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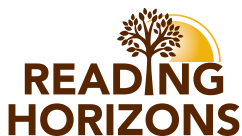
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Preservice Teacher Sense-Making While Learning to Teach Reading as Seen Through Computer-Mediated Discourse

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Abstract

This collective case study used methods of discourse analysis to consider what computer-mediated collaboration might reveal about preservice teachers' sense-making in a field-based practicum as they learn to teach reading to children identified as struggling readers. Researchers agree that field-based experiences coupled with time for reflection benefit preservice teachers as they learn to teach reading. However, research is not as clear about which features of practicum experiences lead to preservice teacher learning, which may contribute to preservice teacher misconceptions, and how learning about reading instruction might be rendered more visible to researchers. Grounded in sociocultural perspectives, analysis focused on language as a mediating tool for the construction of knowledge. Data collection spanned three semesters in a literacy assessment and intervention practicum. Preservice teachers constructed understandings of readers and reading instruction through reflecting, planning, and articulating their decision-making processes with one another in an online discussion board. Findings indicate that analysis of preservice teachers' computer-mediated discussions provided a window into their sense-making processes. While some preservice teachers' discourse demonstrated marked growth, other preservice teachers' limited use of precise language related to reading assessment and intervention frequently inhibited their developing understandings and instructional decisions. Also, some of the decisions instructors made likely contributed to several of the preservice teachers' misconceptions. We conclude with implications for computer-supported collaborative environments in teacher education as a means to make preservice teacher learning more visible and accessible as a tool for teaching and learning.

KEYWORDS: literacy teacher education, computer-mediated discourse, preservice teachers, dialogic reflection, literacy assessment

Invisible in both of these performances are the many kinds of knowledge, unseen plans, and backstage moves—the skunk works, if you will—that allow a teacher to purposefully move a group of students from one set of understandings and skills to quite another over the space of many months. (Bransford, Darling-Hammond, & LePage, 2005, p. 1)

Background

In the spring of 2014, we found ourselves positively positioned as teacher educators to study the typically unseen plans and developing understandings of our preservice teachers as they learned to teach reading to children for whom reading posed significant difficulties. Our teacher education program offers four to five sections of a literacy assessment and intervention course each semester. This course is required for all elementary and special education majors. It includes field-based placements in a local elementary school where preservice teachers (PSTs) apply course concepts and practice teaching reading one-on-one with a struggling student. This is a common practice in teacher education programs and has been found to have a positive impact on PSTs (Hoffman, Wetzel, & Peterson, 2016; Maloch et al., 2003; Risko et al., 2008; Salinger et al., 2010).

For most of our preservice teachers, this course was their final literacy course prior to student teaching. It was designed to deepen PSTs' pedagogical content knowledge (Shulman, 1987) related to the use of formative assessments to plan, implement, and evaluate literacy instruction that is responsive to the academic, cultural, and linguistic needs of their students.

In the spring of 2014, the first author was assigned to teach the course at a local school, Taylor Elementary (pseudonym). Each PST in the course was assigned a student for one-on-one tutoring. The course was assigned to meet after school on Tuesdays and Thursdays from 2:30 until 4:00. The third author taught a second section of the course at Taylor on Mondays and Wednesdays at the same time. Thus, our preservice teachers in our two separate courses worked together so that each elementary student received tutoring 4 days a week. This schedule created the need for PSTs in each course to collaborate through a computer-mediated discussion board in order to facilitate their planning and provide more coherent instruction for the student they shared.

This online discussion became a rich source of information for us as our students made their tacit and developing knowledge more visible and accessible through their descriptive planning and shared concerns. Through analysis of their discourse, we developed several key themes related to the sense-making processes of our students as they learned to teach children identified as having reading difficulties.

Literature Review

Researchers have long concluded that teacher knowledge has the largest impact on student success as readers (Anderson, Hiebert, Scott, & Wilkinson, 1985; Sharp, Brandt, Tuft, & Jay, 2016) regardless of students' socioeconomic status (Ferguson, 1991). In 1987, Shulman laid out a framework to describe the knowledge necessary for teaching. Although this framework is frequently referenced by researchers today, conceptions of "appropriate teacher knowledge" have greatly expanded—just as the roles and expectations of education and teachers continue to change (Ben-Peretz, 2011). Teacher knowledge has progressed from the view that it constitutes a "body of knowledge," including pedagogical principles and subject matter knowledge (Grossman & Richert, 1988, p. 54), to a more "personal-professional" perspective in which the knowledge is found in the mind and body as it is expressed through practice (Tamir, 1991, p. 265).

Connelly and Clandinin (1990) described knowledge as sets of stories that shape what teachers know and what can be known about teaching. According to Ben-Peretz (2011), this perspective “expands our view of ‘instructional competencies’ to encompass teachers’ narrative unities as persons and professionals whose knowledge is found in their past experience, present mind and body, and their intentions for the future” (p. 5). Teachers’ knowledge, therefore, is not situated in a fixed body of knowledge, but in a storied landscape that is both personal and situated in larger stories of teachers and schools. For example, Connelly and Clandinin described sacred stories as stories of practice frequently associated with theory, policy, and research that funnel into the classroom from outside and may be taken up without question.

On the other hand, secret stories may be constructed and lived out within the relative privacy of the classroom (Connelly & Clandinin, 1990). These stories, sometimes described as small stories (Olson & Craig, 2009, p. 548), may sometimes grow to disrupt the authoritative voice of the sacred story, such as policy narratives that overemphasize the importance of high-stakes tests to the exclusion of student-centered practices carried out in the classroom. Connelly and Clandinin’s research (1990) helped explain how sacred stories, such as those about testing requirements and mandated curriculum, may be taken up as authoritative and go unquestioned by parents and teachers in the classrooms.

