the text. The chart title is taken from a chart included in the chapter titled *Schema*. The remainder of the Miller schema chart, depicted in Figure 3.3, utilizes the metaphor of "mental files" to represent schema; this idea is well-aligned with the research literature on the topic of schema. Specifically, that schema is a way of thinking about how knowledge is stored and how stored knowledge is refined and elaborated given new information (Anderson, 1977; Kant, 1781).

The concentric circles used in Ms. Palacios's chart are taken from a chart depicted in a later chapter titled *Synthesizing information*. In the synthesizing information chapter Miller utilizes the same ripple metaphor that Ms. Palacios used in her lesson. Miller explains the ripple metaphor as follows: "…synthesis is like throwing a rock into a pond: first there's the splash, and then the water ripples out, making little waves that got bigger and bigger….your thinking evolves as you encounter new information, and the meaning gets bigger and bigger, just like the ripples in the pond" (p. 159). The messiness created by mixed metaphors of ripples and boulders and the bricolage of schema theory and synthesis that is apparent in Ms. Palacios's lesson raises important questions about how (and if) one can take theories and concepts to practice in ways that maintain the integrity of the theory – a theory that was chiefly not a practice-based theory.

The amalgam of sources Ms. Palacios is drawing from raises important questions about what resources are available for teachers at the fourth and fifth grade levels and, if teachers need to modify resources created for use in early primary classrooms (K-3), in what ways can existing resources be modified so that the content is supportive of the instructional needs, and the trajectory of development, of learners at the fourth and fifth grade levels.

In addition to understanding the lesson design topic I am also interested in understanding how Ms. Palacios chose the texts that were utilized in the lesson – wondering at the core whether the specific content of the texts played any role in her decision making. For the text about Africa Ms. Palacios explained:

> "We're studying slavery in social studies, and Black History month, I just thought it would be a good non-fiction book when I saw it and plus I have a good number of African Americans in my class that I thought hopefully presenting this book might even get them interested in reading it, I just thought the interest level might

> be there for my students to even hear me talking about it. So that's why I picked the book. I also wanted to pick a topic that I didn't really know much about so I could show them that, you know, you can be a novice in a topic. I don't want them to think just because they don't know about something that they can't read about it to learn more. Sometimes they only read what they already know about. I want them to kind of lose some of that comfort and jump out and try a different book."

With regard to focusing on tornadoes in order to provide students with an opportunity to practice she explained:

> "I guess I picked tornadoes just because I liked that book, it seemed kid-friendly, it looked interesting, um, the text was friendly. I mean it was big, I wanted, originally I was going to use the big book on the floor about weather and, they're studying weather in science, but um, I just didn't find it as interesting for me as a reader so I thought this book looked more interesting to read. But I also liked it because it was a different format. Like it was set up with all questions and they, it just looked more interesting so that's why I picked that book" (Interview 2).

Here we see that Ms. Palacios's decision to use the text about Africa and the text about tornadoes was not driven by the curriculum but instead by Ms. Palacios's impression that her students would be interested in the text topic, in the case of the Africa text, and because the tornadoes text seemed to be "kid-friendly".

In addition to the Miller text shaping the lesson design and the influences on Ms. Palacios text selection, there are other influences on Ms. Palacios teaching. When asked why she did the whole class activity focused on tornadoes Ms. Palacios explained that she was following the Madeline Hunter model – a model of lesson planning and lesson design that she learned during student teaching where she had to write out sections of the lesson "word-for-word" in her student teaching. This is the only reference to student teaching as an influence on her teaching that is made in the entire interview corpus.

Finally, the fact that reading comprehension instruction in Ms. Palacios's class did not focus on learning any specific content is well aligned with Ms. Palacios beliefs

about what reading comprehension instruction should be; specifically, learning content is the terrain of middle school and beyond. Ms. Palacios explains:

> "I guess it's kind of like the analogy to teaching them, teaching somebody that's hungry, teaching them to fish instead of giving them the fish, like teaching them the process so that they can have the skills that they'll need to be able to read because reading's going to be how they gain information as an adult, every part of their life. So you have to I guess, you have to refine that skill, how we don't, I don't know you would say that, but it's a skill that has to practiced, it has to be pulled apart and analyzed and shown different, in many ways and you have to pull out the skill specifically but then you've got to pull them all together and hopefully by the time that you're done teaching reading in the elementary I can, I see it more as elementary is really supposed to be the building block, that we, by the time they're done with fifth grade that they have all those process skills, that they can then more in the middle school study, I don't know, maybe more of the content. Because how can you, how can you read in social studies class or science class if you don't have the skills of determining the important ideas from what you're reading and so. I don't know" (Interview 6).

The schema lesson from Ms. Palacios's class is an example from sensemaking drawn chiefly from a popular teacher professional development text as well as supported by her own beliefs about what reading comprehension should be.

Trend 4: Understanding the practice of "serial sharing"

Serial share, a public display of work in which students share their ideas, questions, writing, etc., but in which there is no discussion or interaction about whatever has been shared, was present at some level for every teacher in this study. In a serial share a teacher might ask students to brainstorm questions about a text and then call on several students to share the questions they generated. In the process of sharing the teacher might acknowledge or record the students' questions, but there is no discussion of the students' ideas. The omnipresence of serial sharing raises important questions about the practice of making public individual student contributions with no discussion and how these individual contributions contribute to developing individuals' understandings

given that instruction takes place largely as a whole group. In other words, how are these individual contributions taken up by other individuals with no mediation?

In Ms. Avery's classroom, in an instructional moment taken from the very beginning of a social studies lesson, students are given the opportunity to identify words or concepts that they think might interfere with their understanding. The conversation excerpt below highlights a student identifying the word silk as a word she doesn't know and a serial sharing of student thinking follows.

> **Ms. Avery:** Then there's – well, you tell me, are there any other words that you want to clear up before we read it? Lindsay?
>
> **Lindsay:** Silk.
>
> **Ms. Avery:** Silk. What's silk? Have you heard silk before? What do you think it might be or might mean? Deshante?
>
> **Deshante:** You can have, like silky hair.
>
> **Ms. Avery:** Okay. Silky hair. Matthew?
>
> **Matthew:** It's a kind of fabric.
>
> **Ms. Avery:** Some type of fabric.
>
> **Deonte:** Spider silk, like spider web stuff.
>
> **Ms. Avery:** Okay, Adrianna.
>
> **Adrianna:** Different textures.
>
> **Ms. Avery:** Different textures.
>
> **Student:** Different kind of cloth.
>
> **Ms. Avery:** Cloth. See, you guys already know a lot about this. Okay. Let's dig in. Let's read.

It is apparent in this conversation that Ms. Avery values students' input and believes that she should not simply give students the definition of the word " silk."

However, after calling on several students, it is still not clear what definition of silk will help students in constructing and extracting meaning as they read the text about silk.

When asked about discussion of vocabulary words in a sharing format, Ms. Avery notes the importance of sharing. She explains:

> "the sharing is really important too. Because so often, I mean just with my own self, when a colleague shares something it makes me think of two other things. So I think the sharing piece is really important and that's just second nature."

Ms. Avery then elaborates that sharing

> "helps them generate more ideas, I think it's important to explain their thinking, and also, it's also an assessment piece for me."

The presence of sharing is also tied with Ms. Avery's views about learning. She explains:

> "I think they can learn from each other that most of them knew or had seen that word or had some idea about it."

Throughout the course of our conversation I played devil's advocate - asking Ms. Avery why she simply didn't tell the student the definition of the word. She explained:

> "I didn't give it to them. I try, see that's very easy to do, and I'm not saying that I never do that, cause I do. Sometimes you have to, but I don't think that that's - that's not as powerful as when they can generate it."

Here we see Ms. Avery's instruction guided by her beliefs about how children learn and how she can create powerful learning experiences.

Serial share in Ms. Spencer's classroom

In Ms. Spencer's classroom serial share is used at the very beginning of a lesson as part of an effort to "activate prior knowledge." In a lesson in which students are going to read a text about volcanoes, Ms. Spencer begins by asking students to make a list of

what they already know about volcanoes. After students write ideas in their notebooks Ms. Spencer says the following:

> "I'm just going to have everybody quickly share something, so just think of something off your list. If you happen to have to say the same thing as somebody else, that's okay. Or, if you think of something new, after listening to other people, and it's not on your paper right now, that's okay. You can still share it. We'll just go very quickly, and I'll try to get everybody. Looks like we have lots of people over here who are ready to share" (Interview 3).

Each student in the classroom shares a factoid or anecdote about volcanoes and Ms. Spencer accepts all contributions as equally valid. Whether or not students' contributions were correct or incorrect was unimportant and each contribution was treated individually; there was no effort to identify themes and patterns or to build collective knowledge about volcanoes. When asked about this instructional moment, Ms. Spencer explained:

> "Well I wanted them to activate their background knowledge, like I told them. And I wanted them to begin thinking about that so that hopefully as they were reading then they would have you know some things to connect to, some things already in mind about islands. And I was hoping that they would come up with you know kind of a broad scheme of things, *I know this about islands, I know this is an island, I've been to an island*, you know just some general things like that that then as they're reading they'd be able to connect to."

When asked why it was important for every student in the class to have an opportunity to speak, Ms. Spencer explained:

> "Well again I wanted them to hear kind of the breadth of the ideas, that I knew that some kids the first things they were going to write down obviously was what an island is, kind of the definition. And then I wanted them to hear that you know it's more than just that. Here are some examples of islands, you know a lot of the kids mentioned thinking of a tropical island, so I wanted them to hear the variety of ideas too so that they get an idea that you know as I'm activating my background knowledge in thinking about all this, I can be thinking about more than just the first thing that comes to my head."

In this initial sharing activity, as well as later in the lesson, several students shared information about islands that was inaccurate. I asked Ms. Spencer if she cared whether or not what they were saying was accurate. She explained:

> "At that point I wasn't so concerned. Well I mean a couple things I heard I kind of you know, I kind of cringed at it, but I wasn't as concerned. . . . I was hoping that as those things were in their mind, hopefully as they were reading you know they'd be like whoa, wait a minute you know and have that kind of ah ha moment or that moment of oh wait there's more to it or what I thought at first wasn't correct. So I didn't, that's why I didn't address it at that time."

When asked if there were lessons when it would matter and Ms. Spencer clarified:

> "Yes, yes and my main purpose was to have them do the visualizing. And so I wanted them to activate their background knowledge but I didn't want to place too much emphasis on that at the time. So that's why I chose to kind of down play that and I wanted everybody to share quickly but you know I didn't ask them to elaborate, I didn't, you know ask them to you know rewrite now what you think. You know and depending on what the lesson was about I might have chosen to do that too."

Note how the main purpose – visualizing – aligns with the district curriculum guide that Ms. Spencer uses to guide her work. Perhaps the lack of attention to discussing the ideas that were shared relative to volcanoes was also guided by the fact that the district has prescribed a focus on strategies – including visualization – and so spending time talking about volcanoes seems secondary to focusing on strategies given the district curriculum goals.

Trend 5: Reducing the cognitive demand of the task in the face of student failure

Teaching is a reciprocal task. The teacher asks a question and depends on her students to answer it. Cohen (1989) notes that a challenge for any profession of human improvement – including teaching- depends on the clients in order to achieve results. What happens when students fail? In the corpus of nominated lessons the teacher tended

to intervene in the face of student failure. An example from Ms. Woods's classroom provides a glimpse of this trend.

After reading half of the story *When Jo Louis Won the Title*, Ms. Woods asked students to summarize what has been read.

> **Ms. Woods:** Who can give me a summary of the whole half of the story that we've read. [Pause] Hold on, a minute. Organize your thoughts because we want everything to be in order. Alright Jamarcus – give me what you can of a summary of
>
> **Jamarcus:** Everybody was wowed that he won the title. And, um, and he was trying to get a good job to move to New York City. And he got on the train to go to New York City. And,
>
> **Dasia:** I thought he went to Harlem
>
> **Ms. Woods:** That's in New York City. Good start. You have something to contribute
>
> **Anthony:** When Joe Lewis won the title they threw a party to celebrate. And then the other girl that had grandfather that told her a story about when he went to New York.
>
> **Ms. Woods:** Okay, but you guys are still missing a key piece if you were telling someone about this story. You touched on it. There was a little girl named Jo Louis. Can you tell me if you were telling someone else what's something going on with her. You skipped a big part if you were just telling someone a quick summary.
>
> **Bria:** That she didn't want to tell people her name
>
> **Teacher:** Because
>
> **Bria:** It was a boy name
>
> **Ms. Woods:** we read a story about a girl who was named after a what?
>
> **Students:** A boxer
>
> **Ms. Woods:** [to student who just arrived] So we read a story about a girl who has the name Joe Lewis. She was named after a what?
>
> **Makayla:** a boxer

Teacher: a boxer so she was given the name Joe Lewis. And her grandpa was?

Students: John Henry

Shawn: And he's trying to figure out what's going on with her and he tells us a story about going from, where did he live?

Travon: the country.

Student: Mississippi to New York.

Ms. Woods: you got it, exactly.

The summarizing task starts off strong – with Ms. Woods encouraging students to organize their thinking and to think hard about the important pieces. However, when the students' summary is incomplete, Ms. Woods breaks the task down into a series of questions and the summary is constructed by the teacher asking a question and the students answering it. What was Ms. Woods supposed to do? She wanted her students to construct a successful summary, the period was about to end, and the initial summary fell short of what she considered satisfactory.

When asked why she chose to focus on summarization, Ms. Woods noted that students in her classroom liked to take Accelerated Reader tests which, she explained, "while it asks students comprehension questions, it is basically a summary" (Interview 1). I also wanted to know what Ms. Woods knows about summarization. When asked what she would teach a novice teacher about summarizing, she explains:

> "That I would just like them to be able to give you the main idea back after you've read a main portion of the story. Not everything, but the main, and that's what I really wanted them to get was something about the grandpa and the little girl being nervous. And they got half of it. So just kind of that it's not everything and that's what Nora said when she explained it. It's a blurb which is kind of a quick idea of what the story's about to kind of get somebody excited that wants to read it. So just that. That they get a portion of it, they don't have to know the

> whole story but just kind of they can relate it and that it's clear to you when they explain it" (Interview 1).

Ms. Woods's explanation of what she would teach a novice about summarizing raises questions regarding what specialized knowledge teachers need to know about summarizing. Several research efforts have identified different summarization "moves" including processes of deletion, generalization, and integration (Kintsch & van Dijk, 1978), and have detailed the developmental trajectory of summarization from copy-delete strategies to more sophisticated transformational strategies, such as condensing text ideas into a synopsis in their own words (Brown & Day, 1983). Has Ms. Woods been introduced to the idea that there is a developmental trajectory of text summarization, or what specific challenges children might have when summarizing texts?

Conclusion

Across each of these instructional moments included in this study we see evidence of tremendous sensemaking on the part of the classroom teacher utilizing a range of resources. Below I summarize the range of influences shaping reading comprehension instruction in the small sample of 4th and 5th grade classrooms.

Strategies as a means not an end: The role of the vanishing mediator

In both Ms. Avery's and Ms. Cannon's classrooms we see evidence that comprehension strategies are isolated from constructing and negotiating meaning in interaction with text. In Ms. Avery's classroom discussion leads with content but then veers to extended discussion about types of questions; in Ms. Cannon's classrooms discussion of questions is presented in isolation as a precursor to reading a text about an African American soldier's experience in the civil war.

Comprehension strategies have been endorsed as an effective and important component of reading comprehension instruction (NRP Report, 2000), and much of the teacher resources and curriculum in the area of reading comprehension instruction focus on strategy instruction. The corpus of lessons in this study reveal that students are extracting and constructing meaning about strategies, rather than engaging in the use of strategies as a tool for extracting and constructing meaning of texts. Perhaps thinking about strategies as a vanishing mediator would be a helpful way to conceptualize strategies as a tool for facilitating understanding. Fredric Jameson originally described the concept of the vanishing mediator in his text *The Ideologies of Theory* (1988). Jameson proposed that a vanishing mediator exists to mediate two opposing ideas and, once resolution has been accomplished, the mediator is no longer needed and therefore vanishes. Skillful adult readers do not consciously need strategies to mediate between text ideas and comprehension, though they very likely use them unconsciously. Individuals who are coming to know reading – developing from strategic to skillful readers – likely need explicit strategies in order to mediate text ideas and their own understanding. Understanding how strategies can be treated as a vanishing mediator rather than as the end goal of reading comprehension instruction is perhaps one way to support the use of strategies in the service of constructing and extracting meaning in negotiating written text.

