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Article abstract

This study examines how the amount of teacher talk supports elementary-aged readers' use of metacognitive strategies to comprehend text. One fourth-grade teacher's small group reading sessions (n=5 sessions; 2 with advanced readers, 3 with striving readers) were observed and analyzed for metacognitive reading strategy implementation, some with a think-aloud protocol and some with curriculum materials. Results indicate that more teacher talk during small group lessons led to fewer metacognitive behaviors from striving readers. Small-group lesson talk focused on lower-level questions and problem-solving/support strategies initiated and scaffolded by the teacher, resulting in minimal opportunities for students to independently engage with text.

Talking it out? Metacognition, teacher talk, and comprehension consequences

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This study examines how the amount of teacher talk supports elementary-aged readers' use of metacognitive strategies to comprehend text. One fourth-grade teacher's small group reading sessions (n=5 sessions; 2 with advanced readers, 3 with striving readers) were observed and analyzed for metacognitive reading strategy implementation, some with a think-aloud protocol and some with curriculum materials. Results indicate that more teacher talk during small group lessons led to fewer metacognitive behaviors from striving readers. Small-group lesson talk focused on lower-level questions and problem-solving/support strategies initiated and scaffolded by the teacher, resulting in minimal opportunities for students to independently engage with text.

Keywords: metacognition, literacy, reading, classroom discourse

Teachers have always been a powerful force in the classroom. They can encourage or discourage student agency with their talk, specifically regarding reading comprehension and metacognitive strategy use in-the-moment. While explication and development of procedural thinking is the norm in STEM (e.g., Zepeda et al., 2018), literacy classes have been criticized for focusing more on comprehension as a product through worksheets or book reports (Block & Israel, 2004). As such, teacher moves play a crucial role in how students develop metacognitive reading skills for themselves.

Although recent research about metacognition, or thinking about thinking (Flavell, 1976), illustrates its importance in the field as viewed through knowledge (e.g., Hattan & Lupo, 2020), limited research exists on how specific teacher metacognitive moves directly support or hinder student comprehension. Recent studies have shown that preservice teachers struggle to engage students in during-reading/metacognitive reading discussion (Asikcan et al., 2017), which aligns with current "voice-over" (i.e., talk about a topic without direct instruction) or nonexistent metacognitive pedagogies used in in-service classrooms. Other articles on metacognition focus on teachers' contributions but do not include students' contributions to show their process (e.g., Ortlieb & Norris, 2012) or center their own experiences (e.g., Dorl, 2007). As such, this qualitative case study takes a novel approach to examining teacher moves in-the-moment to analyze how student metacognition and comprehension are supported.

Theoretical Framework

Sociocultural theory maintains psychological development is based on the people and ways of life around us. Verenikina (2003) refers to Vygotsky's (1978) ideas that

language mediates inter- and intrapersonal interactions in the world. She notes "development cannot be separated from its social and cultural context" (p. 2), and that social interactions help children learn to speak and reason for themselves. Essential elements of sociocultural theory include the Zone of Proximal Development (ZPD) and scaffolding. Vygotsky (1978) refers to the ZPD as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). Metacognitive practices as indicated by talk, therefore, are social interactions through which students demonstrate their thinking processes. Social engagement through metacognitive practices and rigorous talk in small groups allows participants to model reading strategies and behaviors. This modeling can bridge the cognitive distance between students' current performance and what the teacher expects.

Scaffolding can also be used to navigate the ZPD. As Bruner (1978) explained in his pioneering work on scaffolding with language, it is "a process of setting up the situation to make the child's entry easy and successful and then gradually pulling back and handing the role to the child as he becomes skilled enough to manage it" (p. 60). Scaffolding is not intended to be permanent and should be removed when students no longer use it to engage with the content (Holton & Clarke, 2006). In the forthcoming analysis, it will be revealed how scaffolding through a more knowledgeable other can support or hinder striving readers' comprehension.