While conceptions of teacher knowledge have shifted, most scholars agree field experiences combined with reflection provide the most beneficial outcomes for PSTs’ development of foundational concepts (Grossman & McDonald, 2008). However, as Forzani (2014) pointed out, a PST could spend months in a practicum setting and never learn to teach a lesson. More emphasis needs to be placed on what features of the practicum experiences lead to PST learning about teaching reading (Hoffman et al., 2016; Lipp & Helfrich, 2016), how this learning might be rendered visible to researchers (Ben-Peretz, 2011), and what contributes to PST misconceptions about teaching reading.

Obstacles to Preservice Teacher Development

Our review of literature on teacher knowledge revealed two recurring themes related to obstacles that may impede preservice teachers’ learning about teaching reading: institutional and policy constraints and PSTs’ preconceived assumptions about teaching based on their apprenticeship of observation.

Institutional and policy constraints. Institutional and policy constraints have been reported as frequent limitations to PST development in practicum settings (Danielewicz, 2001; Fisher-Ari, Kavanagh, & Martin, 2017; Fisher-Ari & Lynch, 2015; Massey, 2003). Massey (2003), for example, reported that mandated programs interfered with PSTs’ understanding of literacy instruction and their ability to transfer knowledge from one setting to another. Likewise, Fisher-Ari and Lynch (2015) studied novice teachers in an alternative route to certification in an urban setting. Initially, the novice teachers unquestioningly took up the mandated curriculum, expressing a lack of agency and a sense of distance from the curriculum. Over time, with help from their instructional coaches (who were also their university supervisors), they began to develop more adaptive and critical stances toward the curriculum.

Danielewicz (2001), who studied student interns in the process of “becoming” teachers while negotiating a culture of high-stakes testing, concluded, “If teachers are to survive, they must not only feel empowered but also must possess efficacy” (p. 163). Danielewicz contended that it is the role of teacher educators to foster efficacy and agency. It is this agency that gives power to future teachers in confronting curriculum and adapting it in ways that best fit student needs. Tackling mandated curriculum can be a daunting

task for a veteran teacher, not to mention a preservice teacher. Thus, it is no surprise that PSTs may uncritically take up the curriculum, but with guidance and support PSTs in these studies demonstrated the ability to become thoughtfully adaptive (G. Duffy, 2002) in their stances toward curriculum.

Apprenticeship of observation. Years of research have provided evidence that it is difficult for the casual observer to discern all the processes that go into teaching a single lesson. Making a comparison between conducting an orchestra and teaching, Bransford et al. (2007) explained:

Invisible in both of these performances are the many kinds of knowledge, unseen plans, and backstage moves—the skunk works, if you will—that allow a teacher to purposefully move a group of students from one set of understandings and skills to quite another over the space of many months. (p. 1)

Numerous studies report that PSTs develop misconceptions about teaching as a result of spending many years observing teaching as students themselves. Grossman, Hammerness, and McDonald (2009) suggested that “teaching is complex work that looks deceptively simple” (p. 273). Lortie (1975) described this phenomenon as the *apprenticeship of observation*, and it remains a frequently cited challenge for teacher educators today (e.g., Darling-Hammond, 2006; Feiman-Nemser & Remillard, 1996; Hall, 2005; Knowles & Holt-Reynolds, 1991; Leinhardt, 1989; O’Brien & Stewart, 1990).

Through a combination of field-based experiences and reflection, PSTs may develop more accurate perspectives of literacy instruction (Grossman & McDonald, 2008; Hoffman et al., 2005; Maloch et al., 2003; Marshall & Davis, 1999). According to Maloch et al. (2003), “In developing a knowledge base related to reading and reading instruction, preservice teachers benefit from multiple opportunities to engage with learners, building substantive and reciprocal relationships, and time to reflect on this practice” (p. 435). A primary goal of teacher educators, then, is to locate spaces and opportunities for preservice teachers to engage in field experiences in concert with reflection and collaboration.

Benefits of Collaborative Reflection in PST Education

For decades, researchers have emphasized the importance of reflection in literacy teacher education. As Hoffman et al. (2014) emphasized, “Reflection is more than just jotting down a response to an experience but a critical process of analysis and synthesis toward insight and change that is ongoing” (p. 123). In their review of research on literacy educator preparation, Swafford, Chapman, Rhodes, and Kallus (1996) indicated that PSTs’ learning is optimized when they have intentional opportunities to make decisions about their practice and time to reflect on and articulate their beliefs about literacy instruction. Stoll and Louis (2007) stressed the value of PST collaboration to bring about professional change through reflection and discussion of problems of practice (p. 91). Despite this, we found very few studies that described collaboration opportunities for PSTs.

Providing more opportunities for PSTs to collaborate and to receive support from peers through asynchronous discussions aligned closely with these recommendations and our own sociocultural perspectives of teaching and learning. While most of the studies we reviewed focused on PSTs’ individual experiences and reflective practices, our study examined the phenomenon of PSTs collaborating to meet the needs of a student who is having difficulty learning to read. This design encouraged the articulation of their observations, plans, and new understandings, allowing us as instructors and researchers to observe their developing understandings through analysis of their computer-mediated discourse.

Computer-Mediated Discourse

Written communication produced in online environments has been called computer-mediated discourse (CMD; Herring, 2001, p. 612). One form of CMD, asynchronous discussion boards, is commonly used as a way to increase time to reflect prior to posting responses (Dauite, 2000; DeSantis, 2013; Parry, 2010). Wells (2001) argued that a written reflection serves as a “tool for thinking” for both the writer and the reader due to the time it takes to write something down and its permanence for the reader (p. 143). An asynchronous discussion board also serves as a tool for thinking for the course instructor, who may then study this communication to better understand how students make meaning through their experiences in the course.