Teachers' beliefs about what comprehension instruction should be

The instructional moments included in this study highlight the ways in which teachers' beliefs about reading comprehension instruction are congruous with the reading comprehension instruction that was nominated as representative of their teaching of

reading comprehension. While I did not aim to pinpoint the source of teachers' beliefs about reading comprehension instruction, there is good evidence that new teachers express beliefs and enact practices that reflect their districts' approaches to literacy instruction (Grossman, Thompson, & Valencia, 2002), that teachers utilize curriculum to guide their work (Ball & Cohen, 1996) and that professional communities shape teachers' work (Spillane, 1999). Arguably, the teacher resources such as STW and Reading with Meaning that teachers identified as resources act as a form of professional community.

All this to say that teachers' beliefs reflect a milieu of influences, and none reflect the RAND definition of what reading comprehension instruction should be. If the RAND Reading Study Group definition of what reading comprehension instruction should be is the ideal, then this ideal must be reflected in the resources that shape teachers' beliefs – especially at the district and curriculum level.

What about the role of standards in the state of Michigan?

No teacher in this study explicitly mentioned standards as an influence on her teaching. However, with the exception of Mr. Oliver – from whose classroom no instructional moments were drawn - all teachers in this study were working in the state of Michigan. In 2004, the Michigan Department of Education created Grade Level Content Expectations (GLCEs, pronounced "Glicks") in response to the federal No Child Left Behind Act of 2001. This act mandated the existence of a set of comprehensive state grade level assessments that are designed based on "rigorous grade level content." The fourth and fifth grade language arts GLCEs are divided into nine categories: Word Recognition, Word Study, Fluency, Narrative Text, Informational Text, Comprehension, Metacognition, Critical Standards, and Reading Attitude. By placing comprehension as a

category that stands apart from narrative text, informational text, and metacognition, the GLCEs seemingly support the divide between emphasizing the processes of skilled reading and learning content through narrative and informational texts. A closer inspection of the content of the GLCEs related to comprehension supports the idea that reading comprehension instruction in the state of Michigan should focus on personal experience, summarization, and categorization and classification of themes, ideas, and characters. The only reference to content is in GLCE R.CM.04.04 which suggests that comprehension instruction should provide students with opportunities to "apply significant knowledge from grade-level science, social studies, and mathematics texts. Suggesting, in fact, that comprehension instruction does not involve the use of these texts.

Figure 3.4: Fourth Grade GLCEs - Comprehension

Students will…

R.CM.04.01 connect personal knowledge, experiences, and understanding of the world to themes and perspectives in text through oral and written responses.

R.CM.04.02 retell through concise summarization grade-level narrative and informational text.

R.CM.04.03 explain relationships among themes, ideas, and characters within and across texts to create a deeper understanding by categorizing and classifying, comparing and contrasting, or drawing parallels across time and culture.

R.CM.04.04 apply significant knowledge from grade-level science, social studies, and mathematics texts.

At the fifth grade level students are held to the same GLCEs in the area of comprehension except that R.CM.04.03 is substituted with the following: "*Students will analyze global themes, universal truths, and principles within and across text to create a deeper understanding by drawing conclusions, making inferences, and synthesizing.*" (Michigan Department of Education, 2006). Hence, the higher order thinking skills involved in making inferences and synthesizing are only emphasized at the fifth grade

level.

Yet again we see that the instruction that was nominated as representative of reading comprehension instruction reflects the context in which teachers are working even if this instruction differs from the ideal put forth by the RAND reading study group.

Shifting the terrain of reading comprehension instruction

While literacy researchers have argued that one core problem for researchers in the area of reading comprehension research is an adequately rich set of theories to guide their work (RAND, 2002), it seems more accurate to say that rich theoretical models have not been adequately translated for use by teachers – or, that these models were not designed with an eye towards practice. The theoretical models that are available are devoid of an instructional framework. Even if teachers understood and embraced the idea that reading comprehension instruction should enable "extracting and constructing meaning through interaction with written text", this definition still does not give the teacher specific ideas about what to do with students in the service of text comprehension. This study is one step towards shifting reading comprehension instruction. Through careful observation of teaching practice and interviews with teachers about their work, I document how teachers have made sense of a field whose research base, while robust and storied, has not always had an eye on understanding the complexity of teaching practice.

The teaching vignettes included in this study highlight the many ways in which the teachers in this study operated as sensemakers and provides insight into the many influences on teachers' work. In the next chapter I turn my attention to focus more closely on one influence on teachers' work: teacher knowledge.

In this chapter we saw glimpses into how the knowledge base for teaching reading comprehension has been cast – for example – in the STW text. In chapter four I explore knowledge more closely based on a hypothesis that providing teachers with resources that include a better articulation of the knowledge a teacher needs in order to teach reading comprehension has the potential to improve reading comprehension instruction and, ultimately, reading comprehension outcomes.

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Chapter IV.
Knowledge for teaching reading comprehension: What is it and why does it matter?

In chapter three I used the lens of sensemaking to hypothesize about the potential influences on teachers' reading comprehension instruction including teacher beliefs, assessments, district and commercially published curriculum materials, and the teacher resource books available to teachers. In this chapter I turn the lens of sensemaking on the field of literacy in order to understand how, as a field, the topic of "knowledge for teaching reading comprehension" has been conceptualized. Using what is learned from this inquiry I hypothesize about a theory of knowledge for teaching reading comprehension.

The concept of knowledge for teaching reading comprehension is grounded in the idea that teaching requires specialized knowledge unique to the profession of teaching. That a teacher has to know subject matter differently in order to teach it is an idea that has been readily taken up in the fields of mathematics and science but has only recently received attention in the area of reading comprehension. Specifying the knowledge required to teach reading comprehension – what one needs to know that is different than simply knowing how to read – has been difficult because of the perceived lack of disciplinary grounding in this area and because few are concerned with teachers' ability to read, in contrast with, for example, their ability to solve mathematics problems or understand scientific phenomena.

Rationale for this study

I focus on understanding teacher knowledge in the area of reading comprehension because of the potential of teacher knowledge as a lever for improving reading comprehension instruction. While there has been enormous interest in studying teacher knowledge for at least four decades (e.g., Beagle, 1979; Wayne & Youngs, 2003), a landmark moment in the study of knowledge for teaching occurred in the mid-eighties when Shulman and his colleagues (1986) coined the phrase pedagogical content knowledge (PCK) and called upon researchers to focus on the ways in which teachers need to know their subject matter that is different from the ways in which well-educated adults know subject matter. Specifically, PCK refers to the knowledge that teachers have about their subject matter that allows them to transform common content knowledge (CCK) into representations, explanations, and learning opportunities that make the content accessible to learners. At the time this theory was presented, it ran counter to the popular notion that teachers simply needed to take more courses in a subject area in order to teach more effectively.

The concept of pedagogical content knowledge has been an important conceptual tool for studying and theorizing teacher knowledge and yet the implications of this conceptual tool in the area of reading comprehension instruction remain unclear. Seminal studies in the area of knowledge for teaching, in particular the set of studies that emerged out of the Shulman's initial Knowledge Growth in Teaching project (Shulman, 1986), focused on understanding teacher knowledge vis-à-vis subject matter preparation in disciplines such as mathematics, science, English literature, and history (Grossman, Wilson, & Shulman, 1989; Shulman, 1986, 1987; Wilson, Shulman, & Richert, 1987).

Shulman's call for educational researchers to think differently about teacher knowledge and the conceptual turn offered by pedagogical content knowledge resulted in a host of research activities aimed at understanding how teachers needed to know mathematics, science and physical education in order to teach children these subjects (e.g., Ball, 1988, 1993, Ball, Lubienski, & Mewborn, 2001; Gess-Newsome & Lederman, 1995; Magnusson, Krajcik, & Borko, 1999; Sherin, 2002). Only recently have similar efforts been undertaken in the field of reading (e.g., Carlisle, Correnti, Phelps, Zeng, in press; Hapgood, Kucan, & Palincsar, under review; Kucan, Palincsar, Khasnabis & Chang, in press, Phelps, 2005; Phelps & Schilling, 2004) and these efforts have primarily been targeted at early elementary reading instruction. Understanding the specialized knowledge required to teach reading comprehension has the potential to inform the design of teacher education and measures of teacher knowledge. Emerging evidence in the field of mathematics, which suggests that teacher's specialized knowledge and student achievement are significantly related (Hill, Rowan, & Ball, 2005), motivates these efforts.

Rationale for this study

The hypothesis that motivates this study is that a better articulation of the knowledge a teacher needs in order to teach reading comprehension has the potential to improve reading comprehension instruction and, ultimately, reading comprehension outcomes. There is an urgent need for the literacy community to begin to understand reading comprehension instruction differently. Across race, class, and gender, a vast majority of children in the U.S. are not learning to comprehend text well as demonstrated on standardized measures (Ingels, Burns, Chen, Cataldi, & Charleston, 2005). While this

study does not answer the question of whether or not a better articulated knowledge base results in improved reading outcomes, it provides the foundation for beginning to think differently about the knowledge base for reading comprehension instruction.

Research questions

This study is guided one key question: How has the field of reading conceptualized the knowledge base for teaching reading comprehension? Two sub-questions follow:

1) *What do three extant measures that purport to measure knowledge for teaching reading suggest is the terrain of knowledge for teaching reading comprehension?*

2) *What do four text-based resources suggest is the knowledge terrain for teaching reading comprehension with elementary students?*

I organize the paper in the following way: First I explore three extant measures of teacher knowledge in the area of reading comprehension; then I explore knowledge for teaching reading vis-à-vis four text-based resources on the topic. Then, using extant measures and text-based resources as the foundation, I present a hypothesis of a theory of knowledge for teaching reading comprehension.

Is there specialized knowledge required to teach children to comprehend text?

A majority of research to date considering the specialized knowledge for teaching has focused on single subject domains such as mathematics or science. This is not surprising given that researching knowledge in a single discipline offers a bounded way to conceptualize and catalog knowledge for teaching. The perceived lack of disciplinary specification for reading comprehension, then, makes identifying knowledge for teaching reading a challenge. Phelps (2005) conducted a survey of both teachers' and non-teachers' knowledge of text, language, and the reading processes needed to teach the

elementary subject of reading and found that there was a distinct knowledge base for the teaching of reading that is not held generally by non-teachers. While Phelps did not focus exclusively on reading comprehension, his work sets an important foundation for the argument made herein: in order to teach children to comprehend text, teachers need specialized knowledge that is different than simply knowing how to read.

The idea that teachers need to know subject matter differently is not new. Several scholars have argued that specialized subject matter knowledge is an essential component of teachers' professional knowledge (e.g., Ball & McDiarmid, 1990; Grossman, Schoenfeld, & Lee, 2005). How you know the subject matter matters, but *what is the subject matter of reading comprehension instruction*?

The fact that reading comprehension is not itself a discipline makes identifying the content of reading comprehension instruction difficult, especially when teachers are often expected to teach reading comprehension during a specified "language arts" block and during which comprehension instruction is happening with a range of texts. Recently I observed a one-hour reading comprehension lesson in which fourth-grade students were reading a text about Saturn; the primary focus of the lesson was having students identify the main ideas and supporting details of the text. I asked the teacher if she cared if students learned anything about Saturn and she replied:

> "No. You know I think it's interesting to them…but it's not anything that's in our science curriculum or not even coming up next year in fifth grade or any time soon, so no, it's just one of those things where I thought the way the article was laid out would do a good job of working on this idea of main idea, supporting details and text structure" (Interview with Ms. Spencer, March 2007).

In his 2006 text The Knowledge Deficit, Hirsch shares a similar example of a class of 9-year olds reading a text about a grasshopper storm in which students are

learning to "clarify." The point of the lesson was not to learn anything about grasshoppers, weather, or ecology but instead was focused on the practice of reading strategies. Hirsch argues, "The idea that reading skill is largely a set of general-purpose maneuvers that can be applied to any and all texts is one of the main barriers to our students' achievement in reading" (p. 14).

Reading comprehension instruction at the elementary level is a unique domain of study because it lacks a single disciplinary foundation. Absent the ability to lean on any one discipline, as Grossman did in her 1991 article *What are we talking about anyway? Subject-matter knowledge of secondary English teachers*, researchers in the area of reading comprehension are forced to work across disciplines such as science, history, math, psychology, sociology, and linguistics in order to understand the processes of text comprehension. And while - to date - this work has been rather interdisciplinary with regard to understanding the *processes* of reading comprehension, it has been less than interdisciplinary in the study of reading comprehension *instruction*.

While teachers are given guidance regarding teaching children about specific instructional strategies, they are given less guidance regarding how to integrate these strategies with meaningful content. Hence, strategies routinely become the end goal of reading instruction. The problem is further confounded by the belief that learning to read disciplinary specific texts is the terrain of middle school, secondary, and post-secondary teachers, and yet these teachers view their role as teaching content and thus a "pedagogy of telling" in which the students depend on the teacher, not the text, for information is dominant (O'Brien, Stewart, & Moje, 1995). In many secondary classrooms, non-text based practices such as whole-class lecture, explanation, demonstration, and recitation

dominate the pedagogical landscape. If elementary school teachers aren't teaching children to read complex texts rooted in disciplinary knowledge and neither are secondary teachers, where are students expected to learn to comprehend text?

Methods

Below I detail the processes of selecting and analyzing the seven text-based artifacts that are included in this study.

Selecting measures

I set out to identify measures that claimed to measure teacher knowledge in the area of reading comprehension. In the course of my investigation I located four measures for inclusion in the study. Comprehension and Learning from Text Survey (CoLTS, Hapgood, Kucan, & Palincsar, under review), and Video Viewing Task (VVT, Kucan, Palincsar, Khasnabis, & Chang, in press) were the only measures I found that focused exclusively on reading comprehension; a third measure, Content Knowledge for Teaching Reading (CKT-R, Phelps & Schilling, 2004), focuses on reading comprehension as one aspect of knowledge for teaching reading. I included the CKT-R measure because it has been psychometrically validated and was designed to be used in large-scale survey research efforts. The CKT-R measure is the only one of the three measures that is scalable in its current form.

Originally I also planned to include the *Praxis II Reading Across the Curriculum: Elementary* measure, developed by the Educational Testing Service (ETS) in response to states revised licensure and professional development requirements as required by No Child Left Behind (U.S. Department of Education, 2002). Because some states had begun using this measure as a "test out" alternative for teachers who do not want to take

additional university courses in reading, it seemed important to understand how the terrain of knowledge for teaching reading comprehension had been defined on this measure. Unfortunately, my request to utilize this measure for research purposes was denied by the ETS research division and therefore I did not have access to the measure for research purposes.

The analysis, therefore, focuses on three measures: CoLTS, CKT-R, and Video Viewing. Interestingly, each of these measures is organized in a different format. CoLTs is a open-ended constructed response format, Video Viewing utilizes constructed responses paired with repeated viewings of videos of teaching practice, and CKT-R is a multiple choice assessment.

Selecting text resources

There are numerous text-based resources and measurement instruments that attempt to define what teachers need to know and do. In selecting a representative sample, I aimed to identify a) extremely influential documents, b) widely utilized documents, and c) documents that represent the perspectives of a range of stakeholders (teachers, policymakers, literacy researchers). Below I detail the four text resources selected as representative.

The National Reading Panel Report (NRP) (National Reading Panel, 2000): The NRP report is a research synthesis generated by researchers for researchers and policy makers; the analysis included in this study focuses on Chapter 4: Comprehension. The NRP report is often considered the document that provided the foundation for part B of the No Child Left Behind act and therefore is an extremely influential document.

Knowledge to Support the Teaching of Reading: Preparing Teachers for a Changing World (Snow Griffin, & Burns, 2005): This text is a consensus document representing the thinking of leading scholars in the field of literacy. This book was created as part of the National Academy of Education's Committee on Teacher Education, whose members have been charged with the task of creating a core knowledge base for teacher education.

Creating Literacy Instruction for All Students (Gunning, 2005): This textbook written by a literacy scholar and is widely used in teacher education methods courses focused on comprehension instruction. In a study published by the National Council on Teacher Quality, this text was one of only four textbooks, out of 227, deemed acceptable for use in teacher education coursework (Walsh, Glaser, & Wilcox, 2006).

Mosaic of Thought (Keene & Zimmerman, 2007): This text was created by practicing teachers for practicing teachers and is a text that is widely used by teachers for their own professional development. *Mosaic of Thought* is the fourth most popular literacy text on Amazon.com and the most popular text on the topic of reading comprehension instruction. Five of the seven teachers in the studies reported in chapters two and three cited *Mosaic of Thought* as an influence on their work.

