

**PRESERVICE TEACHERS' DEVELOPMENT OF
EFFECTIVE APPROACHES TO TEXT-BASED DISCUSSION**

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Text-based discussion is a dialogic instructional practice to promote reading comprehension among students. To enact this practice, a teacher engages students in authentic conversation about text *as students read it*, to assist them in building understanding of text ideas as they are encountered. Text-based discussion has the potential to promote the development of both low-level and high-level comprehension skills among students, yet teachers need support in learning to enact it. Research has indicated that text-based discussion is not well-represented in classrooms today, likely because not many teachers have access to this support.

Recently, some teacher educators have focused on teaching preservice teachers (PSTs) to enact text-based discussions during teacher preparation programs, in an attempt to increase the presence of the practice in classrooms. Practice-based methods courses have been developed which attempt to provide preservice teachers with the knowledge and skill needed to enact text-based discussions successfully. This study investigated the ways in which six preservice teachers' enactments of text-based discussion developed over the course of their one-year student teaching placements, after completing one such methods course in which they learned to enact the practice.

Data were collected at three time points during student teaching, and included transcripts of enactments of text-based discussion, lesson plans, interview transcripts, and assessments of lesson quality using the *Instructional Quality Instrument* (Junker et al., 2004). Analysis of the

data suggested that the PSTs entered student teaching with the ability to enact text-based discussions with a moderate level of success, and that the quality of the discussions continued to improve over the course of the school year. The methods course seemed to support PSTs in learning to link student comments and press students for accuracy and reasoning. PSTs were more successful in eliciting student linking and recall of explicit text information than in eliciting elaborated responses from students; the participation structure enforced by the PST seemed to influence the extent to which students provided elaborated responses. This study supports the use of practice-based methods courses to teach PSTs to enact text-based discussions, and uncovers several areas that are in need of additional focus during these courses.

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1.0 CHAPTER ONE: INTRODUCTION

American educators and policy makers have long emphasized the importance of developing students' ability to comprehend text (National Center for Public Policy and Higher Education, 2010), and policies and programs are regularly put into place to improve the reading comprehension outcomes of U.S. students (e.g., Common Core State Standards Initiative, 2010). To date, the *What Works Clearinghouse* has identified 18 different interventions that have potentially positive effects on reading comprehension, and one intervention that has medium to large positive effects (U.S. Department of Education, 2012).

In spite of the robust knowledge base in the area of reading comprehension, most students' comprehension levels remain far below what would be considered adequate to support 21st century literacies. In 2011, the majority of fourth graders (67%) and eighth graders (76%) demonstrated *Basic* level competencies on the National Assessment of Educational Progress (NAEP) in the area of reading comprehension. Students demonstrating basic competencies are successful with shallow or low-level comprehension skills such as the ability to locate text information, identify explicit main ideas, and make simple inferences such as linking concepts to referents (National Center for Educational Statistics, 2011). *Proficient* level competencies include high-level comprehension skills such as the ability to identify implicit main ideas or problems, integrate information across multiple texts, analyze features of text, and draw conclusions. An astounding 70% of fourth and eighth graders did not comprehend at a proficient

level in 2011. These test scores suggest that while comprehension instruction in classrooms supports many students in developing low-level comprehension skills, it has been unsuccessful in supporting the development of high-level comprehension skills.

One instructional practice that has been investigated by a number of researchers as a viable way to promote the development of high-level reading comprehension skills is *text-based discussion*, in which a teacher supports comprehension by engaging students in an authentic conversation about text. Text-based discussion is a responsive practice, meaning that teachers make instructional decisions moment-by-moment, throughout the lesson, to support and promote student learning. A recent meta-analysis (Murphy, Wilkinson, Soter, Hennessey, & Alexander, 2009) synthesized 42 empirical studies that measured effects of text-based discussion on student reading comprehension. Murphy et al. (2009) found that text-based discussions focused on assisting students in building understanding of text ideas were the most effective at promoting both “literal and inferential comprehension” (p. 759). To provide this type of assistance, teachers use dialogic moves such as open-ended questions to initiate rich, elaborated discussion of the text, and prompts that press students to explain their thinking about the text, support this thinking with evidence or reasoning, link text ideas, and make inferences (e.g., Beck, McKeown, Sandora, Kucan, & Worthy, 1996; Chinn, Anderson, & Waggoner, 2001; Saunders, Goldenberg, & Hamann, 1992; Saunders & Goldenberg, 1999).

Although the Murphy et al. meta-analysis identified several dialogic moves that have been shown to promote the development of high-level comprehension skills across multiple studies, research on teachers’ classroom discussion practices has indicated that most classroom discussions do not contain these types of dialogic interactions (Applebee, Langer, Nystrand, & Gamoran, 2003; Nystrand, 2006; McNeill & Pimentel, 2009; Reznitskaya, 2012; Wolf, Crosson, & Resnick, 2005). Instead, they continue to be dominated by the initiate-response-evaluate

(IRE) patterns of questioning that were identified by Mehan (1979) decades ago, in which the teacher asks a closed question, a student provides a brief response, and the teacher evaluates the response. It has been well-established that IRE questioning patterns focus on low-level comprehension skills such as recall of text information (e.g., Applebee et al., 2003; Cazden, 1988; Mehan, 1979), and so it is not surprising that most students in our country do not comprehend beyond basic levels on assessments such as NAEP.

Some have argued at least part of the reason many of our nation's teachers continue to lead classroom discussions using IRE questioning patterns, in spite of the plethora of research literature related to the relationship between dialogic instruction and student learning, is that text-based discussion requires a significant amount of knowledge and skill to enact successfully, and not many teachers have access to the types of support needed to learn to enact it (McKeown, Beck, & Blake, 2009).

In the past decade, researchers in the field of math education have focused on improving the teaching of responsive dialogic instructional practices during teacher preparation programs (e.g., Ball & Cohen, 1999; Lampert & Ball, 1999), so that novice teachers enter the field better prepared to lead high-quality classroom discussions that promote student learning. Building on this work, researchers in the field of reading have begun to think about ways to improve the teaching of text-based discussion during teacher preparation programs (Kucan, Palincsar, Busse, Heisey, Klingelhofer, Rimbey, & Schutz, 2011; Scott, 2010). As part of this effort, practice-based methods courses have been developed in both fields that focus on providing novice teachers with opportunities to go beyond learning *about* effective classroom discussion practices, and receive intensive support in learning how to *enact* them. While studies have begun to document the learning that occurs during such practice-based methods courses (e.g., Boerst,

Sleep, Ball, & Bass, 2011; Scott, 2010; Shah, 2011), our understanding of how novice teachers learn to enact dialogic instruction such as text-based discussion, and how to best support this learning through teacher education, is still emerging. For example, there have been no studies to date of novice teachers' early enactments of dialogic practice in the field, after completing a practice-based methods course.

1.1 OBJECTIVE OF STUDY

This is a study of the development of six preservice teachers' (PSTs') enactments of text-based discussion during elementary student teaching placements, after completing a practice-based methods course in which they learned to enact the practice. This study utilizes data collected for a larger study about teacher learning of instructional practice to support reading development (Scott, 2010). The objective of this study is to extend our understanding of how novice teachers learn to enact dialogic practice to support student comprehension, and how to support this learning through teacher education.

1.2 THEORETICAL FRAMEWORK

This study of PSTs' learning of the practice of text-based discussion to support elementary student reading comprehension was framed by theories of reading comprehension and theories of learning.

1.2.1 Theories of reading comprehension

While reading comprehension is influenced by many factors, including decoding skills, fluency, prior knowledge, and purpose for reading (e.g., Snow & Sweet, 2003), this study was framed by a text-processing theory of reading comprehension, which focuses on explaining the cognitive processes involved in comprehending text. I included this theory because thinking about what students have to do cognitively to comprehend can help us think about how to provide instruction that supports these efforts.

Kintsch (1998) proposes that skilled readers use low-level cognitive processes such as attention and simple inferences, and high-level cognitive processes such as complex inferences and reasoning, to build understanding of text ideas, and integrate this understanding with prior knowledge; the result of this integration is a mental representation referred to as a “situation model” of text. Van den Broek, Young, Tzeng, & Linderholm (1998) extended this thinking, hypothesizing that readers build understanding of the relationships between multiple text ideas across lengthy pieces of text by fluctuating between working memory and long-term memory, to integrate text information just encountered with text information encountered earlier in the text. Together, these ideas call attention to the importance of low-level and high-level cognitive processes such as attention, inference, reasoning, and linking in comprehending text.

1.2.2 Theories of learning

Socio-cultural theory helps us to understand why text-based discussion, a dialogic instructional practice, may be well-suited to supporting the development of high-level comprehension skills. Vygotsky (1978) first proposed that language is a cognitive tool used to organize, guide, and

refine thinking, as well as mediate learning. Verbal assistance provided by a “teacher” (parent, caregiver, etc.) allows a learner to operate in their zone of proximal development, and use cognitive processes that they cannot yet use independently, which actually pushes the development of these cognitive processes forward. Bruner (1985) elaborated upon the role of language in learning, pointing out that learners internalize the verbal assistance provided by teachers, and use it to assist themselves as they transition from needing assistance to operating independently. Vygotsky’s and Bruner’s work suggests that dialogic interactions between a teacher and a learner drive the development of the learner’s cognitive processes. Dialogic interactions that occur during text-based discussion have the potential to support the development of students' high-level comprehension skills by allowing them to utilize cognitive processes that they cannot yet use independently, to build understanding of text ideas.

One assumption of this study is that a teacher must *learn how* to engage students in dialogic interactions that will successfully promote the development of comprehension; the design of the methods course focused on teaching PSTs to enact text-based discussions was influenced in part by socio-cultural theory, and provided opportunities for the PSTs to practice enacting text-based discussions in increasingly authentic contexts, and receive feedback on their enactments. In other words, the methods course attempted to provide a context in which the teacher educators acted as “more knowledgeable other”, and supported the PSTs in operating in their ZPDs as they learned to enact text-based discussions through guided practice and direct feedback. I included situational learning theory in my framework because it points out that there is a relationship between the context in which learning occurs and what can be learned (Brown, Campione, & Day, 1981; Brown, Collins, & Duguid, 1989). Proponents of situated learning theory argue that for any context in which teachers are learning to enact practice, whether it is a

school classroom, a university classroom, or a small study group, there will be some affordances and some limitations to learning (Putnam & Borko, 2002). Examining the PSTs' enactments of practice during student teaching through the lens of socio-cultural theory and situation learning theory may help us to understand how novice teachers learn to enact text-based discussions to support student comprehension, and how to support this learning through teacher education.

1.2.3 Rationale for study

National assessments (NAEP, 2011) and studies of classroom discourse (Applebee et al., 2003; McNeill & Pimentel, 2009; Nystrand, 2006; Smart & Marshall, 2013) suggest that current instructional practices are not supporting the development of high-level comprehension skills for most students in our nation. Text-based discussion has been shown to support the development of these skills, however, teachers need support to learn to enact the practice successfully (McKeown, Beck, & Blake, 2009; Wilkinson & Son, 2010). Practice-based models of teacher education are being developed in an attempt to provide PSTs with the knowledge and skills needed to enact text-based discussions, so that they enter the workforce better prepared to support high-level comprehension skills among students (Scott, 2010; Shah, 2011). Although researchers are beginning to document PSTs' learning while they are enrolled in such methods courses (e.g., Shah, 2011; Kucan et al., 2011), our understanding of how novice teachers learn to enact responsive dialogic instructional practice is still emerging. No studies to date have investigated PSTs' early enactments of text-based discussion in the field after completing a methods course focused on teaching the practice.

This study investigates six PSTs' enactments of text-based discussion during student teaching, after completing a practice-based methods course in which they learned to enact the practice. This study is guided by the following research questions:

1. How do PSTs' enactments of text-based discussion develop over the course of one-year elementary student teaching placements?
2. What is the nature of the dialogic interactions that occur during the text-based discussions at three time points?

2.0 CHAPTER TWO: LITERATURE REVIEW

This study of the development of PSTs' enactments of text-based discussion to support elementary students' reading comprehension is framed by text-processing theory, socio-cultural theory, and situative learning theory. Together, these theories form a framework that includes the following assumptions: (a) skilled readers use cognitive processes such as attention, inference, linking, and reasoning to comprehend text, (b) dialogic interactions between "more knowledgeable others" and learners can promote the development of cognitive processes, (c) text-based discussion promotes the development of cognitive processes used to comprehend text, (d) teachers need support in learning to enact text-based discussion successfully, (e) the context in which teachers learn to enact text-based discussion will influence what can be learned, which will in turn influence future enactments.

In this chapter I will first orient the reader to the construct of reading comprehension and the theory of reading comprehension that frames this study. Then, I will review theories of the relationship between dialogic interactions and learning, and how text-based discussion might serve as a vehicle to drive the development of students' comprehension skills. Finally, I will discuss models of teacher education that focus on providing PSTs with the knowledge and skills needed to enact text-based discussion, and a theory of learning that helps us to think about the relationship between models of teacher education and teachers' enactments of practice.

2.1 THEORIES OF READING COMPREHENSION

The purpose of the instructional practice that is at the core of this study, text-based discussion, is to support students in developing reading comprehension skills. One of the most cited definitions of reading comprehension today was developed by the RAND Reading Study Group (2002), who defined it as an active process in which the reader simultaneously extracts and constructs meaning from the text using cognitive processes such as inference, attention, and reasoning, as well as prior knowledge. Although many factors influence reading comprehension, including but not limited to cognitive abilities (Aksan & Kasic, 2009; Johnston, Barnes, & Desrochers, 2008; Snow & Sweet, 2003), decoding abilities (Engen & Høien, 2002; Gail, 2011; Leppänen, Aunola, Niemi, & Nurmi, 2008; Perfetti, 1985), correspondence between prior knowledge and text being read (Hammadou, 2000; Moravcsik & Kintsch, 1993; Priebe, Keenan, & Miller, 2012; Recht & Leslie, 1988), socio-cultural influences (Freebody, Luke, & Gilbert, 1991; Stevenson & Fredman, 2006), motivation for reading (Guthrie, Wigfield, Humenick, Perencevich, Taboada, & Barbosa, 2006; Kintsch, 1998; Taboada, Tonks, Wigfield, & Guthrie, 2009), and text features (Graesser, Millis, & Zwaan, 1997), this literature review will focus on the relationship between prior knowledge, cognitive processes, and text features, in order to highlight what a reader must do cognitively to comprehend text, and how teachers might support these efforts through instructional practice.

2.1.1 The role of prior knowledge

Several theories developed during the past two decades help explain the relationship between prior knowledge and reading comprehension. Anderson and Pearson (1984) proposed what they

referred to as schema theory to help explain how a reader comprehends text. Schema theory suggests that the reader makes sense of text by weaving together information directly stated in the text with information inferred from prior knowledge. In one well-known study which supports schema theory, Anderson, Reynolds, Schallert, and Goetz (1977) presented college students with an ambiguous text passage that could have been about four friends getting together to play cards or about four friends getting together to play music. They found that readers who were music students were more likely to interpret the text as being about four friends getting together to play music than readers who were not music students, supporting the idea that readers fill gaps in text information with information from prior knowledge, or schema, to interpret text ideas.

2.1.2 The role of cognitive processes

Kintsch, Van den Broek and colleagues (e.g., Kintsch, 1998; van den Broek, 2005; Wooley, 2011) have developed a text-processing theory to help us think about the cognitive processes a reader uses to build understanding of text ideas, and integrate this understanding with prior knowledge. Two computational models, Kintsch's Construction-Integration model (1998), and Van den Broek et al.'s Landscape model (1998), detail the text-processing theory.

2.1.2.1 Construction-integration model

Kintsch (1998) developed the Construction-Integration (C-I) computational model to simulate a process by which a reader may use attention, memory, and inference to comprehend text. The C-I model specifies a two-step process of construction and integration. This two-step process occurs repeatedly, with each new text idea, as the reader proceeds through the text. During step

one the reader processes an incoming phrase of text and derives the underlying proposition, or gist of the phrase, to construct a textbase. In doing so the reader makes many low-level inferences, such as connecting concepts to their referents. Kintsch proposes that, at this point, a reader can recall the text ideas they have just read for a short time, however, the text ideas will not be retained for long unless they are transferred to long-term memory. In order to transfer the text ideas into long-term memory, the reader must carry out step two, integration of the text ideas with prior knowledge and experiences.

When a reader integrates a textbase with their prior knowledge, he/she incorporates many concepts indirectly implied by the text into their interpretation of directly stated text ideas; the result is a mental representation Kintsch refers to as a situation model. A situation model includes the concepts, characters, actions, events, and setting of the text, interpreted through the lens of the reader's prior knowledge. A situation model is a deep representation of text ideas, meaning that it can be preserved in long-term memory. Kintsch proposes once a reader has constructed a situation model of text, he/she can learn from the text by allocating cognitive attention to higher-order comprehension processes such as reflecting upon the text ideas, analyzing them, or comparing them.

Several studies have supported the utility of the C-I model in explaining reading comprehension processes. For example, Bransford, Barclay, & Franks (1972) documented that skilled readers could accurately answer questions about text immediately after reading it, even though they could not reproduce the precise wording of the text. This finding supports the idea that a skilled reader transforms the surface code, or exact wording, of text into a textbase, or the gist of the text. Moravcsik & Kintsch (1993) demonstrated that when readers are presented with text that has been written in such a way that they cannot utilize prior knowledge to comprehend

it, they are able to recall the gist of the text for a short time, but are unable to retain the text ideas and apply them to a novel situation. This finding supports the idea that in order to learn from text, skilled readers must integrate the textbase into prior knowledge.

2.1.2.2 Landscape model

Van den Broek and colleagues (van den Broek, Young, Tzeng, & Linderholm, 1998; van den Broek, 2010) developed the Landscape Model, an elaboration of the C-I model, to explain how a reader is able to build a situation model using multiple pieces of information across multiple lines of text, and yet not exceed the limited capacity of working memory during the construction phase. The Landscape Model proposes that the content of working memory is continuously updated in a series of integration cycles, resulting in a landscape of fluctuating activations of concepts. To illustrate this model, Van den Broek et al. (1998) provide the following excerpt of narrative text, divided into seven phrases.

1. A young knight rode through the forest.
2. He was unfamiliar with the country.
3. Suddenly, a dragon appeared.
4. The dragon was kidnapping a beautiful princess.
5. The knight wanted to free her.
6. The knight hurried after the dragon.
7. They fought for life and death.

During the construction and integration of phrase 1, concepts are activated (young, knight, rode, forest) and integrated with prior knowledge (reader's idea of "young", readers' idea of "knight", reader's idea of what was ridden – a horse? an elephant?, etc.). During construction of phrase 2, the working memory is cleared to allow room for a different set of concepts to be

activated (he – linked to knight, unfamiliar, country, etc.) and integrated with prior knowledge (reader's idea of what it means to be unfamiliar - maybe the knight doesn't know what to expect, maybe the knight will get lost, etc.). To process phrase 3, the concept of knight is briefly suppressed, a new concept is introduced (dragon), and integrated into prior knowledge. During construction and integration of phrase 6, both dragon and knight are activated, and princess is briefly suppressed. The fluctuation in activation of concepts allows the reader to construct a textbase within working memory by activating only the concepts that are relevant for that phrase, then integrating that textbase into prior knowledge to construct a situation model of the entire text.

2.1.2.3 Implications for reading comprehension instruction

Reading comprehension is an active process: the reader is not a passive receiver of text ideas, but an active constructor of them. A text-processing theory of reading comprehension, which focuses on explaining the cognitive processes used by a skilled reader to comprehend text, has important implications for the design of reading comprehension instruction.

Text-processing theory highlights the important role of cognitive processes such as attention, inference and reasoning in reading comprehension; teachers can support student comprehension by engaging students in utilizing these cognitive processes to build mental representations of text. For example, attention is a critical component of comprehension processing (McVay & Kane, 2012; Solan, Shelley-Tremblay, Ficarra, Silverman, & Larson, 2003); if a concept in text escapes the attention of the reader, it will not become activated, and consequently will not become part of the mental representation constructed by the reader. Students must learn to differentiate between important text ideas and extraneous information, and attend to the parts of the text that are necessary to construct a deep mental representation.

Teachers can support students in this endeavor by focusing discussion on important text ideas, why they are important, and how they are related.

Inferencing plays a large role in comprehension. Low-level inferences, such as establishing links between concepts and referents, and higher-level inferences, such as inferring underlying causes of events (Garrod, O'Brien, Morris, & Rayner, 1990; Long, Golding, & Graesser, 1992; Long & Golding, 1993), are critical in the construction of a coherent situation model. Teachers can support students in comprehending text by assisting them in making both the low-level and high-level inferences that need to be made to comprehend a particular piece of text.

Integration of concepts from long term and short term memory is another important cognitive process involved in comprehension; to comprehend deeply, a reader fluctuates between working memory and long-term memory, making sense of activated text ideas and connecting them to prior knowledge using reasoning (van den Broek et al., 1998). Teachers can support students in integrating text ideas with prior knowledge by prompting them to explain how text ideas connect to their prior knowledge, and how this has shaped their interpretation of the text. For example, if a reader's only prior knowledge of fairy tales is a story in which the knight was mean and cruel and the dragon was the hero, the reader will likely have a much different interpretation of the Van den Broek et al. text excerpt than a reader whose prior knowledge represents a more traditional understanding of the role of knights and dragons in fairy tales.

2.1.3 The role of text features

Text coherence, or the extent to which text provides the information a reader needs to build understanding, influences comprehension (Graesser, Millis, & Zwaan, 1997). Text features at

both the macro-level, such as graphic organizers, and the micro-level, such as linguistic markers, influence the level of text coherence. Coherence gaps place higher demands on readers by requiring them to allocate attention on specific parts of text and make inferences, and sometimes conjectures, about text ideas.

Readers establish coherence by processing and linking text ideas at local and global levels (Graesser et al., 1997). Local coherence is attained if the incoming text idea can be linked to either the previous text idea or related information in the short term memory. Global coherence is attained if the incoming text idea can be linked to the macrostructure of the text, or to previous text ideas that are no longer in the working memory. When the reader establishes coherence within and between all levels of mental representation, deep comprehension of text occurs. Establishing coherence, however, is not necessarily something that all readers do naturally. A teacher can support students in establishing coherence by engaging students in a discussion of the ways in which text ideas are related at both local and global levels, so that these relationships are made explicit.

Several text features have been identified that particularly support the coherence of text. Argument overlap, or a noun-phrase that overlaps an argument in any proposition in the working memory, supports coherence by maintaining continuity between text ideas and reducing the need for inferences (Graesser, Singer & Trabasso, 1994). Connectives also support text coherence by explicitly relating text ideas to each other (Graesser, et al., 1994). Causal connectives, such as *because* or *in order to*, and temporal connectives, such as *before*, *after*, *during*, and *then*, directly indicate to the reader how concepts are related, leaving little room for misinterpretation. Referents, or pronouns and noun phrases that refer to text concepts, are supportive of text coherence (Graesser, Millis, & Zwaan, 1997). Anaphoric referents refer to concepts that have

been previously referred to in the text, such as the use of *he* to refer to *knight* or the use of *they* to refer to *knight* and *dragon*. Deictic referents refer to people, places, or points in time; common deictic references include *you*, *here*, *there*, and *now*. Britton & Gulgoz (1991) found that explicit links between concepts and corresponding referents place less demand on the reader to establish coherence than implicit links. Graesser et al. (1997) found that referents can support coherence if the connection between the concept and corresponding referent is clear and unambiguous. Furthermore, the authors found that referents can be useful in efficiently extending and elaborating concepts.

Britton and Gulgoz (1991) investigated the relationship between coherence and comprehension of expository text with undergraduates. Using a 1,000 word text containing many coherence gaps, the researchers revised the text so that ideas were clearly connected using argument overlap, and referents were explicit rather than implicit. Half of the subjects read the original text, and half read the revised text. Within each group, half of the subjects were assessed with a free recall measure, and half were assessed using a multiple choice measure. Results showed that the high-coherence text group significantly outperformed the low-coherence text group on both free recall measures and multiple choice items requiring inferences, supporting the notion that gaps in coherence can impede comprehension. However, highly coherent text does not necessarily result in deep comprehension. McNamara and colleagues' (McNamara, Kintsch, Songer, & Kintsch, 1996) study of the effect of text coherence on comprehension demonstrated an interesting interaction between reader and text coherence. McNamara et al. compared assessment scores of two types of readers (low prior knowledge; high prior knowledge), on two types of text (low coherence; high coherence). Measures included an assessment tapping into the textbase (recall of explicit facts) and an assessment tapping into the

situation model (reasoning/problem solving using text ideas). The researchers found that for low prior knowledge readers, highly coherent text produced higher scores than low coherence text on both types of assessment. For high prior knowledge readers high coherence text also produced higher scores on recall of information, however, low coherence text produced the best scores on the assessment tapping into the situation model. These results suggest that for readers who have adequate prior knowledge, gaps in coherence force the reader to make inferences and elaborations, which results in deeper comprehension of the text.

In summary, text features such as clear organization, argument overlap, and linguistic markers support coherence, which can in turn support comprehension. While coherence gaps can impede comprehension for readers with low levels of prior knowledge about the text ideas, coherence gaps can deepen comprehension for readers with high levels of prior knowledge by forcing them to work harder to make sense of the text. The implication here is that the amount of support a student needs to make sense of text is dependent upon the balance between their level of prior knowledge about the text ideas, and the level of coherence of the text. Teachers can support student comprehension of text by teaching in response to students' needs, making features that impact the coherence of a particular piece of text explicit when necessary, and assisting students in using inference to fill in coherence gaps at a level that is appropriate for the student.