Literature Review

Metacognition

Tobias & Everson (2009) extrapolate on the traditional notion of metacognition by including monitoring and planning aspects as one reads. Williams & Atkins (2009) considered metacognition to have dual facets: theory of mind, or awareness of cognitive processes, and control of one's cognitive processes, or being aware of when one's comprehension breaks down and what to do to remedy the issue. Artelt and Schneider (2015) observed in their study of fifteen-year-olds that students with more metacognitive knowledge (that is, students who have both the knowledge and foresight to apply reading strategies in moments of cognitive dissonance) have higher reading competence. They also indicated significant relationships existed between reading strategy use, reading competence, and metacognitive knowledge. Therefore, students who use more reading strategies and have stronger metacognitive abilities tend to have higher reading competence because they can monitor and ascertain when their control of cognitive processes goes awry.

Additionally, Almasi & Fullerton (2012) stated comprehension processes must be explicitly taught and scaffolded so readers can become independent, regarding their strategy deployment for metacognition. Specifically, Almasi & Fullerton indicate that strategic readers deliberately select from a wide selection of reading strategies to meet their goal, and have the abilities to monitor and adjust as necessary to comprehend text, whereas striving readers will use the small selection of internalised strategies they possess even if those strategies are inefficient for the task.

In summary, strategic readers who have enough practice and theory of mind to accommodate multiple strategies to improve comprehension tend to have more reading success than readers who have fewer or less efficient comprehension strategies.

Dialogic Talk and Metacognitive Strategy Use for Reading Comprehension

Given that talk appears central to reading comprehension (Ketch, 2005), this research focuses on dialogue and dialogic talk between and amongst teachers and students. Dialogic talk is a teaching practice where "the teacher solicits input from the students, sequences ideas, asks open questions, draws out ideas, and asks students to build on or respond to each other's ideas" (Lehesvuori et al., 2019, p. 2559). Dialogic talk allows for "open and in-depth exchange" (Reznitskaya, 2012, p. 446) and allows students to demonstrate autonomy within the conversation.

There are two main types of talk in classrooms: monologic and dialogic. Monologic talk is talk controlled and evaluated by the teacher with closed-ended questions and surface-level communicative interactions (Nystrand et al., 1997; O'Connor & Michaels, 2007). In this approach, the teacher acts as a gatekeeper determining who speaks, and whose answers are permissible. Conversely, dialogic talk encourages "social relationships of equal status, intellectual openness, and possibilities for critique and creative thought" (O'Connor & Michaels, 2007, p. 277). Teachers who use dialogic talk ask more open-ended questions or questions designed for students to critically evaluate the material. For example, instead of asking to describe character traits of the three bears in Goldilocks, teachers might ask students to compare them to a trio of movie characters to invoke more discussion.

Use of open-ended questions by teachers encourages students to participate actively in the conversation since there are multiple opportunities for them to co-create meaning based on the evidence provided by the speaker. Reznitskaya (2012) elevates the idea of flexible power relationships between the speakers and listeners, and a focus on co-creation of knowledge through elaborated explanations and thinking processes. Essentially, when dialogic talk is used in classrooms, students' thinking processes and participation in the social narrative to inquire on a topic are valued instead of answer correctness.

As students use dialogue to engage with text, they develop reading comprehension. Comprehension is multifaceted in that meaning is created through a reader's prior knowledge and experiences, and their interactions with text (Rosenblatt, 1994). Therefore, two readers may approach the same text and interpret it differently. Current theories in comprehension as influenced by Scarborough's (2001) Reading Rope indicate that making meaning from reading involves multiple cognitive structures, including knowledge regarding vocabulary, schema, language structures, print concepts, metaphors, and inference. Metacognition can be layered over these structures as a bridge to make meaning when students interact purposefully with the text (Rosenblatt, 1994).