The first two text choices are representative of rigorous efforts to understand, review, and synthesize the knowledge base for reading broadly, while the second two choices offer insight into the terrain of knowledge for teaching reading comprehension from the perspective of practice. Each of these serves as a different probe into how the terrain of knowledge for teaching reading has been characterized.

Analyzing measures and resources

I utilized methods of textual analysis, specifically content analysis, to characterize the knowledge base for teaching reading comprehension as represented in the measures and text-based resources identified above. First I read through each resource in its entirety and flagged sections that focused on reading comprehension, specifically. Then I read through each section and asked the question "What does this suggest is the terrain of knowledge for teaching reading." As I was analyzing the content I organized the findings into three broad categories: a) the theoretical perspective from which the artifact was created; b) the categories of knowledge suggested by the instrument; and c) the ways in which the instrument characterized the pedagogy of reading comprehension instruction (e.g., reading comprehension instruction happens through discussion).

Findings and Discussion

Recall that this study is an attempt to understand how the field of reading has conceptualized the knowledge base for teaching reading comprehension. Below I present a content analysis of each measure and text-based resource; additionally, I synthesize the findings across measures and text-based resources into two tables. This makes it possible to identify patterns across various artifacts.

What do extant measures suggest is the terrain of knowledge for teaching reading comprehension?

Content Knowledge for Teaching Reading

The *Content Knowledge for Teaching Reading* (CKT-R) measure (Ball, Phelps, Rowan & Schilling, 2003; Phelps & Schilling, 2004) was developed as part of the Study of Instructional Improvement (SII, http://www.sii.soe.umich.edu). SII is a large study specifically aimed at understanding a number of comprehensive school reform efforts but

broadly aimed at understanding various aspects of instructional change and instructional capacity in schools and classrooms.

The full CKT-R measure is designed around the concept of PCK and aims to understand teachers' knowledge of the specialized content teachers need in order to teach children to read. For the purposes of this study I analyzed only the released items related to comprehension; this involved 49 items organized into eleven "scenarios." Each section of the measure is organized into a series of scenarios written in such as way that they present teachers with situations they might encounter in their work. Each scenario involves one or more items. One scenario, for example, asks the teacher to read a short description of a classroom episode and then answer five related questions. The measure designers categorized the 49 comprehension related questions into three sub-categories: knowledge of content/comprehension (6 scenarios, 22 questions), knowledge of students and content/comprehension (2 scenarios, 10 questions), and knowledge of teaching and content/comprehension (3 scenarios, 17 questions)

While the subset of comprehension-related CKT-R items is included in full in Appendix A, here I explore the questions in each of the three subcategories in an effort to understand what these questions suggest is the terrain of specialized knowledge for teaching reading comprehension.

Section 1: Knowledge of content/comprehension

The questions focused on knowledge of content/comprehension focus on two aspects of this specialized knowledge: the ability to analyze a text and knowledge of language, specifically parts of words. Text analysis focuses on identifying central details, constructing questions that focus on symbolic meaning, differentiating between fiction

and informational texts, making inferences, and identifying similes. A sample question focused on text analysis is included in Figure 4.1.

Figure 4.1: CKT-R Text Analysis Question

Mr. Hamada's students are reading a fable called *The Partridge and the Fowler.*

The Partridge and the Fowler

A Fowler caught a Partridge and was about to kill it. The Partridge earnestly begged him to spare his life, saying, "Pray, master, permit me to live and I will entice many Partridges to you in recompense for your mercy to me." The Fowler replied, "I shall now with less scruple take your life, because you are willing to save it at the cost of betraying your friends and relations."

To assess his students' understanding of *The Partridge and the Fowler*, Mr. Hamada asks them to work in small groups to select a moral for this fable. He provides a list of possible morals. Which choices capture the meaning of this fable? (Mark YES, NO, or I'M NOT SURE for each choice.)

	Yes	No	I'm Not Sure
a) Birds of a feather flock together.			
b) One cannot escape one's own evil deeds.			
c) It is better to take the life of the wicked than the benevolent.			
d) The gods help those that help themselves.			
e) The hero is brave in deeds as well as words.			

The one scenario focused on knowledge of language asked teachers to determine whether ea- was a meaningful prefix. This question is included in Figure 4.2 below.

Figure 4.2: CKT-R: Knowledge of Language Question

Samantha suddenly raises her hand during the discussion of an Aesop's fable called *The Partridge and the Fowler*. She is excited because she thinks she has found out the meaning of the word "earnestly" from examining the structure of the word (i.e., meaning elements). She announces:

> I know "earnestly" means something like "with enthusiasm." It is like "eagerly" since both begin with the prefix "ea." And it means that the Partridge was doing something like eagerly begging.

Nick speaks up.

> I'm not sure what "earnestly" means. But I don't think that "earnestly" and "eagerly" both begin with the same prefix. "Ea" is not a prefix. It doesn't mean anything.

What can you tell about each child's (or both children's) understanding of the use of prefixes to figure out the meaning of words? (Mark ONE answer.)

a) Samantha is reasoning about prefixes correctly in this instance.
b) Nick is reasoning about prefixes correctly in this instance.
c) Neither is reasoning about prefixes correctly in this instance.
d) Both are reasoning about prefixes correctly in this instance.

While the narrative surround provides an interesting context within which to explore whether or not ea- is a meaningful prefix, it is questionable whether this question is any different than questions that ask teachers to simply identify morphemes in a word.

Knowledge of students and content/comprehension

The knowledge of students and content/comprehension section suggests that the terrain of knowledge for teaching reading comprehension involves knowledge of students in interaction with content along two dimensions: responding to students and diagnosing sources of reading difficulty. These two foci are constructed in two separate scenarios. The first scenario asks the respondent to read a student's written response and then, based on the response, to assess whether the child is having difficulty reading for details, synthesizing information across texts, understanding the vocabulary, or paying attention to the information in the text. In the second scenario the respondent is asked to consider

why a child is skipping words while reading a text that is appropriately challenging for his reading level. The questions ask the respondent to consider whether the child relies too heavily on print information, uses content to predict words, needs to learn to pay attention to print, or to consider whether the text is too conceptually challenging despite the words in the text being at an appropriate reading level. Both of these scenarios focus on the work of teaching that requires the teacher to take student work or student error and to try to determine why the child is doing what he/she is doing – the day to day "sensemaking" of teaching.

Knowledge of teaching and content/comprehension

This final section the CKT-R comprehension sub-section focuses on respondents' abilities to identify productive pedagogical moves with regard to teaching vocabulary and building background knowledge. This suggests that knowing how to teach children words that they encounter in text as well as knowing how to develop conceptual understanding of text ideas, often called "building background knowledge" are two important aspects of the terrain of specialized knowledge for teaching reading comprehension. The scenario focused on developing word-level knowledge is depicted in Figure 4.3.

Figure 4.3: CKT-R Question – Developing Knowledge of Words

While reading The Marvelous Manatee Jamal says, "I've heard the word habitat before, but I can't remember what it means." Ms. Gomez is debating what to do next. Given the text of The Marvelous Manatee, which of the following are steps that could help Jamal understand the meaning of the word "habitat?" (Mark YES, NO, or I'M NOT SURE for each choice.)

	YES	NO	I'M NOT SURE
a) Ms. Gomez should tell Jamal the meaning, since Jamal is unlikely to figure out the meaning of this word himself from the text.	1	2	3
b) Ms. Gomez should tell Jamal to look for a root word in "habitat."	1	2	3
c) Ms. Gomez should tell Jamal to read *The Marvelous Manatee* again, looking for clues in the text.	1	2	3
d) Ms. Gomez should tell Jamal to substitute another word for "habitat" that makes sense in the context of the text.	1	2	3
e) Ms. Gomez should tell Jamal to look back over what he has read in *The Wonderful Manatee* and think about what meaning for "habitat" would make sense.	1	2	3

Summary: CKT-R Comprehension Subsection

Across the CKT-R comprehension subsection five themes arise with regard to the terrain of knowledge for teaching reading comprehension: text analysis, knowledge of word parts, responding to student errors/work, teaching children unknown words, and building background knowledge.

Comprehension and Learning from Text Survey

The *Comprehension and Learning from Text Survey*[5] (CoLTS) (Hapgood, Kucan, & Palincsar, under review; Schilling & Hapgood, 2006), included in its entirety in Appendix B, is designed to measure teachers' PCK relative to the teaching of reading

[5] Both *CoLTS* and the *Video Viewing Task* were designed as part of an IERI funded scale-up study on comprehension instruction (Palincsar, Spiro, Magnusson, 2003).

comprehension using an informational text. For purposes of this analysis I utilized both the CoLTS survey and the corresponding coding scheme, which together provide insight into the terrain of what counts as reading comprehension as well as the theoretical framework utilized in the design of the study.

CoLTs is a two-part open response survey in which teachers first read a short text titled *"How Big Can a Bug Be"* (Facklam, 1994) and then write constructed responses to a range of questions. The constructed responses offer insight into the respondents' ability to:

- Analyze an informational text and identify the potential challenges to students' understanding;
- Name productive discourse moves that have the potential to support students' in extracting and constructing meaning from text; and
- Assess and diagnose the challenges students experience while interpreting and learning from informational text.

The CoLTs measure and corresponding coding scheme suggest that the terrain of knowledge for teaching reading comprehension involves a) the ability to analyze text in specialized ways that are unique to the profession of teaching, b) specialized skill with regard to interpreting students' responses (e.g., determining whether or not the students response reflects comprehension) and c) responding to students' ideas in a way that maintains a focus on constructing and extracting meaning.

While the CKT-R measure is multiple choice, the CoLTS measure is constructed response. This means that while there are similar themes across the measures, the CoLTS measure offers much less specificity with regard to, for example, what aspects of text analysis comprise the terrain of knowledge for teaching reading. Instead of asking respondents to identify similes or morals or the genre of the text, respondents are asked to size up the text with an eye towards identifying which ideas in the text would be

important for students to learn and also to identify aspects of the text that would potentially interfere with comprehension. The text analysis portion of CoLTs is represented in two questions. These questions read:

> *Imagine that the "Bugs" text on the preceding page is one that your students will be reading.*
>
> *A. Read the text yourself. In the space below, list the* ***most important*** *ideas in the text; that is, the ideas that you want students to learn from the text.*
>
> *B. Look over the text again. How and why might students have difficulty comprehending or learning from this text?*

The different approaches to text analysis included in CoLTS and CKT-R raise important questions about how teachers need to know text analysis. It seems likely that being able to identify morals of fables, similes, and points in the text that require inferential thinking would overlap with identifying elements in the text that potentially interfere with comprehension, and that being able to do both would be important knowledge for teaching reading comprehension.

In addition to a shared focus on text analysis, both the CoLTS and CKT-R measures focus on interpreting students' responses. A third dimension, though, responding to students' in ways that maintain a focus on constructing and extracting meaning, offers insight into the theoretical stance that guided the designing and scoring of the CoLTs measure. A theoretical stance is not apparent in the CKT-R measure. Furthermore, implicit in the design of the CoLTs measure is a stance regarding the role of discussion in developing reading comprehension skill. The idea that discussion is a productive format for engaging students in *constructing* and *extracting* meaning through discussion of text is apparent in several questions. For example, one question takes a

students' incomplete response and asks the respondent what he/she would do to support the child. The question reads:

> After reading the first two paragraphs, you ask for a volunteer to formulate a question about the text for the rest of the class to consider.
>
> The volunteer you called upon struggled to say something and then responded: "I don't know how to say it." How would you respond? Why?

This question potentially taps the specialized knowledge and judgment required in the face of a pedagogical approach that is as much dependent on teacher knowledge as it is dependent on what students actually say.

Finally, one question raised by the CoLTs measure is what role content knowledge about the subject matter plays in reading comprehension instruction. For example, in question 2G, respondents are asked to answer the following question:

> **2G: After reading the third paragraph, a student comments: "I know that lobsters have exoskeletons, too, and they molt." What is your sense regarding this student's comprehension of the text?**

It is important to be mindful of the fact that the CoLTS measure is not tied to any particular curriculum and so there is no way to know if teachers know anything about lobsters or exoskeletons. The design of the measure does not give the respondent the opportunity to consult outside sources to learn about a topic they potentially know nothing about, which raises the question if being able to respond to students' ideas in a way that maintains a focus on *constructing* and *extracting* meaning is dependent on knowing whether or not what they say is accurate. If teachers have no knowledge of lobsters and their exoskeletons or general knowledge of bugs, does this influence their

response? We do not know teachers' level of knowledge about these topics and how this background knowledge is manifested in their responses to the CoLTS measures.

Video Viewing Task

The *Video Viewing Task* (VVT, Kucan, Palincsar, Khasnabis, & Chang, in press) is designed around participants' repeated viewing of an instructional episode in which comprehension instruction is the primary focus. The purpose of this measure is to assess teachers' ability to describe, analyze, and critique reading comprehension instruction in which the explicit goal is to develop students' reading comprehension abilities. The task consists of watching one five-minute video clip two times. After watching the video clip twice, participants were asked to respond to the following four questions:

1. *What was the teacher trying to accomplish?*
2. *How would you describe the role(s) of the teacher?*
3. *How would you describe the role(s) of the students?*
4. *What would you have chosen to do differently?*

   Respondents were also invited to "make any other comments."

Analysis of VVT data involved first parsing respondents' answers into propositions and then analyzing each proposition along two dimensions: the *focus* of the proposition (context, text, student, and teacher) and the *stance* the teacher took toward it (descriptive, analytic, or evaluative). The VVT provides a different way of conceptualizing knowledge than the open-ended survey response or multiple-choice instruments. Implied in the coding scheme is a continuum of development from novice to expert. Sherin & Han (2004) observed that novices tend to focus on the context and teacher while more expert teachers tend to focus on the student and text. With regard to stance, novices tend to describe, while more experienced teachers tend to offer analytical or evaluative comments.

The VVT task is not so much a measure that specifies the specific "terrain" of knowledge for teaching reading; rather the VVT measure provides insight regarding *how* teachers' have organized their knowledge relative to two specific research-based approaches to comprehension instruction: reciprocal teaching and questioning the author. The measure aims to understand "teachers' understanding of Reciprocal Teaching and Questioning the Author as well as their understanding of how those approaches support students to learn to comprehend text information during discussion"

The measure designers suggest that VVT is an opportunity to assess teachers' knowledge and beliefs regarding reading comprehension instruction in the context of classroom practice. By using a video clip of instruction, the VVT is the only measure that requires the respondent to consider the complexity of reading comprehension instruction practice. Furthermore, the measure implicitly recognizes that beliefs and knowledge are intertwined. The opportunity to put forth one's beliefs – especially in responding to the question "what would you do differently" is an aspect of the terrain of reading comprehension not included in either CoLTS or CKT-R. Given what we learned about the potential levers on classroom practice suggested in chapter 3, it seems quite possible that a teacher could perform competently on the CoLTs measure but not believe that reading comprehension instruction is about constructing and extracting meaning through discussion and therefore not include discussion as part of reading comprehension instruction in his/her classroom.

Terrain of knowledge for teaching reading comprehension suggested by extant measures

While there are some common themes across the measures, each highlights different dimensions of the terrain of knowledge for teaching reading comprehension.

The terrain suggested by the three measures is summarized in the Table 4.1

Table 4.1: The terrain of knowledge for teaching reading comprehension according to three extant measures

	CoLTs	**CKT-R**	**Video Viewing**
Analysis of text and text features	Constructed response with an eye towards what students might have difficulty with	• Identifying the moral in a fable, • Identifying symbolic meaning, • identifying central details, • differentiating between fiction and informational texts, • making inferences, • identifying similes.	
Knowledge of language		Identifying morphemes	
Diagnosing reading difficulty/ interpreting student responses	Interpreting students' responses - Incomplete responses - Inaccurate responses - Tangential responses - Non-responses	• Looking at student work • Diagnosing the source of reading error	
Pedagogical moves	Orchestrating discussion	• Posing questions • Teaching unknown words • Building background knowledge	Resides in respondents description of teacher and student roles
Knowledge of specific approaches to comprehension instruction	Text-based discussion		Reciprocal teaching Questioning the Author
Stance defining reading comprehension instruction	Reading comprehension instruction should facilitate constructing and extracting meaning.		

Across the "terrain" defined by these measures we see that there is some consensus – for example, teaching reading comprehension requires knowledge of specific pedagogical moves - as well as areas of reading comprehension that are unique to each measure. It seems reasonable to claim that no one measure accurately captures the entire terrain and that each measure suggests important dimensions of the terrain.