2.1.4 Summary of reading comprehension

The research reviewed in this section suggests that to comprehend text, skilled readers build understanding of text ideas and integrate this understanding with prior knowledge, to construct a situation model (Kintsch, 1998; van den Broek et al., 1998). Readers use cognitive processes

such as attention, inference, reasoning, and linking to carry out this process. Text features such as argument overlap, explicitness of relationships between concepts and their referents, and use of linguistic markers influence the demands placed on a reader to construct a coherent situation model (Graesser et al., 1997). Some implications of this body of research for reading comprehension instruction are that teachers can support students in comprehending text by assisting them in attending to important text information, establishing relationships between text ideas, making inferences to establish text coherence, and reasoning about how the text ideas connect to prior knowledge. In other words, reading comprehension instruction should focus on assisting students in using cognitive processes such as attention, inference, linking, and reasoning to make sense of text.

2.2 DIALOGIC INTERACTIONS TO SUPPORT LEARNING

Scholars have promoted the use of dialogic interactions to develop high-level cognitive processes for centuries (e.g., Aristotle, 1954; Dewey, 1910). For example, they are the basis of the Socratic Method, which continues to be promoted as an effective instructional tool today (eg., Meckstroth, 2012). Mikhail Bakhtin eloquently spoke of the connection between dialogic interaction among individuals and learning, arguing, “Truth is not born nor is it to be found inside the head of individual person, it is born between people collectively searching for truth, in the process of their dialogic interaction” (1984, p.110).

Socio-cultural theory helps us to better understand how dialogic interactions promote the development of high-level cognitive processes. According to Vygotsky (1978), higher-level cognitive processes that are uniquely human develop as a result of social interaction. Vygotsky

argued that when “more knowledgeable others” (i.e., parents, adult caregivers) interact with young children in such a way that they assist the children in doing tasks that they cannot yet do by themselves, they allow the children to utilize cognitive processes that have not yet fully developed, which pushes the development of these processes forward. He referred to the child’s level of functioning when they are receiving assistance, which is higher than their level of functioning when they are operating independently, as the zone of proximal development (ZPD) (see Figure 1).

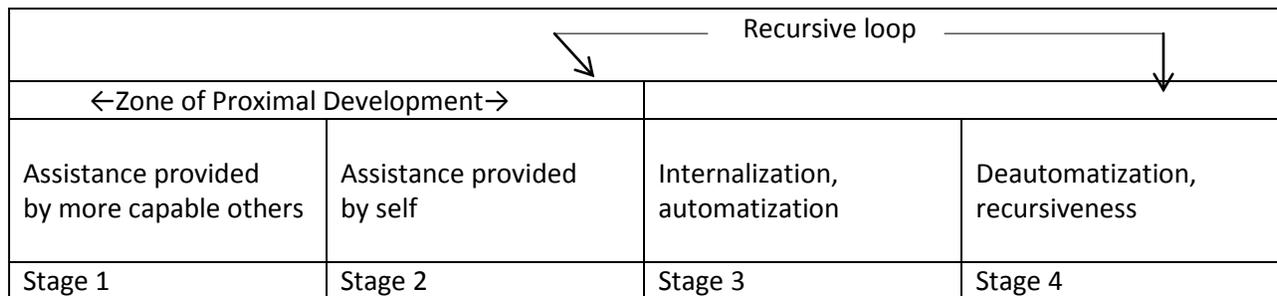


Figure 1. The Zone of Proximal Development (Vygotsky, 1984)

In his seminal book, *Mind in Society*, Vygotsky wrote:

The zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state. These functions could be termed the “buds” or “flowers” of development rather than the fruits of development. (1978, p. 86)

Vygotsky posited that assistance from an adult which allows a child to perform in their ZPD drives the development of high-level cognitive processes because tasks that can be performed with assistance in the present will be performed independently, without assistance, in the future.

Vygotsky emphasized the dual role of language in the development of cognitive processes. First language occurs on an external plane; as an adult and a child work together to complete a task, co-constructed dialogue transmits information and guides actions. Then the child internalizes the assistance received, and language occurs on an internal plane within the child, to further guide and refine thinking. Luria (1982), Vygotsky's student and colleague, further investigated the language that occurs on an internal plane, referring to it as "inner speech". He argued that inner speech, is not merely a repetition of the verbal interactions that occurred between an adult and a child, but rather is constructed by the child as he/she attempts to complete the task independently. Although inner speech disappears once the child is able to complete the task with automaticity, it remains available and will resurface to provide assistance if environmental factors interfere with automatic task performance. Together, dialogic interactions and inner speech are cognitive tools used to plan, guide, and self-regulate behavior and thinking.

Bruner (1960) coined the term scaffolding to describe the verbal assistance parents provide to their young children as they develop oral language. To scaffold learning a parent encourages the child to provide the parts of the message he/she can, and fills in the gaps that the child cannot yet provide. Bruner pointed out that the level of assistance provided by a parent is responsive, increasing or decreasing depending on the goal of the interaction and the ability of the child. Generally it decreases over time, so that eventually child is able to use oral language without assistance. He argued that scaffolding, which occurs naturally between parent and child in informal settings, could be useful in formal school settings as a way for teachers to provide effective instruction to students.

Pearson & Gallagher (1983) developed the Gradual Release of Responsibility (GRR) instructional model (see Figure 2) to describe a method of classroom teaching that is built upon the ideas of Vygotsky (1978) and Bruner (1960). In the GRR instructional model the teacher provides assistance to support students in their ZPD following three steps: 1) the teacher defines and models the task, 2) students engage in guided (assisted) practice of the task, and 3) students engage in independent practice of the task. Direct feedback is provided to the students by the teacher during guided practice and independent practice. A number of studies demonstrated that students who learned to use comprehension strategies using the GRR model outperformed students who learned to use comprehension strategies via alternative teaching methods (Day, 1980; Palincsar & Brown, 1983; Raphael, Wonacutt, & Pearson, 1983).

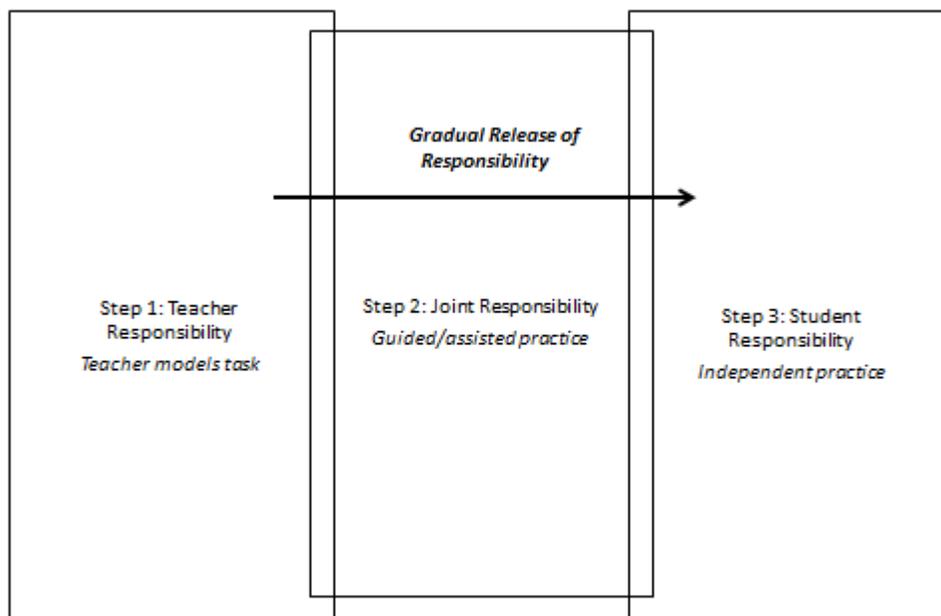


Figure 2. Gradual Release of Responsibility Instructional Model (Pearson & Gallagher, 1983)

Tharp and Gallimore (1988) argued that responsive, assisted performance (Bruner, 1960; Vygotsky, 1978; Luria, 1982), while common among informal interactions between parents and children, is uncommon in formal schooling because classrooms are complex learning environments in which teachers have to manage many individual students at once. The authors claimed that teachers need to be trained in *how* to apply socio-cultural ideas to classroom instruction, and provide the type of assistance to students that will support them in performing in their ZPD and becoming self-regulated learners. As a result of their work related to the Kamehameha Elementary Education Project (KEEP), Tharp and Gallimore developed a theory of teaching built upon socio-cultural theory which proposed that “teaching consists in assisting performance through the ZPD. Teaching can be said to occur when assistance is offered at points in the ZPD at which performance requires assistance.” The recitation that commonly dominates teacher-student classroom interactions, in which teachers ask questions and students provide answers using knowledge they already possess, is assessing, not teaching. In order to learn the pedagogy of providing assisted performance, teachers need modeling, guided practice with feedback, and independent practice with feedback from teacher educators (i.e., professors, principals, supervisors). In other words, the same socio-cultural principles of teaching that have long been touted as effective in primary and secondary classrooms should also be applied during teacher education, to teach novice teachers how to provide high-quality instruction to children.

2.2.1 Classroom dialogue and student learning

Many researchers have supported and expanded socio-cultural theory by investigating the relationship between classroom dialogue and student learning (e.g., Brown, Campione, & Day, 1981; Wertsch, Minick, & Arns, 1984; Zukow, 1988). For example, Fawcett and Garton (2005)

demonstrated that the “more knowledgeable other” does not have to be an adult; when high sorting ability two-year olds provided scaffolding in the form of verbal directives to low sorting ability two-year olds, the task performance among the low sorting ability children improved significantly. This study suggests that within a classroom, the teacher is not the only person who can scaffold learning. When students are given opportunities to interact and collaborate with each other, they can provide support and scaffolding for each other that promotes learning. Cazden (1988) also found that collaboration among students has positive effects on learning. She argued that when students engage in collaborative group dialogue, they scaffold each other by sharing the cognitive demands of the task, which allows them to carry out more complex tasks than they are able to carry out individually. In a similar study Wegerif, Mercer, & Dawes (1999) found that both group and individual reasoning improved after children engaged in collaborative group dialogue to carry out problem-solving activities. These three studies underscore the value of student-to-student interaction during classroom discussion, and suggest that providing opportunities for students to build off of each other, question each other, and/or support each other in building understanding will promote the development of high-level comprehension skills.

A line of research focused on the patterns of dialogic interaction that occur between teachers and students during classroom discussion helps us to better understand the relationship between specific patterns of dialogue and student learning. Orsolini and Pontecorvo (1992) examined eleven science discussions that occurred among a class of five-year olds and their teacher. They found that different sequences of dialogic moves influence students’ talk in different ways. In mutual continuations, a series of linked student utterances and/or teacher revoicings (rephrasing of student comments using vocabulary or syntax that is more precise), the

teacher is more likely to revoice elaborated utterances than simple utterances, and utterances revoiced by the teacher are most likely to be picked up and extended by other students. Revoicing by the teacher seems to socialize attention and knowledge by highlighting some content and dismissing other content. Cycles of contingent queries-answers, in which the teacher asks a question and a student responds, promote little elaborated student talk unless the teacher makes a request for explanation that is followed by the student justifying their point of view. In disputes, in which a student opposes a previous student's utterance, elaborated talk occurs when the opposition requests an explanation, and the opposed student articulates their point of view. The act of justifying a point of view in response to either the teacher or an opposing peer can lead to elaborated talk from a student. Overall this work illustrates that in thinking about using dialogic instructional practices, teacher educators need to go beyond characterizing certain dialogic instructional moves as "effective" or "not effective", and focus on teaching novice teachers to analyze dialogic patterns and the impact they have on student learning. In other words, teachers need to learn not only which dialogic moves to use, but in what contexts some will work better than others; the way to do this is by focusing novice teachers' attention on dialogic interactions within a text-based discussion, rather than on just what the teacher should say.

2.2.2 Text-based discussion to support comprehension

The practice of text-based discussion to support student reading comprehension is grounded in Vygotsky's and Bruner's ideas on the role of dialogic interactions in learning, as well as Kintsch's and van den Broek's ideas on the role of cognitive processes in comprehending text. The goal of enacting a text-based discussion is to engage students in a conversation about the

text, to assist them in building understanding of text ideas and how they are related, and integrating this understanding into prior knowledge. The teacher provides assistance by asking open questions about the text to initiate rich, elaborated discussion, and prompting students to explain their thinking about the text, support their thinking with evidence or reasoning, link text ideas, and make inferences. The premise of text-based discussion is that the dialogic interactions that occur during a text-based discussion support students in utilizing comprehension processes they may not be able to use independently, and allows them to comprehend at higher level than they could independently.

Research supports this premise. For example, studies have shown that text-based discussion increased the complexity of students' comments (Beck et al., 1996; Echevarria, 1995), improved their ability to support their thinking with evidence from the text (Junior Great Books, 1992), and strengthened their literal and inferential comprehension assessment performance (Flynn, 2002; Saunders & Goldenberg, 1998).

Although a substantial amount of research has demonstrated the positive effects of text-based discussion on student comprehension, it is important to note that in most cases, the teachers enacting the text-based discussions in these studies were experienced classroom teachers who were provided with a high level of training and support in learning to enact the practice. Teacher educators need to support teachers in learning *how to* enact text-based discussions successfully.

2.3 LEARNING TO ENACT TEXT-BASED DISCUSSIONS

Research on dialogic instructional practices and responsive teaching can help us think about what a teacher needs to learn to be able to enact text-based discussions. First, there is a good amount of evidence suggesting that the dialogic moves a teacher uses are related to student comprehension. For example, asking open-ended questions and prompting students to explain, link, and support their thinking with evidence promote high-level student comprehension of text (Beck et al., 1996; Chinn et al., 2001; Saunders & Goldenberg, 1999), while asking recall questions promotes low-level comprehension (Applebee et al., 2003). Teachers, therefore, need to develop knowledge about the purposes of various dialogic moves and their impact on student comprehension.

Second, teachers need to develop skill in teaching responsively, or deciding when to use one dialogic move, versus another one, to best support student comprehension (Lampert, 2012; Lampert, Beasley, Ghouseini, Kazemi, & Franke, 2010; Lyons, 2003; Lyons, Pinnell, & DeFord, 1993; Tharp & Gallimore, 1992). Research on responsive teaching to support struggling readers has demonstrated that skilled teachers are able to listen to a student's response, analyze what it implies about their underlying level of understanding and, based upon this, carry out an instructional move to support their learning (Clay, 1991; Clay, 1998; Lyons & Pinnell, 2001; Rodgers & Pinnell, 2002). Clay argued that releasing responsibility to the student is an important part of teaching responsively, in order to move learning forward. She wrote that "each change in the child's control calls for an adjustment in what the teacher does" (2005, p.9). In other words, the teacher's level of support must increase if students struggle, and diminish as students become more skillful in completing the learning task.

Third, text-based discussions involve engaging a group of children in a discussion, therefore teachers also need to develop skill in managing student behavior and participation, providing opportunities for multiple students with different personalities and knowledge bases to participate and interact with each other, and yet keep the conversation from remaining on one topic for too long, or veering too far away from the text (Aukerman et al., 2008; Lampert et al., 2010).

2.3.1 Practice-based models of teacher education

In the past decade teacher educators in the field of mathematics initiated a movement to improve the teaching of responsive dialogic instructional practice in teacher preparation programs, so that novice teachers enter the workforce better prepared to enact high-quality discussions that promote student learning (e.g., Ball & Bass, 2000; Ball & Cohen, 1999; Lampert & Ball, 1999). As part of this effort, practice-based models of teacher education have been developed which made dialogic practice the center of teaching and learning (e.g., Ball et al., 2009). Building on the work of Ball and colleagues, teacher educators in the field of reading have begun to develop practice-based methods courses focused on teaching preservice teachers to enact text-based discussions to support reading comprehension (e.g., Scott, 2010).

Grossman and colleagues (Grossman, Compton, Igra, Ronfeldt, Shahan, & Williamson, 2009) identified a need for a framework to guide the teaching of dialogic practice within practice-based models of teacher education. To develop this framework, the researchers systematically compared the ways in which professional educators prepare teachers, clinical psychologists, and members of clergy to enact “dialogic practice” in their respective fields. The

Grossman et al. framework contains three concepts that were present across the professional preparation programs: *representation*, *decomposition*, and *approximation*.

Representation is the way in which dialogic practice is made visible to candidates. For example, dialogic practice can be represented through video exemplars, modeling, and artifacts (lesson plans, therapy session plans, etc.). Grossman et al. argued that representations are an important part of the teaching of dialogic practice because they provide an overview for candidates, illustrating what the teacher/counselor/clergyman says, and how students/clients respond. They cautioned, however, that in each type of representation, some features of practice will be made visible, while others will remain concealed. For example, a video exemplar of an expert teacher leading a text-based discussion with elementary students affords insight into the types of questions posed to students and the teachers' responses to student's comments. The teacher's underlying reasoning guiding their instructional decisions, however, will remain concealed. The implication regarding Grossman et al.'s concept of *representation* is that as professional educators represent dialogic practice to candidates, they need to be aware of which features of practice are revealed by the representations they utilize, and which features are not.

Although representations in the form of video exemplars or modeling can provide candidates with a general idea of what high-quality dialogic practice looks like, they do not provide the type of fine-grained information candidates need to learn to enact the practice (Gallant and Schwartz, 2011; Kucan et al., 2009; Sabers, Cushing, and Berliner, 1991). *Decomposition*, or breaking down dialogic practice into its fundamental components, focuses candidates' attention on key features of dialogic practice (Grossman et al., 2009) and facilitates the use of a common language and structure for describing and analyzing each feature (Moss, 2011). Grossman et al. argued that decomposition is an essential step in the teaching of dialogic

practice because it allows a professional educator to focus candidates' attention on important details that are easily overlooked when considering the practice as a whole. For example, a teacher educator may decompose a text-based discussion into smaller components such as the introduction, body, and exit of the discussion, and focus teacher candidates' attention on the structure, teaching goals, and instructional moves that are appropriate within each component.

Approximations of practice refer to opportunities for candidates to go beyond discussing the components of dialogic practice, and attempt enactment (Grossman et al., 2009). Approximations of practice can focus on individual components of practice, such as the introduction of a text-based discussion, or on the practice as a whole. Furthermore, they can be carried out in a variety of contexts, including highly-contrived contexts such as with peers in a university classroom, or authentic contexts such as with students in a school classroom. Grossman et al. argued that to successfully learn to enact responsive, dialogic practice during a professional preparation program, candidates need many opportunities to approximate all components of the practice, and receive explicit feedback, in increasingly authentic settings.

The Grossman framework has had an important influence on the teaching of dialogic instruction in the field of education, serving as a framework to guide the teaching of practice, and also as a framework to understand PSTs' learning of this practice (Moss, 2011). For example, Boerst, Sleep, Ball, & Bass (2011) investigated the development of PSTs' enactments of discussion to support student comprehension of mathematical concepts. The dialogic practice was represented to PSTs with a video exemplar of a model teacher leading a discussion of mathematical concepts with elementary students. PSTs participated in discussions of the video, focusing attention on the teacher's underlying goals and purposes for each instructional move, and productive/nonproductive questions. PSTs practiced generating questions for different

purposes, and received feedback from the teacher educators and peers. Finally, each PST planned and carried out a discussion of mathematical concepts with elementary students, recorded, transcribed, and analyzed their lesson. Boerst et al. found that throughout the course, as PSTs gained control of small components of the practice, the complexity of the overall practice they were able to engage in gradually increased. They found that the way they represented the practice of discussion to PSTs, including videos, viewing guides, and the model teachers' anecdotal notes, influenced PSTs' understanding of the practice; they concluded that they needed to be mindful of what they wanted PSTs to understand when deciding how to represent practice. One of the insights derived from this study was that in order to avoid misrepresenting the practice of discussion as a collection of individual dialogic moves, it is necessary to nest the individual dialogic moves within a larger discussion framework that includes dialogic interactions, which is nested within an even larger mathematics framework.

While studies such as the one described above are beginning to document PSTs' learning while enrolled in practice-based methods courses, our understanding of how novice teachers learn to enact responsive dialogic practice, and how to support that learning in teacher preparation programs, is still emerging.

2.3.2 Situative learning theory

Situative learning theory proposes that knowledge is strongly linked to the context in which it is acquired (Brown, Collins, & Duguid, 1989; Greeno & The Middle School Through Applications Project Group, 1998). Proponents of this view argue that for students to transfer knowledge acquired in school to out-of-school settings, they need opportunities to engage in authentic activities which closely resemble real-world practices. Situative learning theory has influenced

the design of elementary and secondary school learning environments for many years (Brown, Collins, & Duguid, 1989, Cobb & Bowers, 1999), and has resulted in school learning environments that mimic real-world contexts. For example, students may learn how to count money via participation in a classroom “store” in which items are bought and sold using coins and bills that are representative of real money. Putnam & Borko (2002) argue that situative learning theory applies to teacher education as well, and that the context in which candidates acquire knowledge about the practice of teaching will influence what they learn, and how well they are able to translate that knowledge into practice. The authors point out that situated learning theory does not, however, suggest that any one context is ideal for all types of teacher learning:

The question is not whether knowledge and learning are situated, but in what contexts they are situated. For some purposes, in fact, situating learning experiences for teachers outside of the classroom may be important – indeed essential – for powerful learning. The situative perspective thus focuses researchers’ attention on how various settings for teachers’ learning give rise to different kinds of knowing. (Putnam & Borko, 2002. pg. 6)

In other words, a particular context allows for some types of learning, but not others. Grossman et al.’s argument that representations of practice make some features of the practice visible, but mask other features, is in line with situative learning theory. For example, video of an expert teacher enacting a text-based discussion provides novice teachers with an overview of what a text-based discussion looks like and sounds like, but it does not provide information about the teacher’s reasoning underlying her instructional decisions.

Situative learning theory, however, applies to more than just representations of practice; it applies to the entire methods course as a context for learning to enact text-based discussions, and even the student teaching placement as a context for extending this learning. The implication of situative learning theory is that the ways in which the PSTs enacted text-based discussions during student teaching will reflect the affordances and constraints on learning that were present at the time the learning occurred.

3.0 CHAPTER THREE: RESEARCH METHODS

This chapter provides a detailed overview of the research methodology used in this study. The following sections describe in detail the contexts, participants, data sources, and methods of data analysis used to investigate the following research questions:

1. How do PSTs' enactments of text-based discussion develop during student teaching placements?
2. What is the nature of the dialogic interactions that occur during the text-based discussions at three time points?

3.1 STUDY DESIGN

I utilized a case study research design (Bogdan & Biklen, 1992; Strauss, 1991) to trace the development of six PSTs' enactments of text-based discussion during one-year student teaching placements, after completing the same section of a practice-based methods course focused on teaching the practice. Multiple data sources including lesson plans, transcripts of text-based discussions, transcripts of semi-structured interviews, and lesson quality assessments, were analyzed to triangulate findings. A primary analysis of the data sources provided an overview of the ways in which PSTs' enactments of text-based discussion developed during student teaching.

A secondary analysis conducted on three of the original six PSTs provided information about nuances that occurred in individual development.

3.2 STUDY CONTEXT

The data used in this study were collected under the direction and supervision of Dr. Sarah E. Scott, as part of a larger study of 18 PSTs' learning of instructional practice to support reading development (Scott, 2010). My role in this study was to devise my research questions, choose the data sources from the entire set that would be relevant in answering my research questions, and analyze them. The participants were part of a group of 30 PSTs who were enrolled in a 12 month teacher certification program (two summer terms, a fall term and a winter term) at a mid-size urban university in the rustbelt. During this program the PSTs completed 36 credit hours of university coursework and a student teaching placement consisting of 4.5 days per week in a local school district elementary classroom from September through May.

3.2.1 Description of practice-based methods course

One of the first courses completed by the PSTs during their teacher certification program was a six-week practice-based methods course, focused on teaching the knowledge and skills needed to enact several high leverage (Ball, 2011) instructional practices considered central to high quality reading instruction. The methods course was designed and taught by three instructors at the university the participants were enrolled in (Scott, 2010), and was held in two settings, a university classroom and a local elementary school, during the summer semester. The first three

sessions, plus four additional sessions throughout the six-week methods course, were held in a university classroom and focused on building foundational knowledge related to reading comprehension. For these sessions, PSTs read assigned articles and participated in discussions and activities related to cognitive processes involved in comprehending text (Kintsch, 1998; Snow & Sweet, 2003; van den Broek et al., 1998), features of text that influence comprehension (Graesser et al., 1997), and socio-cultural factors that influence comprehension (Delpit, 1987; Ladson-Billings, 1995; Snow & Sweet, 2003).

Fifteen sessions of the methods course were held in a local elementary school that housed a free remedial summer school program. These course sessions focused on teaching PSTs to enact a small set of instructional practices that have been shown to support the development of reading skills for elementary students, including robust vocabulary instruction (Beck, McKeown, & Kucan, 2008), reading and writing workshop (Calkins, 1994; 2000; Graves, 1983), and text-based discussion to support reading comprehension (Murphy et al., 2009). The design of these sessions was strongly influenced by Grossman et al.'s (2009) cross-professional preparation framework of representation, decomposition, and approximation of practice. Each session included two hours of large group instruction in which teaching practices targeted by the course were represented, decomposed, and analyzed, and two hours in which PSTs approximated the practices they were learning to enact. The approximations took place with small groups of elementary students who had just completed third, fourth, or fifth grade, and were attending the summer school program for remedial reading instruction.