Most CMD research in teacher education has taken place in graduate-level courses. We found limited research of online discussion boards for preservice teachers, most likely because the majority of the courses for preservice teachers still meet face-to-face. One exception, Jetton (2003–2004), studied PSTs’ discourse in asynchronous discussion boards in which PSTs responded to guiding questions provided by the instructor. The topics discussed related most heavily to the course readings, but also included procedural questions for the instructor about how to give and interpret assessments in their literacy practicum setting. However, due to the teacher-directed nature of the discussion board, the PSTs reported that they did not rely on one another for feedback or collaboration and instead considered the instructor to provide “expert” guidance over that of their peers. In addition, PSTs had opportunities to speak to one another in person on a daily basis, so they did not describe the discussion board as an authentic, or needed, medium of communication. They reported hesitance to give or receive feedback from their peers, because they felt that they had limited knowledge of practice to contribute. It is clear from the study that the design of the discussion board and the role of the instructor greatly influenced the nature and content of the online discourse (T. M. Duffy, Dueber, & Hawley, 1998; Garrison & Cleveland-Innes, 2005).

The purposes of asynchronous discussion boards varied in the research, with the discussion shaped primarily by an instructor who assigned topics and guided the discussion. In most cases, the purposes of CMD centered on collaboratively constructing new perspectives of a subject or topic based on course readings (e.g., Jordan et al., 2014; Wade & Fauske, 2004). However, increasingly CMD includes collaboration to address real-world learning tasks. When these tasks require planning, organizing, and sharing the processes in completing work successfully, thinking is made visible (Minna, Sami, Kari, & Hanni, 2009), allowing students to “provide help and assistance with a view to improving their own work” (Piffare & Cobos, 2010, p. 240).

The design of the discussion board in this study provided an authentic purpose for PSTs to collaborate as they worked with a partner in another course who taught the same elementary student on alternating days. While another course section included students discussing readings that varied with each assigned topic for the course, the current study included two participants in each discussion board engaged in the discussion for the duration of the course with the shared intent of meeting the needs of their student. This allowed for continuity and a meaningful purpose in the discourse that was not typical in other studies we reviewed.

Additionally, in the current study we, the instructors, took a peripheral role in the discussion boards. Although we taught the seminar for our own courses and provided

instructional feedback and support related to the practicum instruction, we did not insert ourselves into the online discussions or propose discussion topics, with the exception of giving students points for participating in the discussion based on a rubric (Appendix A). As we planned for the collaboration between our PSTs, we began to wonder what this design would reveal about PSTs developing knowledge as they learned to teach reading.

Theoretical Framework

Preservice teachers' learning occurs with the support they receive from others (e.g., instructors, mentor teachers, peers) and through dialogic reflection on their practice (Bakhtin, 1986; Dewey, 1933; Schön, 1983). Maloch, drawing on the work of Vygotsky (1978), suggested that learning "is not about the transmission of a set body of knowledge from one person (the teacher) to another (the student) but about guided participation in culturally constructed activities" (Maloch, 2008, p. 320). According to Rogoff (1990), guided participation emphasizes learning as it occurs through everyday events in which people engage in a shared endeavor. Learning, in this sense, occurs not as an accumulation of discrete "bites" of knowledge, but as a dynamic, socially constructed process that relies on, shapes, and is shaped by discourse.

Based on Vygotsky's sociocultural theory of learning, and Mercer's (2000) work on classroom discourse, we contend that the quality of a learning experience is largely dependent on the qualities and characteristics of the discourse. Mercer (2004) characterized talk in the classroom as "a social mode of thinking—a tool for teaching-and-learning, constructing knowledge, creating joint understanding and tackling problems collaboratively" (p. 137). Through the CMD we gained a window into how our PSTs constructed understanding and approached problems collaboratively (Mercer, 2004, p. 137).

Methods

This collective case study (Dyson & Genishi, 2005; Yin, 2008) provided us with insights into the development of PSTs' thinking across 27 cases of online discourse between 65 preservice teachers. In the spring of 2014, two of the authors served as instructors for the two literacy courses under study. The second author began teaching the course along with another colleague in the fall of 2014, enabling us to continue data collection through the spring of 2015. Thus, the data analyzed for this study spans three semesters (Table 1).

Table 1 Course Configuration (all names are pseudonyms)

	Monday/Wednesday 2:30-4:30	Tuesday/Thursday 2:30-4:30	Number of participants/ total number of cases*
Spring 2014	Instructor: Meyer	Instructor: Simpson	28/12 cases
Fall 2014	Instructor: Anderson	Instructor: Bruce	16/5 cases
Spring 2015	Instructor: Anderson	Instructor: Bruce	21/10 cases

*We did not study the discourse of preservice teachers who did not share the same student in tutoring.

The school literacy coach and administrators served as strategic partners (National Council for Accreditation of Teacher Education, 2010, p. 3), using their knowledge of the students and relationships with the community to help select and recruit the children who would benefit from the tutoring. In most cases, they selected students based on benchmark scores that fell below grade-level expectations. We met with the literacy coach and school administrators and agreed that it would be most beneficial if the same group of students came for tutoring Monday through Thursday.

PSTs in the Monday and Wednesday class were partnered with PSTs in the Tuesday and Thursday class and assigned to tutor the same elementary student. For example, Jackson (third grader) attended tutoring sessions Monday through Thursday from 2:30 to 3:30, but he alternated tutors. Samantha and Jeff were assigned to tutor Jackson (pseudonyms), so Samantha worked with Jackson on Mondays and Wednesdays, and Jeff tutored him on Tuesdays and Thursdays. Thus, they became co-tutors during the 11-week placement. Every week Samantha and Jeff would write to each other on the discussion board about their current work with Jackson and future planning of lessons to provide a more seamless tutoring experience. Through sharing assessment results, new insights, and teaching challenges, we hoped our preservice teachers would gain not only stronger foundations for teaching reading, but also dispositions as professionals who reflect, adapt, and respond (Hoffman & Pearson, 2000, p. 37) to the needs of their students as collaborative partners. The PSTs also attended seminar after their tutoring sessions for about 40 minutes. At this time we addressed pressing questions related to their teaching and discussed key concepts in reading instruction.