There is considerable overlap between metacognitive awareness and use of reading comprehension strategies. Both involve deliberate engagement with a text to make meaning and conscious attention to when comprehension breaks down. Striving readers (i.e., students who are just beginning their metacognitive development) approach the text differently than their more successful peers. Successful readers have internalized reading strategies and apply them without devoting much cognitive attention because they can view

the text with a more comprehensive, or holistic, lens (Serra & Metcalfe, 2009). Conversely, striving readers must devote extensive cognitive attention to their implementation of reading strategies since they comprehend at the sentence-level rather than holistically (Serra & Metcalfe, 2009).

As such, metacognitive strategies like self-monitoring and use of context clues encourage students to actively think as they read. Arif & Hashem (2008) used wordless picture books to engage a striving reader and discovered that the student made sense of the text by activating prior knowledge and making references to other texts to determine the connective relationship. Though the texts in the study only had pictures, it can be observed that students comprehend when they actively engage with texts, which can lead to more interactive conversations and more nuanced text-based comprehension. Studies such as this one highlight student metacognitive processes but omit the role of the teacher in metacognitive development.

This study examines how upper-elementary students engage with metacognitive reading strategies practiced in teacher-led small groups. Specifically, the study qualitatively examines the dialogic relationship between the teacher and students as comprehension co-creators. The research questions are as follows:

1) What kinds of talk manifest in reading groups that implement metacognitive reading strategies?

2) What roles do the teacher and student play in terms of sharing and verifying information discovered through metacognitive reading strategy instruction and comprehension?

3) How do students manifest their awareness of their own metacognitive abilities?

The data serve as a springboard for future work to help teachers foster metacognitive reading comprehension in their students. This study illustrates how teacher interactions can support student participation based on how they are deployed with students. By instructing teachers in metacognitive methods where their students think about their own thinking, they may be able to cultivate readers who comprehend text more deeply and independently.

Methods and Methodology

Participants and Context

Ethics approvals for this research were approved under the author's Institutional Review Board, approval number 00005508. One fourth grade class (n=25) and their teacher, Bethany[1] were the focus of this study. It took place at Evergreen Ridge, a rural Midwestern/United States K-4 elementary school. From those 25 students, two focal students were selected as representative for striving (i.e., below-grade-level) and advanced

[1] All participant and place names are pseudonyms to protect privacy.

(i.e., above-grade-level) readers—Chloe and Timmy.

The school demographics are as follows: 50% female, 50% male; 92.9% white, 5.4% Latinx, 0.8% two or more races, and 0.3% each of Asian, Black/African American, and American Indian/Native American. At the time of data collection, ten percent of Evergreen Ridge's students received free and reduced-price lunch. The gender and racial demographics of the class mirrored those of the school.

Bethany and the author were connected through a personal contact at Evergreen Ridge. The author served as the principal researcher and Bethany's literacy coach. She met with Bethany individually to help her develop think-alouds for her small group reading sessions. They met five times over three months for roughly forty minutes each time. The initial session established a timeline, the think-aloud framework, and a data collection plan. Due to COVID-19, all sessions were conducted via Zoom or video-recording.

Measures

Students were assessed in a whole group for metacognitive strategy use and reading comprehension. The metacognitive strategy use assessment was a modified version of the Metacognitive Awareness of Reading Strategies Inventory (MARSI; Mokhtari & Reichard, 2002). The MARSI was chosen for its ability to provide a whole-group assessment of participants' metacognitive reading strategy engagement. A self-reporting strategy was selected over small-group conversation analysis because the author wanted to observe students' conceptualizations of their own reading processes.

Due to the age of the participants and time constraints, the number of items on the assessment was modified from thirty to fifteen (see Appendix A; consistent with Mokhtari et al., 2018). Items were included if they were considered appropriate by late-elementary-school and early-middle-school literacy standards upon consultation with an outside literacy coach.