One of the instructional practices PSTs learned to enact, and the practice that is the focus of this study, was text-based discussion. This practice was targeted because it has been shown to be effective in supporting the development of high-level comprehension skills among students

(Murphy et al., 2009). The next three sections will describe the ways in which text-based discussion was represented, decomposed, and approximated in an attempt to create an environment in which PSTs could learn to enact the practice effectively.

3.2.1.1 Representation of text-based discussion

One theory that undergirds the practice of text-based discussion is a text-processing theory of reading comprehension (Kintsch, 1998; Van den Broek et al., 1998), which proposes that readers comprehend by engaging in a continuous cycle of constructing meaning and integrating this meaning with prior knowledge, as each new text idea is encountered. In line with this theory, text-based discussion was represented to the PSTs in this study as a conversation about text, led by the teacher during the reading of the text, as text ideas are encountered by students. The methods course promoted the idea that the goal of text-based discussion is to use dialogic instructional moves to assist students in building understanding of text ideas and how they are related, and to integrate this understanding into prior knowledge.

According to Grossman et al. (2009), each method of representation of an instructional practice affords insight into some features of the practice, while other features remain hidden. For example, a video exemplar affords insight into what the teacher said and how the students responded, however, the teacher's rationale and thought processes underlying his/her instructional moves remain hidden. Text-based discussion was represented to PSTs using a combination of video exemplars, artifacts, and modeling /debriefing by the course instructor, in order to decrease the number of features that remained hidden.

3.2.1.2 Decomposition of text-based discussion

During the methods course, the practice of text-based discussion was decomposed into four components: planning the discussion, initiating, or “launching” the discussion, supporting student comprehension during reading through discussion, and exiting the discussion (Scott, 2010). The important features of each component were made explicit to the PSTs through modeling, handouts, and discussion. For example, the planning component included four steps: 1) carefully read the text before assigning it to students, 2) determine your instructional purpose for the discussion, 3) analyze the text for features that will challenge or support student comprehension, and 4) plan stopping points and questions to initiate discussion at each stopping point. The course instructors discussed each step with PSTs in detail, provided handouts detailing the steps, and provided examples of high-quality lesson plans.

A very important component of text-based discussion is the body of the discussion, during which a teacher supports students in comprehending text by engaging them in a conversation about it. A skilled teacher uses two types of dialogic moves during the body of a text-based discussion, initiating questions to spark a rich conversation, and follow-up moves to assist students in building understanding of the text ideas, and integrating this understanding with prior knowledge. Initiating questions can be preplanned by the teacher, however, follow-up moves are made in response to student comments, and cannot be preplanned.

Some types of initiating questions and follow-up moves work better than others for different purposes. For example, open-ended questions such as *What do we know about the character so far?* spark discussion and encourage students to explain their thinking about text ideas better than yes/no questions (Beck et al., 1996). Prompts that press students, such as *Why do you think that? Can you say more about that?* are effective at promoting a deep

understanding of text by providing students with opportunities to support their comments with reasoning or evidence from text (Saunders et al., 1992). Prompts such as *Who can add on to what Ben just said?* promote the linking of text ideas (Wolf et al., 2005). The methods course instructors decomposed the body of a text-based discussion for PSTs by developing a core of possible dialogic moves along with explanations of the purpose of each move.

3.2.1.3 Approximations of practice

Grossman et al. (2009) point out that in service-oriented professional education programs such as clergy or clinical psychology, it is common for those in training to be afforded abundant opportunities to engage in enacting practices in gradually increasing levels of authenticity. For example, a clergyman-in-training may begin approximations of a sermon by enacting an opening statement with a group of peers, and eventually work up to enacting an entire sermon with a congregation. An important part of approximations is that the professional in training receives targeted feedback about their enactments, and makes adjustments based upon this feedback (Moss, 2011).

Guided by these ideas, the methods course was structured so that PSTs had opportunities to approximate practice in increasingly authentic settings, and receive feedback from the course instructor. For example, each PST rehearsed components of text-based discussions in the presence of their classmates, and received feedback from the course instructors. Importantly, the classmates were not asked to “act” like students. Instead they watched as interested observers while the course instructor acted like a student, to provide a sense of how real students may respond to various dialogic moves used by a teacher. Next, PSTs enacted entire text-based discussions in elementary classrooms, with small groups of elementary students. These lessons were videotaped for later analysis and discussion with their classmates and course instructors. In

addition to the oral feedback provided in the video-viewing discussions, each PST received written feedback from the course instructors on their enactments, and completed written reflections of their teaching.

The planning of the lessons was also approximated with increasing authenticity. At the beginning of the course, PSTs used lesson plans that had been prepared by the course instructors to guide their lessons; as the course progressed, PSTs were responsible for planning increasingly larger amounts of lessons, and received written feedback from the course instructor on their lesson plans.

3.2.1.4 Enactments of text-based discussion during student teaching

All of the PSTs who completed the methods course described above began their student teaching placements in the fall semester immediately following the methods course, and were invited to participate in a research study of teacher learning (Scott, 2010) during student teaching. 18 PSTs agreed to participate. By consenting to participate, each PST agreed to share a lesson that was representative of their reading comprehension instruction with researchers at three time points during their student teaching placements (October, February, and May). These lessons were not limited to text-based discussions, they just needed to represent typical reading comprehension instruction provided by the PST.

A total of 54 reading comprehension lessons, three for each participant, were audiotaped. Each shared lesson was observed and rated by a trained research assistant, using the *Instructional Quality Assessment (IQA)* (Matsumara, Slater, Junker, Peterson, Boston, Steele, & Resnick, 2006). Additionally, each PST was interviewed immediately following the shared lesson, by a trained research assistant using a semi-structured interview protocol. PSTs were compensated \$50 at each time point for their time.

3.3 DATA SOURCES

The data sources for this study were collected as part of the Scott (2010) study described above and included lesson plans and audio recordings of text-based discussions, assessments of lesson quality, and audio recordings of semi-structured interviews. This section describes each data source and how it was collected.

3.3.1 Lesson plans

Each PST provided the researchers with a copy of the lesson plans they utilized for the lesson they chose to share. A total of 54 lesson plans were collected, three from each PST. The lesson plans represented a range of formats, including a template created by the university teacher preparation program, templates created by the mentor teachers, templates created by basal reading programs, and templates created by the PSTs.

3.3.2 Enactments of comprehension instruction

Each nominated comprehension lesson was enacted with students from the PSTs' student teaching placement classroom, at three time points. The first time point was in October, about one month into student teaching. The second time point was mid-way through student teaching, in February. The third time point was near the end of student teaching, in May. Each enactment was recorded; the audiofiles were stored on Dropbox.

3.3.3 Instructional Quality Assessments

Each nominated reading comprehension lesson was observed and assessed using the *Instructional Quality Assessment (IQA)* (Junker, Matsumara, Crosson, Wolf, Levison, Weisberg, & Resnick, 2004), which measures the quality of dialogic instruction and related classroom activities for both reading comprehension and mathematics. The *IQA* consists of 12 checklists intended to provide information about the classroom, students, and lesson materials as well as 16 rubrics that rate the academic rigor of the lesson activities and materials. The *IQAs* were administered by three research assistants, each of whom participated in a training workshop. Tuning assessments were triple-coded, and any discrepancies were negotiated through discussion until all assistants agreed to a single rating.

3.3.4 Semi-structured interviews

The research assistants conducted interviews with the PSTs immediately following each nominated reading comprehension lesson. The interviews were conducted using semi-structured protocols consisting of a set of primary questions, and follow-up questions for some of the primary questions. The research assistants were instructed to ask each PST all of the primary protocol questions, and to ask the follow-up questions when a response to a primary question required more probing. The interview protocols were designed using an iterative approach, so that adjustments could be made at each data collection time point in response to gaps in information gathered from the previous interview as well as changes in PSTs' roles in their student teaching placement classrooms over time. The interview questions focused on PSTs' interpretations of their teaching practice and the ways in which they believed contextual factors

influenced it. Each interview was recorded and stored in digital format on a flash drive for later transcription.

3.4 PARTICIPANTS

To investigate my research questions, I conducted a primary analysis of the enactments of comprehension instruction and IQA protocols for six of the 18 PSTs who participated in the larger study (Scott, 2010). I then conducted a secondary finer-grained analysis of the enactments of comprehension instruction, lesson plans, and semi-structured interviews of three of the six PSTs included in the primary analysis.

To determine the subset of PSTs that would be the focus of this study, I examined the 54 audiotaped reading comprehension lessons collected for the Scott (2010) study, and identified the 11 PSTs who had enacted text-based discussions at all three time points. Next, I narrowed the subset to the nine PSTs who had been placed in second grade through fifth grade. I decided to limit my analysis to PSTs working in grades two and up because by second grade an average reader has developed enough basic decoding skills that they can allocate cognitive attention to building deeper understanding of text ideas; in earlier grades, when basic decoding skills are still developing, this is more difficult to do (Fountas & Pinnell, 1996). Next, I examined the *IQA* scores of the 9 remaining PSTs, and rank ordered their cumulative scores on eight *IQA* test items that measure factors related to text-based discussion (see Appendix A). Finally, I chose the two highest ranking and the two lowest ranking PSTs, and randomly chose two from the middle of the ranks (see Table 1). It should be noted that William's cumulative scores were much higher than any of the other PSTs, including the second-highest ranking PST, Anna.

Table 1. Cumulative IQA scores at three time points for the PSTs in the primary analysis

PST	Grade	Student Participation (points/ 12)	Teacher Links (points/ 12)	Students Link (points/ 12)	Teacher Presses (points/ 12)	Students Provide (points/ 12)	Revoice (points/ 9)	Text Rigor (points/ 9)	Discussion Rigor (points/ 12)	Total (points/ 90)
William	5	12	11	10	11	11	4	9	11	81
Anna	2	12	6	3	9	9	9	7	9	63
Katie	3	12	6	5	9	8	6	8	7	62
Nicholas	4	12	8	5	8	8	7	6	8	61
Thomas	2	12	5	3	9	7	2	6	7	51
Rachel	2	12	5	3	8	5	2	6	6	47

3.4.1 PSTs included in the primary analysis

William completed his student teaching in a fifth grade classroom of a private elementary school located in a mid-size city. His placement school was attended by a large population of university faculty members. Nicholas completed his student teaching in a fourth grade classroom of a public elementary school located on the fringe of a mid-size city. His school serviced students from a range of low to high SES backgrounds. Katie completed her student teaching in a third grade classroom of a public elementary school located within a mid-sized city. Her school serviced students from low-mid SES backgrounds. Anna, Thomas, and Rachel completed their student teaching in second grade classrooms. They were placed in three different public elementary schools, each of which was located on the fringe of a mid-sized city that serviced students from a range of low to high SES backgrounds.

3.4.2 PSTs included in the secondary analysis

For the secondary analysis I chose William, Anna, and Thomas as illustrative case studies of nuances that can occur in individual development. I included William for several reasons. First, he received the highest cumulative *IQA* scores at every time point, suggesting that he was more successful at enacting text-based discussions than the other PSTs. Also, William was placed in a fifth grade classroom for student teaching. Average students in fifth grade are fluent readers, which means that they have a large sight word vocabulary, and can read with proper phrasing and expression (Fountas & Pinnell, 1996). Fluency allows readers to allocate cognitive attention to higher-level thinking such as reasoning about text ideas, because they do not have to spend a lot of time attending to lower-level skills such as decoding words or analyzing punctuation.

I also included Anna and Thomas in the secondary analysis because they were both placed in second grade classrooms in the same public school district. Working with second graders on reading comprehension is a little different than working with fifth graders, because during second grade, average students are moving from a transitional stage of reading to a fluent stage of reading (Fountas & Pinnell, 1996). This means that they have a smaller sight word vocabulary, and are less adept at reading with proper phrasing and punctuation, than fluent readers. Readers in a transitional stage of reading have to consciously attend to decoding words and analyzing punctuation more frequently than fluent readers, which means that they have less cognitive attention that can be allocated to high-level comprehension skills. Of the six PSTs in this study, Anna fell into the highest third of the rank ordered cumulative *IQA* scores, while Thomas fell into the lowest third, suggesting that Anna was more successful at enacting text-based discussions than Thomas.

3.5 DATA ANALYSIS

3.5.1 Primary analysis

First I analyzed the *IQA* protocols and transcripts of text-based discussion collected at three time points, focusing on all six PSTs, to investigate group trends in development of enactments of text-based discussion. A more detailed description of the methods of analysis for each data source follows.

3.5.1.1 IQA

I focused my analysis of the *IQA* (Matsumara et al., 2006) on three rubrics related to overall quality of text-based discussions: (1) the percentage of students participating in the discussion, (2) the rigor of the text being discussed, and (3) the rigor of the discussion. I included the first rubric because managing student participation during a text-based discussion has been found to be challenging for novice teachers (Lampert et al., 2010). I included the second rubric because each PST enacted their text-based discussions with different texts, therefore it was important to verify the level of complexity of each text used. The level of text complexity influences the demands placed on a reader to comprehend it (Graesser, et al., 1994), which influences the level of assistance readers will need during a text-based discussion. I included the third rubric to establish overall quality of the text-based discussions, as rated by the *IQA*.

I also analyzed PSTs' scores for the five rubrics that assess dialogic moves used by either the teacher or the students during text-based discussion: (1) the extent to which the teacher links students' comments, (2) the extent to which students link each other's comments, (3) the extent to which the teacher presses students to back up comments with evidence or reasoning, (4) the

extent to which students back up their comments with evidence or reasoning, and (5) the extent to which the teacher “amplifies”, or revoices student comments. Although the *IQA* used the term “amplify”, a term for this dialogic move that is used widely in the field is “revoicing”; for this paper I will use the term “revoicing” to avoid confusion. I included these rubrics because they focus on dialogic moves that have been shown to promote student reading comprehension during text-based discussions (e.g., Beck et al., 1996; Chinn et al., 2001; Saunders & Goldenberg, 1999), and so it was important to investigate the quality of their use during PSTs’ text-based discussions, as rated by the *IQA*.

The scores for each of these eight rubrics range from 0 to 3 or 4; a detailed description of the criteria that need to be met to receive each score is provided in the scoring protocol (see Appendix A). For the analysis of the rubric scores, I calculated the mean score and standard deviation of each rubric across all PSTs at each time point, rounding each mean to the nearest one hundredth. I also calculated the cumulative scores across all eight rubrics for each PST at each time point, to track development in overall lesson quality as rated by the *IQA*. This analysis provided a snapshot of the PSTs’ enactments early in student teaching, and how they changed over the course of the school year.

Finally, I compared the cumulative *IQA* scores of the PSTs who had used fiction text to those who had used non-fiction text at each time point. I included this analysis because the text features for fiction text and nonfiction text differ (Graesser, et al., 1997), and place different types of demands on the reader who is attempting to comprehend what they read. I wanted to investigate if there were differences in the quality of text-based discussions attempting to support reading comprehension for each genre.

3.5.1.2 Transcripts of text-based discussions

Each of the six PSTs focused on in this study recorded three text-based discussions, one at each of three time points during the school year (October, February, and May). The 18 recordings were transcribed by either me (N=9) or a paid transcriptionist (N=9). Prior to any analysis, identifying information was removed from the transcripts, as well as the time points in which the discussions occurred. After all coding had been completed, identifying information and time points were replaced to trace development over the course of the year.

Each transcript was analyzed in a randomly chosen order. To begin, I divided each text-based discussion into interaction units, or discussion segments organized around a single text event (Bloome et al., 2010). The following sections describe in detail the additional primary analyses I conducted with the 18 transcripts.

3.5.1.2.1 Structure of text-based discussions

I examined the structure of each text-based discussion, to see if the PSTs led the discussion during the reading or after the reading of the text. I was interested in this structure because the methods course promoted the idea of discussing the text during the reading, to assist students in building understanding of text-ideas as they are encountered, and support them in developing comprehension skills. A more traditional way to structure a discussion about text, however, and one that the researchers have found is prevalent in classrooms (e.g., Applebee et al., 2003), is after the students have finished reading the text, to assess their comprehension of it. I was curious if the PSTs, during student teaching, used the structure they had learned in the methods course, or if they relied on the more traditional structure that they had likely experienced as students. I coded the transcripts using the following coding scheme: 1 = text-based discussion

took place during the reading of the text; 2 = text-based discussion took place after the reading of the text.

Most basal reading programs instruct teachers to use the traditional approach, and discuss text with students after they have read it, to assess their comprehension of what they have read. I was curious if the PSTs who used basal reading programs in their student teaching placement classrooms were less likely to use the after-reading structure they had learned in the methods course for text-based discussion than the PSTs who were placed in classrooms that used trade books for reading instruction. I coded the transcripts for the type of reading material each text-based discussion centered on using the following coding scheme: 1 = trade book; 2 = basal reading program, to see if there was a relationship between the way in which each PST structured their text-based discussion and the reading materials they used.

3.5.1.2.2 Patterns of talk

The methods course promoted the idea that text-based discussion can be an effective practice to support student comprehension of text when it provides opportunities for students to engage in elaborated talk by interacting with each other about the text, and building upon each other's comments. Studies have shown that student-student interaction about the text does not often occur in classrooms, because classroom teachers tend to dominate the talking time during discussions (e.g., Applebee et al., 2003). I analyzed the discussion transcripts at each time point to investigate the extent to which students interacted with each other during text-based discussions.

I focused on turns of talk, identifying the speaker of each turn, and marking PST turns with T and student turns with S. I analyzed the patterns of these turns, marking areas where the coding indicated that the teacher talked, then a student talked, then the teacher talked, then a

student talked. I also marked areas where the coding indicated strings of student turns one after another, without interruption from the teacher. I counted the number of teacher turns in each text-based discussion, as well as the number of student turns, and calculated the ratio of number of teacher turns to number of student turns for each text-based discussion. I tracked changes over time for each PST in this ratio.

3.5.1.2.3 Framing of initiating questions

The methods course focused on teaching the PSTs to initiate each discussion segment with open questions rather than closed, because research has shown that open-ended questions promote rich, elaborated discussion better than closed questions (Beck et al., 1996). I analyzed the transcripts to determine which types of questions PSTs initiated discussion segments with. I coded the first question asked by the PST in each discussion segment using the following coding scheme: 1 = open-ended question allowing for an elaborated response; 2 = closed question allowing for a short, unelaborated response. Then, I calculated the percentage of open-ended and closed questions used across all six PSTs at each time point. This analysis provided a snapshot of the features of the initiating questions posed by the PSTs to initiate segments of discussion, and how this changed over the course of the school year.

3.5.1.2.4 Focus of initiating questions

I examined the transcripts to determine what types of information the PSTs focused on during text-based discussions, and how this changed over time. To do this, I examined each initiating question posed by a PST, and open-coded for the type of information being requested from students. I identified four categories of types of information that were focused on through initiating questions: 1 = define a word or phrase from text, 2 = explain or summarize text

information, 3 = make an inference about text information, 4 = other. I calculated the percentage of initiating questions that focused on each type of information across all of the PSTs at each time point, to identify group trends and how they changed over time.

3.5.1.2.5 Illustrative examples

I examined the 18 text-based discussion transcripts, and identified excerpts of the discussions that contained dialogic interactions that were rated by the *IQA*. I did this to provide rich, illustrative examples of the ways in which dialogic moves used by the PSTs and their students were related.

3.5.2 Secondary analysis

I conducted a secondary, micro-analysis on William, Anna, and Thomas, to better understand nuances of dialogic interactions that occurred, and how they changed over time. I included the lesson plans, text-based discussion transcripts, interview transcripts, and *IQA* protocols in the secondary analysis.

3.5.2.1 Background information

I examined the data sources to gather background information on each of the PSTs included in the secondary analysis, including information about their placement school and curriculum, their role in the classroom, and their experiences with the mentor teacher.

3.5.2.2 Planning

The methods course in which the PSTs learned to enact text-based discussions emphasized several features related to planning the discussion. First, PSTs were taught to analyze the text and determine specific learning goals for it. Second, PSTs were taught to segment the text, and develop questions to initiate discussion about each segment based upon the learning goals. I examined the lesson plans of the PSTs included in the secondary analysis, to see how they planned for text-based discussions during student teaching. The following questions guided my analysis: (1) If the lesson plan included learning goals, were they general comprehension goals, or specifically related to the text being read? (2) Did the PST segment the text and plan initiating questions for each segment?

I also examined the interview transcripts, searching for information that provided insight into each PSTs' planning, and how it developed throughout the school year.

3.5.2.3 Initiating questions

To examine nuances in development of initiating questions, I focused on two types of characteristics. First, I coded for the extent to which the initiating questions promoted elaborated student responses using the following coding scheme: 1 = open question, 2 = yes/no or closed question. Then, I coded a second time, for the type of comprehension skill elicited by each initiating question. Open coding revealed the following skills elicited: 1 = recall explicit text information, 2 = make an inference or reason, 3 = explain the meaning of a word or phrase from the text.

I focused on whether the questions were open or closed because, as in the primary analysis, research has shown that open-ended questions promote rich discussion better than closed questions (e.g., Beck et al., 1996), and the methods course focused on teaching the PSTs

to word questions in such a way that they were open-ended. I also focused on the comprehension skills elicited by each initiating question to determine the level of cognitive processing that the PSTs focused on. Each of the skills identified are necessary to comprehend text, however, traditional classroom discussions do not adequately support the development of high-level inference and reasoning skills (e.g., Applebee et al., 2003; Smart & Marshal, 2013; Nystrand, 2006). One goal of the methods course was to teach PSTs to support these high-level comprehension skills through text-based discussion.

I traced changes over time in the characteristics of the initiating questions for each PST included in the secondary analysis, and then searched the interview transcripts for information that provided possible insight into factors that influenced the characteristics of PSTs' initiating questions.

3.5.2.4 Follow-up moves

A follow-up move is a dialogic move used by a teacher in response to a student during a text-based discussion. While initiating questions can be planned by the teacher before the text-based discussion begins, follow-up moves cannot because they are made in response to students. One challenge of learning to enact text-based discussions is that PSTs need to learn to “think on their feet,” deciding which follow-up move will best support student comprehension in the moment.

Follow-up moves cannot be characterized as “effective” or “not effective” at supporting student comprehension, because their level of effectiveness depends on the context in which they are used (Orsolini & Pontecorvo, 1992). The methods course, however, emphasized the idea that follow-up moves focused on eliciting elaborated talk from students to build understanding of text ideas are more supportive of comprehension than follow-up moves focused on evaluating student responses or eliciting the “right” answer.

I examined the follow-up moves used by each PST included in the secondary analysis, to examine nuances in how they attempted to support student comprehension. To do this, I conducted open coding of all teacher turns that occurred in response to a student. Excluded from this analysis were all teacher turns in which the teacher called on a new student, but did not respond in any other way, and teacher turns in which the teacher affirmed a student comment, using words like “yes” or “okay”, but did not respond in any other way. The open coding revealed the following types of follow-up responses: 1 = teacher repeated the students’ comment verbatim, 2 = the teacher revoiced the student’s comment, 3 = the teacher pressed for accuracy, and 4 = the teacher pressed for reasoning (see Appendix B). I calculated the total number of follow-up responses that were included in my analysis, and the percentage of each type that was used for each text-based discussion. Then, I traced individual trends, and searched the interviews for information that may provide insight into differences documented among the three PSTs.

3.5.2.5 Quantity of talk

For students, engaging in elaborated talk about text is more supportive of comprehension than answering a teacher’s questions with one or two word answers (Chinn et al, 2001). Informed by this work, the methods course promoted the idea that teachers should not dominate a text-based discussion, but should instead provide many opportunities for students to engage in elaborated talk about the text.

I examined the October and May text-based discussion transcripts of the three PSTs included in the secondary analysis, to investigate how much talking the PSTs did compared to the students at the beginning of the school year compared to the end. To do this, first, I calculated the total number of words spoken by the PST and the total number of words spoken

by all of the students participating in the discussion. I calculated the percentage of PST words compared to student words, and then compared the percentages for each PST at each time point, to identify changes over the course of the school year. Finally, I searched the interview transcripts for information that may shed light on individual differences in quantity of talk.

4.0 CHAPTER FOUR: RESULTS

In this chapter I report the results of the primary data analysis for all six PSTS, followed by the results of the secondary analysis for William, Anna, and Thomas.

4.1 RESULTS OF PRIMARY ANALYSIS

4.1.1 Percent of students participating in the discussion

Managing student participation during a text-based discussion can be challenging, especially for novice teachers. Teachers need to keep the conversation on topic, encourage quiet students to participate, and not allow one or two students to dominate the discussion. One goal of the methods course was to provide PSTS with authentic opportunities to approximate text-based discussions with elementary students, so that they could learn to foster an environment in which the discussion was rich and yet on task, and in which students with diverse personalities and skill sets felt comfortable and had opportunities to participate in the discussion. On the *IQA* rubric that measured the percent of students that participated in the text-based discussion, all of the PSTs received the highest score possible at every time point (see Table 2), indicating that they had a student participation rate of >75% for each text-based discussion analyzed in this study. The scores were surprisingly high for a group of novice teachers, and suggest that the methods

course provided an environment that supported the PSTs in learning to manage student participation during a group discussion.