This arrangement also led to more opportunities for us to discuss our own teaching. As we met and planned for the semester, we began to wonder how analyzing our PSTs' online discourse might inform us about the processes our preservice teachers go through as they learn to teach reading (Anders, Hoffman, & Duffy, 2000, p. 719). Therefore, a single broad question guided our research: What does the analysis of preservice teachers' online discourse reveal about how they make sense of learning to teach reading to children for whom reading poses significant difficulties?

Analysis of the discourse from this study provides a unique window from which to consider the sense-making processes of PSTs as they learn how to teach reading. Their discourse offers insights into the preparation of preservice teachers and demonstrates an authentic tool by which teacher educators may analyze how PSTs develop knowledge through their field-based experiences coupled with opportunities to collaborate with peers in online settings.

Researcher Roles

Our positions as instructors and researchers of our own courses allowed us to have a view of the data as researchers deeply engaged in the instruction and with personal knowledge of the PSTs. However, since we collected data for a year and a half and none of us taught the course during all three of those semesters, we also analyzed data from more of an outsider, or etic, perspective. As teacher-researchers of our own courses, we shared in course development and likely impacted our students' discourse in a number of ways. Due to time constraints, we delegated the primary grading of the discussion boards to our graduate assistants. We were not able to be as present in the discussion boards on a weekly basis as we would have liked in order to provide more support for our students, but we did frequently meet with students for conferences in person at other times. We wondered, in hindsight, if the discourse between our PSTs without our direct participation provided more authentic online exchanges, revealing more of their own constructions of teaching reading.

Contexts and Participants

The preservice teachers in our research included elementary education and special education majors during their reading assessment and intervention course at a large university in the Midwest. A total of 56 of PSTs participated in the study, 90% of whom identified as White, middle-income individuals in their early 20s. An outside

assistant provided the PSTs with the invitation to participate in the study. We did not learn which PSTs had chosen to participate until after final course grades had been submitted in order to protect our PSTs from feeling pressure to participate and to remove potential for grading bias.

The practicum took place in an urban elementary school in the Midwest. According to data released from the Indiana Department of Education, 92% of the students received free or reduced price meals. The school served a population identified as 50% African American, 32% White, non-Hispanic, and 15% multiracial.

Data Sources

Data sources included coursework, collaborative online discussions between co-tutors, and observational notes of tutoring. We use the term co-tutors to indicate the two PSTs from different sections of the same course collaborating together to meet the needs of the student for whom they both shared responsibility. Particular attention focused on the online discussion board between co-tutors.

Online discussion board. In an effort to create a space in which our students could collaborate, we used our learning management system to create a community space in which PSTs engaged in discussion with their co-tutors. Using our students' online discourse as a primary data source allowed us unique access to their learning processes, not just their learning products (Wells, 2001). PSTs were each required to post in the discussion board at least twice a week. No requirement was made as to the length or content of the discussion beyond the general requirements in the rubric (Appendix A). We developed the rubric, to be graded on a weekly basis, to facilitate thoughtful reflection and participation. Undoubtedly, in some cases, the rubric shaped the online discussions.

Course artifacts. Data included records of ongoing one-on-one conferences and class discussions, observational notes on tutoring sessions, and a formal progress report submitted at the end of the semester. The progress report included initial and final assessment results, methods used for instruction, student progress, and PST reflections on professional growth throughout the course and practicum experience.

Data Analysis

Transcripts of the discussion board were collected in three separate binders for each researcher. We completed first draft open coding on all semesters independently (Emerson, Fretz, & Shaw, 1995; Erlandson, Harris, Skipper, & Allen, 1993). We refined and extended codes through an iterative process until we reached consensus (Appendix B). We noted how these codes related within each case, and we looked for examples of each. For example, in one case PSTs' lack of specificity in how they discussed assessments and what they noticed and named about their student paralleled and seemed to contribute to the cumulative (Mercer, 2000) nature of their talk. This led to a joint misconception about why their student struggled to read texts above his reading level.

We confirmed and extended themes through triangulation of data and through ongoing dialogue that returned us repeatedly to the data (Strauss & Corbin, 1990). We also looked for disconfirming cases (Cresswell & Miller, 2000). These "misfit" cases that did not fit the overall patterns of our findings provided us with unique insights into how students made sense of their experiences and, thus, are included as an essential part of our results. As instructors we also considered it invaluable to consider what was not present in our findings, those silent spaces that spoke loudly to important conceptual understandings our students may be missing.

Findings

As PSTs engaged in the discussion board, they made repeated reference to things they were discovering about readers and the reading instruction. They used words such as “noticed” and “found” and phrases such as “I thought it was interesting that...” to call attention to their discoveries. A word frequency was performed using a qualitative software management system for one semester of the data, and “noticed” appeared 174 times in their discussions. This term, and other forms of the same term, consistently appeared in all cases across all semesters. Focusing on the use of these terms allowed us to better understand what our PSTs discovered about their teaching and the children they tutored.

Our analysis indicated that in cases in which our PSTs’ noticed and specifically named their students’ reading behaviors and assessment results, they were better able to connect course content to their understanding of readers. Conversely, a more consistent pattern indicated a lack of specificity when discussing assessments and a limited use of course terminology. It appeared that this lack of specificity inhibited PSTs from developing more accurate portraits of their students as readers in order to shape instruction to better fit the needs of their students.