Importantly, none of these measures has been validated in terms of its implications for classroom practice – that is, we do not know anything about the

relationship between a teacher's performance on the measure and his/her teaching of reading comprehension.

Text-based resource analysis

Text 1: National Reading Panel Report: *Chapter 4, Comprehension*

The first text analysis is drawn from chapter 4 of the *National Reading Panel* (NRP) report. The NRP report is a widely circulated and widely cited document and is representative of efforts to synthesize the vast research base in the area of area of reading comprehension. Chapter 4 of the NRP report, titled *Comprehension*, is divided into three parts: Part I: vocabulary instruction, part II: text comprehension instruction, and part III: teacher preparation and comprehension strategy instruction.

Part I, vocabulary instruction, asserts that vocabulary instruction supports comprehension, but the text never explicitly links vocabulary instruction and reading comprehension instruction despite the recognition that it is almost impossible to separate the two. The authors note:

> "Both vocabulary and comprehension involve the meaning of the text, albeit at different levels. Vocabulary is generally tied closely to individual words while comprehension is more often thought of in much larger units. To get to the comprehension of larger units requires the requisite processing of the words. Precisely separating the two processes is difficult, if not impossible." (4-15)

While the purpose of part one of chapter four is to review approaches to vocabulary instruction, there are some glimpses into the terrain of knowledge for teaching reading comprehension. The authors cite Stahl and Fairbanks, 1986, who conducted a meta-analysis of research on vocabulary instruction. The authors conclude that vocabulary instruction "was an important component for comprehension" (4-20) and that the most effective instructional techniques were a mix of definitional and contextual programs.

The report is not constructed at a level of detail such that these definitional or contextual programs are discussed at any level of detail, but it does suggest that part of the terrain of knowledge for teaching reading comprehension must include attention to vocabulary.

Part II of chapter four, text comprehension instruction, endorses teaching readers to use comprehension strategies. The focus on comprehension strategies is based on the idea that teaching students to use specific cognitive strategies improves reading comprehension. The authors define comprehension strategies as:

> " . . .specific procedures that guide students to become aware of how well they are comprehending as they attempt to read and write. Explicit or formal instruction on these strategies is believed to lead to improvement in text understanding and information use. Instruction in comprehension strategies is carried out by a classroom teacher who demonstrates, models, or guides the reader on their acquisition and use. When these procedures have been acquired, the reader becomes independent of the teacher." (4-40)

Part two of chapter four does not specify the terrain of knowledge for teaching reading at any level of detail except to say that teachers should demonstrate, model, and guide. Later in section two the report suggests that "For teachers, the art of [strategy] instruction involves a series of "wh" questions: knowing when to apply what strategy with which particular student(s)."

The third part of chapter four focuses on the topics of teacher preparation and text comprehension and is the only section of the chapter focused on specifying how we prepare teachers to teach reading comprehension. Given the endorsement of strategy instruction in part II, I expected to see specific attention to how we teach teachers to teach children to use strategies. While the report referenced research demonstrating that teachers could be taught how to teach strategy instruction, there was no specific information regarding what they need to be taught. The report did generally suggest the

following:

> "Teachers need training to become effective in explaining fully what it is that they are teaching (what to do, why, how, and when), modeling their own thinking processes for their students, encouraging students to ask questions and discuss possible answers and problem solutions among themselves, and keeping students engaged in their reading by providing tasks that demand active involvement. There should be greater emphasis in teacher education on the teaching of reading comprehension. Such instruction should begin during pre-service training, and it should be extensive, especially with respect to preparing teachers to teach comprehension strategies." (p. 4-8)

The terrain of knowledge, then, as suggested by the NRP report part III, is knowledge of how to:

- Give effective explanations of what to do, why, how, and when (presumably relative to strategies)
- Verbalize thinking processes for students
- Facilitate question asking sessions and discussion
- Keep students engaged in the reading task

Implied also is the idea that teachers have to know how to create engaging reading tasks; what those tasks are remains unstated. The NRP report is overwhelmingly focused on strategy instruction. This is a different perspective on reading comprehension instruction than the stance implied by the CoLTs measure, which suggests that reading comprehension instruction is about *extracting* and *constructing* meaning through discussion and that strategies such as questioning should be used as tools that guide students in extracting and constructing meaning.

Overall the NRP report is quite general with regard to what specifically teachers would need to know in order to teach reading comprehension.

Text 2: Knowledge to support the teaching of reading

The second analysis drawn from the text *Knowledge to Support the Teaching of Reading: Preparing Teachers for a Changing world* – a consensus document compiled

by the National Academy of Education Reading sub-committee that, like the NRP report, focuses on reading development broadly, not reading comprehension specifically.

The sub-committee responsible for generating the support was comprised of ten literacy scholars from a range of universities and education related research institutions. The report provides a framework for understanding, broadly, the knowledge a teacher needs in order to teach children to read with meaning. While chapters one and six comprise the introduction and conclusion, the four remaining chapters provide categories for thinking about knowledge for teaching reading comprehension. These chapters include:

- Students change: What are teachers to learn about reading development;
- Students vary: How can teachers address all their needs?;
- Students encounter difficulties: When teachers need specialized knowledge; Learning to use reading assessments wisely.

While it is important to keep in mind that the text was written broadly, I will review each chapter in an effort to characterize the potential insight the report provides regarding the specific terrain of knowledge for teaching reading comprehension.

Chapter two questions what teachers need to learn about reading development as individuals learning to read become increasingly skillful and strategic over time. The chapter is not specifically targeted at understanding what, specifically, teachers need to know in order to foster this skillful development. Rather, the chapter highlights seven areas in which "differential development" can lead to differences in reading comprehension. These influences include:

Purposes and goals for reading which set the reader up to bring background knowledge to bear on the reading task;

Nonlinguistic abilities and processes such as perception, attention, and memory ease;

Engagement and motivation, which support the reader in enduring through the reading task;

Domain knowledge can be about broad domains such as understanding the life cycle or narrow domains such as basketball;

Discourse knowledge that allows one to exploit the features and functions of different styles and genres;

Vocabulary and linguistic knowledge including knowledge of words and knowledge of syntax, semantic, and pragmatic systems;

Cognitive and metacognitive strategy development focuses on text-level strategies that facilitate comprehension.

These seven influences have implications for what a teacher would need to know. Broadly, these categories suggest that teachers need to know how to:

- Help students understand the purposes for reading,
- Develop domain, discourse, vocabulary, and linguistic knowledge,
- Develop cognitive and metacognitive strategies,
- Engage and motivate students.

After discussing each of these categories in turn, the chapter shifts to focus on knowledge of texts and knowledge of language systems. Relative to facilitating comprehension, the text suggests, broadly, that teachers need to have knowledge of morphology, etymology, syntax, pragmatics and discourse, especially in academic texts.

Chapter four provides a detailed portrait of two learners and their literacy experiences across the K-12 spectrum. The authors highlight the need for teachers' to be aware of individual students needs while also confronting several myths about students who are learning English as a second language as well as students who speak a nonstandard dialect of English. While the chapter hypotheses that the two students' teachers know phonology, metacognition, etymology, orthography, semantic, syntax, discourse, and pragmatics as well as "a respectable complement of teaching practices for

using this knowledge" (p. 125) the text does not offer specific prescriptions for what those teaching practices should be nor does the text specificity what, specifically, these teachers know about metacognition, syntax, or any of the listed categories. Again, the text provides a useful framework for thinking about knowledge for teaching reading but does not provide any level of detail beyond the identification of useful categories.

Chapter four is titled Students encounter difficulties: When teachers need specialized knowledge. Earlier I defined knowledge for teaching reading comprehension as the specialized knowledge required to teach reading comprehension; the title of chapter four uses the phrase specialized knowledge somewhat differently, referring to the fact that one in ten students in U.S. classrooms qualifies for special education and that teaching students who are classified as special education require a specialized knowledge base. Given the likeliness that teachers will have students in their classrooms who have been classified as special education, this seems like an important aspect of the terrain of knowledge for teaching reading comprehension.

Text 3: Creating Literacy Instruction for all Students

Creating Literacy Instruction for all Students (Gunning, 2005) is a textbook comprised of 13 chapters, each is focused on some aspect of teaching reading. My analysis of the textbook focuses the two chapters focused on text comprehension. Chapter six is titled *Comprehension: Theory and Strategies* and Chapter 7 is titled *Comprehension: Text Structures and Teaching Procedures*.

The two chapters focused on comprehension offer a dizzying tour of the vast terrain of research in the area of reading comprehension. Chapter six begins by explaining schema theory, situation models, the role of reasoning, the role of attention,

and the developmental nature of reading comprehension – all in three pages. Then the text moves on to explain comprehension strategies. Strategies are divided into three categories: preparational strategies (activating prior knowledge, setting purpose and goals, previewing, predicting); organizational strategies (comprehending the main idea, selecting or constructing the main idea, determining the relative important of information and summarizing); and elaboration strategies (making inferences, imaging, and question generation). The descriptions of each of the strategies offer almost no into what a teacher would need to know in order to teach each strategy effectively. For example, the reader is reminded that "question generation is a powerful strategy" and that "in addition to being a novel and interesting activity question generation is also an effective strategy for fostering comprehension" (p. 302). The text provides the reader with little insight into how question generation fits into the theoretical models presented at the beginning of the chapter nor does the text attend to what a teacher would need to do to support students in generating questions that support comprehension. Chapter six ends with a focus on two pedagogical models: Questioning the Author and Reciprocal Teaching. The reader is provided with an encyclopedic step-by-step account of how to implement each instructional approach. The fact that each approach is characterized in a step-by-step manner contradicts the theoretical stance that is inherent in both. Specifically, that reading comprehension instruction requires flexible and responsive conversations with students in interaction with text in order to facilitate comprehension.

While chapter six focused on theories of text comprehension and comprehension strategies, chapter seven focuses more closely on text structures and "teaching procedures". Much like chapter six, chapter seven provides the reader with very general

insight into the terrain of knowledge for teaching reading comprehension. For example, towards the end of chapter six the author provides the following "FYI" to the reader: "To help students structure their summaries of fictional pieces, you might use story grammar, which is explained in the next chapter. Chapter seven has the following to say on the topic of story grammar:

> "Various story grammars, or schemes, are available for analyzing a story into its parts. Although each may use different terminology, they all tend to concentrate on settings, character, and plot. Plot is divided into the story problem and/or the main character's goal, the principal episodes, and the resolution of the problem. In most story grammars, characters are included in the setting; however, as setting is a literary word that has long been used to indicated only time and place, it is used in that sense in this book. Different types of stories have different types of structures, and as students progress through the grades, both stories and structures become more complex." (p. 318).

In this example, the explanation of story grammar offers little insight into what a teacher needs to know in order to teach children to use story grammar elements to facilitate text comprehension. Are there elements of story grammar that children have difficulty with? How do non-fiction genres such as biographical memoir, often written as a story, interact with traditional story grammar structures? What about stories that aren't structured as traditional problem/solution? What role can story mapping play in promoting rich discussion about text?

While the text does provide the reader with a list that categorizes various text structures (enumeration-description, time sequence, comparison-contrast, etc.) the text does not provide insight into what teachers need to know about these text structures in order to support comprehension. For example, are time-sequence texts easier to comprehend than texts that are organized in the cause-effect structure?

Finally, chapters six and seven provide the reader with a description of a range of pedagogies including Reciprocal Teaching (Palincsar & Brown, 1984), Questioning the Author (Beck, McKeown, Hamilton, & Kucan, 1997), Guided Reading, Directed Reading Activity, and Directed Reading and Thinking Activity. These descriptions are often step-by-step "how to" guides to the approach. In addition to listing these specific pedagogical approaches, the text urges teachers to use questioning and graphic organizers, are urged to develop students' knowledge of strategies, and are reminded that writing stories can help develop comprehension. While this tour of practices is helpful in alerting the reader to the range of instructional practices that could potentially support reading comprehension, it is not clear how these various approaches fit together into an instructional framework. How are novice teachers expected to organize comprehension instruction given the list of practices included in the Gunning text? And where are they expected to learn what to do inside each practice in order to implement the pedagogical approach skillfully. Perhaps because of the nature of the textbook market or perhaps because of the nature of the field of reading comprehension, the reader is left with a broad understanding of reading comprehension but very little knowledge of what to do in practice each day in the service of teaching reading comprehension.

Text 4: Mosaic of Thought

The fourth and final text is *Mosaic of Thought* (Keene & Zimmerman, 2007), a text written by two classroom teachers with extensive teaching experience and a text that was chosen because it is the most popular teacher professional development book on the topic of reading comprehension. The book is an attempt to provide the reader with a "physiology" of reading – "a picture of the actual working of the parts as a reader

interacts with lively text" (p. ix). – to take the reader through the myriad ways in which we construct meaning as we read.

The text has an almost inspirational tone from the outset and, unlike the textbook reviewed above, it is easy to read. Through thick narrative description the authors take the reader inside the classrooms of teachers who have, without a doubt, created rich literacy environments. The early chapters in the text focus on the reader, specifically metacognition, and connecting the known to the new – especially through personal connections with text. Attention then turns to instruction – specifically how to develop strategic readers. The authors focus the readers' attention on the topics of determining importance, questioning, the use of sensory images, inferring, synthesis, and developing students as independent readers. While the narrative text is compelling and extremely interesting, this text is not chiefly about what a teacher would need to know and be able to do in order to implement the ideas that are suggested. For example, on the topic of synthesis, the authors note the following:

> "The process of synthesizing occurs during reading.
>
> - Proficient readers maintain a cognitive synthesis as they read. They monitor the overall meaning, important concepts, and themes in the text as they read and are aware of ways text elements fit together to create that overall meaning and theme. A proficient reader's synthesis is likely to extend the literal meaning of a text to the inferential level" (p. 184).

While this knowledge is likely important, the implications of this knowledge for practice are not clear. For example, how does a teacher develop students so that they can "maintain a cognitive synthesis as they read"? Where does this fit in an instructional framework?

Much like the other text-based resources included in this study, *Mosaic of Thought* provides the literacy community with useful categories for thinking about

teacher knowledge but the text falls short of articulating a theory of knowledge for teaching reading comprehension.

Terrain of knowledge for teaching reading comprehension suggested by extant measures

Analysis of four representative texts provides a much more narrow picture of the terrain of knowledge for teaching reading comprehension than the terrain defined by the measures. With the exception of the *Knowledge to Support the Teaching of Reading* text, the text-based resources do not attend to knowledge of language, knowledge of reading development, or the ways in which teachers need to be able to hear and interpret student responses. The terrain suggested by the four text-based resources is summarized in a table included in Appendix C.

With the exception of the *Knowledge to Support the Teaching of Reading* text, there is an overwhelming emphasis on strategy instruction. In one text, *Mosaic of Thought*, strategy instruction and comprehension instruction are treated almost synonymously. Given that strategy instruction has received considerable attention in the research literature, it is not surprising that most efforts to characterize the knowledge base for teaching reading comprehension attend to the topic of strategy instruction. However, given the variable role of strategy instruction across the seven artifacts – from positioning knowledge of strategies as the end goal of comprehension instruction, to treating strategies as a tool for use in facilitating comprehension – it is not surprising that strategy instruction assumed such a prominent role in the reading comprehension instruction that was analyzed in chapter two.

Efforts at sensemaking: The terrain of knowledge for teaching reading comprehension

The instruments and texts analyzed in this study suggest important aspects of the terrain of knowledge for teaching reading comprehension. This analysis also provides insight into the ways in which efforts to characterize the knowledge base for teaching reading comprehension have not been chiefly about practice. That is, the efforts are overly general, lacking a coherent theoretical framework, and generally are not written with an aim towards how the ideas could be taken up and used by teachers in practice.

For example, the NRP chapter on comprehension is similar to most representations of the knowledge base for teaching reading comprehension: very general lists of practices with little attention to the enactment of these practices and what a teacher would need to know in order to enact them skillfully.

Throughout my analysis I could not help but feel overwhelmed by the number of sources drawn upon in the various artifacts. For example, in the *Knowledge to Support the Teaching of Reading* text, the authors note that the American Federation of Teachers advocate four domains of knowledge for reading: knowledge of the psychology of reading and reading development; knowledge of language; knowledge of and ability to implement validated instructional practices competently and reflectively; and ability to assess children using research-based tools and strategies (Snow, Griffin, & Burns, 2005, p. 56). In a similar effort the International Reading Association offers five standards for teacher-education programs that expand on the AFT recommendations to include "knowledge about literate environments, variations among cultural backgrounds of students, and options for instructional grouping" (p. 56). Both the AFT recommendations and the IRA recommendations offer little insight in what, specifically, teachers need to

know and how they need to know this differently for teaching. If teachers were to try to use the AFT recommendations for implementing validated instructional practices competently and reflectively, there is little direction regarding what, specifically, the teacher should do. This leaves me wondering what, then, would a coherent theoretical framework look like?