Table 2. Mean IQA scores and standard deviations for student participation at three time points

<i>IQA</i> Rubric	Highest Possible Score	October <i>N</i> =6 <i>M</i> (<i>SD</i>)	February <i>N</i> =6 <i>M</i> (<i>SD</i>)	May <i>N</i> =6 <i>M</i> (<i>SD</i>)
Student Participation	4	4 (0)	4 (0)	4 (0)

4.1.2 Rigor of the texts

Each of the 18 text-based discussions analyzed in this study was enacted with a different text; therefore it was important to assess the rigor of the texts, to make sure that each one was sufficiently complex enough to support a rich discussion. One of the rubrics on the *IQA* was designed to measure text rigor, defined as the amount of “grist” contained in the text ideas for students to grapple with as they work to construct meaning. The scores ranged from 0, meaning that there was “nothing about the text that requires extended discussion” (Matsumara et al., 2006, pg.19) to 3, meaning “the text contains substantial grist for students to grapple with in a group discussion” (Matsumara et al., 2006, pg. 19). The mean scores for text rigor of the text-based discussions analyzed in this study were 2.17 in October, 2.33 in February, and 2.5 in May; standard deviations ranged from 0.41 to 0.55, indicating little variation among PSTs at any time point (see Table 3). These scores suggest that all texts used for text-based discussions in this study were of moderate complexity; there is no evidence that any one PST enacted a text-based discussion using text that was extremely simple or complex for their corresponding grade level.

Table 3. Mean IQA scores and standard deviations for text rigor at three time points

<i>IQA</i> Rubric	Highest Possible Score	October <i>N</i> =6 <i>M</i> (<i>SD</i>)	February <i>N</i> =6 <i>M</i> (<i>SD</i>)	May <i>N</i> =6 <i>M</i> (<i>SD</i>)
Text Rigor	3	2.17 (0.41)	2.33 (0.52)	2.5 (0.55)

4.1.3 Rigor of the text-based discussions

Another rubric measured the rigor of the text-based discussions, defined as the extent to which the teacher supported students in analyzing and interpreting global text ideas, as opposed to fragments of information or isolated facts (Matsumara et al., 2006). The mean score for discussion rigor at the first time point, in October, was 2.50 (see Table 4). This is higher than one might expect for novice teachers with one month of student teaching experience, given what we know about the complexity of enacting text-based discussion successfully. The mean scores for discussion rigor increased over the course of the school year, while the standard deviations decreased, indicating that all the PSTs got better at supporting student comprehension using text-based discussion as the year progressed.

Table 4. Mean IQA scores and standard deviations for discussion rigor at three time points

<i>IQA</i> Rubric	Highest Possible Score	October <i>N</i> =6 <i>M</i> (<i>SD</i>)	February <i>N</i> =6 <i>M</i> (<i>SD</i>)	May <i>N</i> =6 <i>M</i> (<i>SD</i>)
Discussion Rigor	4	2.50 (1.05)	2.67 (0.82)	3.17 (0.75)

4.1.4 Quality of text-based discussions for fiction and nonfiction text

Features of text such as organization, vocabulary, and punctuation influence a reader's ability to comprehend what they read (Graesser et al., 1997). Text features that commonly occur in fiction, such as dialogue, non-linear passage of time, etc. are different from text features that commonly occur in nonfiction, such as the use of connectives to establish relationships between multiple concepts. As a result, a text-based discussion of fiction text may look very different than a text-based discussion of nonfiction text. For example, when reading nonfiction text that describes photosynthesis, teachers may need to direct students' attention to connectives such as *before*, *during*, or *after*. When reading fiction that alternates between past tense and present tense to tell a story, teachers may need to focus on establishing a nonlinear time line of events with students. During the methods course, the PSTs discussed the differing features of fiction and nonfiction text that influence text comprehension. They practiced enacting text-based discussions with elementary students using both genres; however, the majority of the texts used during the methods course were fiction.

I reviewed *IQA* protocols to identify whether the PSTs based the text-based discussions analyzed in this study on fiction or nonfiction text. I then compared the mean cumulative *IQA* score for both text types at each time point (see Table 5), to see if there were differences in the quality of the text-based discussions.

Table 5. Mean cumulative IQA scores for fiction and nonfiction text at three time points

Genre	Highest Possible Cumulative Score	October N=6	February N=6	May N=6
Fiction	30	21.75	23.8	25.3
Nonfiction	30	16.5	20	24

The PSTs leading fiction text-based discussions outperformed those leading nonfiction text-based discussions at each time point, however, the gaps between the average *IQA* scores for each type of discussion decreased over the course of the school year. The data suggests that in October, the PSTs did a much better job of leading fiction text-based discussions than nonfiction ones, but by May, there was little difference between the quality of the discussions in the two genres.

4.1.5 Dialogic moves rated by the IQA

Five rubrics on the *IQA* were designed to measure the frequency and accuracy with which five dialogic instructional moves occur during dialogic instruction (see Appendix A). The underlying premise is that the more frequently they are used during instruction, in the way in which they were intended to be used, the higher the quality of the dialogic instruction will be.

The PSTs were rated on a continuum, with a score of 0 indicating the discussion was not linked to the text, a score of 1 indicating the discussion was linked to the text, but the dialogic move was not observed, a score of 2 indicating the move was used, but in a partially correct way, a score of 3 indicating that the dialogic move was used correctly one to two times, and a score of four indicating that the move was used correctly and consistently. The mean scores at each time point, as well as the cumulative mean scores, are presented in Table 6.

Table 6. Mean IQA scores and standard deviations for dialogic moves at three time points

<i>IQA</i> Rubric	Highest Possible Score	October <i>N</i> =6 <i>M</i> (<i>SD</i>)	February <i>N</i> =6 <i>M</i> (<i>SD</i>)	May <i>N</i> =6 <i>M</i> (<i>SD</i>)
Teacher Links	4	2.5 (0.55)	2.17 (0.98)	2.17 (0.98)
Students Link	4	1.33 (0.82)	1.67 (1.21)	2 (1.27)
Teacher Presses	4	2.0 (0.63)	3.33 (0.82)	3.83 (0.41)
Students Provide	4	2.17 (0.98)	2.83 (0.98)	3.17 (0.75)

Teacher Revoices	3	1.75 (0.5)	2.5 (0.56)	2.4 (0.55)
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Overall, the scores for dialogic moves used by PSTs increased in the areas of pressing and revoicing, and decreased in the area of linking over the course of the school year. The scores for dialogic moves used by students increased in both the areas of linking and providing knowledge. A more detailed discussion of each area follows.

4.1.5.1 Linking

The *IQA* defines linking as the extent to which discussion participants connect ideas and/or positions to build coherence. The following excerpt from William’s text-based discussion of *Canyons* by Gary Paulsen with his fifth grade students is a good example of a teacher linking students’ comments.

Jack: It seems like he’s cold hearted because he wants to fight.

PST: Cold-hearted because he wants to fight. What do you think, Andrew?

Andrew: He wants to show them, you have to show them that he can be a man and he can do it and he can help them but no one believes that so he’s not cold-blooded, or hearted.

PST: What I hear you saying is he’s trying to prove himself? Erin, what were you going to say?

Erin: It could be that or it could be that he’s doing it because he feels like doing it.

Jack: He’s like itching to do it.

PST: So maybe two different things. Emma?

Emma: Also, I don't think that he's cold-hearted, because they're also invading their territory kind of.

PST: But let's go back a second, before that you (Andrew) were saying it was a need to prove himself, and Erin you were saying something a little different. Can you say that again?

The students in William's class had differing viewpoints about whether or not the main character in the story is "cold-hearted". Throughout the discussion William linked each student's comment to previous comments to make the contrasts between them explicit. He focused on getting students to consider several angles of interpretation, rather than on getting students to verbalize what he felt was the "right" answer.

The *IQA* also measured the extent to which students linked their comments to each other. The following excerpt from William's October text-based discussion provides an example of students linking their comments to retell Aesop's fable *The Donkey and the Peddler*.

PST: Chris, can you tell me some about what you read? What were the characters?

Chris: Our characters were a donkey and salt peddler.

PST: Did the donkey talk?

Students: No.

Student1: No, but it was a smart donkey.

Student 2: It was a smart donkey, but he cheated.

Student 3: He fell, the salt he was carrying dissolved. Then he fell on purpose.

Student 4: Because he wanted a lighter weight.

In this example, four students used a variety of connectives such as *but*, *and*, *then*, and *because*, to retell the story and make the relationships between the different text ideas explicit. Linking served as a device through which multiple students collaborated to actively engage with the text ideas and develop a retelling of a story that all participants agreed upon. The mean scores for teacher linking decreased over the course of the school year, while the mean scores for student linking increased (see Table 6), suggesting that as the students made more attempts at linking their comments, the PSTs, as we see in this example, reduced their level of involvement in the discussions.

4.1.5.2 Pressing

The *IQA* defines pressing as the extent to which a teacher pushes students to explain their reasoning, or provide text evidence/details to support their comments. The mean scores for teacher pressing on the *IQA* increased over the course of the year (see Table 6), which means that during the text-based discussions, the teachers pressed students more frequently as the year progressed. In May the mean score for pressing was 3.83 and the standard deviation was 0.41. This suggests that most PSTs, by the final text-based discussion, were consistently pressing students to support their comments with evidence from text and/or reasoning.

An analysis of the transcripts illustrated that the PSTs used pressing for different purposes, which supported comprehension in different ways. For example, at times PSTs pressed for accuracy, or, in other words, pressed students to verbalize explicit text details. The following excerpt from Nicholas's fourth grade text-based discussion of *Green Tomatoes*, from the *Harcourt Trophies* (2007) basal program, provides a good example of this:

PST: Jason, what do you think? What do we know about Nick?

Jason: That he likes to sell tomatoes and pickles?

PST: Okay, he likes to sell tomatoes and pickles. Jennifer, what else?

Jennifer: He likes to sell vegetables.

PST: Okay, he likes to sell vegetables. Where is he selling these vegetables and things from? Where is he selling them from, Danny?

Danny: From his house maybe?

PST: Okay, from his house maybe. Where specifically is he getting all these things from? Jason.

Jason: His garden.

PST: His garden, right. They're coming from his garden. So we know that Nick has a garden, and he likes to sell different vegetables and pickles and different things from his garden, very good.

In this example, Nicholas initiated the segment of discussion with an open question about a story character, *What do we know about Nick so far?*, and then pressed for accuracy by asking the students to answer the question using specific details from the text. Pressing for accuracy supports comprehension in the sense that it draws student attention to specific text ideas, and allows students to verbalize these ideas, increasingly the likelihood that they will be integrated into a situation model of the text. The teacher, in choosing which text information to press for, makes decisions about which text ideas are important and need to be attended to.

At other times, the PSTs pressed for reasoning, or in other words, pressed students to support their thinking by making inferences and using prior knowledge. For example, Rachel led a text-based discussion in May with a group of second graders, while reading a short story about Amelia Earhart from the *Harcourt Trophies* (2007) basal series. The following excerpt from this discussion illustrates the way in which she pressed a student for reasoning:

PST: On Page 239. It says, "When Amelia was a teenager a war started, and she helped as a nurse." Is that a heroine kind of thing to do?

Alex: Kind of.

PST: Kind of? Being a nurse in a war isn't something heroic?

Zoe: I think it is.

PST: Why do you think it is?

Zoe: Because the people can get really, really sick, and there wasn't a lot of medicine back then. And they needed to help them. And they couldn't really help themselves because they were moving around. And they couldn't package up food, because a lot of the food they couldn't have -- have -- a lot of it wasn't sometimes in the hospital so the -- so the patients could have it.

In this example, Rachel initiated a segment of discussion with a yes/no question, which led to several unelaborated responses from Alex and Zoe. She then followed up by pressing for the reasoning behind Zoe's comment. Pressing for reasoning supported the development of high-level comprehension skills for Zoe because it elicited elaborated talk about the text in which she articulated the way in which multiple text ideas were connected, and made an inference about nursing and heroism.

4.1.5.3 Providing knowledge

The *IQA* defines providing knowledge as the extent to which the students respond using text ideas and/or reasoning related to text ideas. The mean scores for students providing knowledge increased over the course of the school year (see Table 6). An analysis of the transcripts revealed that some students provided knowledge using elaborated language, while other students

provided knowledge using brief, unelaborated utterances. The following excerpt from Rachel's May text-based discussion with second graders provides an example of a student providing knowledge using elaborated language:

PST: [The text] says, "When Amelia was a teenager a war started, and she helped as a nurse." Is that a heroine kind of thing to do?

Ryan: Kind of.

PST: Kind of? Being a nurse in a war isn't something heroic?

Mattie: I think it is.

PST: You think it -- why do you think it is?

Mattie: Because the people can get really, really sick, and there wasn't a lot of medicine back then. And they needed to help them. And they couldn't really help themselves because they were moving around. And they couldn't package up food, because a lot of the food they couldn't have -- have -- a lot of it wasn't sometimes in the hospital so the -- so the patients could have it.

In this example, Mattie's initial response was brief and unelaborated, however, when Rachel pressed her to provide reasoning for her comment, she engaged in an elaborated explanation in which she linked multiple text ideas and made an inference about the relationship between them.

Other students provided knowledge using brief, unelaborated utterances. Consider the following excerpt from Nicholas' October text-based discussion with fourth graders:

PST: Jack, what do you think? What do we know about Nick?

Jack: That he likes to sell tomatoes and pickles?

PST: Okay, he likes to sell tomatoes and pickles. Jen, what else?
Jen: He likes to sell vegetables.
PST: Okay, he likes to sell vegetables. Where is he selling these vegetables and things from? Where is he selling them from? David?
David: From his house maybe, or...?
Steven: In his driveway

In this example, Nicholas presses the students for accuracy; in response, each student provides one piece of explicit text information using a brief, unelaborated utterance. The knowledge students provide in this example reflects a lower level of comprehension than the knowledge Mattie provided in the first example.

These findings support Boerst et al.'s (2011) claim that when teaching preservice teachers to enact discussion practices, it is important to nest individual dialogic moves within the context of a rich conversation to support student learning. In the examples above, pressing for reasoning resulted in a student providing high-level knowledge by linking and making inferences, while pressing for accuracy resulted in students providing low-level knowledge by identifying explicit text ideas. The implication for teacher educators is not that preservice teachers should be taught to press for reasoning rather than for accuracy, but rather that preservice teachers should be able to differentiate between the two types of pressing, and use them purposefully depending on the needs of their students.

4.1.5.4 Revoicing

The *IQA* defines revoicing as the extent to which the teacher models the types of student responses they are looking for by rephrasing student comments using more precise and/or extended wording. In order to count as revoicing on the *IQA*, the teacher must rephrase the comment

immediately following the student's original comment. A verbatim repetition of a student's comment does not count as revoicing on the *IQA*. The mean score for revoicing increased over the course of the school year (see Table 6), indicating that the frequency with which PSTs revoiced student comments increased.

My analysis of the transcripts suggested that revoicing is a high level of support (Bruner, 1984), serving as a tool for teachers to model the types of elaborated responses they are looking for from students, before students are engaging in this type of dialog independently. While revoicing provides students with a model for high-quality talk about text, the teacher is the one doing the "heavy lifting". The following excerpt from Nicholas' May text-based discussion with fourth graders illustrates this:

PST: Okay, what have we learned about Violet Beauregard so far? And this does go with the question in our packets, we're supposed to describe the third and fourth finders. So everyone should turn to question number four. What did we learn about Violet Beauregard so far? Nolan, what do you think?

Nolan: She likes to chew gum.

PST: She likes to chew gum. We found out that she likes to chew gum. What else did we find out, Grace?

Grace: Her mouth could move really fast.

PST: Her mouth could move really fast. We know she was chewing ferociously on her gum. We know she was talking very fast, her jaws could move very fast. She's chewing ferociously on a piece of gum. Did we find anything else out yet?

Lindy: She laid off the gum when she heard about the chocolate creations.

PST: Good. Whenever she found out about the chocolate bars she stopped chewing gum and started eating candy bars because she wanted to find that ticket. Alright let's keep reading.

In this excerpt Nicholas repeated the gist of Grace's comment, then added two examples from the text to back up her thinking. He repeated the gist of Lindy's comment, then added details from the text to extend her thinking.

William, the PST who was rated the highest for lesson quality at every time point, had low *IQA* scores for revoicing in May, indicating that the frequency with which he used this move was low. An analysis of his transcripts indicated that while he revoiced very infrequently during his May text-based discussion, William's students often engaged in elaborated talk about the text. The following excerpt from William's May text-based discussion illustrates the type of elaborated talk his students typically engaged in:

PST: So quickly, based on Sandy's reading, expression those kind of things, how can we describe this character?

Jenna: It seems like he was around the age of 12 or 13, because he didn't want to get woken up, he was like, "Daad", getting woken up. Little kids, they don't care if they get woken up, because they go to bed early.

PST: He thinks 12 or 13? Tyler, how can you describe this character?

Tyler: I don't think he's 12 or 13, I think he's 10, 9, 8, 7. Little kids, they don't care if they get woken up, because they go to bed early.

Ben: But you're not talking about the right character. I just want to say ... because he said, "Come on, Edmund, I want to share this stuff" to the boy.

Jalyn: Was the boy talking to the kid, is the kid sleeping or is the dad sleeping?

Sam: No, he's sleeping and the dad is awake.

Jalyn: Yeah, that's what I said, it seemed like the boy was 12 or 13 because he didn't want to wake up.

Analysis of the transcripts suggests that as his students become adept at engaging in elaborated talk about the text, the frequency with which William revoiced decreased. Although William's *IQA* scores for revoicing were lower in May than the other PSTs' scores, the quality of his discussion was higher in the sense that his students were able to independently link text ideas, make inferences, and articulate their thinking clearly. This finding mirrors the findings related to linking, and suggest that assessments that measure the quality of a text-based discussion by calculating the frequency of certain dialogic moves, such as the *IQA*, do not capture the gradual release of responsibility that occurs in high-quality text-based discussions over the course of time, as teachers reduce their level of support and students take on the task of comprehending independently.

For this rubric, the fact that the mean *IQA* score for revoicing increased over the course of the school year suggests that in many cases, the PSTs were jumping in and modeling elaborated talk about the text more frequently at the end of the school year than they were early in the year. This is the opposite of the trend that occurred with linking, in which the PSTs linked less and the students linked more as the school year progressed. The reason PSTs were more successful at releasing responsibility to their students for linking than for providing elaborated responses may be that linking is an easier comprehension skill to learn, for both teachers and students. The *IQA* scores suggest the PSTs entered student teaching more adept at linking than revoicing, therefore it may be that they had more time to teach their students how to use this skill

through modeling, assisting, and gradually releasing responsibility. Additionally, the PSTs may have viewed teacher linking as a way to model a behavior they wanted the students to use, but revoicing as something different, possibly a way to ensure that all of the students in the group heard the interactions that had occurred between just a few; many of the PSTs indicated in their interviews that one challenge of text-based discussions was to make sure that all of the students were attending to the conversation, even during the times when they were not actually speaking. These results suggest that the methods course did a better job at preparing the PSTs to use the dialogic move linking than the dialogic move revoicing during text-based discussions, and that additional focus on the purpose of revoicing, and how to release responsibility to students to provide rich, elaborated responses, would be beneficial.

4.1.6 Structure

A text-processing view of reading comprehension proposes that readers build understanding of text as they move through it, by deriving the underlying proposition from each text phrase, and integrating this understanding with prior knowledge (Kintsch, 1998). Comprehension skills such as attending to important text ideas, establishing relationships between them through reasoning, and making inferences to establish coherence, drive comprehension of text. In line with this theory, the methods course promoted the idea that while assessing student comprehension of text after they have read it is an important part of teaching, the goal of a text-based discussion is to assist students in developing comprehension skills by building understanding of text ideas *during the reading* of the text. This was a novel idea for many of the PSTs, who were familiar with a more traditional approach to reading comprehension instruction in which the teacher poses a series of questions to students after the text has been read, to assess student comprehension of the

text. Typically, basal programs embrace this traditional approach, and publish recommended questions for the teacher to discuss with students at the end of each story.

I analyzed the lesson plans and transcripts to see if the PSTs structured their text-based discussions to occur during the reading of the text, like they had practiced doing in the methods course, or if they had used a more traditional approach and structured the discussion to occur after the reading of the text (see Table 7). I also included the source of the text the PSTs used and the grade levels of the students they worked with in my analysis, to see if I could identify any other factors that may have influenced the ways in which PSTs structured their text-based discussions.

Table 7. Grade level, type of text, and structure of text-based discussion at three time points

PST	Grade Level	Source of Text	October	February	May
William	5	trade book	After	after	after
Katie	3	trade book	During	during	during
Anna	2	trade book	During	during	during
Nicholas	4	basal story	during/after	during/after	during/after
Thomas	2	basal story	during/after	during/after	during/after
Rachel	2	basal story	during/after	during/after	during/after

There did not seem to be any influences of grade level on the structure of the text-based discussions. Two of the three PSTs using trade books led text-based discussions during the reading of the text, which is reflective of the structure promoted by the methods course, and in line with a text-processing theory of reading comprehension. All three of the PSTs using basal programs for reading instruction led text-based discussions during the reading of the text as text ideas were encountered, like they had learned to do in the methods course, and also discussed the published questions at the end of the story per the basal recommendations, even if the questions at the end of the story were identical to the ones discussed during the story. More than once

students reacted to an identical question by making comments such as “we already talked about this”; in these cases, the PSTs required students to repeat the main points of the prior discussion.

This finding suggests that 1) the methods course did support the PSTs in thinking about how to use text-based discussion to assist students in making sense of text ideas *as they are encountered*, and 2) the PSTs who used basal programs combined text-based discussion instructional practices with the comprehension instruction specified in the teacher’s manual, rather than choosing one or the other. The fact that they insisted on discussing identical questions twice suggests they were attempting to adhere to the teaching procedures required by the basal program, even if these procedures were redundant.

William, a fifth grade PST who used trade books for reading comprehension instruction, required his students to read the text for homework, and then led a text-based discussion about the assigned reading the following day. Although William’s text-based discussions occurred after the reading of the text, they were still focused on assisting students in understanding specific text ideas as they were being re-read. For example, William began a text-based discussion about the novel *Coyote Runs* by reading a line from the book, saying, “*I am doing it, I am doing well, I am a man.* Do you agree or disagree with this? Why or why not?” In other cases, William asked students to reread excerpts from the text that had been read the night before, and then posed a question about the excerpt to initiate a discussion. For example:

PST: Page 50, third paragraph down. Take a second to read that to yourself and then we’ll talk about character traits... Everybody almost to the end of the conversation? The top of page 51. Susan, you want to talk about his personality for us?

- Susan: Well, he was being nice. He was thinking about her feelings, about how she might think or feel...
- PST: He was thinking about her feelings? What does the conversation tell you about his personality? What kind of traits is he demonstrating? Emma?
- Emma: He was saying how his mom needed something so badly and Brennan almost wept for her sometimes so I think that shows that he really cares for her even though he doesn't get around to being with her a lot of the time.
- PST: So Emma mentioned that in the next paragraph it talks about how he almost wept for her. How would you describe that in a personality trait?
- Emma: He was being really considerate.
- John: Well, Brennan is kind of considerate, I would say, because he knows that his mom really wants to do this dating stuff, even though he doesn't like it and the men keep leaving her and she thinks that they're really good.

William's transcripts illustrate the point that while advanced readers may not need the same level of support as developing readers, by stopping every few paragraphs to discuss each line of text, it is still possible to ground discussion in text passages to create a context in which students discuss specific text ideas, and build understanding of the relationships between these ideas, particularly for challenging areas of the text.

4.1.7 Patterns of turn taking

One goal of text-based discussion is to provide opportunities for students to engage in collaborative group talk, building on each other's comments to make sense of text (Goldenberg,

1992; Orsolini & Pontecorvo,1992). To enact dialogic instruction such as text-based discussion successfully, teachers have to learn to manage the tension of allowing students to interact with each other and yet keep the conversation on topic (Ball & Bass, 2000).

I analyzed the turns of talk at the first and last time points, to try to make sense of how the PSTs were managing this tension. First, I identified the speaker of each turn, marking PST turns with T and student turns with S. Then, I calculated the ratio of number of teacher turns per student turns. A ratio of one teacher turn to one student turn indicated an interaction pattern in which the teacher talked, then a student talked, then the teacher talked, then a student talked, and so on. A ratio of less than one teacher turn to student turn indicated there were segments of the discussion in which students talked one after another with no interruption from the teacher. The results of this analysis are presented in Table 8.

Table 8. Number of PST turns per student turns at first and last time points

PST	Grade	October (# teacher turns / # student turns)	May (# teacher turns / # student turns)
William	5	0.76	0.65
Nicholas	4	1.15	0.99
Katie	3	0.97	0.56
Thomas	2	1.22	1.0
Anna	2	1.0	0.97
Rachel	2	0.96	0.93

In all cases, the number of teacher turns per student turns during a text-based discussion decreased between the first and third time point, indicating all of the PSTs did less talking in May than in October. Three of the PSTs, William, Katie and Rachel, had less than one teacher turn per student turn at both time points, indicating episodes during their text-based discussions when students spoke one after another without teacher interruption.

A closer analysis of the transcripts indicated that William, Katie, and Rachel allowed students to speak without being called on by the teacher, as long as the comments remained on-task; I will refer to this participation structure as “speak freely” (SF). There were episodes in all of these PSTs’ text-based discussions when students’ comments veered off-task, and the PST had to redirect student attention to the text. On the other hand, there were also episodes in which students engaged in a rich discussion, building on each other’s comments about the text without teacher assistance. For example, consider the following excerpt from Katie’s May text-based discussion of the novel *Skinnybones* with her third grade group:

PST: So let's -- let's help Becca out. So we're thinking about this, all Alex did was ask his father to shove a bologna sandwich under the -- the door. Because why? He won't let --

Student 1: Because he asked him. And he doesn't let anybody in his bedroom.