We also found a few cases where PSTs demonstrated misunderstandings that may have resulted, in part, from our own instructional decisions. In these instances, it appeared that choices we made as instructors unintentionally set up barriers for our students as they constructed their understanding of reading instruction. However, over time and with support from instructors, most PSTs made decisions rooted in course seminars and readings that moved them closer to practices aligned with research. Although most PSTs cleared up misperceptions by the end of the semester, a few did not. We considered these equally valuable, if not more valuable, sources of information about our PSTs’ development.

We include excerpts from PSTs’ online discourse to illustrate each of these findings in the following sections. The excerpts are from much longer, extended conversations, therefore we pulled threads from each conversation that most clearly reflected the findings.

Learning About Readers

Analysis of PSTs’ noticings revealed that PSTs were engaged in a process of inquiry and discovery about readers. All co-tutors engaged in conversations in which they noticed and named their students’ interests, strengths, and areas of need, as well as their students’ responses to instruction. Through our analysis of the online discourse and course artifacts, we found the PSTs articulated noticings to one another to inform their instructional decisions.

Noticing and naming specific reading behaviors. The excerpt below between Katie and Beth occurred about two weeks after the class read several articles on the importance of using texts reflective of students’ cultures. One of the articles in particular focused on the improved quality of miscues and retellings children produced when reading books that reflected their own cultural experiences:

Readers like Francisco can more easily construct meaning from a text that contains familiar elements because their background knowledge helps them make predictions and inferences about the story.... She found that students made higher quality miscues and produced better retellings with the culturally relevant story. (Freeman & Freeman, 2004, p. 7)

Shortly after this reading, Katie and Beth articulated what they were learning about their student as a reader using similar reasoning as Freeman and Freeman, providing us with a sense of how they were taking up course readings and discussions through their practicum experiences:

Discussion Board Posts: Katie and Beth (weeks 1 and 2 of tutoring)

Katie: I've noticed the more interested in the book Amber is, the more detail she can relay back. I know that should be an obvious thing, but just wanted to share.

Beth: I have also noticed that if Amber is not engaged or interested in the text she seems to have low comprehension of it when I ask her questions. However, if she does connect to the text she asks lots of questions, uses examples from the text to answer my questions and makes personal connections to the text. She has a very broad schema and does a wonderful job of connecting to books.

The initial noticing opened up a conversation that extended into their co-construction of the importance of a reader's schema in responding to a text. The first comment illustrated that interest in a text would help a reader remember better what they read. Then Beth elaborated further, suggesting that when their student relates to a text, she is able to generate questions, provide textual evidence, and make personal connections—all strategies used by proficient readers (Pressley & Afflerbach, 1995). Although they did not yet label it as such, Katie and Beth demonstrated developing understanding of readers in a sociocultural context for learning to read. Through their discussions, Katie and Beth demonstrated their understanding that the texts they use for instruction and the interest a student has in those texts corresponds, at least to some degree, with the student's reading proficiency and ability to apply reading strategies. What was noticeably absent from their discourse was explicit reference to the article, particularly the importance of culturally responsive texts (Zygmunt, Clark, Tancock, Mucherah, & Clausen, 2015). Although we address this omission of talk about culturally responsive instruction elsewhere (Fife-Demski, Stefanski, & Leitze, 2017), it is important to note that their specificity in this case, and others we analyzed, was not without significant omissions.

Limited specificity and use of terminology. As instructors of a course that focuses on the use of assessment, we shared concerns when one of the first patterns to emerge in the coding process (after noticings) related to what was not there—the consistent use of data and course terminology to inform discussions and instructional decision making. When discussing the results of initial assessments, PSTs tended to talk in generalities without including specific results. Reporting specific data and terminology reflective of course content would have been helpful in talking about what readers could do, could almost do, and could not yet do. Despite the fact that we emphasized this in seminar, in course readings, and on the rubric used to assess the online discourse, this pattern did not change dramatically across the semester. Although the following excerpt is brief, it reflects a larger pattern in many of our PSTs' online exchanges:

Discussion Board Posts: Bonnie and Kelli (weeks 2 and 3 of tutoring)

Bonnie: I noticed that on the word list Andre was able to self-correct and sound out most of the words; however, he wanted to rush through the list.

Kelli: It also seems like he's a fairly good reader, just tries to rush through things without comprehending it.

Bonnie: I was able to get him to focus more on Wednesday and saw he was already comprehending better with focus.... His words per minute had already increased by seven.

While Bonnie identified their student's ability to self-correct and sound out most the words, she failed to mention what word list she gave the student or to explain what she meant by "most" of the words. In a similar way, Kelli did not discuss what the assessment indicated about their student's comprehension—claiming that their student was a fairly good reader who did not comprehend. Using generalities instead of specific language impeded their learning and constrained their abilities to make more informed decisions.

Although they used more specificity as the course progressed, their limited use of data reflected their instructional decision making. Bonnie chose to focus on comprehension by using a "cluster graphic organizer" without explaining what aspect of comprehension she wanted the student to develop. Kelli, on the other hand, chose to work on reading multisyllabic words in hopes it would "enhance his fluency while reading higher level" texts. Both seemed to engage in cumulative talk (Mercer, 2004) in which they uncritically affirmed one another's decisions.

A related pattern suggested PSTs' narrow focus on motivation and engagement seemed to override their use of data to learn about their students as readers. For example, Kelli shared that her assessments indicated Andre read a level F text with success, but Kelli continued to push more difficult texts, because Andre had demonstrated interest in the topic. Likewise, when Bonnie shared her reasoning behind selecting level F texts, she related it more to behavior and interest than to her assessment results:

As for running records, one of the main reasons I got his level F as his instructional level was because when we moved up a level, he was not interested and did not want to complete the story.

When he repeatedly refused to read these texts, both PSTs attributed Andre's reading difficulties to lack of attention and behavior challenges, rather than a closer consideration of his assessments.