A theory of knowledge for teaching reading comprehension

While others have already argued that the research base for the pedagogical knowledge for the teaching of reading remains inadequate (Snow, Burns, Griffin, 2001), the problem is broader than simply not knowing. This study demonstrates that while the field of literacy has delineated broad categories of knowledge for teaching reading, very little attention has been paid to articulating the specialized knowledge required to teach reading comprehension, let alone the pedagogical content knowledge. The research that is available is fragmented, overly simplistic, or not available in ways that are accessible and usable by teachers and teacher educators.

The need to identify and measure the specialized knowledge involved in teaching reading comprehension is supported by persistent patterns of reading failure in the United States and emerging evidence in the field of mathematics that teacher's specialized knowledge and student achievement are significantly related (Hill, Rowan, & Ball, 2005).

Shulman's theory is the dominant model for thinking about knowledge for teaching. The construct of PCK was designed to bring disciplinary (content) knowledge into conversation with teaching pedagogy. Shulman and his colleagues believed that research on teaching and teacher education programs had focused on generic principles of teacher effectiveness, such as management and recognition of individual differences, to

the exclusion of subject matter. The absence of a focus on subject matter was dubbed the "missing paradigm" of educational research.

Recently, Ball, Thames, and Phelps (2008) expanded on Shulman's theory by introducing a new category: specialized content knowledge (SCK). SCK is the knowledge necessary for teaching the subject that is *not* entwined with knowledge of pedagogy, students, and curriculum yet is not knowledge held by most well-educated adults. CCK, PCK, and SCK traverse the daily work of teaching. By adding a new category – SCK – Ball and colleagues refined a theory that has to date not received much critical attention. They argued that PCK, despite the recognition that the concept has been important to the field of education, requires theoretical development, analytic clarification, and empirical testing.

Knowledge for teaching reading comprehension: A proposal

As stated earlier, the implications of current models of knowledge for teaching remain unclear in the area of knowledge for teaching reading comprehension. Articulating a theory of knowledge for reading comprehension offers a unique challenge. Elementary teachers in the United States, working as generalists rather than subject area specialists, must teach children to comprehend a wide variety of texts. Subject area specialists – history teachers, science teachers, etc. – must teach children to comprehend disciplinary texts in disciplinary specific ways. Hence, the field of reading comprehension is uniquely positioned as trans-disciplinary yet is still faced with many of the challenges that scholars in the disciplines struggle with.

In what follows I will utilize the foundation provided by Shulman (1986) and Ball et. al (2008) as well as the insights provided by my analysis of seven existing artifacts to

propose a theory of knowledge for teaching reading comprehension. Inside this theory I take the stance that while there are generic types of knowledge associated with reading and linguistic processes that all teachers need to know, the bulk of the work of teaching children to comprehend texts is tethered to academic disciplines such as history or science. In order to understand this stance, it is helpful to trace the genesis of the concept of PCK in order to understand how this might inform a theory of knowledge for teaching reading comprehension.

From 1968-1973 Shulman and colleagues studied medical problem solving through a series of simulation studies. By the mid-1970s, Shulman was beginning to articulate the relationship between what he was learning through research in medicine and the implications of this research for the field of teaching. These initial connections are articulated in his essay *The Psychology of School Subjects: A Premature Obituary?* (1974). Shulman's research in medicine focused on how excellent, experienced doctors reasoned during their work – from the initial encounter with the patient to the point at which the doctor made a diagnostic judgment. The primary purpose of this research was an attempt to understand the single underlying set of intellectual process – medical inquiry strategies or skills - that physicians used in making a diagnosis. Much to the surprise of researchers, no generic set of processes was identifiable in the course of their analyses. Instead they found that diagnostic competence was domain specific. Shulman notes:

> "It appears necessary to possess domain-specific knowledge to solve most problems. While the knowledge alone may not be sufficient in the absence of appropriate information-processing skills and a proper set of problem formulations, it is abundantly clear that no amount of general intellectual skill or mastery over cognitive strategies will overcome lacks in content knowledge" (1974/2004, p. 108).

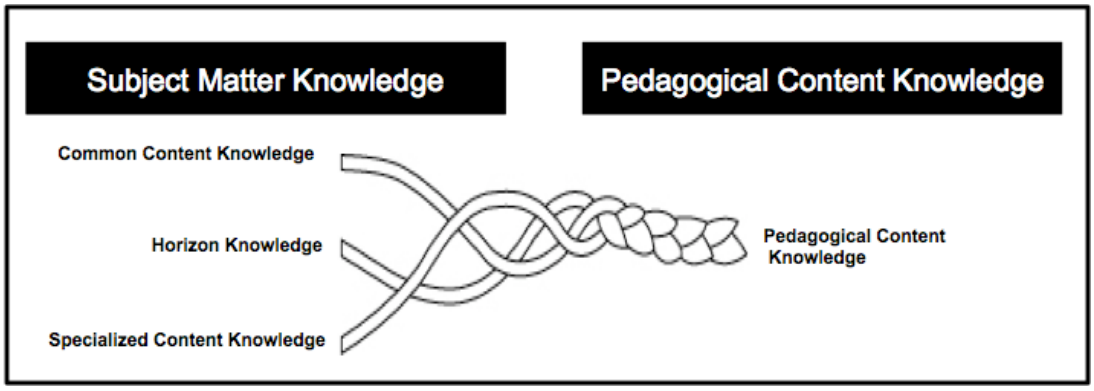
The idea that knowledge is domain specific and not generic is further supported by research on memory and expertise. For example, in a study of third graders (8 year olds) and college students, third graders recall of information was superior to that of college students when the topic of the recall task was oriented to content that young children had superior knowledge of, including cartoons and child-oriented television shows, while the college students' recall was better in adult-oriented topics (Linberg, 1980). Relatedly, research on expertise has repeatedly demonstrated that expert performance is not related to IQ or knowledge of discrete facts. Instead, experts have deep conceptual understanding of the topic and their expert knowledge is organized around core concepts and "big ideas" that guide their thinking about the domain (Chase & Simon, 1973; Champagne, Gunston, & Klopfer, 1983; Chi, Feltovich, & Glaser, 1981). For children to develop expertise in reading comprehension, we must offer them the opportunity to organize knowledge about text in domain specific ways – specifically the school subject domains of science, social studies, history, mathematics and literature.[6] The terrain of knowledge for teaching reading comprehension defined by existing measures and text-based resources suggests that knowledge for teaching reading comprehension is largely generic and disconnected from knowledge of content. And yet there is good evidence that depth of knowledge about the structure of a discipline enables teachers to identify concepts that are generative and have the potential to lead to deep conceptual understanding (Lee, 2007; Stevenson & Stigler, 2002). In what follows I

[6] I am sympathetic with arguments about other forms of texts and about the role of the disciplines in maintaining discourses of power; however, I am primarily concerned with improving reading comprehension in school subjects, which are, in a majority of U.S. schools, organized around disciplines.

articulate a theory of knowledge for teaching reading comprehension that takes this idea seriously.

The theory of knowledge I propose maps closely onto the model put forth by Ball et. al. (2008). Horizon Knowledge, CCK, SCK are distinct forms of subject matter knowledge and they combine to form CK. Taken together these four categories comprise a theory of knowledge for teaching reading comprehension. A visual summary of this proposed model is included in Figure 4.4.

Figure 4.4: Hypothesis of domains of knowledge for teaching reading comprehension



The remainder of discussion is organized around my hypothesis of the four different dimensions of knowledge for teaching reading. I will discuss, in order, common content knowledge, horizon knowledge, and specialized knowledge. I will then discuss how each of these becomes intertwined into distinct forms of pedagogical content knowledge.

Common Content Knowledge and Horizon Knowledge

In the case of reading comprehension, CCK refers to the ability to comprehend disciplinary texts. While educational critics express concern that teachers' lack of knowledge of science and mathematics may impede their capacity to teach these content

areas, few critics are concerned about teachers' ability to read. This theory ups the ante a bit, however, because it implies that teachers need to be able to read texts "in ways that take seriously privileged modes of argumentation as well as habits of mind and dispositions that are characteristic of the discipline" (Lee, 2007). I am not arguing that elementary generalists need to become expert historians, scientists, literary critics, or mathematicians. Rather, I am suggesting that in order to teach reading comprehension, teachers need to be aware of disciplinary dispositions and text structures as well as dominant modes of argumentation in order to support text comprehension. In the *Knowledge to Support the Teaching of Reading* text, the only artifact that attended to the topic of content knowledge, the authors note that teachers' knowledge base should be sufficient to intervene when students need help understanding, whether the subject is a story or explanations of agricultural production. This suggests that teachers need to not only how to read but they need to know about what they are reading.

A different dimension, horizon knowledge, taps into knowledge of reading development. Ball et. al (2008) define horizon knowledge in mathematics as an awareness of how mathematical topics are related over the span of the curriculum. I propose that in reading comprehension, horizon knowledge refers to a teachers' understanding of the development from novice to master – that is, an understanding of the trajectory of text comprehension development as the typical learner interacts with text across genres and text types. Horizon knowledge is not simply knowledge of child development – an aspect of the terrain of knowledge suggested by both the Gunning textbook and the *Knowledge to Support the Teaching of Reading* Text. While knowledge of child development is likely important, horizon knowledge is specifically about how

children's interactions with text and aspects of comprehension change over time. For example, as I suggested in chapter 3, one aspect of horizon knowledge is knowledge of how children's summarizes of text change as they become increasingly skillful and strategic.

Specialized Content Knowledge

Much of the existing research in the area of knowledge for teaching reading has focused on the specialized knowledge of language – including phonemes, morphemes, syllables – that teachers need to have (Moats 1994, 2000; McCutchen & Berninger, 1999; Wong-Fillmore & Snow, 2002). While this specialized linguistic knowledge is likely an important dimension of knowledge for teaching reading at the early elementary level, there are forms of specialized knowledge unique to the area of text comprehension. Below I discuss four possible categories; these categories are drawn from categories of knowledge suggested by the analysis of existing artifacts but are cast in a way so that the focus is explicitly on specialized knowledge for teaching reading comprehension. At its core, my characterization of the specialized knowledge required to teach reading comprehension is focused on the obstacles that students encounter in text that interfere with the construction of meaning. By bringing together the disparate categories suggested by the existing artifacts, this theory brings together what is fragmented in the research literature or has not yet made its way into educational research. I hypothesize that the specialized knowledge for teaching reading comprehension involves, at minimum:

- *An understanding of the processes of skilled reading*
- *Knowledge of genre and disciplinary specific features of text*
- *An understanding of the linguistic demands of reading comprehension*
- *Knowledge of words and concepts in building text comprehension*

An understanding of the processes of skilled reading

The process of reading is skillful and automatic for most adults. Teachers, however, need to be aware of the range of practices that good readers deploy when reading a text – processes that for skilled adult readers are undertaken with little or no effort but that children are coming to know. By deconstructing the text comprehension process, teachers will be better prepared to teach children what it is expert readers do. For example, teachers will be able to model skillful reading through think alouds because they are conscious of the processes they are utilizing as they read. Furthermore, they will be able to identify sources of student error or reading difficulty such as lack of fluency, difficulty processing long sentences, or an inability to explain the meaning of what is read.

An analog to this "deconstruction" or "decomposition" can be seen in the research on mathematics education. Most adults know efficient algorithms for adding two digit numbers. Teachers of mathematics, however, need to learn algorithms differently - in ways that make the algorithm visible. It is not enough to know the algorithm works – they must also know why and how the algorithm works so that they can both teach it to students and identify sources of student errors (Ball, Hill & Bass, 2005).

Knowledge of genre and disciplinary specific features of text

Knowledge of the features that characterize a text in a genre or the ways in which texts are constructed in a specific discipline is potentially an important tenet of the specialized knowledge for teaching reading comprehension. For example, in an interview, Mr. Oliver, an experienced teacher, explained his specialized knowledge of mystery texts in his teaching of fourth and fifth graders. He noted that authors of mystery texts often used "red herrings" to throw the reader off the suspect's trail, and that children

often "took the bait" of these red herrings. This same teacher also noted the presence of technical vocabulary such as *motive* and *suspect* and that these words were typically not part of children's working vocabularies. Finally, he noted that the notion of "clue" needed to be expanded – specifically that, when reading mysteries with students, students expected the clue to be very apparent – posted on a tree, sitting on a table. Mr. Oliver taught children that clues could be wide ranging - including subtle clues, such as flashbacks or changes in weather, and that these clues were also important for solving the mystery (Interview with Mr. Oliver, May 22, 2007). This teacher, because he knew mystery texts in a specialized way, was able to teach mystery texts differently.

Disciplines have text genres, too. For example, Coffin (1997) identified four common genres in history education: autobiographical, biographical, historical recount, and historical account. Historical recounts retell the events in a sequence, while historical accounts attempt to explain why things happened in a particular sequence. Knowing that history education texts are organized in these different ways, however, doesn't yet get at the specialized knowledge for teaching children to comprehend said texts. The specialized knowledge requires knowing these different history education genres and knowing, then, what about these texts is challenging to or supportive of students' comprehension. For example, are historical recounts easier for students to comprehend than historical explanations because recounts are organized chronologically?[7] Are there features of each of these different texts that students have difficulty with? Teachers who had this specialized knowledge would be better prepared to teach and support students in comprehending these texts. This idea is supported by recent investigations by Hapgood,

[7] See Schleppegrell (2004), p. 115 for a helpful discussion of different genres of texts common to science education.

Kucan & Palincsar (under review) who found that teachers who were skillful at analyzing texts were prepared to anticipate the challenges that students were likely to have while reading the text.

An understanding of the linguistic demands of reading comprehension

The content, as well as the medium, of schooling, is language. Despite this fact, the "language of schooling" and the specific linguistic demands of doing school tasks are rarely made explicit to students (Schleppegrell, 2004). Yet, opportunities for students to comprehend text are dependent on their having access to language, given the fundamentally linguistic nature of reading. Some children's language backgrounds and out-of-school experiences prepare them well for this highly linguistic task, but others need to be taught how language is constructed in academic texts. In their volume *What teachers need to know about language?*, Wong-Fillmore & Snow (2000) detail the many areas of language – both written and spoken – with which teachers need to be familiar. While the text provides compelling arguments regarding the many ways in which U.S. teachers are unprepared to work with immigrant and language-minority children, the text does not take on the task of detailing the text-based linguistic knowledge that is important and relevant to the work of teaching children to comprehend text.[8] Understanding how texts are constructed is yet another area of specialized knowledge for teaching reading comprehension. For example, teachers of reading comprehension should understand the role of coherence in facilitating or impeding comprehension. Coherence is the degree to which the ideas in a text hang together in a meaningful and organized fashion (Graesser,

[8] The authors do propose that teachers should take a course titled "text analysis and language understanding in educational settings, which would address "how language structures and style in written texts affect comprehensibility" (p. 34). Presumably this course would address the specialized knowledge I detail in this section.

McNamara, & Louwerse, 2003). One impediment to coherence is coreference. When a pronoun is used in a text, the reader must identify the coreferent – to whom he, she, they, etc., is referring to. Simple pronouns are not the only type of coreference. For example, if a sentence reads:

I have a dog named Glover. That mischievous mutt is always getting into trouble.

The reader must use inferential thinking to identify that the dog, Glover, and mischievous mutt are synonymous. Research has shown that "low-knowledge" readers have difficulty making these inferences and teachers must be aware of the points in a text at which these complex coreferences could interfere with comprehension.

It is not surprising that most teachers are unaware of the role of coherence relations in comprehending text. Graesser et al. (2003) concede that "most researchers who have studied text coherence have not yet considered the implications of coherence for teaching reading" (p. 96). Importantly, coherence is not the only linguistic demand teachers of reading comprehension need to know. Science and history texts present unique challenges and many of these challenges are, at their core, linguistic (Schleppegrell, 2004). For example, history and science texts often hide social actors. In a text about environmental science the author might note "habitat loss" or "destruction of the rainforest" without attributing these acts to specific social actors (Chenhansa & Schleppegrell, 1998).

Knowledge of words and concepts

Language conveys content. While the linguistic demands discussed in the previous section represent an important aspect of the specialized knowledge of teaching reading comprehension, teachers of reading comprehension still need to know a great

deal about individual words and the topics that are discussed in the text if they are to facilitate students' comprehension of texts. What makes this specialized knowledge is somewhat subtle. Expert readers have to know a great deal about words and concepts, too.