Student 2: And then when he did it he said, "How dare you." I mean, when he did that, when his dad stuck the bologna sandwich under the door in the plastic, he was disappointed. I think he was disappointed in his parents and in himself because he was already disappointed that he gave up on him. So maybe he (inaudible) his parents for (inaudible). Actually, he thought that they should actually think of a way to get him out of his room.

Student 3: And I kind of disagree with Joey, because he's thinking, "Oh, man, they're not trying to get me out. They're horrible parents, why should I eat this squished sandwich."

Student 4: But they're really, they're trying to feed him.

Student 5: Yeah, but I disagree. I disagree with you because -- well, I disagree, because they didn't like squish it. They were just trying to be nice.

Student 8: He -- he didn't think that they had squished it, because he actually said that when it goes -- put it under -- under the door --

Student 3: Well --

Student 5: But the dad was just trying to be nice, not rude.

Student 3: I know, but he just doesn't --

Student 5: He was just trying to listen to Alex.

PST: Okay. This is a really good discussion that we're having. You all are kind of thinking - you're on the same thoughts about Alex and his father and what's going on right now. But let's find out. Let's see what happened. What Alex will do; if he'll come out of his room or not. So continue reading.

In this discussion segment, the students operated at a high level of functioning that has been shown to promote deep comprehension of text, by independently engaging in argumentation and supporting their views with reasoning and text evidence (Goldenberg, 1992). Katie allowed the students to interact directly with each other while they each built a case for their point of view, interrupting only when the students seemed to have reached an impasse, to move the discussion forward.

Nicholas, Thomas, and Anna, on the other hand, strictly enforced the rule that a student must be called on by the teacher to speak; I will refer to this participation structure as “raise hand” (RH). While these PSTs maintained tight control of student talk and had few behavioral issues to deal with, their students never had the opportunity to engage in discussion and

argumentation independently with each other. The following excerpt from Nicholas's May text-based discussion with his group of fourth graders illustrates this point. The group is discussing a chapter from *Charlie and the Chocolate Factory* by Roald Dahl:

- PST: Jason what did we learn about Violet?
- Jason: Maybe she's irresponsible because when she's walking on the subway she sticks gum on the elevator buttons.
- PST: Yeah, irresponsible because what does she do with her gum, she sticks it on the elevator buttons, so that the next person who comes along is pushing a button and their getting used gum stuck on their finger. So Jason says that is kind of irresponsible, I'd say that's irresponsible. What other describing word could you use for her? Megan?
- Megan: Greedy?
- PST: Greedy, maybe?
- Megan: She is sometimes kind of like greedy because she tried to beat her best friend at like -
- PST: Okay, maybe she was trying to beat her best friend at something
- Megan: Or like other word is kind of like rude.
- PST: Yeah that's kind of rude. David?
- David: I think she's like selfish because she (inaudible)
- PST: Okay, yeah, greedy, rude, selfish – those are all words to describe her.

In this example, Nicholas controlled and mediated all of the interaction. Students did not directly interact with each other, and Nicholas decided the order in which student ideas would be heard. While the high level of control may have helped to keep student comments focused on

the text, it also robbed students of opportunities to listen to each other, agree or disagree, and build ideas off of each other. These results suggest that the participation structure enforced by the PST influenced the opportunities students had to interact with each other to build understanding.

4.1.8 Framing of initiating questions

Text-based discussion promotes student comprehension when it provides opportunities for students to use elaborated speech to discuss their developing understandings and interpretations of text ideas with others (Applebee et al., 2003). Open-ended questions allow for elaborated responses from students, while yes/no questions or closed questions (questions that require a one-to-two word answer) do not (Beck et al., 2006). To be clear, an open-ended question does not insure that a student’s responses will be rich and elaborated, but it provides the opportunity for such a response. The methods course promoted this idea, teaching PSTs to differentiate between open and closed questions, and frame questions so that they were open to allow room for elaborate student responses. For example, PSTs were coached to ask “*What just happened?*” rather than “*What did Sandy do when Mike walked into the room?*”

I coded the initiating questions, focusing on whether they were open or closed, and calculated the percentage of initiating questions that fell into each category across all six PSTs at each time point (see Table 9).

Table 9. Percentage of open-ended and closed initiating questions at three time points

Initiating Question	October N=6 (%)	February N=6 (%)	May N=6 (%)
Open-ended	55	73	79
Yes/no or closed	45	27	21

In October, 55% of the initiating questions posed by PSTs were open-ended questions, and 45% of the questions were yes/no or closed questions. In February, 73% of the questions were open-ended, and 27% were yes/no or closed. In May, 79% of the questions were open-ended, and 21% were yes/no or closed. The fact that PSTs framed most of their questions to be open-ended at every time point is surprising, considering that recent classroom studies have found classroom discussions to be dominated by closed and yes/no questions (Applebee et al., 2003; Nystrand et al., 2006). This finding suggests that the methods course supported PSTs' in learning to frame open-ended questions, and that continued practice enacting text-based discussions during student teaching supported their development in this skill.

4.1.9 Focus of initiating questions

Historically, it has been found that comprehension instruction tends to focus more on developing low-level comprehension skills than high-level skills (e.g., Applebee et al., 2003; Nystrand et al., 2006). One advantage of text-based discussion as an instructional practice to support student comprehension is the flexibility this instructional practice affords; teachers can frame questions to support students in developing low-level comprehension skills, such as explicit recall of text ideas, high-level comprehension skills, such as making inferences and reasoning about the text, and vocabulary skills, such as explaining the meaning of a word or phrase based upon the context in which it is used in text. The methods course promoted the idea that all of these comprehension skills are necessary in building a coherent situation model of text, and that through text-based discussion, a teacher can use dialogic moves to assist students in developing them. I examined the transcripts from October and May to determine what types of

comprehension skills the PSTs focused on during text-based discussions, and how this changed over time. To do this, I examined each question posed by a PST, and open-coded for the type of comprehension skill each question focused on. I identified the following skills: 1 = recall text information, 2 = explain the meaning of words or phrases from text, 3 = make an inference about text information. Then, I calculated the percentage of each type of skill that was focused on across all six PSTs at each time point (see Table 10).

Table 10. Focus of initiating questions at first and last time points

Focus of Initiating Question	October N=6 (%)	May N=6 (%)
Recall Text Information	59	17
Explain Meaning of Word/Phrase	19	15
Make Inference	22	68

The PSTs focused on developing vocabulary skills the least amount at each time point. In October, 19% of PSTs’ questions prompted students to explain the meaning of words or phrases in text, such as “What does the phrase *mind your own beeswax* mean?”; by May, this percentage dropped to 15%. A closer analysis of the transcripts, interviews, and lesson plans revealed that the majority of instructional activities focused on vocabulary from the text occurred outside of the text-based discussions, and that vocabulary questions asked during text-based discussion most often served to review word or phrase meanings that had already been discussed at a prior time. This trend did not change over the course of the year.

The percentage of questions prompting students to recall text information, such as “What happened to Nick’s tomatoes?”, dropped from 59% in October to 17% in May. On the other hand, the percentage of questions prompting students to make inferences, such as “How do you think Henry is feeling right now, and why do you think that?” rose to 68%. In other words, by the end of the school year, PSTs’ text-based discussions focused more on the development of high-level comprehension skills than low-level skills.

4.1.10 Summary of primary analysis

My primary analysis revealed a number of interesting trends in the development of PSTs' enactments of text-based discussions during their one year student teaching placements. Student participation was high for all of the PSTs at each time point, which is surprising for a group of novice teachers who are learning to balance eliciting elaborated student talk with providing opportunities for all students to participate in classroom discussion. This finding suggests that the methods course had a positive impact on the PSTs' ability to manage student participation during a text-based discussion.

Cumulative *IQA* scores were higher in October than one might expect for novice teachers, given the complexity of text-based discussions. Additionally, cumulative *IQA* scores continued to increase at each time point. These findings suggest that the methods course supported the PSTs in learning to enact text-based discussions, and that their enactments continued to improve over the course of the school year as they gained experience working with students.

While cumulative *IQA* scores were higher for text-based discussions based on fiction texts than non-fiction texts, the gap decreased over the course of the year, suggesting that increased opportunities to work with non-fiction text during student teaching supported the PSTs' ability to enact text-based discussions of the genre.

In the area of dialogic moves, mean *IQA* scores for teacher linking decreased while mean scores for student linking increased. Analysis of the text-based discussion transcripts indicated that as students became more adept at linking, teachers decreased the amount of linking they did. Mean *IQA* scores for pressing increased, as did mean scores for student providing knowledge. Analysis of the text-based discussion transcripts indicated that PSTs pressed more for accuracy

in October, which resulted in unelaborated student responses, and more for reasoning in May, which resulted in elaborated, higher-level student responses. These results suggest that PSTs focused more on supporting high-level comprehension skills at the end of the school year than they did at the beginning. Mean *IQA* scores for revoicing increased, although analysis of the text-based discussion transcripts indicated that revoicing was a very high level of support, and that a low score for revoicing in May sometimes indicated that the PST no longer needed to revoice because the students had taken on the responsibility of providing elaborated responses.

The methods course taught PSTs to enact text-based discussions during the reading of the text, to deal with text ideas as they are encountered; a more traditional view is to hold discussion until after the reading. During student teaching five of the six PSTs enacted their text-based discussions during the reading, including three who used basal programs that provided discussions questions for after the reading. The three PSTs who used basals also followed the published recommendations, and extended their discussions after the reading to go over the published questions with their students. The PST who enacted his text-based discussions after the reading worked with fifth graders who were assigned lengthy reading assignments; he reread excerpts of text to launch discussion of them, and help students make sense of challenging text-ideas. Overall, these findings suggest that the methods course supported PSTs in thinking about how to use text-based discussion to support students in making sense of text ideas as they are encountered, and that the PSTs figured out ways to do this within the context of the materials they were using during student teaching. An analysis of patterns of turn taking revealed that William, Katie, and Rachel spoke less than one turn per student during text-based discussions in both October and May, while Nicholas, Anna, and Thomas spoke more than one turn per student. A closer analysis of the transcripts revealed that William, Katie and Rachel allowed students to

speak freely during text-based discussions, as long as their comments were on-task. Nicholas, Anna, and Thomas, on the other hand, upheld a strict rule that students must raise their hand and wait to be called on before speaking. One result of these two patterns of turn taking was that William, Katie, and Rachel had to redirect students attention at times; the episodes in which redirection was required decreased from October to May. Nicholas, Anna, and Thomas, on the other hand, rarely had to redirect student attention. A second result of these two patterns of turn taking was that William, Katie, and Rachel's students developed the ability to interact with each other about text ideas, by engaging in argumentation and building off of each other's comments; these are high levels of communication that promote deep comprehension of text. Nicholas, Anna, and Thomas's students, on the other hand, never had opportunities to interact with each other. These findings suggest that the participation structures enforced by the PSTs influenced the opportunities students had to interact with each other to build understanding of the text.

An analysis of the transcripts focusing on the types of questions PSTs posed to initiate discussion segments suggested the percentage of yes/no questions and closed questions decreased over the course of the school year, while the percentage of open-ended questions increased. The percentage of recall questions and vocabulary questions decreased over the course of the school year, while the percentage of inference questions increased. These results suggest that the methods course supported the PSTs in learning to initiate discussion with open-ended questions, and that they focused these open-ended questions more on high-level comprehension skills as the year progressed.

4.2 RESULTS OF SECONDARY ANALAYSIS

The primary data analysis provided an overview of the ways in which PSTs' enactments of text-based discussion developed during student teaching, however, it did not provide the type of fine-grained information needed to examine nuances in individual development that occur in specific student teaching environments. I conducted a secondary analysis of William, Anna, and Thomas in order to identify differences in development that were not made visible in the primary analysis, as well as features of each student teaching environment that may have influenced each PSTs' practice.

Table 11. Grade levels and cumulative IQA scores of PSTs included in primary analysis

PST	Grade	October <i>IQA</i> (points/30)	February <i>IQA</i> (points/30)	May <i>IQA</i> (points/30)	Cumulative <i>IQA</i> (points/90)
William*	5	27	29	25	81
Anna*	2	17	21	25	63
Katie	3	19	21	22	62
Nicholas	4	16	21	24	61
Thomas*	2	15	18	18	51
Rachel	2	13	13	21	47

*PSTs included in secondary analysis

4.2.1 Quantity of talk

Text-based discussion is effective at supporting the development of both low- and high- level comprehension skills among students because it provides a forum in which students have the opportunity to engage in collaborative, elaborated talk about text by explaining text ideas, establishing relationships between them, making inferences, and building onto each other's comments. This means that in order for a text-based discussion to be effective, students need

many opportunities to talk. The methods course promoted this idea, encouraging PSTs to allow students ample opportunities to engage in elaborated talk during text-based discussions.

To examine the quantity of teacher and student talk that occurred during the text-based discussions of the three PSTs included in the secondary analysis, I counted the number of words spoken by the PST and the number of words spoken by the students participating in the text-based discussion, and calculated the percentages of words spoken by the PST and words spoken by the students. I then compared the first and last time point to trace development in this area (see Table 12).

Table 12. Percent of total words spoken at first and last time points

	October (%)		May (%)	
	PST	Students	PST	Students
William	26	74	39	61
Anna	62	38	59	41
Thomas	79	21	71	29

These data suggest that William was overall the most successful at providing opportunities for his students to talk, and Thomas was the least successful. These results are in line with the cumulative *IQA* scores for the PSTs, in which William had the highest scores at each time point, and Thomas had the lowest scores. These results support the idea that teachers who are good at eliciting elaborated student talk during a text-based discussion do a better job of supporting student comprehension than teachers whose talking dominates the discussion. They also indicate that there wasn't much change between the first and third time point for any of the PSTs, and suggest that there wasn't really growth in this area over the course of the school year, as the PSTs gained teaching experience.

In the next sections I will present the findings for William, followed by Anna, and then Thomas. Finally, I will summarize the similarities and differences between each.

4.2.2 William

William was placed in a fifth grade classroom in a private school that services many children of university faculty. He reported in his October interview that the school as a whole embraced a constructivist view of learning, and promoted dialogic instruction to support student learning across subject areas. For reading comprehension instruction, the fifth graders in William's placement classroom were divided into two heterogeneous "novel groups." William worked with one of the groups, and the mentor teacher worked with the other; William's group contained nine students. Over the course of the school year each novel group read a number of narrative texts, and participated in text-based discussions about them.

4.2.2.1 Planning

The methods course promoted the idea that teachers should plan for a text-based discussion by setting instructional goals for the text, dividing the text into several discussion segments based upon the instructional goals, and developing open-ended questions to initiate discussion for each segment. I examined William's lesson plans and interview transcripts at each time point, to determine how he planned for his text-based discussions during student teaching.

The analysis indicated that he followed a similar routine for planning each text-based discussion. First, William read the text thoroughly and divided it into instructional sections. Second, he developed instructional goals for each section, and open questions to initiate discussion. These two steps were identical to the way in which William learned to plan text-based discussions in the methods course, and they were also identical to the way in which his mentor teacher planned for her text-based discussions.

In the first and second interviews, the interviewer asked William what his lesson objectives were for the text-based discussion that had just been enacted. William's lesson objectives became more focused and precise from the first to the second time point. In October, referring to his text-based discussion about several fables, he said, "For this one I just really wanted it to be the valuable lessons, and being able to take from a story that may not be reality, pull something out for themselves." Four months later, referring to his text-based discussion about the novel *Canyon Runs*, he said, "I try to do a mix of surface questions, like *What happened when he did this?*, so there's a definite answer, and then a lot of the open-ended *What would that mean?*, or *Why would he do something like that?*, so that they can make some meaning of the characters.

Although William maintained a constructivist point of view throughout the school year when describing his ideas regarding the teaching of reading comprehension, he became more precise at each time point in articulating his thoughts. When asked what it means to teach reading comprehension in October, William reported,

... just letting them make their own meaning and being able to use the text to support that too. Yeah, I guess a lot of open-ended questions in the discussion. I'm kind of lucky with the bunch we have, most of them are pretty solid kids, not a lot of behavior stuff, so they're able to work in groups and bounce ideas off each other. And they can make meaning from what the other kids say. So more of just facilitating that discussion.
(William, October interview)

In February William elaborated upon the types of questions he asked and why, characterizing reading comprehension instruction as

... asking the questions, both the surface questions and then the deeper meaning, like the motivation or why somebody would do something. That's the point of a book, for them to make their own meaning and to make connections to it. (William, February interview)

In May William talked more explicitly about supporting students in linking the text and their prior knowledge, saying,

I think going back to the characters, a lot of them were going back into the book, so that they then understood what their character is like. A lot of them were able to make connections to the characters so they were relating some prior knowledge. And, I think just them understanding their character more will help them as they continue to read the book. (William, May interview)

4.2.2.2 Initiating questions

In the primary analysis I examined group trends in the features of the questions posed by the PSTs to initiate discussion. In the secondary analysis I examined individual trends in these characteristics, and then searched the interviews for information that could shed light on each PST's development.

One strong focus of the methods course was to teach PSTs to frame initiating questions so that they were open-ended, rather than closed. For example, PSTs were coached to ask questions such as, "What do we know about Max so far based on what we just read?" rather than, "Where did Max go after school?", or "Does Max like to play baseball?" to initiate a text-based discussion. The reasoning behind this stance is that open-ended questions promote elaborated student responses better than closed questions, and are more likely to lead to rich discussion about text. William reported in all three interviews that one thing he took away from the methods course was how to frame questions so that they are open-ended, rather than yes/no, to

promote discussion among students. William was successful at asking more open-ended than closed or yes/no questions at every time point (see Table 13); in February and May 100% of his initiating questions were open-ended. This data supports his claim that he learned to initiate discussion with open-ended questions in the methods course, and suggests that his ability to do so continued to improve with practice during student teaching.

Table 13. William: Percentage of open-ended and closed initiating questions at three time points

Type of Question	October (%)	February (%)	May (%)
Open-ended	69	100	100
Closed	31	0	0

In October, although most of William’s initiating questions were open-ended, they were basic recall questions, which is a low level of comprehension (see Table 14).

Table 14. William: Focus of initiating questions at three time points

Focus of Initiating Question	October (%)	February (%)	May (%)
Basic Recall	100	0	0
Make Inference/Reason	0	100	100
Explain Meaning of Word	0	0	0

The following excerpt from the October text-based discussion provides an example of the types of initiating questions William posed:

PST: What was a character in the story?

Angela: an ant

Nick: and a dove

Although the question was open because it did not ask for one specific character, it elicited the recall of explicit text information, and resulted in short, unelaborated responses from the students.

In February and May, William's initiating questions elicited high-level comprehension skills from students. For example:

PST: So Emily mentioned that in the next paragraph it talks
 about how he almost wept for her. How would you
 describe that in a personality trait?

Sam: Well, Brennan is kind of considerate I would say
 because he knows that his mom really wants to do this
 dating stuff but, even though he doesn't like it and the
 men keep leaving her and she thinks that they're
 really good.

This initiating question elicited inference and reasoning from the students, and resulted in an elaborated response in which Sam explained what he was thinking about the text ideas and why. These types of elaborated responses have been shown to support higher levels of comprehension among students.

4.2.2.3 Follow-up moves

A follow-up dialogic move is a question or prompt used by a teacher during a text-based discussion in response to a student utterance. Follow-up moves cannot be planned before the text-based discussion because they are made in response to students during the discussion. This means that teachers have to learn to "think on their feet", and make decisions in the moment about how to best support student comprehension. Orsolini & Pontecorvo (1992) argued that we

have to go beyond characterizing follow-up moves as “effective” or “not effective”, and consider the impact they have on student comprehension in specific contexts. I analyzed William’s follow-up moves in October and February (see Table 15). I did not include May in the analysis because William participated very little in the May discussion, allowing the students to take control. The percent of teacher follow-ups that were verbatim repetitions of what the student said decreased from 17% to 10% between October and February.

Table 15. William: Follow-up moves used at first and second time points

Follow-up Move	October (%)	February (%)
Repeat	17	10
Revoice	56	23
Press for Accuracy	17	12
Press for Reasoning	11	55

The percent of teacher follow-ups that were revoicings of student responses, using more precise language or extending/elaborating/linking what the student said, dropped from 56% in October to 23% in February. The percent of teacher follow-ups that were pressing students to support their comments with explicit text information decreased between October and February, while the percent of pressing for reasoning increased. Additionally, the average length of student responses increased from 7.2 words in October to 16.2 words in February. Together, this suggests that in February, William reduced the extent to which he linked, summarized, and elaborated, and instead pressed students to do this work. Table 16 provides examples of typical follow-up responses in October and May, and illustrates these changes.

Table 16. William: Examples of follow-up moves at first and second time points

October	February
T: How is it a valuable lesson? S1: Well, some people might find it valuable.	T: Yeah, okay. What, umm, what do we know about this Sancta character? S1: He’s the leader.

<p>T: Okay, I like that; AL said some people find it valuable, some do, some don't. That in itself I think is valuable, just that you don't have to listen to everything you hear. It's for what you think it's worth.</p>	<p>S2: He's the leader of the raid.</p> <p>T: The leader? What makes him the leader?</p> <p>S3: He's been on a whole bunch of raids, and he's very experienced.</p> <p>S4: He's wise. That's why they call the old people the wise men – because they are experienced.</p>
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4.2.2.4 Summary of William

William was placed in a fifth grade classroom of a private elementary school that was attended by a large number of university faculty members' children. He reported in his October interview that the school administrators adopted a constructivist theory of learning and promoted the use of dialogic instruction, including text-based discussion, in all classrooms. William conveyed that the school used trade books for reading instruction, and that most of the teachers in the school regularly carried out text-based discussions of trade books with their students for reading comprehension instruction.

William was assigned a heterogeneous group of nine students from his placement classroom for reading instruction. The group read and discussed a number of novels throughout the year. William planned text-based discussions of the novels using a planning method that was used by his mentor teacher, and similar to the one used in the methods course. His lesson goals and objectives were very general in October, but became more focused and precise over the course of the school year.

William was successful in initiating discussion using open-ended questions. In October, 69% of William's questions to initiate discussion were open-ended; in February and May the percentage rose to 100%. William became better at eliciting high-level comprehension skills

from students over the course of the year, by asking inference questions rather than recall questions.

Over the course of the year, the percentage of follow-up moves that were repetitions or revoicings of student comments decreased, while the percentage of follow-up moves that pressed students to support their comments with reasoning increased. This suggests that by May William decreased the extent to which he explained, linked, and made inferences about text ideas, and pressed students to do this work.

William scored higher than the other PSTs on the *IQA* at every time point, and higher than one might expect for a novice teacher, considering the complexity of enacting text-based discussions with students. A micro-analysis of his lesson plans and transcripts supported the growth in *IQA* scores over the course of the year, showing that by May he was better at eliciting high-level comprehension skills from students, and releasing responsibility to students to use these high-level skills independently. Several features of William's student teaching environment may have contributed to his advanced development. William was placed in a school that emphasized dialogic instruction, including text-based discussions to support reading comprehension. This meant that the students had participated in text-based discussions regularly throughout their elementary school experience, and by fifth grade were quite familiar with their expected roles in a dialogic instructional format. Additionally, William was the only PST in this study who had a mentor teacher that regularly enacted text-based discussions as part of her classroom instruction. In his February interview, William said, "I feel prepared [to enact text-based discussions] based on watching my mentor and just kind of talking to her about it." The fact that William was able to observe his mentor enacting text-based discussions, and discuss the practice with her, was likely supportive of his development in enacting this complex practice.

4.2.3 Anna

Anna completed her student teaching in a second grade classroom, located in a suburban public school that services children from families with low, mid, and high incomes. Anna reported in her interviews that she valued the fact that her students came from varied SES backgrounds:

“I really, really like being at this school. We’re completely different than the other schools. And I really like that because I think being here will help me wherever I go. I’ve worked with kids who are from all different levels of, you know, SES, and so I think that will help me a lot. I just think we have like a really great mix of kids. Not one class is uniform or anything, so I think that will help me in the long term.”

Anna reported a collaborative working relationship with her mentor in which she received guidance, but was also allowed to try instructional practices she learned at the university:

She really does provide me with a lot of guidance... we have different ideas on some things ... she’ll show me what she has and then I take what I learned from [the teacher education program] and we try to collaborate with that. (Anna, October interview)

Anna’s placement school used the *Harcourt Trophies* (2007) basal program for reading instruction, however teachers were free to supplement instruction with trade books or other materials. Anna reported that her placement class typically spent one week working on a new story for reading instruction, and that she most often worked with half the students in an empty classroom, while her mentor teacher worked with the other half in her classroom. In her October interview, Anna reported frequently leading text-based discussions to support student reading comprehension:

I like asking questions a lot whenever we read the book. I've seen some other teachers read a 20-page book; they don't ask any questions, they don't take any comments. And I know that adds a lot of time, but I think if you're asking them questions throughout, you get a better idea that they're paying attention in the then and now instead of just waiting until the very end ... I think [the students] don't get a ton of time to speak and so it's nice to hear what they have to say sometimes – if it's related. (Anna, October interview)

Anna's comments indicate that text-based discussion was a practice she learned in her teacher certification program, but not a practice she observed teachers in her placement school using. In other words, Anna did not have the opportunity to refine her understanding of the practice by observing her mentor teacher enacting it like William did.

4.2.3.1 Planning

I examined Anna's lesson plans and interview transcripts at each time point to make sense of how she planned for her text-based discussions during student teaching, and how this developed over the course of the school year.