This assessment evaluates students' "awareness and perceived use of reading strategies while reading academic or school-related materials" (Mokhtari & Reichard, 2002, p. 251) For each item, students self-evaluated their during-reading behaviors related to global reading, problem-solving, and support-based strategies using a Likert scale. Per Mokhtari and Reichard (2002), global reading strategies use "generalized, intentional reading strategies aimed at setting the stage for the reading act" (p. 252), and problem-solving strategies help readers engage with texts when comprehension breaks down. Support-based strategies use resources apart from the text to supplement and engage with the material as it is read (Mokhtari & Reichard, 2002).

After participating in teacher-led small groups, a smaller group of teacher-selected students were individually re-evaluated using the modified MARSI and administered a secondary measure: the Reading Metacognitive Strategy Picture Protocol (RMSPP; Cobb, 2016; see Appendix B). The RMSPP was chosen for its capacity to assess individual students and its qualitative nature stemming from the students themselves. It uses a picture prompt wherein the facilitator shows a picture to the participant of a girl reading and asks what good readers like "the girl" do before, during, and after reading. Participants then compare their own reading metacognitive behaviors to those of the "good reader." In addition to the RMSPP, participants were asked to read aloud paragraphs from a fourth-

grade reading selection and then think aloud to demonstrate their reading comprehension process.

Procedure

The small groups involved in this study include two groups of readers, divided according to district and curricular literacy assessments: one group of advanced readers (i.e., those scoring above grade-level), and one group of striving readers (i.e., those scoring below grade-level). The focal students were Timmy, a ten-year-old boy in the advanced readers group, and Chloe, a nine-year-old girl in the striving readers group. Both students enjoyed reading and considered themselves to be good readers. While Bethany chose Timmy at random from her advanced-readers group, Chloe was intentionally selected because Bethany felt specific metacognitive instruction would help her make more expedient progress in reading.

After five coaching sessions, Bethany submitted five videos of her small group sessions with students. Three sessions were with Chloe's group of striving readers and two sessions were with Timmy's group of advanced readers. Of those sessions, three (two with Chloe and one with Timmy) used the think-aloud protocols provided and two used the provided curriculum so a typical small group session could be evaluated for metacognitive strategy use.

The individual sessions were video-recorded and transcribed. The five transcripts were analyzed using a codebook developed from items found on the MARSI screener, in addition to data-generated categories such as scaffolding (teacher-provided prompts or questions to assist students' metacognition), extending (elaborating on a student's given answer), clarifying (distilling an answer into its most basic form), and levels of rigor in questions. Rigor was defined as what teachers ask students to do with text, using Webb's (2004) Depth of Knowledge tool. These categories were added after one round of open coding (Merriam & Tisdell, 2015). I used the codebook (Appendix A) to first quantify and qualify participants' statements and then to holistically evaluate participant dialogic turns (e.g., who was speaking, how long, and how often) found in the transcripts.

Creswell and Poth's (2018) data analysis spiral was used further analyze the coded materials, observing for themes among and between the pieces and writing reflections. The observations are noted below.

Results

From interpretation of video evidence and transcripts, three themes appeared: 1) more teacher talk during small group lessons co-occurred with fewer metacognitive student behaviors; 2) fewer examples of dialogic talk and rigorous questions occurred in groups with striving readers as compared to advanced readers; and 3) striving readers appeared to seek out more knowledgeable others to confirm their comprehension while advanced readers displayed more self-assured metacognitive behaviors as measured by dialogic talk between teacher and students/students and students independent of teacher talking time.

More Teacher Talk, Less Student Talk

In this study, students' active participation in small groups as discussants and co-constructors of knowledge appeared to help them develop more metacognitive reading

behaviors. Though the group sizes were significantly different (i.e., Timmy's group had four participants plus the teacher and Chloe's group had two participants plus the teacher), the amount of active participation from students appeared to play a role in the metacognitive behaviors observed.

This phenomenon was measured by the number of dialogic turns, or the number of times each person spoke, and by percentage of time speaking. According to Warren-Price (2003), when teacher-centered activities occupy more than 50% of a lesson, students have fewer opportunities to engage in comprehension- and metacognitive-based behaviors derived through peer talk.