Learning About Reading Instruction

Analyzing the PSTs' discourse gave us a window into how the experiences helped PSTs move beyond various levels of initial misperceptions of reading instruction into more intentional practices focused on student learning. The discourse allowed us to view how PSTs grappled with new ideas as they attempted to teach. The PSTs would share their struggles with their co-tutors, receive feedback, and offer guidance on how to make improvements. Through this process most of our students came to more precise understandings of reading instruction.

We also saw a pattern of persistent misperceptions about teaching reading that did not get resolved through the semester. Initially, it was tempting to view these misperceptions as failings on the part of our own instruction and failings on the part of our students. However, over time and through ongoing analysis and reflection, we began to think of these as windows into our students' sense-making (Goodman, 1967) as well as reflections of our own practices. The noticing and naming that occurred through the discussion board revealed how misperceptions changed and how they remained the same over the course of a practicum.

Changing misperceptions. During the semester Megan and Lauren tutored, the school requested that we use test preparation materials as a small part of our instruction with the third graders to help them prepare for their state-mandated reading test. The teachers had pulled together a workbook of passages and questions they felt closely mirrored the test students would take in early April. Although we resisted the use of these workbooks, we felt the partnership required a measure of give-and-take. We attempted to frame the

use of the workbooks with our PSTs in the context of teaching reading comprehension strategies for short passages, along with strategies for answering multiple-choice questions. However, as shown in the following excerpt, the PSTs developed their own understandings of reading instruction, in part, through the use of these materials:

Discussion Board Posts: Lauren and Megan (weeks 2, 3, 4, and 5 of tutoring)

Lauren: Bryan volunteered to read the passage [from the test prep workbook], but when he struggled he asked if we could read as a team. . . . When it was time to answer the eight comprehension questions, he started reading the questions in his head and choosing the first answer that sounded correct. . . . After the testing, we played “Sunken Treasures,” which is a game I checked out of the resource room.

Lauren: I am going to research a lot of poems about baseball since we will be continuing the chapter book “The Boonsville Bombers.” This way we can read some short and fun excerpts that Bryan will not be intimidated by. This way I can work on some fluency with the poems and comprehension with the chapter book.

Megan: I continue to notice that Bryan simply reads the words without thinking about them. Because of this, I have started to ask him questions every few pages. This has challenged him to think deeper about the events in the books. I did introduce decoding strategies on Monday. I made two copies of the bookmark that I sent you. One he can use when reading library books or material in class and the other we will be using in tutoring.

Megan: Today I specifically focused on comprehension strategies from the book, such as the Anticipation Guide, the Quilts, and the Making Words. The Anticipation Guide worked really well to help Bryan think about the words I was reading. With the Quilts strategy, I simply had him describe the story in one sentence to write on the square and asked him to draw a picture that went with it. At the end of the activity, we talked a little about how he just discovered the main idea.

Lauren and Megan began their tutoring using test preparation materials and games from the school’s resource library. This demonstrated a very limited view of comprehension instruction, which included reading a passage and answering questions at the end. Lauren, as well as other PSTs, viewed the use of the workbook as “testing” to be administered, rather than an opportunity to model and teach comprehension strategies. This was contradictory to our recommendation and modeling of using the workbooks as an opportunity to provide instructional strategies for comprehension.

We had growing concerns about the use of these workbooks as it became more obvious how they shaped our PSTs’ instruction and understandings related to comprehension instruction. The majority of our PSTs did not explicitly question the use of these materials for instruction. However, our analysis indicated that throughout the semester most transitioned to more appropriate use of the materials and instructional approaches or omitted them from their instruction altogether.

As Lauren and Megan progressed, they determined their student needed additional comprehension and fluency instruction beyond what their testing approach and skills-based games could provide. They discussed possible ways to meet this need, ultimately selecting poems with a topic matching that of their chapter book to achieve more cohesive instruction

throughout the tutoring sessions. Near the end of the semester, the PSTs had shown growth in their understanding of the needs of their student by selecting multiple strategies from the course materials and applying them throughout the tutoring session to support their student's comprehension.

Through analysis of this transcript, we recognized that we unintentionally perpetuated the sacred story of test preparation as part of comprehension instruction (Connelly & Clandinin, 1990). As the semester moved ahead, we encouraged PSTs to rely more heavily on what they were learning about reading comprehension instruction as an active and intentional process, not as answering questions assigned at the end of a reading passage. Analysis of the CMD served as a cautionary tale to us that our PSTs' learning includes a storied landscape that is shaped, in part, by how well we ourselves navigate teaching in a high-stakes educational environment.

Persistent misperceptions. In the dialogue between Jeff and Samantha, we noted misperceptions regarding the role of automaticity in reading high-frequency words that were not fully resolved through their collaboration. The following excerpt reflects a small part of a larger conversation that took place over the course of the semester, which also included additional, more accurate talk about other important aspects of the reading process:

Discussion Board Posts: Samantha and Jeff (weeks 7, 8, and 9 of tutoring)

Samantha: I have started the word wall with the sight words and we made a graph to record the sight words Jackson knew. He was extremely excited to color in how many words he knew. I'll leave the graph for you in the folder.

Jeff: [after viewing the results on the graph] I was surprised Jackson got so few with you as compared to how well he was doing with me. I was running through flashcards and by the time we took a short break from them he was getting over three quarters of the words no problem. I started off with about 20 and added five new for 4 weeks. When we did sight words, some of the words I would add would be based off the words he missed during reading. Oddly, however, he got the words correctly the first time with sight words but couldn't get them while reading.

Samantha: I don't see him getting through the pre-primer list of words. He has about half of them, but he can't say what the word is by just looking at it. He tries to sound it out, which he should not do with sight words.

Jeff: So today we worked more with sight words. He did really good and only would get stuck on the occasional word. When I pulled out my list he quickly said, "Oh, not that again." I saw that you had the same list I have been working with in the past. If you push him a little on the word you will get it out of him usually. Most of the time he would just say "I don't know it" and when asked to look at it again he would finally respond to it, which was usually correct.