In October, Anna planned a text-based discussion of a basal story entitled *A Chair for My Mother*. Anna included several learning goals in her plans that were directed specifically at integrating ideas from the story being read with the students' knowledge base (e.g., Students will explore the difference between wants and needs, and apply these definitions to their own possessions). Anna's lesson plans were similar to the structure used in methods course in the sense that they included detailed learning goals, as well as detailed plans for the launch, the body, and the exit of the discussion, but there were also some significant differences. One difference was that Anna planned what she would tell students about the story and how it related to her life, however, she did not plan any questions to initiate student talk during the discussion.

For example, this is an excerpt of what Anna planned for the body of the October text-based discussion:

Tell students about a time when you really wanted something, but did not have enough money to purchase it. Explain how you worked hard to earn the necessary money, and your means for saving it. Describe how you felt when you finally bought what you wanted. “A couple of years ago I really wanted a laptop, but I didn’t have enough money to buy one. I knew it would be really helpful with my schoolwork to have one, so I decided to earn some money doing different jobs...” (Anna, October lesson plan)

Although Anna’s learning goal was to have students explore their understanding of several concepts in the text, and connect the text to their own lives, her lesson plans indicated that she actually planned a lecture in which she did most of the talking, exploring, and connecting.

In February Anna planned a text-based discussion of a basal story about penguins, and in May she planned one for several fables from an anthology used by the second grade teachers in her placement school. For both of these text-based discussions, her lesson plans included questions to initiate discussion rather than stories of how the text related to her life. These changes suggest a shift in Anna’s understanding of how to assist students in exploring their understanding of the text during a text-based discussion.

I calculated the ratio of words spoken by Anna to words spoken by the students during each text-based discussion, to see if the students engaged in more talk during the text-based discussions in which Anna planned initiating questions. In October the ratio was 1.64 teacher words to one student word, while in May the ratio was 1.46 teacher words to one student word,

suggesting that the students did engage in more talk when Anna included initiating questions in her lesson plans, rather than stories about herself, to spark discussion.

4.2.3.2 Initiating questions

I analyzed the transcripts to identify the characteristics of the questions Anna posed to initiate each discussion segment within her text-based discussions at each time point.

The analysis of Anna’s transcripts revealed that the percentage of closed initiating questions, which are less likely to result in rich discussion of text, steadily decreased throughout the school year while the percentage of open initiating questions, which are more likely to promote rich discussion, increased (see Table 17).

Table 17. Anna: Percentage of open-ended and closed initiating questions at three time points

Initiating Question	October (%)	February (%)	May (%)
Open-ended	0	20	29
Closed	100	80	71

This pattern suggests that Anna became better at framing initiating questions to promote discussion as the year progressed. While Anna became better at asking open-ended questions by May, the majority of her initiating continued to be closed. The following excerpt illustrates this:

PST: Right now we are going to look at three different fables on our smart board. All right. Can someone please read me our title? Right here. Matthew?

Matthew: *The Fox and the Stork.*

PST: *The Fox and the Stork.* What's a stork? Grace?

Grace: A kind of bird.

PST: It's a kind of bird. Yeah. Manny?

Manny: It's like a pelican, but it's not.

A closer look at the May transcripts indicated that when Anna asked initiating questions related to comprehension at the sentence or paragraph level, she was successful in asking open questions. Many of her initiating questions, however, were focused on comprehension at the word level (vocabulary questions), and were closed.

An analysis of the comprehension skills elicited by Anna's initiating questions revealed that Anna focused heavily on vocabulary during her text-based discussions throughout the school year (see Table 18).

Table 18. Anna: Focus of initiating questions at first and last time points

Focus of Initiating Question	October (%)	May (%)
Recall Text Information	50	18
Make Inference/reason	0	27
Explain Meaning of Word/Phrase	50	55

Anna commented in her February interview that vocabulary was a strong area focus in her mentor teacher's reading instruction. A closer analysis of her transcripts revealed that while the percentage of her initiating questions focused on vocabulary did not change much at each time point, Anna became better at teaching responsively when students' comments indicated they were confused about the meaning of words in the text. Consider the following excerpt from Anna's October text-based discussion, when students' responses indicate confusion about the meaning of the word *bargain*:

PST: Okay. I heard this word that began with a B; bargain. Who might tell me what a bargain is? What does that mean to you? Liz?

Liz: It means something like -- it means you have a lot of that.

PST: A bargain. Okay.

Liz: Like, a lot of stuff. Like a -- like a -- kind of like a pile of stuff.

PST: Okay. Will, what do you think?

Will: It means, like, you, like, give a -- you know, like, I'll give you a dollar for this, so you –

PST: Mm-hmm. You can bargain with somebody. But what would I say -- what would you say if I told you, "Hey, Emma, I'm going to the mall tomorrow. I hear they have lots of good bargains." What does that mean to you? Mm-hmm.

Emma: I should come, too.

PST: Well, you should come, too. But, Zach, what does that mean to you?

Zach: They have a price, and they take some of it away.

PST: Oh. They take some of it away. So that is a -- a big blowout?

Zach: Sale.

PST: Sale. Yeah, a big sale. So her grandma had lots of good bargains on tomatoes. So she got them for less money than they normally are. So they're saving money that way.

In this example, Anna did not provide clear feedback to students when their comments indicated confusion about the meaning of the word *bargain*; her lack of explicit feedback led to more confusion among the students.

By May, Anna was more direct with students when their responses indicated confusion:

PST: All right. "Patty, the milkmaid, was going to market, carrying her milk in a pail on her head. As she went along she began calculating what she would do with the money she would get for the milk. "I'll buy some fowls

from Farmer Brown," she said." Hold on. What's a fowl? F-O-W-L.
What's a fowl? Emma?

Emma: An out.

PST: A what?

Emma: An out.

PST: Oh, like F -- F-O-U-L? Yeah, like in baseball or basketball. Yeah, if you
foul somebody.

This is -- this is a little different. Emilio?

Emilio: I was thinking an (inaudible).

PST: Oh. It's not a (inaudible). It is a foul, but this is spelled a little different.
See it right where I'm pointing Jacob?

Jacob: It's like a bucket.

PST: Not like a bucket. It's a type of animal. Matt?

Matt: A duck.

PST: It's kind of like a duck. It's like a chicken. Okay.

Sean: Because it's right in the sentence. "I'll buy some fowl from Farmer
Brown," she said. "And then they will lay eggs."

In this example, Anna was direct in telling students that the *foul* they were speaking of is different than the word *fowl* in the text. She then attempted to provide scaffolding by pointing to the illustration of the *fowl*. When the students became focused on the pail in the illustration, rather than the fowl, she increased the level of support by saying a *fowl* is an animal. After multiple unsuccessful attempts at getting the students to say the meaning of *fowl*, Anna told them the meaning that was relevant to the story. This is a good example of the fact that Anna

improved her ability to provide clear feedback and scaffold student learning when student responses suggested confusion about word meanings.

In October, 50% of Anna's initiating questions required students to recall explicit text ideas, promoting the development of low-level comprehension skills. At no point did Anna attempt to get students to reason or make inferences. Following is an excerpt of the October transcript that exemplifies the types of recall questions Anna posed.

PST: So what was the goal they were trying to achieve in a *Chair for my Mother*? Brian?

Brian: They were trying to get a chair.

PST: Yeah, they were trying to get a chair. How did they save up for this chair? Matt?

Matt: How they put the money in a -- in a jar.

PST: Mm-hmm. They put money in a jar. And what might -- where did they get that money? Ellie?

Ellie: From the tips from the mom's job.

PST: Mm-hmm. From the tips from her mom's jar. And sometimes she even got to work at Josephine's. She was --

Ellie: At -- at her job.

PST: Job. Yeah, she got it from the job her mom did. And so did the daughter.

In February and May, the percentage of recall initiating questions decreased, while the percentage of inference and/or reasoning initiating questions, which promote the development of high-level comprehension skills, increased. The following excerpt from the May text-based

discussion is an example of an interchange in which Anna’s initiating question requires the student to make an inference to explain the moral of a fable:

PST: The Fox and the Stork. And what does this moral mean; one -- one bad turn deserves another? Brian?

Brian: It means like if you do something bad to another person that things will happen back.

PST: Yeah, they might turn around and -- and be unkind to you, too. Carson?

Carson: It's like revenge.

PST: Yeah, it's kind of like revenge.

In this example, Anna asks the students to explain the meaning of the moral, rather than asking them to recall the moral written in the text. This type of questioning supports students in developing high-level comprehension skills because it pushes them to connect text ideas, make an inference, and explain their thinking.

4.2.3.3 Follow-up moves

I analyzed Anna’s transcripts to determine which follow-up moves she used during text-based discussions, and how this developed over the course of the school year (see Table 19).

Table 19. Anna: Follow-up moves used at three time points

Follow-up Move	October (%)	February (%)	May (%)
Repeat	20	18	19
Revoice	36	27	25
Press for Accuracy	44	55	40
Press for Reasoning	0	0	16

Early in the school year Anna tended to respond to students by repeating or revoicing their comments and then pressing for accuracy. Her follow-up moves early in the school year,

like her initiating questions, remained very focused on eliciting the recall of explicit text information (press for accuracy), a low level of comprehension. The following excerpt from her October text-based discussion provides an example of this type of exchange:

PST: Yeah, they were trying to get a chair. How did they save up for this chair?
Matt?

Matt: How they put the money in a -- in a jar.

PST: Mm-hmm. They put money in a jar. And what might -- where did they get that money? Ella?

Ella: From the tips from the mom's job.

PST: Mm-hmm. From the tips from her mom's jar.

The frequency with which Anna repeated and revoiced student comments decreased over the course of the school year, as did the amount of teacher talk that occurred during the text-based discussion. The frequency with which Anna pressed for accuracy decreased from October to May, and the frequency with which she pressed for reasoning increased. Together, this data suggests that as the year progressed Anna focused less on eliciting recall of explicit text ideas from students, and provided more opportunities for them to make inferences, connect text ideas, and engage in elaborated talk. In other words, she got better at using text-based discussion to promote high-level comprehension among students. Anna's description of how she felt her understanding of reading comprehension instruction had changed over the school year supported this claim:

I used to think [reading comprehension instruction] had to be mostly teacher led to ensure that the kids comprehended the text in front of them. And I've learned over this period to kind of trust the children to do that on their own, and see what they get out of it.

I'm there to reinforce what they think they know, or tell them that this is not exactly what you should be comprehending from the text. (Anna, May interview)

4.2.3.4 Summary of Anna

Anna completed her student teaching in a second grade classroom located in a school that services children from a wide range of SES backgrounds. She reported that she had a positive relationship with her students and mentor teacher, and had the freedom to try out instructional practices she had learned in her teacher certification program, even if they were different from the practices used by her mentor teacher. Although Anna's placement school adopted the *Harcourt Trophies* (2007) basal reading program for elementary reading instruction, teachers were free to supplement reading instruction with trade books or other reading materials. Anna conducted all of the text-based discussions analyzed in this study with trade books. Anna reported that while she frequently conducted text-based discussions to support student reading comprehension, this was a practice she learned in her reading methods course, and was not a practice she observed other teachers in her placement school using. .

Anna did not plan initiating questions for her text-based discussion in October, suggesting a lack of understanding in how to elicit student talk about text, and assist students in building understanding of text ideas. In February and May, Anna did plan questions to initiate discussion and promote student talk. The quantity of student words during each text-based discussion increased in February and May, suggesting that adding initiating questions to her lesson plans resulted in more student talk about the text.

Anna improved in her ability to initiate discussion with open questions as the year progressed, however, she continued to ask a higher-than-expected number of closed questions to initiate discussion in May (71%). This was largely due to her heavy focus on vocabulary, which

was reflective of her mentor teacher's instructional focus for reading comprehension. Early in the year Anna struggled to provide clear feedback to students when their responses indicated confusion about the meaning of words from the text, however, she became more direct and responsive with students by May.

In October, Anna focused heavily on explicit recall of text information, a low-level comprehension skill. Analysis of Anna's October interview transcripts indicated that Anna believed reading comprehension instruction should focus on assisting students in developing both low-level and high-level comprehension skills. By May Anna's instruction was more representative of her reported beliefs, as she began to assist student in making inferences and reasoning about text ideas. One reason it may have taken some time for Anna's instruction to match her beliefs in the area of reading comprehension was that she was utilizing an instructional practice to support reading comprehension (text-based discussion) that was not utilized by her mentor teacher. While she reported receiving a high level of support from her mentor teacher in providing her with the freedom to enact text-based discussions, she did not receive support in the nuts and bolts of the practice.

4.2.4 Thomas

Thomas's cumulative scores on the *IQA* were in the bottom third of the ranked ordered scores of the PSTs in this study. Thomas completed his student teaching in a second grade classroom, located in a suburban public school that services children from families with low to moderate incomes. During the interview following the October text-based discussion, Thomas described a positive working relationship with his mentor teacher in which he had the freedom to try out new instructional practices:

I really like how my mentor teacher sort of lets us co-teach ... anything I'm interested in or want to do, she's always willing to let me do alongside her if not do on my own. She's been really open about letting me take things on in the classroom. (Thomas, October interview)

Although the mentor teacher was open to letting Thomas try various instructional practices, he alluded to a tension that existed between his own beliefs about instruction, and the school's overall emphasis on high-stakes assessment:

This is a fairly high stakes school, and we have to teach to the test... I feel a little conflicted with that, so I can't necessarily do what I think is best for all the students because of constraints more on my teacher than on me, and I would feel bad about undermining her there. (Thomas, October interview)

In this high-stakes assessment era of education, in which school funding is linked to student performance on standardized assessments, the tension described by Thomas is not uncommon among teachers.

Thomas's placement school used the *Harcourt Trophies* (2007) basal program for reading instruction. In Thomas' placement classroom, students typically began reading a new story from the basal reader each Monday, and completed a test on the story the following Friday. Throughout the week students read each story multiple times, in a variety of contexts including large group read aloud, partner reading, and independent reading. Thomas reported that he regularly enacted what he felt were text-based discussions during the large group read aloud of the story, to support students' comprehension of what they were reading.

4.2.4.1 Planning

I examined the lesson plans and interview transcripts at each time point to make sense of how Thomas planned for his text-based discussions during student teaching, and how this developed during the school year.

In October, Thomas planned a text-based discussion of a basal story entitled *Helping Out*. His lesson plans for this text-based discussion were embedded in a grid that contained reading and writing instruction plans for the entire week. The comprehension instructional goal for the week was very general, stating, “Students will be able to summarize a text.” Thomas’s lesson plans did not include any specific questions to initiate discussion of the story. When asked in the interview following the discussion how he felt the lesson had gone, Thomas expressed some dissatisfaction, saying, “I definitely could have prepared my questions better because so many of them were off the cuff.”

In February, Thomas planned a text-based discussion of a basal story entitled *Cool Alli*. His lesson plans for this text-based discussion were quite brief, consisting of a sentence indicating how he would arrange the reading of the text: “Read the story together with one group speaking the dialog and the other group reading narration”. Thomas did not include any instructional goals in his lesson plans, or any questions to initiate discussion. While his sparse lesson plans leave the impression that Thomas did not put much thought into the planning of the text-based discussion of *Cool Alli*, his interview suggests otherwise. He reported that although he did not write down any questions to initiate discussion of the story in his lesson plans, he did develop questions before meeting with the students, rather than thinking of them “off the cuff” like he did in October. He said, “I read through the story several times. I planned questions for comprehension at the end of the story based around those questions.” This stands in contrast to

what he was taught in the methods course, however, it is in line with typical comprehension instruction that occurs in classrooms. The fact that Thomas based his initiating questions on the basal test suggests that his instructional goal was for students to be able to provide accurate answers to the test questions.

In May, Thomas planned a text-based discussion of a basal story entitled *Dinosaurs Travel*. For this lesson, he developed six questions to initiate and guide the discussion, and included them in his lesson plans. Thomas did not include instructional goals in his lesson plans, but indicated in the interview following the discussion that he based his initiating questions on the basal test students would be taking later in the week, which again suggests that his instructional goals was for students to be able to answer the test questions.

Overall, Thomas's planning of text-based discussions did not represent the approach to planning he learned in the methods course. Early in the year he did not develop specific instructional goals or initiating questions to guide discussion of the text. In February and May he reported that he developed initiating questions based upon the test questions before meeting with the students, however, he continued to not include them in his lesson plans. Thomas's discussion questions in February and May were based on the basal test students would be taking on the stories, and focused on assessing student comprehension rather than assisting students in building comprehension. This is not surprising, given the emphasis placed on assessment in Thomas' placement school.

4.2.4.2 Initiating questions

I analyzed the transcripts to identify the characteristics of Thomas's initiating questions at each time point. In his interviews Thomas reported that one thing he learned in the methods course, and continued to use during student teaching, was how to frame questions so that they require

more than 1-2 word responses from students. The analysis of Thomas’ transcripts supported his claim, revealing that at each time point, Thomas initiated most segments of discussion using questions that were open-ended (see Table 20).

Table 20. Thomas: Percentage of open-ended and closed initiating questions at three time points

Type of Question	October # (%)	February # (%)	May # (%)
Open-ended	4 (80)	9 (82)	10 (91)
Closed	1 (20)	2 (18)	1 (9)

I also coded the transcripts for the comprehension skills Thomas focused on with his initiating questions at each time point. These data are summarized in Table 21 below.

Table 21. Thomas: Focus of initiating questions at three time points

Focus of Initiating Question	October (%)	May (%)
Recall Text Information	83	30
Make Inference/reason	0	50
Explain Meaning of Word/Phrase	17	20

Despite the fact that Thomas posed a majority of open-ended initiating questions in October, most of these questions were low-level, basic recall questions in which students were asked to identify explicit text ideas. In October there is no evidence that Thomas attempted to get students to link text ideas, reason or make inferences, high levels of comprehension. Below is an excerpt of the October transcript that exemplifies the types of questions Thomas posed to initiate discussion of the text.

text: *In early spring you can help to plant seeds in the vegetable garden. Soon they will sprout and grow into many good things to eat. You can turn some chores into fun, like washing the car on a hot summer's day.*

PST: How could you make turning chores into fun? Ellie?

Ellie: On a hot day you could wash the car and get people wet.

In February and May Thomas continued to ask basic recall questions that focused on low-level comprehension, however, he also posed high-level comprehension questions. The following excerpt from the May text-based discussion is an example of an interchange in which Thomas's question requires the student to make an inference, rather than just recall text ideas. In this example, the answer to Thomas' question is not explicitly stated in the text, but must be inferred by the reader.

PST: How did Mrs. Fry show that she liked Ali's drawing?

Matthew: She kicked off a sandal.

PST: Yeah, she kicked off her sandals, and she was doing what?

Matthew: Putting her feet in the lake.

PST: Yeah, pretending like it was real, right?

Matthew: Mm-hmm.

The change in Thomas's singular focus on low-level comprehension to a combination of low-level and high-level comprehension was mirrored in his vocalizations of what it means to teach reading comprehension during the interviews. In the October interview he said, "reading comprehension is just having a general understanding of what has happened in the story." In the May interview, his views had expanded: "Daily reading comprehension revolves around students reading texts, making text-to-real-world connections to make it more meaningful, and recognizing the importance of the words on the page."

Thomas entered student teaching with a strong ability to initiate discussion with open-ended rather than closed questions. He was also successful in framing questions to develop low-level comprehension skills at the beginning of student teaching. By the end of the school year,

he focused on both low-level and high-level comprehension skills through his initiating questions. His views of what it means to teach reading comprehension also developed over the school year, shifting from a focus on supporting low-level comprehension in October to a focus on supporting both low-level and high-level by May. This may have been partly due to the fact that he was working in a second grade classroom, in which many students enter the school year in a transitional/near fluent stage of reading, and end the school year in a fluent stage of reading. In fact, Thomas commented in his May interview that his views of what it means to teach reading comprehension, as well as his instruction, changed over the school year because he was working in second grade. He further explained, “at the beginning of the school year, there were some students who really couldn’t read, and now that they can read – well, just the depth of understanding varies.” Thomas seems to be arguing, rightly so, that working with second graders is different than working with the fifth graders he had become accustomed to in the methods course. By focusing on low-level comprehension in October, he was following the lead of his students, who were still in a transitional phase of reading. As the students’ reading skills progressed, Thomas was able to focus on higher levels of comprehension during text-based discussion.

4.2.4.3 Follow-up moves

I analyzed the transcripts to identify which follow-up moves Thomas used at each time point (see Table 22).

Table 22. Thomas: Follow-up moves used at three time points

Follow-up Move	October (%)	February (%)	May (%)
Repeat	29	29	3
Revoice	21	26	44
Press for Accuracy	36	28	31

Press for Reasoning	14	17	22
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One follow-up move that Thomas used frequently in October (29%) and February (29%) was repeating students' comments verbatim. In May, Thomas rarely repeated students' comments verbatim (3%). Although repeating students' comments was discouraged by the methods course because it has not been shown to support students' comprehension (Beck et al., 1996), studies have found that it is a move teachers commonly use during classroom discussions (Applebee et al., 2003). I analyzed the teacher-student interactions that occurred immediately before and after Thomas' repetitions, to identify the context in which teacher repetitions occurred. Most often, immediately after Thomas repeated a students' comment, he pressed the student for more information. The following excerpt from the February text-based discussion illustrates this pattern:

PST: Where is this story happening?

Lyndi: It's happening outside her building

PST: Outside her building. Do you think her building was in the country, the suburbs, or the city?

In this example, Thomas repeated Lyndi's comment verbatim, but then he immediately followed up by pressing her to make an inference. My analysis suggests that Thomas may be using repetition as a placeholder, perhaps to buy a little time while he decides what to say next. In May, the percentage of follow-up comments that were verbatim repetitions dropped to 3% of the total follow-up comments, suggesting that as Thomas gained experience leading text-based discussions, he perhaps no longer needed extra time to think of what to say next.

Another type of follow-up move Thomas used was pressing, or pushing a student to say more about their thinking. Pressing was emphasized in the methods course as an effective way

to get students to elaborate their thinking about text, and ultimately support their comprehension of it. I identified two types of pressing used by Thomas, pressing for accuracy, in which he pressed students to support their comments with explicit text information, and pressing for reasoning, in which he pressed students to support their comments with reasoning or making inferences. Thomas consistently pressed students for more information at each time point, however, he tended to press more for accuracy than for reasoning, particularly in May. This may have been reflective of the school's emphasis on assessment. In fact, during an interview he commented: "It's very set in stone what you have to accomplish for the Friday tests...so rather than thinking about what it means to understand the story, discussion is limited to what is on the test."

Revoicing is a follow-up move in which the teacher repeats a student's comment using more precise language, to make the relationships between ideas more explicit. Revoicing has been positioned as a dialogic move that promotes student comprehension by many researchers (e.g., Beck et al., 1996). The frequency with which Thomas used revoicing increased over the course of the school year, resulting in increases in his *IQA* score, and indicating an improvement in the quality of his teaching. I took a closer look at the transcripts at each time point, to investigate the impact of Thomas's revoicing on student talk.

In October, 21% of Thomas's follow-up moves involved revoicing students' comments. In most cases, the revoicing was integrated with pressing for accuracy or reasoning. The following excerpt of the October text-based discussion provides an example of this:

- PST: So who remembers what a nonfiction photo essay is from yesterday?
 Levi, can you share?
- Levi: It's something real that's in photographs.

PST: What do you mean by something real?

Levi: Like *Helping Out*.

PST: You mean it's a real story that they use photographs to help. What do the photographs help us to understand?

Ethan: That someone is helping out.

In this example, Thomas presses Levi to clarify what he is thinking, revoices to make the relationship between the concepts Levi mentioned (real, photographs) more explicit, and then presses the class for more information. Thomas is guiding the discussion, but not dominating it; students are consistently encouraged to participate in the discussion.

In May, the percentage of Thomas's follow-up moves that were revoicings of students' comments increased to 44%. Closer analysis of the transcript revealed that Thomas dominated much of the text-based discussion. The following excerpt illustrates Thomas's dominance in the discussion:

PST: What does the title tell you about the story? *Dinosaurs Travel. A Guide for Families on the Go*. What does that tell us, Ethan?

Ethan: That it's like a book that tells you like --

PST: (interrupting) This is a whole guide to tell us all about what we need to do to get ready. How we can get to different things. It tells us what we might enjoy, because it even tells about how the trip might be more fun. It tells about how you might be feeling when you come home. You might be happy to be home. You might just be wanting to go on another trip again. So that -- those are all details that the title tells us, because it's a guide for families who like to travel, right?

Ethan: Yeah.

Throughout the May text-based discussion, Thomas used revoicing to make inferences and reason about text ideas, instead of pressing students to do this high-level thinking. The implication here is that judging the quality of teaching by simply counting the frequency of dialogic moves can be misleading; the context in which the move is used has to be considered. In this case, the way in which Thomas used revoicing in October was much more supportive of high-level thinking among students than the way in which he used the move in May.

The May interview provides insight into why Thomas may have made this shift in how he used revoicing. In his May interview, when asked if his views of reading comprehension instruction had changed since the methods course, Thomas stated:

Ummm.... Yes.... In the sense that, just within the restrictions of the certain curriculum s. You can't necessarily teach reading comprehension to the same level and you can't have the, uh, the day-by-day focus on vocabulary and text based discussion. And, it's just the time consuming aspect of it – reading comprehension. It doesn't seem possible within at least public schools.

Due to restrictions in his curriculum, and the school's emphasis on assessment, Thomas didn't feel like he had as much time to spend on text-based discussion as he would have liked. He may have begun taking more control of the text-based discussions as the year progressed to speed up the time it took to discuss each text segment, and fully prepare students to take the basal test.