In examining the think-aloud lessons created by Bethany and the curriculum's interventions for the striving-reader group, she spoke for roughly 51%, 52%, and 52% of the turns, respectively. This number of dialogic turns for teachers and students was on par with or a little over Warren-Price's (2003) estimation. Chloe and her peer in the group made up the remainder of the time, with Chloe speaking nearly twice as much as her peer in all recorded small groups.

From this measure, one might assume that all participants engaged to a somewhat equal degree. However, when looking at the number of minutes each participant spoke, the numbers became skewed. Though Bethany contributed roughly half of the utterances in each session, she spoke 79-97% of the time across all recordings. She spoke the most often during each session even though her turns are nearly equivalent to those of the students. Over-contributing in a small group could have kept students from deeply engaging with text and building their metacognitive strategy use. By including both dialogic turns and the amount of time each participant contributes, we gain a more comprehensive understanding of how striving students experience small group learning.

Fewer Questions, More Statements

In the striving-reader group, the teacher asked fewer questions and gave more extensions on student answers. This enactment of teacher dominance in conversation and answer extrapolation can be considered over-scaffolding (Daniel et al., 2016), as demonstrated in Excerpt A1. Chloe's groupmate, Arabella, shared her thoughts as Chloe looked for an example from the text.

Table 1
3.2.A1: Excerpt 1

Bethany	She's a hard worker, isn't she? … Okay, what else can we infer about Deborah [character]?
Arabella	[mumbles] She's eager to know what the boys learned at school?
Bethany	Say it again.
Arabella	She's eager to know what the boys learned at school?
Bethany	Okay, she's eager to know what the boys learned at school. What does that tell us about her? She wants to know…
Arabella	They're smart?
Bethany	She wants to learn, right? She likes learning new things. Yeah. She wants to go to school. But is she allowed? No, she's not allowed to, right? Yeah, she wants to learn. She wants to learn new things. She likes

to work hard. We can infer lots of things about Deborah just based on those descriptions.

In this exchange, Bethany demonstrated over-scaffolding by extending, defined as overelaborating or making inferences on a student's behalf. Instead of letting the student explain, she made the connections for them, thereby doing more comprehension and metacognitive work than her students. By elaborating on the answer, Bethany may have kept Chloe and her peer from metacognitive engagement with the text. Moreover, this action from the teacher may have hindered their abilities to engage with the text and each other through co-constructing meaning.

When the teacher did ask questions, they were predominantly focused on sharing explicit information. The striving readers produced one-word or short-phrased answers straight from the text instead of contributing their own interpretations, and Bethany provided generic feedback such as "good job." This interaction is like the I-R-E cycle recently updated by Elizabeth et al. (2012). These responses seem to indicate that the striving readers did not rely much on their own metacognition to critically engage with the text. Excerpt B further illustrates how striving readers rely on what they can directly prove from text rather than an inferential interpretation.

In contrast, as shown in Excerpt A2, Bethany allowed larger amounts of talk by asking more questions to the advanced group. Her use of more student-directed engagement appeared to prompt more peer participation and deeper comprehension.

Table 2

3.2.A2 Excerpt A2

Bethany	But what does it mean if "tense feelings of vengeance and silent accusation hang in the air?"
Alex	Is this when they were about to like, doing it out and like the practice sword thing?
Bethany	I think so. Yeah, this is more than just learning swordplay.
Alex	They're all kinda looking at each other like enemies ready to, about to fight. And like, I think they were like, who's going to strike first, who's gonna, so like we're tense. And…yeah.
Bethany	Timmy?
Timmy	In my mind, for like a silent accusation, I feel like they were accusing or like saying like, he did something bad, or something in his head, but hasn't really said it or anything because Tobias saw that Sage is trying to leave the window or whatever. And then he came back and he's like, but he didn't say anything. … Kind of like accusing him but not accusing him.
Bethany	But not saying it. … Why do you think the author said it like that instead of just saying we were, you know, ready to fight?
Timmy	Because it would have built suspense? Yeah, maybe had more. It would have been more interesting.