Word knowledge is multifaceted. At the word level, teachers need to be able to explain words in ways that support students' learning of the word given the students' age, background knowledge, and the context in which the word is used. Research has repeatedly shown that context clues are often misleading or non-directive and that dictionary definitions are not helpful because of vague language, the difficulty of differentiating one word from another, and the fact that dictionaries provide multiple pieces of information that are difficult to integrate (Beck, McKeown, & Kucan, 2002). As such, teachers who are supporting students in comprehending text are faced with the task of developing student-friendly explanations and this task is not easy. Beck et al provide several helpful examples to make this point salient. Take, for example, the word "ally." A dictionary definition might state that an ally is "one associated with another" when in reality, the core conceptual understanding one would want to know about ally might be that an ally is someone who is on your side, especially when there are others who are not on your side (Ibid, p. 36). Knowledge of words that are overlooked but that may impede comprehension is yet another dimension of the specialized word knowledge teachers of text comprehension may need. For example, many of the words on the academic word list (Coxhead, 2000) are words that are not technical words but occur with frequency in a wide range of academic texts. Words such as *abandon*, *advocate*, and *accommodate*

might be overlooked because they lack conceptual heft but can still interfere with comprehension.

Beyond knowledge of individual words, teachers must have conceptual understanding of the topic of any particular text. In utilizing texts to support students' learning how to comprehend text, teachers must also have some conceptual understanding of the topic at hand. Conceptual understanding of the text must often exceed the content of the text, given that expository texts are too often written in inconsiderate ways and may lack the information that is necessary to comprehend them. Graesser, McNamara, & Louwerse (2003) give the following example, excerpted from a text about a button battery, to illustrate this point:

> "The zinc loses electrons as it becomes zinc oxide, while the mercury atoms gain electrons as the mercury oxide changes to mercury. The battery produces a current of 1.35 volts" (p. 86).

In these two sentences, it is unclear whether the battery produces a current of 1.35 volts because of the process described in the first sentence, or, if that fact is independent of the first sentence. If the teacher understands the relationship between these two sentences, she is positioned to mediate students' understanding of the text while simultaneously helping students understand that texts are not always constructed in considerate ways. Teachers' knowledge of the subject matter in relation to students' prior knowledge, the information contained in the text, and potential (mis)conceptions enables careful attention to student learning. This is an important aspect of the work of teaching (Grossman, 1990).

Concluding thoughts about specialized content knowledge for teaching reading

In articulating the specialized knowledge for teaching reading comprehension, I am the first to acknowledge that the list is not exhaustive. However, these four categories present a first hypothesis – a domain map if you will – of what might count as the specialized knowledge for teaching reading comprehension. Ball et. al (2008) concede that it can be difficult at times to discriminate specialized content knowledge from pedagogical content knowledge. They write:

> "For example, consider what is involved in selecting a numerical example to investigate students' understanding. The shifts that occur across the four domains, for example, from ordering a list of decimals (common content knowledge), to generating a list to be ordered that would reveal key mathematical issues (specialized content knowledge), to recognizing which would cause students the most difficulty (pedagogical content knowledge), to deciding what to do about their difficulties (pedagogical content knowledge), are important yet subtle".

Despite the fact that the categories are somewhat blurry, it is worth keeping specialized content knowledge as a distinct category that stands apart from pedagogical content knowledge. As part of a provisional taxonomy of categories, I've allowed SCK to remain because of its potential value as a way of characterizing the specialized knowledge required to teach reading comprehension. Its absence, I'm afraid, would create more problems than it would solve.

Thus far I have characterized elements of knowledge for teaching reading that could be categorized as knowing *about* reading comprehension instruction in a specialized way. This is not the same as knowing how to *do* specific instructional practices. Is it this topic - the actual instantiation of reading comprehension instruction and the pedagogical content knowledge associated with it -- to which I will now turn.

Pedagogical Content Knowledge for Teaching Reading Comprehension

Recall that pedagogical content knowledge (PCK) refers to the knowledge that

teachers have about their subject matter that allows them to transform CCK, SCK, and horizon knowledge into representations, explanations, and learning opportunities that make the content accessible to learners. The maps of the terrain of knowledge for teaching reading suggest that PCK has been attended to on extant measures in very general ways, but that, on the whole, PCK has been overlooked as well as under theorized in the field of reading comprehension. This idea is confirmed by recent publications. Lee (2007), for example, suggests that PCK involves understanding:

- Developmental progressions (e.g., children versus adolescents)
- The continuum between novice and expert practice
- Enduring misconceptions and naïve theories help by youth and novices generally (Clement, 1982; Clement et al., 1989, Disessa, 1982)
- Multiple routes to maximize opportunities to learn
- How to assess what learners understand and don't understand (p. 120).

Lee then characterized these as "competencies." While Lee has identified a set of competencies that are likely important dimensions of teacher knowledge, they seem incomplete as articulations of PCK – must like all the explications of teacher knowledge included in this study. As a field we have competently listed broad categories of what teachers should know, but we have not articulated the specialized knowledge that resides inside these categories.

The attempts to define the knowledge base for teaching reading comprehension included in this study provide insight into specific categories of PCK. The existing maps suggest that teachers need to know how to:

- *Set clear instructional purposes*
- *Select appropriate texts*
- *Activate relevant prior knowledge*
- *Pose questions*
- *Hear and interpret students' incomplete and emergent thinking*
- *Uptake of student contributions*
- *Verbalizing the reading process*

- *Attend to complex discourse routines*

Below I explore each of these categories of PCK vis-à-vis the existing research literature.

Setting clear instructional purposes

Studies of pedagogical expertise across a number of disciplines, including reading, show that teachers often fail to establish purposes for lessons and when purposes are set they are often short or overly general. Setting clear instructional purposes, however, holds promise for improving instructional outcomes given evidence that teachers who are successful in setting clear instructional purposes are able to utilize these purposes in the course of instruction and there is a strong relationship between purpose setting and students' comprehension (Borko & Livington, 1989; Durkin, 1984; Livingston & Borko, 1989, 1990; Smith & Feathers, 1983). In supporting students to comprehend text through discussion, the teacher must set purposes for reading in terms that the child can make sense of and, in the course of instruction, use these instructional purposes to motivate instructional decision-making such as identifying which ideas to take up and foreground in the course of discussion and identifying those that are less central to the core concepts.

Selecting texts

Much like carefully choosing numerical examples in mathematics, choosing texts that are aligned with ones' instructional goals is key. In the context of text-based discussions, it is crucial to select texts that have sufficient grist that make it possible to

engage in discussion of complex text ideas.[9] The act of selecting a text for use in instruction requires the teacher to use specialized knowledge to understand the specific challenges of the text and the appropriateness of the text given the students and the instructional goals.

Activating relevant prior knowledge

Prior knowledge refers to the understanding that students bring to a text. There is widespread agreement that prior knowledge influences learning, and that learners construct concepts from prior knowledge (Glaserfeld, 1984, Levin & Pressley, 1981, Resnick, 1983). If prior knowledge plays a role in learning then it makes good logical sense that prior knowledge plays a huge role in text comprehension, especially given the fact that inconsiderate texts often require students to draw on knowledge that is not contained in the text. In order to make use of prior knowledge in the course of a text based discussion the text must know how to:

> (a) determine the background knowledge of students relevant to a particular topic and utilize a repertoire of ways to build background knowledge if necessary.
>
> (b) mediate background knowledge in ways that support weak readers who, research has shown, often relate texts and prior knowledge that are irrelevant or even misleading. (e.g., Williams, 1993).

PCK enables the teacher to recognize the strategic work of connecting students' prior knowledge with the text at hand. Lee (2007) notes the difficult work of teachers making connections between everyday knowledge and school-based knowledge. That is, background knowledge is not only knowledge about topics such as the Revolutionary War, but the ability to help students see how the things they are doing each and every day

[9] I recognize that in some cases it is not possible to select the text to be used given district of state mandates or limited availability of texts. However, teachers often are able to make decisions about how a text is used in an instructional situation, and this requires PCK.

can support their comprehension of text. Ultimately the goal of including prior knowledge activation as part of every encounter with text is so that students are able to do this automatically and independently as expert readers.

Question posing

The typical discourse pattern of initiation-response-evaluation and the tendency for questions to focus on literal recall are well-documented patterns of instruction in U.S. classrooms (Cazden, 2001; Mehan, 1979). The task of posing questions that provide students opportunities to think about and comprehend text requires PCK and is at the heart of a skillful text-based discussion. Questions that facilitate comprehension are sufficiently complex such that students have the opportunity to integrate the text with their own emerging understandings. Posing such questions is not easy. Taxonomies of question posing (i.e., Bloom, 1956) suggest that asking certain types of questions – for example "thinking" and "why" questions - is sufficient. These taxonomies say little about the judgments a teacher makes regarding the nature of the inferences that a student is going to be able to make or about the improvisational nature of classroom talk. You can plan the first question, but focused follow-up questions can't be planned in advance. Simply asking teachers to pose "why" questions is perhaps a necessary but not sufficient condition.

Hearing and interpreting students' emerging and incomplete thinking

Given the improvisational nature of classroom talk, there are numerous points during instruction that require considerable attention to the moment-to-moment performance that is unfolding in the classroom and an ability to hear and interpret

students emerging and incomplete thinking. SCK, CCK, and horizon knowledge facilitate thoughtful improvisation. Lee (2007) explains:

> [Teachers] must be astute enough to see in the moment-to-moment performances in the classroom what emergent understandings – sometimes in the form of misconceptions – reveal about what students understand about the topics and kinds of problem solving being taught. This is never easy because students often do not present such emergent understandings in the syntactic form that teachers expect. Students who do not speak academic English or for whom English is a second language may offer explanations that do not take the form of statements of abstraction that are expected in school (p. 35).

This point has also been made in research in mathematics (Ball, Hill, & Bass, 2005; Lampert, 2001) and science (Lemke, 1990). Mediating students' incomplete ideas is potentially difficult if the teacher is unfamiliar with the cultural norms of ways of speaking of the students and the structure of the discipline.

Uptake of student contributions

Taking students contributions and weaving them back into discussion while keeping an eye on the text is a specialized and difficult task. Researchers have defined this act as uptake (Nystrand, 1997), which refers to moments in discussion in which a teacher or other student takes up and builds on a previous comment. The teacher might listen to the students' contribution and then, using the students' idea, pose a question that serves to elaborate, clarify, or challenge the students' contribution. Doing so requires the teacher to know quite a bit about the content, the child, and the instructional goal. Each of these is woven into an in-the-moment-decision that will ideally advance student learning.

Verbalizing/modeling the reading process

Teachers of reading comprehension need to know the reading process differently. Verbalizing and modeling this knowledge is a unique form of PCK requiring teachers to

make public the expert processes that they are using while reading. Studies of U.S. classrooms suggest that teachers tend to verbalize text-to-self connections but avoid more complex verbalizations such as inferential thinking or promoting text coherence despite evidence that such strategies are more effective for promoting text comprehension (Magliano, Trabasso, & Graesser, 1999).

The unnatural act of verbalizing one's reading process requires knowing the reading process differently. This is complicated by the fact that teachers may, as expert readers, have adopted some strategies as particularly useful but jettisoned others. Hence the language of the teacher is not actually a verbalization of his or her reading process but a verbalization of the reading process from the perspective of what would promote learning for his/her students. For example, the teacher might model and verbalize that she is going to keep a list of the characters in the story while she is reading even if this is an unnecessary practice for her as an expert reader.

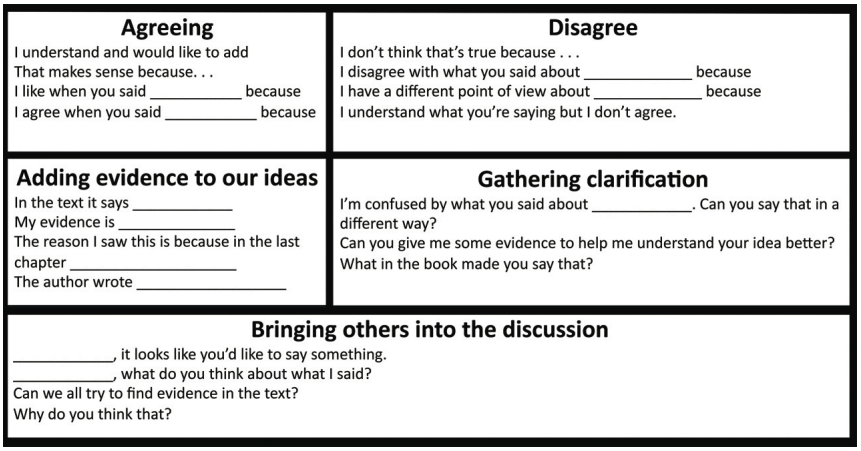
Importantly, which specific strategy the teacher verbalizes might not be as important providing instructional opportunities to grapple with and analyze text. In their 1986 study in which different groups of students were trained in the use of different strategies, all the trained groups improved equally (Chan & Cole, 1986). This suggests that, rather than any specific strategy being important, strategies act as mediators between the printed word and the act of comprehension but which strategies matter less.

Attend to complex discourse routines

Much of comprehension instruction involves complex discourse patterns. Text-based discussions, as well as specific instructional approaches such as book clubs or literature discussion groups, all promote students talking together about text. Talking

about texts is something that students need to be taught how to do. Research on accountable talk (O'Connor & Michaels, 1996; Michaels, O'Connor, & Resnick, in press) in which students are given specific directions for agreeing, disagreeing, using evidence to add to ideas, clarifying ideas, and bringing others into the discussion, can play an important role in text comprehension instruction. Figure 4.5 shows an interpretation of the accountable talk research that was posted in a multiage fourth and fifth grade classroom.

Figure 4.5: Accountable talk in Mr. Oliver's Classroom



Teaching students specific ways to talk about text can improve the quality of text discussions while also bridging students' home discourse and the formal academic language students are expected to come to know in school (Delpit, 1988; Gee, 1996). Being aware of productive structures for promoting student talk marks a form of PCK that is not typically held by most adults**.**

Concluding remarks on pedagogical content knowledge

The categories of PCK put forth in this discussion are not meant to be exhaustive; rather, I hope this discussion has highlighted the many categories of specialized and pedagogical knowledge in play during the course of teaching children to comprehend text

while also highlighting the many ways in which the field of literacy has not yet done this careful articulation.

This discussion and the corresponding categories of PCK offer a first hypothesis of the domains of PCK for teaching children to comprehend text. Admittedly, important dimensions of knowledge have been ignored entirely. For example, knowledge of how to create a classroom environment in which it is safe for students to discuss their ideas and take intellectual risks, or the knowledge needed to be able to instill hope for those students who have experienced repeated failure, or the knowledge of how and what motivates students is simply not addressed in these categories. Furthermore, writing and response to text have not been discussed at all.

Conclusion

This study has demonstrated that, despite the wide consensus in the research literature regarding what it is teachers should do in the service of teaching reading comprehension, the resources that are available to teachers and teacher educators typically provide little more than a superficial description of instructional practices. After mapping the terrain of knowledge proposed by various measures and text-based resources, I attempted to unify these ideas into a coherent theory of knowledge for teaching reading comprehension.

However, I present these categories cautiously. Presenting CCK, horizon knowledge, PCK, SCK in this way runs the risk of reproducing the fragmented knowledge base that already exists in the area of reading comprehension. I have not attempted to tether these categories of knowledge to specific instructional practices. However, I hope that future research efforts make an attempt to articulate these

knowledges inside specific practice. This avoids the risk of these categories becoming reified in forms that amount to little more than declarative knowledge

Moreover, as a field, we have a good understanding of the types of instructional experiences that support the development of reading skill. While it is fashionable to name and identify one's own brand of reading comprehension instruction, if one looks across various approaches to identify the pedagogies that reside inside each, there is a relatively small set of instructional practices at the core of each of these activities. These include:

- *Facilitating a text-based discussion*
- *Reading a text aloud for the purposes of modeling fluent expert reading and thinking*
- *Supporting students to read text independently*
- *Positioning students to work collaboratively to negotiate text (e.g., Book club discussions, literature groups, etc.)*

Understanding what CCK, Horizon Knowledge, SCK, and PCK look like inside each of these four instructional practices would be an interesting and fruitful next step in this research.