4.2.4.4 Summary of Thomas

Thomas completed his student teaching in a public school district that placed a strong value on instruction geared to prepare students to do well on assessments. He reported that while he felt

“conflicted” about this emphasis at times because it was incompatible with what he had been taught in his teacher preparation program, he adjusted his instruction to accommodate the wishes of the district administration.

Thomas conducted each of the three text-based discussions analyzed in this study with short stories from the *Harcourt Trophies* (2007) basal reading program. Although his planning for the October discussion was minimal, and not reflective of what he had been taught in the methods course, he acknowledged in the interview following the discussion that he should have put more time into the planning of the discussion questions instead of asking them “off the cuff”. In February and May, Thomas reported that he planned questions to initiate discussion before meeting with the students, based on the basal test students would be taking on each story. While the fact that he reported planning discussion questions before meeting with students was indicative that he approached the instruction in a more organized fashion, an assessment-driven approach to planning a text-based discussion such as this was not emphasized during the methods course. This is not surprising, however, when considering the emphasis on assessment that was present among the administration and faculty in Thomas’ placement school.

The methods course promoted the idea that text-based discussions should occur during the reading of the text, to assist students in building understanding of text ideas as they are encountered. This is in opposition to more traditional discussion approaches, in which teachers discuss the text with students after they have read it to assess student understanding of what they have read. Interestingly, Thomas led his text-based discussions during the reading of the text, which is reflective of the stance taken by the methods course, however his discussion questions were more focused on testing student comprehension than on supporting students in building understanding. This suggests that Thomas had an incomplete understanding of the purpose of

leading a discussion during the reading of text, and was influenced by his placement school's emphasis on student assessment.

Thomas reported that one thing he had taken away from the methods course was how to frame discussion questions so that they were open-ended, rather than closed. An analysis of his transcripts supported this claim, showing that 80% of his initiating questions were open-ended in October. The fact that this number rose to 91% by May indicates that Thomas' experiences enacting text-based discussions during student teaching supported the development of his ability to frame open-ended questions.

In October most of Thomas's discussion questions and follow-up moves elicited recall of explicit text ideas, and promoted low-level comprehension among students. As the school year progressed, however, the incidence of these low-level dialogic moves decreased while the percentage of dialogic moves that promoted the development of high-level comprehension skills among students increased. In his May interview, Thomas noted a difference in enacting text-based discussions with second graders compared to the fourth graders he worked with during the methods course, due to differences in reading skills. He reported that, during student teaching, his discussion questions became more advanced as his students' reading skills became more advanced.

In spite of Thomas's view that student reading skills increased over the course of the school year, he continued to struggle with releasing the responsibility of high-level skills such as linking, elaborating, and reasoning about text ideas to students, even in May. The fact that Thomas felt there was not enough time during the school day to lead extensive text-based discussions, due to other instructional requirements set forth by his placement school, may explain why he dominated the talking that occurred during the text-based discussions, and did

not release responsibility to the students for engaging in high-level comprehension skills; he was simply trying to speed the discussion up.

4.2.5 Summary of secondary analysis

I conducted a secondary, fine grained analysis of the text-based discussion transcripts and lesson plans of William, Anna, and Thomas to identify nuances in individual enactments of text-based discussions and development of these enactments. I also analyzed the interview transcripts for information that provided insight into their development.

All three PSTs reported regularly enacting text-based discussions, a practice they learned in their methods course, to support student comprehension of text. Only one PST, William, reported that his mentor teacher regularly used the practice, and could serve as a resource. Anna and Thomas reported that their mentor teachers did not include text-based discussions in their set of instructional practices and so, while Anna and Thomas were free to enact text-based discussions with their students, they did not feel they received the same type of support that William felt he received from his mentor teacher.

In spite of the differences in level of support, the three PSTs' enactments of text-based discussions developed in some similar ways. First, in all three cases the number of closed initiating questions decreased from October to May, while the number of open-ended initiating questions increased. This is important because open-ended questions are more likely to promote elaborated student talk, and support student comprehension, than closed questions. Second, in all three cases the number of initiating questions that elicited basic recall of explicit text ideas decreased from October to May, while the number of initiating questions that elicited inference and reasoning about text ideas increased. This is important because basic recall questions

promote the development of low-level comprehension skills, while inference and reasoning questions promote the development of high-level comprehension skills. Students need to develop both low-level and high-level comprehension skills to become proficient readers. Third, in all cases, the frequency with which the PST repeated student comments verbatim decreased between October and May. Repeating verbatim was discouraged by the methods course because it has not been found to promote student comprehension, however, it seemed to serve as a placeholder for the novice teachers, to buy time as they decided what to say next to support student comprehension. It may be that as the PSTs became more adept at deciding on the next dialogic move, they no longer needed to buy extra time by repeating student comments verbatim. Finally, in all three cases, the frequency with which the PSTs pressed for reasoning increased from October to May, while the frequency with which they pressed for accuracy decreased. This is important because pressing for reasoning supports a higher level of comprehension than pressing for accuracy.

There were also several important differences in the development of Thomas's, Anna's, and William's enactments. The frequency with which the PSTs revoiced student comments increased from October to May for Thomas, while it decreased for Anna and William. Additionally, the percentage of words spoken by the PST during a text-based discussion compared to percentage of words spoken by the students was much higher for Thomas at every time point. In May, Thomas spoke 71% of the total words uttered during his text-based discussion, Anna spoke 59%, and William spoke only 39%. These data suggest that by May, Anna and William were more willing to lessen their participation in the text-based discussion, and let the students do the work of comprehending, than Thomas was. In fact, both Anna and William commented in their May interviews that they learned during student teaching to back

off, and let the students do more of the talking during text-based discussions. Thomas, on the other hand commented in his May interview that he just didn't have the time to let the students do more talking during text-based discussions, because he was under pressure to prepare them to do well on the test.

The instructional emphasis of the school and/or mentor teacher was evident in each of the PSTs' enactments. Thomas was placed in a school that focused on preparing students for assessments, and his discussion questions were aimed at feeding students the information they would need to do well on the week-end test. Although Thomas increased the extent to which he elicited inferences and pressed for reasoning, he continued to do most of the talking during the text-based discussions even in May.

In Anna's and William's placement schools, assessment preparation did not overshadow instruction. Without the pressure of preparing students to take tests, Anna and William took a more relaxed approach to text-based discussion, and allowed their students to take on more of the responsibility of enacting text-based discussions as the year progressed.

All of the PSTs developed in some aspects of their enactments of text-based discussion, regardless of the environment they were placed in. This suggests that the methods course provided a foundation of knowledge and skills relating to text-based discussion that the PSTs drew upon to guide and further develop their enactments during student teaching. With that being said, it has to be acknowledged that the PST who developed the most in terms of quality of text-based discussions, William, was placed in a school that promoted the use of dialogic instruction across subject areas, and was mentored by a teacher who used the practice of text-based discussion regularly, and so was able to serve as a model and a source of guidance for this type of instruction. Although mentor teachers and school administration did not provide any

sources of data directly for this study, these findings suggest that the instructional approaches embraced by school personnel in a student teaching placement school influence the ways in which PSTs enact text-based discussions during student teaching.

5.0 CHAPTER FIVE: DISCUSSION

This study investigated the development of six PSTs' enactments of text-based discussion during student teaching, after completing a methods course focused on teaching the practice. The objective of this study was to better understand how novice teachers learn to enact text-based discussions, and how to support this learning through teacher education. My research questions were: (1) How do PSTs' enactments of text-based discussion develop over the course of one-year elementary student teaching placements?, and (2) What is the nature of the dialogic interactions that occurred during the text-based discussions at three time points? To address these questions, I conducted a preliminary analysis of six PSTs' *IQA* scores and text-based discussion transcripts collected at three time points during student teaching. I also conducted a secondary, finer-grained analysis of three of the original six PSTs' text-based discussion transcripts, interview transcripts, and lesson plans. In this chapter I will discuss the ways in which my findings address each of my research questions, and the implications these findings have for teacher education. I will also discuss directions for future research that builds on this study.

5.1 DEVELOPMENT OF PSTS' ENACTMENTS OF TEXT-BASED DISCUSSION

The context in which teachers learn to enact instructional practice influences the way in which they enact it (Putnam & Borko, 2002). In this study, six PSTs learned to enact text-based

discussion in the context of a practice-based methods course that was designed using a cross-professional training framework (Grossman et al., 2009). The framework calls attention to the ways in which practice is represented and decomposed by the professional educator(s), and approximated by students being trained in a given profession. PSTs' learning continued in the context of six unique student teaching placements, as the novice teachers used the knowledge and skills attained in the methods course to enact text-based discussions with elementary students in their placement classrooms.

The data analysis indicated that PSTs enacted text-based discussions with a moderate level of success at the first time point during student teaching, and that the quality of their text-based discussions continued to improve at the second and third time points. There are two important points to make about this trend. First, the fact that six novice teachers with no formal teaching experience entered student teaching with a moderate ability to enact text-based discussions, a challenging practice for even seasoned teachers (e.g., Beck et al., 1996), suggests that the methods course effectively supported the PSTs in internalizing some knowledge and skill related to text-based discussion. Some researchers have raised concerns about novice teachers' ability to learn to enact responsive, dialogic practice such as text-based discussion (Stein, Engle, Smith, & Hughes, 2008), citing the complexity of the practice and novice teachers' lack of teaching experiences to draw from. This study contradicts that argument, suggesting that it is possible for novice teachers to learn at least some of the knowledge and skill needed to enact text-based discussions during a practice-based methods course.

The second important point to make about the increasing trend in PSTs' *IQA* scores is that the PSTs continued to improve the quality of their enactments during student teaching, even after the supports provided by the methods course were removed. Classroom studies have

indicated that teaching experience alone does not typically result in the ability to enact high-quality dialogic instruction (Applebee et al., 2003; Nystrand, 2006). The interview transcripts suggested that five of the six PSTs' mentor teachers were unfamiliar with the practice of text-based discussion as it was represented to the PSTs in their methods course, therefore, we cannot attribute the improvements that occurred during student teaching to targeted support provided by a mentor who was experienced in enacting the practice. It is probable, therefore, that PSTs drew on the knowledge and skill they developed during the methods course, as well as their individual experiences with their students, to refine their enactments of text-based discussion during student teaching.

5.1.1 Environments that support novice teachers' learning

How did the methods course and student teaching experiences support PSTs in learning to enact text-based discussions, an instructional practice that is challenging for even seasoned teachers to learn? Pearson and Gallagher's (1983) Gradual Release of Responsibility (GRR) instructional model (see Figure 2) may help to explain. Although the GRR model was not consciously implemented by the teacher educators who taught the methods course, the way in which they taught the PSTs to enact text-based discussions did reflect the pedagogy of the model.

The GRR model of instruction was originally developed by Pearson & Gallagher (1983) to describe a Vygotskian approach to teaching comprehension strategies to children. The goal of the GRR model is to guide teachers in providing comprehension instruction that effectively supports students in moving through the stages of the ZPD (see Figure 1), so that eventually the students will be able to use comprehension strategies independently. The GRR model includes three instructional steps: 1) define/model the strategy, 2) engage students in guided practice

using the strategy, and 3) engage students in independent practice using the strategy. An important part of the GRR model is direct feedback from the teacher, which is provided during guided and independent practice; the level of feedback, or “assistance”, as Vygotsky would have called it, should decrease over time as the child becomes more adept at using the strategy.

The design of the methods course was informed by the Grossman et al. (2009) cross-professional training framework, however, by implementing this framework to teach the PSTs how to enact text-based discussions, the teacher educators in the methods course also implemented the Pearson and Gallagher’s (1983) GRR model. For example, they defined and modeled text-based discussion in the way they *represented* it to PSTs, by discussing the goals of the practice (to assist students in building understanding of text-ideas as they are encountered by engaging them in elaborated talk about the text), modeling it, and providing video excerpts of an experienced teacher enacting the practice with elementary students. The teacher educators elicited guided practice when they *decomposed* text-based discussion into several smaller instructional segments, and required PSTs to *approximate* the segments in the university classroom. They elicited independent practice when they required PSTs to enact complete text-based discussions with the summer-school students. The teacher educators provided PSTs with direct feedback for both guided and independent practice. The design of the methods course allowed the PSTs to operate in their ZPD, and internalize some of the knowledge and skill needed to enact the complex instructional practice of text-based discussion. During student teaching PSTs’ development continued because they were operating in stages two and three of the ZPD, providing assistance to themselves as they engaged in independent practice of text-based discussion.

One important implication of this study is that teacher educators may want to consider consciously using the GRR model of instruction, in addition to the Grossman et al. framework, to teach novice teachers how to enact practice. Tharp and Gallimore (1986) argued that the principles of Vygotskian teaching and learning, in which the teacher provides gradually decreasing assistance as the student learns to complete the task independently, should be applied to all levels of education, including teacher education. In other words, teachers need assistance from a teacher educator in order to learn to provide high-quality, responsive comprehension instruction in the same way that students need assistance from teachers to learn to comprehend text, and young children need assistance from parents to learn language; the results of this study support that argument.

5.1.2 Shift from low-level to high-level comprehension

Overall, the methods course and student teaching experiences supported PSTs in developing knowledge and skill needed to enact text-based discussions with elementary students; a closer look at the data provides information about the specific types of knowledge and skill PSTs attained. At the first time point PSTs asked more open-ended questions than closed questions to initiate discussion, and were moderately successful at linking student comments together and pressing students to provide more information, all of which are dialogic moves that promote student comprehension (e.g., Beck et al., 1996; Chinn et al., 2001; Saunders & Goldenberg, 1999). Most of PSTs' initiating questions and pressing prompts, however, focused on getting students to recall explicit text information. As the school year progressed the PSTs shifted their focus to high-level comprehension skills such as getting students to make inferences and reason.

There are several possible reasons why this shift occurred. Some of the PSTs commented in their interviews that as their students became better at using low-level comprehension skills, they began to focus the text-based discussion on higher-level skills. This suggests they gradually released responsibility for using low-level comprehension skills to the students, and as the students took the responsibility on, the PSTs shifted to higher-level skills. However, the fact that *all* of the PSTs made this shift including William, whose fifth grade students were accustomed to participating in text-based discussions and using high-level comprehension skills to think about text from the beginning of the school year, suggests that there may have been additional reasons for the shift beyond the premise that the students were not ready to use high-level comprehension skills early in the school year.

It could be partly related to the PSTs' developing ideas about their responsibilities as teachers. Early in the school year the PSTs may have felt obligated to use low-level questions and prompts to assess if their students comprehended the basic ideas of the text, based on the types of teacher-student interactions about text they were familiar with from their own school experiences. As the year progressed they may have realized the low-level assessment questions were not always necessary, and that they could decrease the amount of assessing they were doing during text-based discussions, and use the time to work on assisting students in deeply comprehending the text. Anna commented in her May interview that over the school year she learned to "trust" that the students would get the basic meaning of the text on their own, without her "jumping in to save the day". She felt that this realization caused her to change her role in the text-based discussion, and focus on interpreting the text rather than assessing students' basic comprehension of it.

Finally, it could be that during the methods course the PSTs attained the knowledge and skill needed to support low-level skills but not high-level skills, and they required additional practice enacting text-based discussions during student teaching to develop the knowledge and skill to support high-level skills. In order to focus on high-level comprehension of text, a teacher needs to have a deep understanding of the text themselves. It may take more time to develop the skill to support high-level comprehension among students because PSTs need to refine their own high-level comprehension skills, as well as develop pedagogical skill at supporting someone else in comprehending deeply. Future research in this area is needed, to better understand the reason why this shift from low-level to high-level skills occurred.

5.1.3 Releasing responsibility

Text-based discussion is a responsive instructional practice, intended to support students in developing comprehension skills by assisting them in using cognitive processes to build understanding of text as they read it (Beck et al., 1996; Chinn et al., 2001). An important part of teaching responsively is releasing responsibility to students, by reducing the level of support provided as the students become more skilled (Clay, 2005; Pearson & Gallagher, 1983; Tharp & Gallimore, 1986). Releasing responsibility to students is important because it fosters independence, so that students do not have to rely on the teacher's assistance to successfully complete tasks. The trends in *IQA* scores and the text-based discussion transcripts examined in this study suggest that the PSTs were more successful in releasing responsibility to the students for linking than for providing rich, elaborated responses.

Linking a comment to previous comments made during a text-based discussion has been shown to support comprehension by making the relationships between text-ideas, as well as

students' developing understanding of them, explicit (e.g., Beck, McKeown, Sandora, Kucan, & Worthy, 1996; Chinn, Anderson, & Waggoner, 2001; Saunders, Goldenberg, & Hamann, 1992; Saunders & Goldenberg, 1999). Teacher scores for linking on the *IQA* decreased over the course of the school year, while student scores increased. An analysis of the text-based discussion transcripts provided information about the nature of the linking that occurred, that helped to explain why there was an inverse relationship between teacher linking and student linking on the *IQA*. Early in the school year the PSTs linked student comments somewhat frequently, and this seemed to serve as a model to students. As the school year progressed, students began to mirror the linking they observed their PST doing. In May, as the students became more adept at linking each other's comments, the PSTs linked less. In other words, PSTs released the responsibility of linking to the students by the end of the school year, and the students took up this responsibility, so that by the end of the school year the students were linking independently.

Revoicing, in which the teacher repeats student comments using more precise or more elaborated language, has been shown to support student comprehension of text by socializing students' attention (Orsolini & Pontecorvo, 1992) and modeling high-quality, elaborated responses (Goldman, 2012; Wolf et al., 2005). The mean *IQA* score for revoicing increased over the course of the school year; an analysis of the text-based discussion transcripts provided information about the nature of the revoicing that occurred. William, the highest performing PST at every time point, had the lowest score in May for this dialogic move. Thomas, the lowest performing PST at every time point, had relatively high scores for revoicing in May, compared to his other *IQA* rubrics. I examined the text-based discussion transcripts to try to make sense of why the May revoicing scores did not seem to be in line with overall text-based discussion quality. William's transcripts suggested that early in the school year he revoiced unelaborated student responses, which provided students with a model of what rich, elaborated responses

sound like. By May, he no longer revoiced student comments, however, his students' comments were typically rich and elaborated. This suggests that once his students learned to provide rich and elaborated responses during text-based discussions, William decreased the amount of talking he did, including revoicing, because it was no longer necessary. In other words, William released the responsibility of providing rich, elaborated responses to the students and by the end of the school year, they were providing these types of responses independently.

Thomas's transcripts suggest that early in the school year he repeated unelaborated student comments verbatim; this seemed to serve as a placeholder while he thought of the next thing to say. In May, Thomas's students continued to provide unelaborated responses; rather than repeating them verbatim, Thomas tended to revoice them. While Thomas did provide a model of rich, elaborated responses for his students, he did not provide opportunities for his students to engage in such talk; in other words, he did not release the responsibility of providing rich, elaborated responses to his students. This suggests that although William's May *IQA* scores were lower than Thomas's for revoicing, the quality of his text-based discussion was actually higher because his students were operating in stage 3 of their ZPD, and providing elaborated responses independently.

One implication of these findings is that although research on dialogic instructional practices has shown that teacher moves such as linking and revoicing are effective at assisting students in comprehending text, there is more to the story - the way in which a teacher uses these moves has an impact on student learning. To foster independent use of comprehension skills, teachers must gradually release responsibility to the students to link and provide the types of elaborated responses they have modeled through revoicing. This means that the frequency with which teachers use dialogic moves such as linking and revoicing should decrease over time, as

students become adept at linking and constructing elaborated responses to make sense of text. One important focus in teacher education, then should be on teaching novice teachers how to use dialogic moves in such a way that they release responsibility to their students over the course of the school year, and promote the independent use of comprehension skills.

A second implication of these findings is that measuring the quality of a text-based discussion by counting the frequency of a teacher's dialogic moves may be misleading, as we saw with William, because it does not capture the decrease in moves that will occur as the students become more adept, if the teacher is gradually releasing responsibility to the students. Adjusting the *IQA* to capture this trend may improve the validity of the test scores.

Gradually releasing responsibility to the students to use comprehension skills is an important part of comprehension instruction that the methods course did not explicitly address, however, most of the PSTs seemed to naturally do this as their students began to link during text-based discussions. Including the GRR model of instruction in future methods courses focused on teaching the practice of text-based discussion may help PSTs to gradually release responsibility more purposefully for a wider range of comprehension skills, and foster a greater level of independence among their students.

5.1.4 Managing student participation

There was an interesting trend in the relationship between the participation structure enforced by the PSTs and student talk. Although all six of the PSTs elicited high levels of student participation during their text-based discussions at all time points, the participation structure they enforced (RH or SF) seemed to influence the type and quality of the student participation that was elicited. Students who were required to gain teacher permission before talking (RH) tended

to keep their comments focused on making sense of the text, however, they did not interact with each other to do so. Students who were allowed to make contributions to the discussion without being called on (SF) tended to make comments off-task comments at times; however, by May they also interacted with each other, building upon each other's comments and engage in productive argumentation, to make sense of the text. These findings suggest that while the PSTs who enforced a SF participation structure had to redirect student attention back to the text-based discussion at times, the pay-off was high because their students learned to engage in a type of dialogic interaction that supports the development of high-level comprehension skills (Chinn et al., 2001). This finding implies that reading methods courses may need to better support PSTs in learning how to enforce a participation structure that keeps student attention on the text-based discussion, yet engages them in high-level dialogic interactions with each other.

5.1.5 Instructional emphasis of the placement school

The analysis of William's, Anna's, and Thomas' lesson plans, text-based discussion transcripts and interview transcripts shed light on the ways in which the instructional emphasis of the placement school influence individual enactments of text-based discussion.

William was placed in a school that emphasized dialogic instruction to promote high-level thinking across subject areas. At each time point William's lesson plans for text-based discussions included specific learning goals related to building understanding of the text, and initiating questions to target those learning goals. These lesson plans were similar to the lesson plans he learned to develop in the methods course, as well as the lesson plans used by his mentor teacher. Thomas focused heavily on inferences and reasoning during his text-based discussions,

particularly at the second and third time points. Thomas' lesson plans and enactments of text-based discussion were reflective of the instructional emphasis of his placement school.

Anna was placed with a mentor teacher that emphasized vocabulary instruction. Throughout the school year, Anna's lesson plans included specific learning goals related to building understanding of the text, but most of her initiating questions focused on vocabulary words from the text, rather than building understanding of the relationships between the text ideas. Most of Anna's prompts also focused on eliciting information about vocabulary from students. This focus on vocabulary seemed to be reflective of her mentor teacher's instructional focus.

Thomas was placed in a school that emphasized assessment testing. Thomas's lesson plans did not include learning goals. His questions were targeted at preparing the students to take the basal test on the story, and text ideas that were not assessed were ignored in the text-based discussion, even if they were relevant to building understanding of the story. Thomas did most of the talking during his text-based discussions, and commented that while he would like to allow the students to talk more, he just didn't have time because he had to get them ready for the test. Thomas's lesson plans and enactments of text-based discussion were reflective of his placement school, which placed a strong emphasis on assessment testing.

Overall, although William, Anna, and Thomas all learned to enact text-based discussion in the same methods course, the ways in which they enacted the practice during student teaching were influenced by the instructional emphasis of their placement school. This suggests that the instructional emphasis of the placement school is a learning environment feature that will influence what can be learned as PSTs refine their enactments of practice during student

teaching. The implication is that teacher educators may have to consider this factor as they support PSTs in learning to enact text-based discussions.

5.2 LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

This study has illustrated the ways in which PSTs' enactments of text-based discussion develop over one year student teaching placements, and provided some insight into the nature of the dialogic interactions that occur during these enactments. Some of the limitations of this study, as well as some of the findings, point to directions for future research.

One limitation of this study is that there were not baseline text-based discussions conducted by the PSTs, before receiving instruction during the methods course. Obtaining baseline enactments will help us to better understand PSTs' development of text-based discussion skills and how methods courses can support PSTs in learning to enact text-based discussions.

Another limitation of this study is that there were no outcome measures of student comprehension. We can make inferences about students' developing levels of comprehension based upon the quality and nature of their contributions during text-based discussions, however, we cannot know the specific ways in which a text-based discussion supported or failed to support their comprehension without assessments of student comprehension. These assessments will be important in understanding how specific patterns of dialogic interactions impact what students take away from text, which will help us to support PSTs in learning to teach responsively.

One finding was that the instructional emphasis of the placement school influences enactments of text-based discussion during student teaching. We need to investigate this further,

to expand our understanding of the ways in which student teaching environments interact with PSTs' learning of instructional practice.