Samantha: I really want to encourage him and help him get his sight words down, because I feel like I can barely get him to read through the pre-primer list. I like him to know the word when he looks at it, not sound it out at all. If he sounds it out, that tells me that he doesn't know the word by sight just yet.

Jeff: I kind of am surprised that you only got through the pre-primer list because we have made it through that list and the primer no problem for Dolch sight words.

Jeff and Samantha struggled to make sense of the differences they saw in their experiences when teaching sight words to their first-grade student. Jeff argued that their student had learned the sight words. Samantha, on the other hand, felt that the student did not read them with enough automaticity and, therefore, did not truly know his sight words. For Jeff, knowing the sight words included laboriously sounding out the words, even with a little push from the teacher. Samantha, however, indicated an understanding of sight words that required rapid recall of the word from memory and did not include sounding out the words “at all.”

Though Jeff received feedback multiple times from his instructor and Samantha, and marked resistance from his student (noted in his comments and instructor observations), he held firm in his beliefs, demonstrating these misunderstandings in the CMD and his instruction throughout the semester (Lortie, 1975; Munby, Russell, & Martin, 2001). In Samantha’s position that the words on the Dolch list should be read automatically, she accurately demonstrated the understanding that the goal for students was to be able to read these words quickly because they represent approximately 50% of the words in any given text (Dolch, 1936). However, in order to develop sight word knowledge, as their student was doing, most students use some graphophonic cues that help them become more automatic in reading these words over time. To be sure, there is a memory element to learning sight words, just as in learning graphemes in other words requires one to remember the sound–symbol relationships (Duke & Mesmer, 2016; Ehri, 1978), but it does not preclude the use of graphophonic cues.

This excerpt provides a picture of just how persistent and unique to each PST some of the misunderstandings may be as they struggle to make sense of teaching reading and how analyzing their CMD as they collaborate made this more visible to us. An important element of their sense-making processes included the course seminars and assigned readings. In this case, when Samantha defined sight words as words that needed to be memorized, we realized the language we and our reading assignments used may have contributed to Samantha’s misunderstanding of how to teach sight words. In future courses, for example, we determined it might be better to use the term high-frequency words and further emphasize the role of graphophonic knowledge in learning these words (Duke & Mesmer, 2016).

Through analysis of PSTs’ online discussions, their progress reports, and our observational records, we recognized that the heavy emphasis on and urgent concern to teach the high-frequency words displayed by both Jeff and Samantha may have been too much, too soon for this particular student. Their developing understanding of the importance of high-frequency words may have superseded the developmental needs of their student, leading them to place too heavy an emphasis on sight words.

Analyzing this discourse helped us understand that the terminology and approaches we used may have contributed to these misunderstandings. Initially, Samantha and Jeff’s talk most closely reflected Mercer’s (2004) description of disputational talk in which there is much disagreement. However, they both attempted to provide clarification and constructive feedback. Also, Mercer described disputational talk as including more elements of competition. In this case, we suspected that some of the talk with Jeff may have been of a competitive nature, insisting that the student was doing better with him, but in other cases Jeff admitted he was struggling with behavior and asked Samantha for suggestions, so we concluded competition did not likely play a huge role in this talk. Instead, it appeared they persisted in their attempts to understand one another. The limits of

their developing understandings, differing interpretations of effective high-frequency word instruction, and limitations of their instructors likely hampered their development of more accurate, balanced perspectives of high-frequency word instruction.

Discussion

We found that our PSTs' authentic need to be explicit when collaborating with their co-tutors helped us see their developing understandings in ways that were not possible through our other course discussions or assignments. As PSTs wrote with their co-tutors in mind, the use of specific language helped them come to new understandings.

Bakhtin (1986) claimed that in dialogue "the speaker himself is oriented precisely toward such an actively responsive understanding. . . . [T]he speaker talks with an expectation of a response, agreement, sympathy, objection, execution, and so forth" (p. 69). Together, the co-tutors were able to further develop their understandings in teaching reading, and we were better able to see their sense-making processes throughout their tutoring experiences.

As we studied our PSTs' online discussions, we realized how powerful the opportunity was for them not only to have the practicum experience, but to have it in the company of others who shared similar challenges, noticings, and common objectives—in this case their primary shared objective included working together to address the learning needs of their students (Lave & Wenger, 1991). Although their talk may have varied (Mercer, 2004), collaborating gave the PSTs practice in articulating what they were doing and why, and it provided an opportunity for them to consider the benefits of working together with colleagues.

As they continued to bounce ideas off one another, they noticed how targeting their lessons on specific areas contributed to their students' gains in reading. Whether it was using the same sight word list, reading books on a particular topic of interest, or trying different strategies toward the same learning outcome, the PSTs discovered that, by collaborating, they were learning more about their student and how to best approach instructional decision making. The collaboration helped shape them in their process of becoming what Hoffman and Pearson (2000) described as teachers who are "reflective, adaptive, and responsive" (p. 37).

While most of the PSTs showed an increase in their understanding of how to teach reading, misconceptions surfaced during discussions between particular co-tutors. Over time, and drawing from Goodman's (1967) idea of miscues (in which mistakes children make while reading are framed as opportunities for insight into how children are processing the printed words on the page), we realized that, much like teachers of young readers, analysis of PSTs' misunderstandings provided windows into their sense-making processes. Just as beginning readers require experience and support, so do these beginning educators. The PSTs received this support from instructors and their peers. However, we had a constant, unresolved sense of urgency that we were not able to be more present in the online discussions.