Appendix A: CKT-R

KNOWLEDGE OF CONTENT / COMPREHENSION

1. Ms. Gomez is preparing for a reading lesson in which students will read a story about manatees. The focus of the lesson is teaching students to read expository text for information. She begins by quickly reading the story in the teacher's guide. New vocabulary words are underlined in the teacher's guide.

The Marvelous Manatee

What do manatees and elephants have in common? You might be amazed to find that they have a great deal in common! The elephant is one of the manatee's closest relatives. Elephants and manatees are also both mammals. Like all mammals, manatees are warm-blooded. They breathe air with their lungs and they give birth to live babies. Some mammals live on land while others live in the water. Mammals that live in the water are called aquatic.

Manatees and their relatives are the only marine mammals that are herbivores. They can weigh up to 3,500 pounds and reach 13 feet in length. They are very tactile and are often observed hugging each other and nuzzling snout to snout. These slow-moving, gentle giants are peaceful and unafraid of humans.

Manatees have a colorful place in seafaring legends. Long ago sailors reported seeing mermaids at sea. These wonderful creatures would come to the surface and beckon sailors to come close. Then they would disappear as soon as the boat neared. In fact, manatees probably inspired legends about mermaids. Manatees have a mermaid-like tail and friendly, expressive faces.

The peaceful manatee, like its cousin the elephant, is an endangered animal. Manatees have few natural enemies, other than humans. Boat collisions are the single greatest reason for manatee mortalities. Ultimately, however, loss of habitat is the most serious threat facing manatees today. There are approximately 3,000 manatees left in the United States. Without our help the manatee could soon be extinct.

While reading the *Marvelous Manatee*, Carmen shares the following observation.

> I think that this story is not just informational writing, because it has mermaids in it and mermaids are fantasy creatures. So I think The Marvelous Manatee should be described as both informational and fiction.

What conclusion can Carmen's teacher make about Carmen's statement? (Mark ONE answer.)

a) Carmen is correct to describe this text as both informational and fiction.

b) Carmen is correct to describe this text as informational, but not correct to describe it as fiction.

c) Carmen is correct to describe this text as fiction, but not correct to describe it as informational.

d) This text can not be described as either informational or as fictional.

e) There is not enough information to determine if Carmen is correct or not.

2. Ms. Linn is teaching a lesson using an Aesop's fable called *The Vixen and the Lioness*. Before class, she reads the fable.

The Vixen and the Lioness

A Vixen who was taking her babies out for some sunshine one balmy morning came across a Lioness with her cub in arms. "Why do you act so proud, Lioness, over one solitary cub?" sneered the Vixen. Look at my healthy and numerous litter here, and imagine, if you are able, how a proud mother should feel." The Lioness gave her a superior look, and lifting up her nose, walked away, saying calmly, "Yes, just look at that beautiful collection. What are they? Foxes! I've only one, but remember, that one is a Lion."

After listening to Ms. Linn read *The Vixen and the* Lioness, a number of students in the class are holding a lively discussion about different animals that live in Africa. Ms. Linn feels that the discussion is not focused on exploring the symbolic meaning of the fable. Which of the following questions do you think would be most likely to help students focus on the symbolic meaning of the text? (Mark ONE answer.)

	Yes	No	I'm Not Sure
a) If the lion is king, why is the vixen disrespectful to the Lion Queen?	1	2	3
b) Couldn't the Lioness attack the vixen for being disrespectful?	1	2	3
c) If the lion is king, why does the Lioness even bother to compliment the "beautiful collection" of foxes?	1	2	3
d) How can one lion be worth more than several foxes?	1	2	3
e) Who would win a fight between a vixen and a lion?	1	2	3

3. Mr. Hamada's students are reading a fable called *The Partridge and the Fowler.*

The Partridge and the Fowler

A Fowler caught a Partridge and was about to kill it. The Partridge earnestly begged him to spare his life, saying, "Pray, master, permit me to live and I will entice many Partridges to you in recompense for your mercy to me." The Fowler replied, "I shall now with less scruple take your life, because you are willing to save it at the cost of betraying your friends and relations."

To assess his students' understanding of *The Partridge and the Fowler*, Mr. Hamada asks them to work in small groups to select a moral for this fable. He provides a list of possible morals. Which choices capture the meaning of this fable? (Mark YES, NO, or I'M NOT SURE for each choice.)

	YES	**NO**	**I'M NOT SURE**
a) Birds of a feather flock together.			
b) One cannot escape one's own evil deeds.			
c) It is better to take the life of the wicked than the benevolent.			
d) The gods help those that help themselves.			
e) The hero is brave in deeds as well as words.			

4. Samantha suddenly raises her hand during the discussion of an Aesop's fable called *The Partridge and the Fowler*. She is excited because she thinks she has found out the meaning of the word "earnestly" from examining the structure of the word (i.e., meaning elements). She announces:

> I know "earnestly" means something like "with enthusiasm." It is like "eagerly" since both begin with the prefix "ea." And it means that the Partridge was doing something like eagerly begging.

Nick speaks up.

> I'm not sure what "earnestly" means. But I don't think that "earnestly" and "eagerly" both begin with the same prefix. "Ea" is not a prefix. It doesn't mean anything.

What can you tell about each child's (or both children's) understanding of the use of prefixes to figure out the meaning of words? (Mark ONE answer.)

a) Samantha is reasoning about prefixes correctly in this instance.
b) Nick is reasoning about prefixes correctly in this instance.
c) Neither is reasoning about prefixes correctly in this instance.
d) Both are reasoning about prefixes correctly in this instance.

5. The next question is about a children's book called *A Friend for a Day*. The text of the book is displayed below. In the book, each passage is accompanied by an illustration, but the illustrations are not included here, due to space limitations. Please read the book below and answer the questions on the following pages.

On Monday I play hide and seek with Jen. Jen is hiding under the slide. Page 1	On Tuesday Bob and I put on a play. Bob is the ghost. I am the witch. Page 2
On Wednesday I paint pictures with Zane. He made a picture of a boat. Page 3	On Thursday I play soccer with Beth. Beth kicks the ball very hard. Page 4
On Friday I do math with Sam. We add big numbers. We add them fast. Page 5	On Saturday and Sunday I go to the park and play with my very best friend. Can you guess? Page 6

Question 5, continued: Ms. Andrews has just finished reading *A Friend For A Day* with her students. She is now considering a number of questions she might use to carry out a discussion of the story. Ms. Andrews wants students to work on understanding details that are central to understanding the story. She also wants students to make inferences based on the information in the story. Which questions would you select for each of these purposes? (Mark ONE choice for each question.)

	Identify <u>central</u> details	**Make Inferences**	**Neither**	**I'm not sure**
a) Where does Jen hide?	1	2	3	4
b) What do you like to do with your friends?	1	2	3	4
c) What other kinds of things do you think the main character would like to do?	1	2	3	4

6. Ms. Bass is a student teacher. She is teaching about figurative language and has asked her students to generate creative and unusual similes. After school she is looking at their papers, but is unsure whether the students have written similes. She checks the definition of a simile and finds that a simile is a comparison between two things not usually considered alike (their likeness is figurative, not literal). Based on this definition, how should she mark the following sentences? (Mark YES, NO, or I'M NOT SURE for each statement.)

	Yes, this IS a simile	**No, this is NOT a simile**	**I'm not sure**
a) The cheetah runs as fast as a gazelle.	1	2	3
b) Tiger Woods is just as good as any golf player ever.	1	2	3
c) My new school looks just like my old school.	1	2	3
d) He throws a baseball like a gun fires a bullet.	1	2	3
e) When she is happy, my sister purrs like a cat.	1	2	3
f) Superman is faster than a rocket ship.	1	2	3
g) The kids swarmed out of the school like bees out of a hive.	1	2	3

KNOWLEDGE OF STUDENTS AND CONTENT/ COMPREHENSION

Please Refer to Text of 'The Marvelous Manatee' Printed Above

11. After asking her students to read the story about manatees, Ms. Gomez hands out a short comprehension worksheet. While walking around the room and looking at student answers, she notices a few students who are having difficulty answering the questions.

She looks at Sita's responses to "What things make a manatee and an elephant alike? What makes a manatee and an elephant different?" Sita has written:

> Manatees live in the sea. They don't eat meat. They are really big and can weigh as much as 3,500 pounds. They touch each other a lot and hug. They are really nice to each other and they are also really nice to people.

What does Sita's answer suggest? (Mark YES, NO, or I'M NOT SURE for each

	YES	**NO**	**I'M NOT SURE**
a) Sita may have difficulty reading for details.	1	2	3
b) Sita may have difficulty synthesizing and organizing information across the text.	1	2	3
c) Sita may be overwhelmed by complicated vocabulary.	1	2	3
d) Sita may have difficulty paying attention to the information in the text.	1	2	3

12. Dan makes many substitutions for words while oral reading. His errors seem to preserve the meaning of the text. His teacher is concerned that Dan might be reading texts that are too difficult. She checks the number of errors he is making and decides that the text he is reading is actually appropriate for Dan's instruction.

Given these observations of Dan's reading, which of the following would his teacher now realize? (Mark YES, NO, or I'M NOT SURE for each choice.)

	YES	**NO**	**I'M NOT SURE**
a) Dan relies too heavily on print information.	1	2	3
b) Dan uses context to predict words.	1	2	3
c) Dan reads to make meaning.	1	2	3
d) Dan needs to learn to pay attention to print.	1	2	3
e) Dan does not understand the general idea in what he reads.	1	2	3
f) Dan is reading text that has concepts above his level	1	2	3

KNOWLEDGE OF TEACHING AND CONTENT / COMPREHENSION

18. Ms. Smith is teaching a unit on the American Civil War. She has many students in her fifth-grade classroom who are recent immigrants to the United States. Few of her students are familiar with United States culture, even fewer with U.S. history. Most of her students, however, have been in the school long enough to learn both oral and written English, enough at least to decode the words in their reading and content area texts. Ms. Smith has found that many of her students are excellent at memorizing information, but have difficulty using this information to interpret events.

Which of the following teaching strategies would be likely to help Ms. Smith's students build background knowledge they can use to learn from a text about the conflicts of the Civil War? (Mark YES, NO, or I'M NOT SURE for each choice.)

	YES	**NO**	**I'M NOT SURE**
a) Elicit their current level of knowledge about the Civil War in the United States.	1	2	3
b) Read the class an "accessible" storybook about the U.S. Civil War, such as Ted Lewin's *Red Legs: A Drummer Boy of the Civil War*.	1	2	3
c) Divide the class into small groups to play Stratego, a board game involving battle strategies.	1	2	3
d) Divide the class into "reading regiments" and ask students to design battle flags for their group.	1	2	3
e) Require each student to memorize the dates of the major battles fought in the Civil War.	1	2	3
f) Elicit students' current knowledge about wars, why people fight them, and what their usual consequences are.	1	2	3

19. *Please Refer to Text of 'The Marvelous Manatee' Printed Above*
While reading The Marvelous Manatee Jamal says, "I've heard the word habitat before, but I can't remember what it means." Ms. Gomez is debating what to do next. Given the text of The Marvelous Manatee, which of the following are steps that could help Jamal understand the meaning of the word "habitat?" (Mark YES, NO, or I'M NOT SURE for each choice.)

	YES	**NO**	**I'M NOT SURE**
a) Ms. Gomez should tell Jamal the meaning, since Jamal is unlikely to figure out the meaning of this word himself from the text.	1	2	3
b) Ms. Gomez should tell Jamal to look for a root word in "habitat."	1	2	3
c) Ms. Gomez should tell Jamal to read *The Marvelous Manatee* again, looking for clues in the text.	1	2	3
d) Ms. Gomez should tell Jamal to substitute another word for "habitat" that makes sense in the context of the text.	1	2	3
e) Ms. Gomez should tell Jamal to look back over what he has read in *The Wonderful Manatee* and think about what meaning for "habitat" would make sense.	1	2	3

20. *Please Refer to the Text of 'The Vixen and The Lioness' Printed Above*
After reading The Vixen and Lioness fable, a student asks Ms. Linn, "What is a 'vixen?'" Ms. Linn considers among a few questions she could ask the student. Which question(s) are likely to help the student find the meaning of vixen? (Mark YES, NO, or I'M NOT SURE for each choice.)

	YES	**NO**	**I'M NOT SURE**
a) Have you ever heard that word or a similar word before?	1	2	3
b) What clue does the title provide to help you?	1	2	3
c) How does the ending "en" in "vixen" help you figure it out?	1	2	3
d) What does the root "vix" mean?	1	2	3
e) Is there a clue in the fable text that could help you figure out what "vixen" means?	1	2	3
f) Who are the main characters in the fable?	1	2	3

Appendix B: Text and Sample items from CoLTS measure

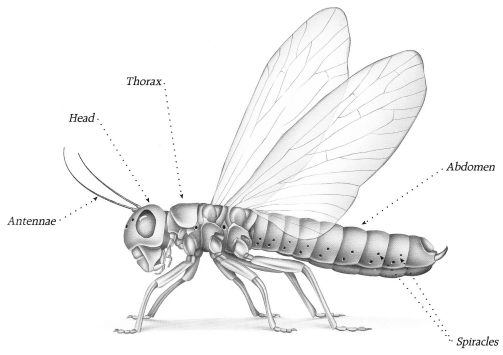
How Big Can a Bug Be?

Bugs are everywhere. Most of them are no bigger than your little fingernail. Some are so small that you'd need a microscope to see them. There is one so tiny that it lives on the tongue of a horsefly. But big bugs are rare, and even the biggest would look small next to most other animals. A mouse is a small mammal, but a bug as big as a mouse is a giant among insects. Monster bugs are found only in comic books or scary movies, because real bugs aren't built to be big.

An *insect* wears its waterproof skeleton on the outside. It's called an *exoskeleton* (*exo* means outside). The insect's muscles are attached to its outside skeleton, just as our muscles are attached to our inside skeletons. When a muscle moves, the skeleton moves. A beetle could never be as big as a bear. Its muscles would collapse under the weight of too much exoskeleton.

Inside skeletons grow, but outer skeletons don't. When an insect gets too big for its exoskeleton, it *molts*. That means the insect crawls out of its tight exoskeleton, the way an astronaut wriggles out of a space suit. Molting is a dangerous time for an insect because its soft body is left unprotected. While it waits for its new exoskeleton to harden, the insect puffs up to make itself bigger. In that way, its new suit will be one size too large, leaving plenty of room to grow into.

An insect's heart is not much more than a bump in its one and only blood vessel. Greenish yellow blood is pumped first to the insect's head, and then it kind of oozes slowly back through the body. The blood isn't red because it doesn't carry oxygen. Monster bugs would have trouble breathing. Insects have no lungs. They get air through tiny holes called *spiracles* (SPEAR-a-culls). The spiracles connect to short tubes that take air to all parts of the body. No part of an insect's body can be very far from its exoskeleton – and its spiracles.



From <u>*The Big Bug Book*</u> *by Margery Facklam, Little, Brown & Company, Boston 1994, p. 4-5.*

COLTS Questions, Part 1:

Imagine that the "Bugs" text on the preceding page is one that your students will be reading.

A. Read the text yourself. In the space below, list the **most important** ideas in the text; that is, the ideas that you want students to learn from the text.

B. Look over the text again. How and why might students have difficulty comprehending or learning from this text?

COLTS Questions, Part 2:

Imagine that you plan to ask students to read the "Bugs" text orally, and that you will stop periodically to ask students to talk about the ideas in the text. You might pose a question, students might pose a question, students might offer comments, or you might ask students to predict or summarize.

C. After reading the first paragraph, you ask for a volunteer to sum it up.
A student says: "Bugs are everywhere."
How would you respond? Why?

D. After reading the second paragraph, you ask for a volunteer to explain what an exoskeleton is and how it works.

One student says: "It's on the outside and it's waterproof."
How would you respond? Why?

After reading the first two paragraphs, you ask for a volunteer to formulate a question about the text for the rest of the class to consider.

The volunteer you called upon struggled to say something and then responded: "I don't know how to say it."
How would you respond? Why?

F. Another student volunteered the question: "What animal would a beetle never be as big as?" What does this suggest about the child's use of questioning as a comprehension strategy?

G. After reading the third paragraph, a student comments:
"I know that lobsters have exoskeletons, too, and they molt."
What is your sense regarding this student's comprehension of the text?

H. After reading the final paragraph, students offer the following comments.

Student X says: " People's blood is not always red—if you look at the veins on your arm, you can see that your blood is blue, but it turns red when the veins carry it to the heart and get oxygen."

Student Z says: "Oh, so another reason they can't be too big is because of the spiracles—they couldn't reach far enough into a big bug."

Compare and contrast their responses:

H. (continued)

How would you respond to each student?