APPENDIX A

INSTRUCTIONAL QUALITY INSTRUMENT (JUNKER ET AL., 2004) SCORING PROTOCOL FOR THE RUBRICS ANALYZED IN THIS STUDY

IQA Rubrics	4 Points	3 Points	2 Points	1 Points	0 Points
Participation in the Learning Community	Over 75% of the students participated in the discussion.	50-74% of the students participated in the discussion.	25-49% of the students participated in the discussion.	Less than 25% of the students participated in the discussion.	None of the students participated in the discussion.
Teacher's Linking Student Contributions to One Another	The teacher consistently connects students' comments to each other and shows how they relate.	At least twice the teacher connects students' comments and shows how they relate.	The teacher connects students' comments but does not show how they relate.	The teacher does not connect students' comments.	The discussion was not directly related to the text.
Students' Linking Contributions to One Another	Students consistently connect their comments together and show how they relate.	At least twice students connect their comments together and show how they relate.	Students connect their comments together but do not show how they relate.	Students do not connect their comments together.	The discussion was not directly related to the text.
Asking/Pressing	The teacher consistently asks students to provide evidence for	At least twice, the teacher asks students to provide evidence for	At least once, the teacher asks students to provide	The teacher does not ask students to provide evidence for	The discussion was not related to the text.

	their comments, pressing for accuracy OR pressing students to explain their reasoning.	their comments, pressing for accuracy OR pressing students to explain their reasoning.	evidence for their comments, pressing for accuracy OR pressing students to explain their reasoning.	their comments.	
Providing Knowledge	Students consistently provide accurate evidence from text or prior classroom experience for their claims, OR relate facts together OR use reasoning in ways appropriate to the discipline.	At least twice, students provide accurate evidence from text or prior classroom experience for their claims, OR relate facts together OR use reasoning in ways appropriate to the discipline.	At least once, a student provides accurate evidence from text or prior classroom experience for their claim, OR relate facts together OR uses reasoning in ways appropriate to the discipline.	Students do not back up their claims with evidence OR students provide only one isolated fact.	The discussion was not related to the text.
Text Rigor	N/A	The text contains substantial grist to sustain a discussion, in the complexity of the content (theme, relationships between characters) and the writer's craft (literary language, vocabulary, organizational	The text contains some grist to sustain a discussion, having some degree of complexity in the content or theme.	The text contains minimal grist. It may be a simple narrative or short excerpt from a workbook.	There is nothing about the text that requires extended discussion.

		structure)			
Discussion Rigor	The teacher guides students to engage with the underlying meanings or literary characteristics of a text. Students interpret or analyze a text and use extensive and detailed evidence from the text to support their ideas or opinions.	The teacher guides students to construct an enriched and elaborated understanding of the text including analysis of the causes and effect of text events or character actions. The students engage in some underlying meanings, but provide little evidence to support their claims.	The teacher guides students to construct a surface-level summary of the text based on explicit text information OR students provide little evidence to support their claims.	The teacher guides students to recall fragmented information from the text.	The discussion does not relate to the text.
Amplification (Revoicing)	N/A	There are many examples of the teacher paraphrasing student comments using more appropriate word choice and more complex syntax; the paraphrasing provides an alternative way of expressing the idea.	There are 1-2 examples of the teacher paraphrasing student comments using more appropriate word choice and more complex syntax; the paraphrasing provides an alternative way of expressing the idea.	The teacher paraphrases student comments, correcting grammar.	The teacher does not paraphrase student comments.

APPENDIX B

FOLLOW-UP MOVES CODING SCHEME USED IN SECONDARY ANALYSIS

Follow-up Move	Description	Example S = student T = teacher
Repeat	Teacher repeats student comment(s) verbatim.	S: I think Charlie is smart. He doesn't get in trouble. T: Okay, Charlie is smart. He doesn't get in trouble.
Revoice	Teacher paraphrases student comment(s) using more complex vocabulary or syntax.	S: I think Charlie is smart. He doesn't get in trouble. T: Okay, so Charlie is playing it smart. He doesn't do anything to cause trouble inside the Chocolate Factory.
Press for Accuracy	Teacher asks student to support their comment(s) with evidence from the text or from a previous classroom lesson.	S: I think Charlie is smart. He doesn't get in trouble. T: What did the other children do to get into trouble?
Press for Reasoning	Teacher asks student to support their comment(s) with reasoning that is appropriate for the discipline.	S: I think Charlie is smart. He doesn't get in trouble. T: Why do you think that makes him smart?

BIBLIOGRAPHY

- Aksan, N., & Kisac, B. (2009). A descriptive study: Reading comprehension and cognitive awareness skills. *Procedia: Social and Behavioral Sciences*, 1, 834-837.
- Anderson, R., Nguyen-Jahiel, K., McNurlen, B., Archodidou, A., Kim, S.-Y., & Reznitskaya, A., (2001). The snowball phenomenon: Spread of ways of talking and ways of thinking across groups of children. *Cognition and Instruction*, 19, 1–46.
- Anderson, R., & Pearson, P. (1984). A schema-theoretic view of basic processes in reading comprehension. In P. D. Pearson (Ed.), *Handbook of Reading Research* (pp. 255–291). New York: Longman.
- Applebee, A., Langer, J., Nystrand, M., & Gamoran, A. (2003). Discussion-based approaches to developing understanding: Classroom instruction and student performance in middle and high school English. *American Educational Research Journal*, 40, 685-730.
- Aristotle (1954). *The Rhetoric and the Poetics of Aristotle*. New York, NY: Random House Incorporated.
- Aukerman, M., Belfatti, M., & Santori, D. (2008). Teaching and learning dialogically organized reading instruction. *English Education*, 40, 340-364.
- Bakhtin, M. (1984). *Problems of Dostoevsky's poetics*. Minneapolis, MN: University of Minnesota Press.
- Ball, D. (1990). The mathematical understandings that prospective teachers bring to education. *The Elementary School Journal*, 90, 449-466.
- Ball, D., & Cohen, D. (1999). Developing practice, developing practitioners: Towards a practice-based theory of professional education. In G. Sykes and L. Darling-Hammond (Eds.), *Teaching as the Learning Profession: Handbook of Policy and Practice* (pp. 3-32). San Francisco: Jossey Bass.
- Ball, D. (2000). Bridging practices: Intertwining content and pedagogy in teaching and learning to teach. *Journal of Teacher Education*, 51, 241-247.
- Ball, D., & Even, R. (Eds.) (2008). *The professional education and development of teachers of*

- mathematics: The 15th ICMI Study*. New York: Springer.
- Ball, D. and Forzani, F. (1999). The work of teaching and the challenge for teacher education. *Journal of Teacher Education*, 60, p. 497.
- Ball, D., Sleep, L., Boerst, T., & Bass, H. (2009). Combining the development of practice and the practice of development in teacher education. *The Elementary School Journal*, 109, 458-474.
- Beck, I., Farr, R., & Strickland, D. (2007). *Harcourt trophies: A harcourt reading and language arts program*. Orlando, FL: Harcourt.
- Beck, I., & McKeown, M. (2002). Questioning the author: Making sense of social studies. *Educational Leadership*, 60, 44-47.
- Beck, I. & McKeown, M. (2001). Text-talk: Capturing the benefits of read-aloud experiences for young children. *The Reading Teacher*, 55, 10-20.
- Beck, I., McKeown, M., Sandora, C., Kucan, L., & Worthy, M. (1996). Questioning the author: A yearlong classroom implementation to engage students with text. *The Elementary School Journal*, 96, 385-414.
- Biggs, J. (1989). Approaches to the enhancement of tertiary teaching. *Higher Education Research and Development*, 8, 7-25.
- Biggs, J. (1993). From theory to practice: A cognitive systems approach. *Higher Education Research and Development*, 12, 73-85.
- Boerst, T., Sleep, L., Ball, D. and Bass, H. (2011). Preparing teachers to lead mathematic discussions. *Teachers College Record*, 113, p. 2844-2877.
- Bogdan, R. & Biklen, S. (1993). *Qualitative research for education: An introduction to theories and methods*. New York: Pearson.
- Bransford, J., Barclay, J., & Franks, J. (1972). Sentence memory: A constructive versus interpretive approach. *Cognitive Psychology*, 3, 193-209.
- Britton, B., & Gulgoz, S. (1991). Using Kintsch's computational model to improve instructional text: Effects of repairing inference calls on recall and cognitive structures. *Journal of Educational Psychology*, 83, 329-345.
- Brown, A., Campione, J., & Day, J. (1981). Learning to learn: On training students to learn from texts. *Educational Researcher*, 10, 14-21.
- Brown, J., Collins, A., and Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18, 32-42.

- Bruner, J. (1984). *Child's talk: Learning to use language*. New York: Oxford University Press.
- Cazden, C. (1988). *Classroom discourse: The language of teaching and learning*. Portsmouth, New Hampshire: Heinemann.
- Chinn, C., Anderson, R., & Waggoner, M. (2001). Patterns of discourse in two kinds of literature discussion. *Reading Research Quarterly*, 36, 378-411.
- Clay, M. (2006). *Literacy lessons designed for individuals: Part two, teaching procedures*. Portsmouth, NH: Heinemann.
- Clay, M. (1998). *By different paths to common outcomes*. New York, NY: Stenhouse Publishers.
- Clay, M. (1991). *Becoming literate*. Portsmouth, NH: Heinemann.
- Cobb, P., & Bowers, J. (1999). Cognitive and situative learning practices in theory and practice. *Educational Researcher*, 28, 4-15.
- Common Core State Standards Initiative (2010). *Common Core Learning Standards for English Language Arts and Literacy*. Retrieved from http://www.p12.nysed.gov/ciai/common_core_standards/pdf.
- Darling-Hammond, L. (2012). *Powerful teacher education: Lessons from exemplary programs*. San Francisco: Josey Bass.
- Dewey, J. (1910). *How we think*. Chicago, IL: D.C. Heath and Company.
- Eason, S., Goldberg, L., Young, K., Geist, M., & Cutting, L. (2012). Reader-text interactions: How differential text and question types influence cognitive skills needed for reading comprehension. *Journal of Educational Psychology*, 104, 515-528.
- Engen, L., & Høien, T. (2002). Phonological skills and reading comprehension. *Reading and Writing*, 15, 613-631.
- Fawcett, L., & Garton, A. (2005). The effect of peer collaboration on children's problem-solving ability. *British Journal of Educational Psychology*, 75, 157-169.
- Furtak, E., Hardy, I., Beinbrech, C., Shavelson, R., & Shemwell, J. (2010). A framework for analyzing evidence-based reasoning in science classrooms. *Educational Assessment*, 15, 175-196.
- Gallant, P., and Schwartz, R. (2009). Examining the nature of expertise in reading instruction. *Literacy Research and Instruction*, 49, 1-19.
- Garrod, S., O'Brien, E., Morris, R., & Rayner, K. (1990). Elaborative inferencing as an active or

- passive process. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 16, 250-257.
- Goatley, V., Brock, C., & Raphael, T. (1995). Diverse learners participating in regular education “book clubs”. *Reading Research Quarterly*, 30, 352-380.
- Goldenberg C., (1992). Instructional conversations: Promoting comprehension through discussion. *The Reading Teacher*, 46, 316-326.
- Goldenberg, C. (1992). Instructional conversations: Promoting comprehension through discussion. *The Reading Teacher*, 46, 316-326.
- Goldenberg, C. and Patthey-Chavez, G. (1995). Discourse processes in instructional conversations: Interactions between teacher and transition readers. *Discourse Processes*, 19, 57-73.
- Goldman, S. (2012). Adolescent literacy: Learning and understanding content. *Literacy Challenges for the 21st Century*, 22, 89-116.
- Gonzalez, G. & DeJarnette, A. (2013). Leading classroom discussions. *Mathematics Teaching in the Middle School*, 18, 544-551.
- Gordon, C., & Debus, R. (2002). Developing deep learning approaches and personal teaching efficacy within a preservice teacher education context. *British Journal of Educational Psychology*, 72, 483-511.
- Graesser, A., Millis, K., & Zwaan, R. (1997). Discourse comprehension. *Annual Review of Psychology*, 48, 163-189.
- Graesser, A., Person, N., & Hu, X. (2002). Improving comprehension through discourse processing. *New Directions for Teaching and Learning*, 89, 33-44.
- Graesser, A., Singer, M., & Trabasso, T. (1994). Constructing inferences through narrative text comprehension. *Psychological Review*, 101, 371-395.
- Graves, D. (1994). *A fresh look at writing*. Portsmouth, NH: Heinemann.
- Greeno, J. and the Middle School Through Applications Project Group (1998). The situativity of knowing, learning, and research. *American Psychologist*, 53, 5-26.
- Greeno, J., Collins, A., & Resnick, L. (1996). Cognition and learning. In D. Berliner and R. Calfee (Eds.), *Handbook of Educational Psychology* (pp. 15-41). New York: MacMillan.
- Grossman, P., Compton, C., Igra, D., Ronfeldt, M., Shahan, E., & Williamson, P. (2009). Teaching practice: A cross-professional perspective. *Teachers College Record*, 111, 2055-2100.

- Guthrie, J., Wigfield, A., Humenick, N., Perencevich, K., Taboada, A., & Barbosa, P. (2006). Influences of stimulating tasks on reading motivation and comprehension. *Journal of Educational Research*, 99, 232-245.
- Hammadou, J. (2000). The impact of analogy and content knowledge on reading comprehension: What helps, what hurts. *Modern Language Journal*, 84 (1), 38-50.
- Johnston, A., Barnes, M., & Descrochers, A. (2008). Reading comprehension: Developmental processes, individual differences, and interventions. *Canadian Psychology*, 49, 125-132.
- Junker, B., Matsumara, L., Crosson, A., Wolf, M., Levison, A., Weisberg, Y., & Resnick, L. (2004). *An overview of the Instructional Quality Instrument*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Kamil, M., Pearson, P., Moje, E., & Afferblach, P. (Eds.). (2011). *Handbook of reading research* (Vol. 4). London, UK: Routledge.
- Kennedy, M. (1999). The role of preservice teacher education. In Darling-Hammond, L. and Sykes, G. (Eds.) *Teaching as the Learning Profession: Handbook of Teaching and Policy* (pp. 54-86). San Francisco: Jossey-Bass.
- Kintsch, W. (1998) *Comprehension: A paradigm for cognition*. New York: Cambridge University Press.
- Kucan, L. (2009) Engaging teachers in investigating their teaching as a linguistic enterprise: The case of comprehension instruction in the context of discussion. *Reading Psychology*, 30, 51-87.
- Kucan, L., Hapgood, S., & Palincsar, A. S. (2011). Teachers' specialized knowledge for supporting student comprehension in text-based discussions. *The Elementary School Journal*, 112, 61-82.
- Kucan, L., & Palincsar, A. S. (2010). *Assessing specialized knowledge for text-based discussion: Multiple methods and measures*. Symposium presented at the annual meeting of the National Reading Conference/Literacy Research Association, Fort Worth, TX.
- Kucan, L., Palincsar, A., Busse, T., Heisey, N., Klingelhofer, R., Rimbey, M., and Schutz, K. (2011). Text-based discussion: The case of reading. *Teachers College Record*, 113, 2989-2922.
- Kucan, L., Palincsar, A., Khasnabis, D., & Chang, C. (2009). The video viewing task: A source of information for assessing and addressing teacher understanding of text-based discussion. *Teaching and Teacher Education*, 25, 415-425.
- Lampert, M. (1999). Knowing teaching from the inside out: Implications of inquiry in practice

- for teacher education. In Gary A. Griffin (Ed.), *On Teacher Education: 1999 Yearbook*. Chicago, IL: National Society for the Study of Education.
- Lampert, M. (2012). Improving teaching and teachers: A “generative dance”? *Journal of Teacher Education*, 63, 361-367.
- Lampert, M. & Ball, D. (1999). Aligning teacher education with contemporary K-12 reform visions. In L. Darling-Hammond and Gary Sykes (Eds.) *Teaching as the Learning Profession: Handbook of Teaching and Policy* (pp. 33-53). New York: Jossey-Bass.
- Lampert, M., Beasley, H., Ghouseini, H., Kazemi, E., & Franke, M. (2010). Using designed instructional activities to enable novices to manage ambitious mathematics teaching. In M. K. Stein & L. Kucan (Eds.), *Instructional Explanations in the Disciplines* (pp. 129-141). New York: Springer.
- Lampert, M. & Graziani, F. (2009). Instructional activities as a tool for teachers’ and teacher educators’ learning in and for practice. *Elementary School Journal*, 109, 491-509.
- Leppänen, U., Aunola, K., Niemi, P., & Nurmi, J. E. (2008). Letter knowledge predicts grade 4 reading fluency and reading comprehension. *Learning and Instruction*, 18, 548-564.
- Long, D. and Golding, J. (1993). Superordinate goal inferences: Are they automatically generated during comprehension? *Discourse Processes*, 16, 55-73.
- Long, D., Golding, J., and Graesser, A. (1992). A test of the on-line status of goal-related inferences. *Journal of Memory and Language*, 31, 634-647.
- Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago Press.
- Lucas, C. (1999). *Teacher education in America: Reform agendas for the twenty-first century*. New York, NY: St. Martin’s Press.
- Lyons, C. (2003). *Teaching struggling readers: How to use brain-based research to maximize learning*. Portsmouth, NH: Heinemann.
- Lyons, C. & Pinnell, G. (2001). *Systems for change in literacy education*. Portsmouth, NH: Heinemann.
- Lyons, C., Pinnell, G., & DeFord, D. (1993). *Partners in learning: Teachers and children in Reading Recovery*. New York, NY: Teachers College Press.
- Matsumara, L., Slater, S., & Crosson, A. (2008). Classroom climate, rigorous instruction and curriculum, and students’ interactions in urban middle schools. *Elementary School Journal*, 108, 293-312.
- Matsumara, L., Slater, S., Junker, B., Peterson, M., Boston, M., Steele, M., & Resnick, L. (2006).

- Measuring reading comprehension and mathematics instruction in urban middle schools: A pilot study of the Instructional Quality Assessment* (CSE Technical Report 681). National Center for Research on Evaluation, Standards, and Student Teaching, Los Angeles, CA.
- McKeown, M., Beck, I., and Blake, R. (2009). Rethinking reading comprehension instruction: A comparison of instruction for strategies and content approaches. *Reading Research Quarterly*, 44, 218-253.
- McKeown, M., Beck, I., & Worthy, M. (1993). Grappling with text ideas: Questioning the author. *The Reading Teacher*, 46, 560-566.
- McNamara, D., Kintsch, E., Songer, N., and Kintsch, W. (1996). Are good texts always better? Interactions of text coherences, background knowledge, and levels of understanding in learning from text. *Cognition and Instruction*, 14, 1-43.
- McNeill, K. & Pimentel, D. (2009). Scientific discourse in three urban classrooms: The role of the teacher in engaging high school students in argumentation. *Science Education*, 94, 203-229.
- McVay, J. and Kane, M. (2012). Drifting from slow to “d”oh! Working memory capacity and mind wandering predict extreme reaction times and executive control errors. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 38, 525-549.
- Meckstroth, C. (2012). Socratic method and political science. *American Political Science Review*, 106, 644-660.
- Mehan, H. (1979). “What time is it, Denise?” Asking known information questions in classroom discourse. *Theory Into Practice*, 18, 285-294.
- Moravcsik, J., and Kintsch, W. (1993). Writing quality, reading skills, and domain knowledge as factors in text comprehension. *Canadian Journal of Experimental Psychology*, 47, 360-374.
- Moss, P. (2011). Analyzing the teaching of professional practice. *Teachers College Record*, 113, 2878-2896.
- Murphy, P., Wilkinson, I., Soter, A., Hennessey, M., and Alexander, J. (2009). Examining the effects of classroom discussion on students’ comprehension of text: A meta-analysis. *Journal of Educational Psychology*, 101, 740-764.
- National Center for Educational Statistics (2011). *The Nation’s Report Card: Trial Urban District Assessment Reading 2011* (NCES 2012-455). Institute of Education Sciences, U.S. Department of Education, Washington, D.C.

- National Center for Public Policy and Higher Education and the Southern Regional Education Board (2010). *Beyond the rhetoric: Improving college readiness through coherent state policy*. Retrieved from the National Center for Public Policy and Higher Education website: <http://www.highereducation.org>.
- Nystrand, M. (with Gamoran, A., Kachur, R., & Prendergast, C.) (1997). *Opening dialogue: Understanding the dynamics of language and learning in the English classroom*. New York: Teachers College Press.
- Nystrand, M. (2006). Research on the Role of Classroom Discourse as it Affects Reading Comprehension. *Research in the Teaching of English*, 40, 392-412.
- Oded, B., and Walters, J. (2001). Deeper processing for better EFL reading comprehension. *System*, 29, 357-370.
- Orsolini, M. and Pontecorvo, C. (1992). Children's talk in classroom discussions. *Cognition and Instruction*, 9, 113-136.
- Patthey-Chavez, G. and Clare, L. (1996). Task, talk, and text. *Written Communication*, 13, 515-563.
- Perfetti, C. (1985). *Reading ability*. New York: Oxford University Press.
- Priebe, S., Keenan, J., and Miller, A. (2012). How prior knowledge affects word identification and comprehension. *Reading and Writing: An Interdisciplinary Journal*, 25, 131-149.
- Putnam, R., & Borko, H. (2000). What do new views of knowledge and thinking have to say about research on teacher learning? *Educational Researcher*, 29(1), 4-15.
- RAND Reading Study Group. (2002). *Reading for understanding: Toward a research and design program in reading comprehension* (Report MR-1465-OERI). Retrieved from RAND Corporation website: http://www.rand.org/pubs/monograph_reports/MR1465.html.
- Raphael, T. and McMahon, S. (1994). Book club: An alternative framework for reading instruction. *The Reading Teacher*, 48, 102-116.
- Recht D., and Leslie, L. (1988). Effect of prior knowledge on good and poor readers' memory of text. *Journal of Educational Psychology*, 80, 16-20.
- Reznitskaya, A. (2012). Dialogic teaching: Rethinking language use during literature discussions. *The Reading Teacher*, 65:7, 446-456.
- Sabers, D., Cushing, K., and Berliner, D. (1991). Differences among teachers in a task characterized by simultaneity, multidimensionality, and immediacy. *American Educational Research Journal*, 28, 63-88.

- Saunders, W. and Goldenberg, C. (1999). Effects of instructional conversations and literature logs on limited- and fluent- English proficient students' story comprehension and thematic understanding. *The Elementary School Journal*, 99, 277-301.
- Saunders, W., Goldenberg, C. and Hamann, J. (1992). Instructional conversations beget instructional conversations. *Teaching and Teacher Education*, 8, 199-218.
- Scott, S. (2008). *Rehearsing for ambitious instruction in the university classroom: A case study of a literacy methods course*. Paper presented at American Educational Research Association Annual Meeting, March 24-28, 2008, New York, New York.
- Shah, A. (2011). *Practicing the practice: Learning to guide elementary science discussions in a practice-oriented science methods course* (Unpublished doctoral dissertation). Available from Proquest Dissertations and Theses Database. (UMI No. 3476789)
- Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15, 4-14.
- Shulman, L. (2000). From Minsk to Pinsk: Why a scholarship of teaching and learning? *The Journal of Scholarship of Teaching and Learning*, 1, 48-53.
- Smart, J. & Marshall, J. (2013). Interaction between classroom discourse, teacher questioning, and student cognitive engagement in middle school science. *Journal of Science Teacher Education*, 24, 249-267.
- Snow, C. and Sweet, A. (2003). Reading for comprehension. In C. Snow and A. Sweet (Eds.) *Rethinking reading comprehension* (pp. 1-11).
- Solan, H., Shelley-Tremblay, J., Ficarra, M., Silverman, N., and Larson, S. (2003). Effect of attention therapy on reading comprehension. *Journal of Learning Disabilities*, 36, 556-563.
- Strauss, A. (1987). *Qualitative analysis for social scientists*. Cambridge, MA: Cambridge University Press.
- Stein, M., Engle, R., Smith, M., & Hughes, E. (2008). Orchestrating productive mathematical discussions: Five practices for helping teachers move beyond show and tell. *Mathematical Thinking and Learning*, 10, 313-340.
- Taboada, A., Tonks, S., Wigfield, A. and J. (2009). Effects of motivational and cognitive variables on reading comprehension. *Reading and Writing*, 22, 85-106.
- U.S. Department of Education, National Institute of Education Sciences. (2012). *What Works Clearinghouse*. Retrieved from <http://www.ies.ed.gov/ncee/wwc/FindWhatWorks>.

- Van den Broek, P.W. (2010). Using texts in science education: Cognitive processes and knowledge representation. *Science*, 328, 453-456.
- Van den Broek, P., Young, M., Tzeng, Y., & Linderholm, T. (1999). The landscape model of reading: Inferences and the online construction of a memory representation. In H. van Oostendorp & S.R. Goldman (Eds.), *The construction of mental representations during reading* (pp. 71-98). Mahwah, NJ: Erlbaum.
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wegerif, R., Mercer, N., and Dawes, L. (1999). From social interaction to individual reasoning: An empirical investigation of a possible socio-cultural model of cognitive development. *Learning and Instruction*, 9, 493-516.
- Wells, G. (2004). *Dialogic inquiry: Toward a socio-cultural practice and theory of education*. New York, NY: Cambridge University Press.
- Wertsch, J., Minick, N., and Arns, F. (1984). *The creation of context in joint problem-solving*. Cambridge, MA: Harvard University Press.
- Wilkinson I. and Son, E. (2011). A dialogic turn in research on learning and teaching to comprehend. In M. Kamil, P. D. Pearson, E. Moje, and Afflerbach (Eds.), *Handbook of reading research Volume IV* (pp. 359-387). New York: Routledge.
- Wolf, M., Crosson, A., and Resnick, L. (2005). Classroom talk for rigorous reading comprehension instruction. *Reading Psychology*, 26, 27-53.
- Woolley, G. (2011). *Reading comprehension: Assisting children with learning disabilities*. Dordrecht, The Netherlands: Springer International.
- Yifat, R. & Zadunaisky, S. (2008). Teachers' talk in preschool during circle time: The case of revoicing. *Journal of Research in Childhood Education*, 23, 310-323.
- Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education*, 89, 89-99.
- Zukow, P. (1988). Socio-perceptual bases for the emergence of language: An alternative to innatist approaches. *Developmental Psychobiology*, 23, 705-726.