It became clear that some of the decisions we made as instructors contributed to the PSTs' misconceptions. For example, our decisions about materials related to test preparation created the conditions that initially influenced some of our PSTs to approach comprehension instruction as "testing." We suspected this was due, in part, to the design and intent of the test preparation materials themselves. With support from instructors, our students demonstrated agency by gradually moving away from these materials, shifting their focus to instruction more responsive to their students' needs (Danielewicz, 2001; Fisher-Ari, Kavanagh, & Martin, 2017; Fisher-Ari & Lynch, 2015; Massey, 2003).

Although some of the misunderstandings appeared to be unique to the individual PSTs, our word choice and instructional approaches likely shaped some of these misunderstandings related to teaching reading, as it likely did in Samantha's and Jeff's approaches to teaching high-frequency words. Finally, we noted that the lack of specificity in our PSTs' talk about assessments and the use of language specific to the practice of reading instruction limited their co-construction of knowledge and their ability to make thoughtfully adaptive decisions (G. Duffy, 2002). All of this shaped how we thought about our own practice.

Taking a more active role in the discussion board might have allowed us to model the use of more precise language and provide opportunities to develop and shape understandings of the PSTs (T. M. Duffy et al., 1998; Garrison & Cleveland-Innes, 2005). However, the time constraints we had made this impractical, and we saw the value of providing CMD as a space where our PSTs learned to collaborate, and trust their own voices (Jetton, 2003–2004), in a more balanced relationship with peers. Instead, we have considered the possible future use of metadiscourse as a way to take advantage of these opportunities identified by analyzing our PSTs' discourse.

Implications for Teacher Educators

As we reviewed research on the development of PST understanding of reading instruction, we noted a large number of studies that focused on PST reflections. These assignments typically followed teaching experiences or were coupled with reading and reflecting on course content. While PSTs may be asked to reflect as part of course requirements, the nature of our online collaboration promoted reflection.

As they reflected on what worked or did not work with their instruction, for example, they also thought ahead to what might work or not work both for themselves and for their co-tutors as they continued to work with their students. And as they shared their noticings and named their discoveries about readers, they provided insights into their reflections in practice (Schön, 1983). This dynamic interplay of reflective practices expands the notion of reflection in teacher education from a single response for an assignment or teaching experience to a more dialogic reflection that is both collaborative and consequential to their success with their student.

At the same time, our analysis of the discourse revealed misunderstandings related to teaching reading. As teacher-researchers, we gained a better understanding of our PSTs' learning and, as a result, have continued to make changes to our own practice. As we became aware of what our PSTs needed to revisit, we could make adjustments. We have also used the analysis of the CMD in consideration of programmatic revisions, such as foregrounding students' dialogic reflections as an integral part of the course curriculum.

We recognized the benefits of PSTs collaborating with peers during their field experiences. These analyses indicate the need for opportunities for PSTs to engage in metadiscourse, helping them directly link the language of teaching reading to their experiences in the practicum. This, including the use of video records of practice and collecting student artifacts, would require more of a shift in our own thinking from a focus on what content we need to cover to prioritizing the processes our students go through as they develop dialogically reflective practices.

Implications for Future Research

Finally, we strongly encourage—as others have done before (e.g., Hoffman, Wetzel, and Peterson, 2016; Risko et al., 2008)—more transparency in the scholarship of

teaching and learning in literacy teacher education. We have greatly benefited from the work of scholars in the field who have studied not just their students' learning, but also the teaching moves and the "skunk works" (Bransford, Darling-Hammond, & LePage, 2007, p. 1) behind the processes that lead to preservice teachers' learning (e.g., Hoffman et. al., 2014; Peters, Birdyshaw, & Bacevich, 2016; Zygmunt et. al., 2015).

Studying computer-mediated collaboration in which PSTs share similar goals in working with the same students reveals both the turning points they experience as well as the challenges of learning to teach reading. As this study demonstrated, there is much to be learned from analyzing our PSTs' misunderstandings. While Lortie (1975) pointed to prior, relatively passive experiences of observation as a primary contributor to PST misunderstandings, transparency and vulnerability in the analysis of our PSTs' discourse led us back to our own practices. As teacher educators and researchers, we encourage further research that highlights not just the processes that lead to turning points for our PSTs, but also the processes that contribute to the misunderstandings in PST development as they learn the complex art of teaching reading.

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About the Authors

Angela J. Stefanski, PhD, is an assistant professor of literacy education at Ball State University. Her scholarship includes research into the classroom and institutional structures that shape children's access to equitable literacy instruction. Dr. Stefanski teaches field-based literacy courses for preservice teachers and online/hybrid graduate courses. She actively pursues the scholarship of teaching and learning through studying literacy teacher development.

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APPENDIX A

Discussion Board Rubric

	3	2	1
Clarity	Provides details, examples, supporting statements; well organized and easy to understand	Broad statements without clear examples; may be somewhat confusing	Little detail and confusing; possibly lacks organization
Best practice	Accurately uses vocabulary and concepts related to courses and discussions	Attempts to use vocabulary and concepts related to courses and discussions	Does not use vocabulary and concepts related to courses and discussions
Response	Reciprocates, responds, and contributes new information	Reciprocates but does not contribute new information, or contributes new information but does not reciprocate	Does not reciprocate and does not contribute new information
Questions	Asks thoughtful questions that invite conversation	Asks limited questions	Does not ask questions

Total = 10 points

APPENDIX B

Refined Codes and Average Occurrence of Code Per Case

Refined Codes with descriptions	Average occurrence of code per case
Noticings about readers	9.0
Noticings about reading instruction	0.8
Specificity—using language and terms from course materials and seminar discussions	2.3
Lack of specificity—not using language and terms from course materials and seminar discussions	7.0
Behavior or behavior management	11.0
Motivation and interest related to reading	22.0
Reflection on practice	11.0
Misconception about reading instruction	1.5
Misconception about readers	1.8
Assessment talk related to formative assessment	15.0
Articulating plans	28.0
Explanation of instructional decisions	13.0
Construction of challenges of teaching reading	10.0