CoLTs sample scoring

Part 1

Imagine that the "Bugs" text on the preceding page is one that your students will be reading.

A. Read the text yourself. In the space below, list the most important ideas in the text; that is, the ideas that you want students to learn from the text.

SCORING: IDENTIFICATION OF TEXT IDEAS

1	2	3
Lists selected terms to get 3	Lists of concepts and terms	Integrates to explain important concepts Must refer to size limitations of bug Not just: Bugs are small But bugs are small because…

Note: If teacher includes concepts and terms, code for 2. If teacher includes main idea of text as well as terms or concepts, code for 3. If list seems fragmented and doesn't indicate that teacher has focused on ideas of importance, go for 1.

B. Look over the text again. How and why might students have difficulty comprehending or learning from this text?

SCORING: IDENTIFICATION OF TEXT CHALLENGES

0= incorrect analysis of text features: e.g. "The title does not match the information provided in the text."

1	2	3
List of general text challenges/ affordances e. g., vocabulary organization prior knowledge lots of information (stays at word level)	List of specific text/challenges affordances e. g., scientific terminology refers to specific paragraphs, sentences	Analysis of content in terms of structure, clarity of presentation, and completeness. Must refer to lack of explicit connections to main idea of text: size of bugs to receive a three.

CoLTS sample scoring, Part 2

Imagine that you plan to ask students to read the "Bugs" text orally, and that you will stop periodically to ask students to talk about the ideas in the text. You might pose a question, students might pose a question, students might offer comments, or you might ask students to predict or summarize.

C. After reading the first paragraph, you ask for a volunteer to "sum it up".

A student says: "Bugs are everywhere."

How would you respond? Why?

SCORING: INSTRUCTIONAL MOVES

Ideal response: Let's look again at/reread that first paragraph and see what it's mostly about. A summary needs to tell what most of the sentences in a paragraph are about. Are there more sentences about where bugs live?

When I try to sum up a paragraph, I look back at all the sentences and try to figure out what they're telling. There has to be more than just one sentence that tells the important information. Let's see if your summary gives information from more than just one sentence.

3= ideal response: provides **specific examples** of scaffolding/modeling
2= provides **general statements**: e.g. "I would model or lead student to summarize through my questioning."
1= indicates what student did with no scaffolding/modeling: e.g. "That's just the first sentence."
-or- Acknowledges student's response, follows with questions, but provides no support for summarizing.
0 = incorrect or misleading response: What are some places we find bugs?
-or- provides inefficient response: Let's reread everything.
-or- doesn't respond to student: Who else has an idea?
-or- no response "I don't know what I'd say.'

SCORING: REASONING

Ideal reason/analysis**: Student just repeats first sentence. The paragraph is really about the size of bugs.**

3 = ideal reason/analysis (includes a diagnosis)
2 = reason includes idea that student just repeats first sentence, but doesn't refer to size of bugs being big idea or that summarizing is difficult **(includes a diagnosis**
1 =reason states the obvious "Student didn't summarize."
0 = no reason given; or reason is incorrect or irrelevant Says that students need encouragement. Students learn from one another. Students learn in different ways.

Appendix C: Synthesis of the terrain of knowledge for teaching reading comprehension as suggested by representative text-based resources

	NRP	Knowledge to support the teaching of reading	Gunning Textbook	Mosaic of Thought
Analysis of text and text features		Knowledge of different text types Expository texts in different subject domains	Knowledge of various text structures	Determining importance of text ideas
Knowledge of language		Knowledge of: phonology, semantics, syntax, discourse, and pragmatics		
Vocabulary instruction	Instructional techniques that involve definitional or contextual programs of vocabulary instruction	Vocabulary and linguistic knowledge - Morphology - Etymology		
Diagnosing reading difficulty/ interpreting student responses		Knowledge of productive assessments to gain information about students' reading abilities		
Reading Development		Readers become increasingly strategic and increasingly automatic as they develop as skilled readers	As children's background knowledge increases and their reasoning ability matures, their ability to comprehend improves.	
Students with special needs		Teach individual classified in special education requires specialized knowledge		

	NRP	Knowledge to support the teaching of reading	Gunning Textbook	Mosaic of Thought
Pedagogical moves	• Give effective explanations of what to do, why, how, and when (presumably relative to strategies) • Verbalize thinking processes for student • Facilitate question asking sessions and discussion • Keep students engaged in the reading task	Setting clear instructional purposes and goals for reading Knowledge of ways to develop: • domain knowledge • discourse knowledge • vocabulary and linguistic knowledge • cognitive and metacognitive strategies	• Posing questioning • Using graphic organizers • Retelling • Using wait time • Providing students opportunities to write stories	• Knowledge of ways to develop students' abilities in the areas of: • Questioning, • The use of sensory images, • Inferring • Synthesis • Independent reading
Knowledge of specific approaches to reading comprehension instruction			• Reciprocal Teaching • Questioning the Author • Guided Reading • Directed Reading Activity • DR-TA (Directed Reading – thinking activity)	
Stance defining reading comprehension instruction	Reading comprehension instruction should facilitate the development of strategies	The purpose of reading is to read with meaning.	Comprehension is the main purpose of reading; comprehension strategies support reading with meaning.	Comprehension instruction should focus on the development of students as strategic readers
Stance regarding teachers' content knowledge		Teachers' knowledge base should be sufficient to intervene when students need help understanding, whether the subject is a story or explanations of agricultural production.		

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Chapter V.
Conclusion

In his 1967 text *"Death at an early age: The Deconstruction of the hearts and minds of Negro children in the Boston Public Schools,"* Jonathan Kozol describes the impoverished instructional opportunities present in many Boston Public Schools. The reading instruction Kozol details is an all too familiar story -- students constructing stock responses to carefully controlled texts, instruction focused on having students adopt the teachers' interpretation of a text rather than constructing their own, and a dearth of opportunities to engage with complex text ideas. Has much changed in the past 40 years? While important research advances have been made in the area of reading comprehension, instruction still remains far from ideal.

Throughout this dissertation I adopted the perspective that reading comprehension is "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (RAND, 2002, p. 11) and that reading comprehension instruction is, ideally, focused on supporting this process. The findings from this study have repeatedly demonstrated that reading comprehension instruction in U.S. classrooms and the resources available to teachers focus extensively on the use of comprehension strategies with little or not attention to constructing meaning of the content in the text.

The RAND definition of reading comprehension instruction suggests that reading comprehension is not simply the application of a discrete set of strategies but the

integration of a number of mental processes in an effort to extract and construct meaning. Reading comprehension instruction, therefore, must support students in extracting and constructing meaning. This perspective, however, is not included in many of the resources available to teachers nor is it embedded in the influences that guide teachers' work. This dissertation provides good evidence that teachers are sensemakers. The teachers in this study have made sense of the resources that are available to them – resources that often stand at odds with the definition of reading comprehension instruction put forth by the RAND Reading Study Group. Given the attempts at sensemaking evident throughout this study, it seems that if there were better coherence between the research literature and the influences on teachers' teaching, the terrain of reading comprehension instruction would look different.

The end of this dissertation is just the beginning of a line of research concerned with understanding how to achieve this coherence, and, broadly, how to improve reading comprehension instruction in U.S. classrooms. Throughout this dissertation I have identified broad trends that characterize reading comprehension instruction in a small set of U.S. classrooms, I have attempted to understand, using the lens of sensemaking, why teachers teach reading comprehension in the way they do, and I have analyzed extant measures and text-based resources for the purposes of understanding how the terrain of knowledge for teaching reading has been defined by literacy scholars and practicing teachers. The findings from each of these investigations suggest that teachers teach the way they do because they have been told to teach in this way – an idea that runs counter to the notion that instruction in classrooms is impermeable to change.

I began this dissertation by explaining that I hoped to explore two levers for

improving the quality of instruction: (a) classroom practice, examined for the purpose of indentifying learning opportunities for students, and (b) teacher knowledge, examined for the purpose of understanding the specialized knowledge required to teach reading comprehension that is different than simply knowing how to read. I ultimately hope to use what is learned from these investigations of knowledge and practice to enable the development of a) instructional interventions for in-service and pre-service teachers; b) teacher resources that enable teachers to teach reading comprehension more skillfully; and c) valid and reliable systems of assessment that adequately represent the knowledge base for teaching reading comprehension. Below I explore each of these areas vis-à-vis the findings from this study.

Designing instructional interventions

Child outcomes are inextricably linked to the quality of instruction they receive. Currently, teacher preparation and professional development programs are inadequate in the crucial domain of reading comprehension, in part because the solid, systematic research base that should provide a foundation for teacher preparation does not exist. (Rand Reading Study Group, 2002).

Study 1, which focuses on what counts as reading comprehension instruction in a small set of U.S. classrooms, suggests that there is tremendous variability in learning opportunities and there are few lessons "scripts" that define what should happen during reading comprehension instruction. Instructional interventions for pre-service and in-service teachers have the potential to define these scripts and reduce variability. Evidence for this can be seen in the field of early elementary literacy where there is, as Grossman and McDonald (2008) aptly note, some hard-won consensus with regard to the

types of learning experiences young children need in order to become proficient readers and writers. The same cannot be said for upper elementary literacy instruction. If a group of teacher educators were given the task of naming four instructional activities that every teacher should be able to skillfully implement by the time they exit a class focused on reading comprehension instruction in the upper elementary grades, consensus would be hard to find. And yet the field of early elementary literacy has demonstrated that consensus has the potential to improve the relevance of teacher education – making it possible to design teacher education interventions focused on learning how to do a small set of high-leverage practices well and to target the knowledge for teaching those practices in very specific ways (Scott & Lampert, in preparation). Furthermore, by identifying the practices teachers should implement, researchers have been able to establish trajectories of development from novice to expert, thus giving practitioners an idea of what skilled practice looks like (Kerbow, Bryk, Pinnell, Rodgers, Hung, Scharer, Fountas, & Dexter, under review).

The lack of consensus regarding a theoretical perspective on reading comprehension instruction complicates the task of improving instruction. Study two provides evidence for the many theoretical perspectives available to teachers, and the ways in which these perspectives offer competing and incompatible views on teaching comprehension instruction. The lack of consensus makes it possible, then, for decisions about what counts as reading comprehension instruction to take place at the local level with little guidance from the research literature. A fact that likely propagates idiosyncratic and variable approaches to comprehension instruction. Given the variability in what counts demonstrated in chapter two and the fact that teachers' actions

seem justified given the findings in chapter three, it seems wise to turn our attention to the important topic of developing a coherent theoretical framework for reading comprehension instruction. This dissertation offers a first hypothesis in chapter four.

The ways in which the knowledge base has been characterized, as highlighted in study three, provides further insight into how interventions can change the landscape of reading comprehension instruction. Prospective teachers have few if any opportunities to come to understand the substance and nature of their subject matter in any way that would enable them to teach it to their students (Ball & McDiarmid, 1990). Teacher education must take on the task of preparing teachers to teach reading comprehension well. Understanding what knowledge should be targeted in teacher education is key. There is no course in the liberal arts curriculum titled "reading comprehension instruction". Aside from the rare professor at the high school or college level who teaches their students how to read a particular text in a particular way (i.e., reading like a historian) the learning experiences that students have in liberal arts courses likely take reading comprehension for granted.

The need to understand the specialized knowledge of teaching reading comprehension cannot be overstated, especially for multi-subject teachers in elementary grades. Elementary generalists cannot be expected to have implicit knowledge about reading in all the different content areas they teach their students and so need even more assistance in teacher education and professional development without which teachers are likely to rely on the very methods of literacy instruction that they experienced in school (Cohen, 1989).

Instructional Resources

In addition to interventions in teacher education, the design of instructional resources has the potential to contribute to instructional change. Commercially published textbook materials are already widely used by teachers in America's classrooms and are therefore well-situated to influence practice in ways that standards, frameworks, and other reform initiatives are not (Ball & Cohen, 1996). Unfortunately curriculum designers often do not know or have the opportunity to learn about the ways that curriculum materials fit into the complex concrete situation that teachers face every day (Snow, Burns, and Griffin, 1998) and curriculum materials are thus designed with little attention to the challenges of curriculum enactment.

Ball and Cohen (1996) argue that curriculum materials should be designed as much for teachers as for students and should be used as a site for teacher learning. Teachers' guides could help teachers to learn how to listen to and interpret what students say, to anticipate what learners may think about or do in response to instructional activities, and what to do in response to such actions. The resources currently available to teachers, as demonstrated in study three, suggest that available resources offer only general insight into what teachers should know and do in the service of teaching reading comprehension. Mr. Oliver, one of the teachers in this study who referenced a number of texts including *Mosaic of Thought* (Keene & Zimmerman, 2007), *The Art of Teaching Reading* (Calkins, 2000), *On Solid Ground* (Taberski, 2000), *I Read It but I Don't Get It* (Tovani, 2000) and *Shades of Meaning* (Santman, 2005), summed up the state of the knowledge base for teaching reading comprehension by explaining that the knowledge

available in teacher resource books isn't always readily usable in practice. He described the situation as follows:

> "I bet like if you ask four teachers they would give you four kind of different definitions of fluency. I think this is the third year I've taught this unit and this year is the first year that I'm, it's like that I can't separate comprehension from fluency. I know that a lot of teachers, like professional books, you know they devote a chapter to fluency or there's a book just about fluency, but I don't, I don't think, and I would never want to say that my child is, that a student is showing great fluency unless I can assess that they've understood what they've read. I mean in some ways that is like a great actor in a play like you would never go to a show, a Broadway show and think that someone's putting on a great performance if they didn't, if they hadn't internalized the words. But a lot, you know a lot of kids can stand up and say the words and seem kind of like they've internalized it but really not gotten the whole thing.

Developing curricula and other teacher resources that offer teachers knowledge that is usable in practice seems imperative for changing the landscape of reading comprehension and seems especially crucial for novice teachers. In their study of new teachers in Massachusetts, researchers from the Harvard Graduate School of Education's Project on the Next Generation of Teachers interviewed 50 new teachers from multiple grade levels and subject areas and concluded that one of the central problems facing new teachers is finding curricular resources and materials that help them know how to do their job well and that the absence of a coherent set of curriculum materials has adverse effects on student achievement and teacher retention (Kauffman, Johnson, Kardon, Liu, & Peske, 2002).

Measurement instruments

While the three instruments explored in study three provide insight into extant attempts to measure the specialized knowledge in the area of reading comprehension, they also highlight the ways in which the knowledge base for teaching reading comprehension is overly general and lacks a coherent theoretical framework. This study,

however, by placing three extant measures into a dialectic with one another, makes it possible to see which aspects of the terrain are attended to in each measure and, on the whole, how the terrain has been defined in extant measures. While the theory proposed at the end of chapter four provides suggestions for future design efforts, as a field it still seems like we are far from having any one measure that appropriately synthesizes the vast terrain of knowledge for teaching reading comprehension.

Importantly, as mentioned in chapter four, none of the existing measures have been validated in terms of teaching practice. This is an important next step in understanding existing measures given that as a field, we are not interested in more knowledgeable teachers simply for the sake of teachers having more knowledge; rather we are interested in understanding the role of knowledge in improving comprehension instruction.

There is good reason to continue working to design valid and reliable measures. In 2006 all but four states had programs of teacher testing (U.S. Department of Education, Office of Postsecondary Education, 2005) and these testing regimes are costly and often function as gate-keepers to the profession of teaching. Designing valid measures – measures that have some relationship to what teachers do in practice – can at least justify their gatekeeping role.

Concluding thoughts

While it would be foolhardy to think that the ideas put forth in this dissertation study offer a new point of departure for future studies, I do hope that scholars in the field of literacy will look at their current research efforts with new lenses -- with an eye

towards understanding the implications of their work for improving reading comprehension instruction on the ground level.

The call for literacy researchers to approach reading comprehension instruction research with new theoretical lenses is both naive and necessary. Students' reading comprehension abilities cannot improve significantly if teachers feel unprepared to teaching reading comprehension well and if reading comprehension instruction continues to provide students with very few opportunities to negotiate text. Complex as it is, the ability to teach students to comprehend text is a practice that can be learned. Understanding what counts as reading comprehension instruction, why teachers teach reading comprehension the way they do, and how the knowledge base has been characterized in the field of reading comprehension instruction are important steps towards understanding the ways in which we could systematically improve reading comprehension instruction in U.S. classrooms. The ultimate goal of this program of research is to understand the terrain of teaching reading comprehension well enough so that we can develop teacher education interventions, instructional resources, and measures that appropriately (i.e., valid, feasible, educative, fair) represent the knowledge required to teach reading comprehension.

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