In Excerpt A2, Bethany asked questions to get students to co-create comprehension rather than making definitive statements about the text. She also invited students into the conversation by asking a follow-up question. Additionally, the questions Bethany asked to

this group are more rigorous, asking students to infer meanings within the chapter (e.g., the quote about vengeance) and the author's purpose. Compared to her focus on comprehension products with striving readers in Excerpt A1, when working with advanced readers in Excerpt A2, Bethany focused more on comprehension processes. This process-orientation can allow students to actively engage in metacognition more readily.

Whereas advanced readers tend to use more comprehensive knowledge through peer interaction to comprehend a text dynamically, striving readers can experience text as static and view the teacher or text as the authority. Excerpt B illustrates how striving readers prioritized information from the text rather than using it as one part of the equation. In response to Bethany's questions, Chloe's answers indicated surface-level inferences rather than using multiple examples from the text to support her argument.

Table 3

3.2.B Excerpt B

Bethany	What can you infer or guess about Deborah? Yeah, Chloe.
Chloe	[mumbles] She's a hard worker.
Bethany	She's a hard worker, isn't she? Yeah. What, what part of the text kind of led you to that?
Chloe	"'Deborah was a good worker. She grew strong as she milked the cows, fed the pigs, and tended the chickens'."
Bethany	Absolutely.

In her response to Bethany's question, Chloe read straight from the text instead of providing her own answer, substituting "hard worker" for "good worker." She seemed unwilling to assign an original character trait to the main character, but instead shared the author's sentiments about the character found directly in the text. From the low voice used to answer the initial question and the more confident tone she used as she read aloud, she may have placed her confidence in her teacher and the text rather than her own skill.

When striving readers *did* engage with metacognitive behaviors, they were initiated by the teacher. Consequently, the students had limited opportunities to independently build their own abilities to metacognitively engage with a text. This behavior appears to be characteristic of over-scaffolding, as further evidenced in Excerpt C. In it, Chloe and Arabella participated in a small-group exercise about how to use context clues. Then Bethany dismissed them from their small group with an independent practice activity to use context clues from their book to determine what an unknown word meant. Upon reporting back after their independent practice, Chloe revealed she chose the word "unanimous." Like Excerpt A1 with Arabella, Excerpt C with Chloe highlights Bethany's focus on the comprehension product, whereas this over-scaffolding is absent and replaced by questions focused on the process in Excerpt A2 with Timmy.

Table 4

3.2.C Excerpt C

Bethany	Okay. So they said "If you guys want me" and then they said "all in," so what do you think the word "unanimous" means?
Chloe	Huge?

Bethany	Okay. If you would replace the word "unanimous" with the word "huge…"
Chloe	[reading from the text] "The vote was huge? (inaudible) honor-y member of the group."
Bethany	Does that make sense? No. Let's go back. Yeah. It says, "'All in favor?' I asked. 'Vote.'" So she says basically says it's everybody in, and then the vote was unanimous. This is a tough one. So who was voting?
Chloe	Monica, Becca, and Claudia.
Bethany	Okay. And did they all vote for him to be in the club?
Chloe	Mm-hmm (affirmative).
Bethany	Okay. And you know that because of what it says, right? So what do you think that word "unanimous" means if the vote was unanimous and they all voted the same way?
Chloe	The vote was the same?
Bethany	They all voted the same way. That's what the word means. Okay. All three of the girls said "Yep, we want him in there." And that's tough because we can't necessarily put that in there. Right. "The vote was everyone was the same" kind of sounds funny, but that's what the word "unanimous" mean, would be that everybody voted that. Okay? All right. Nice job, ladies.

Instead of asking Chloe open-ended questions to develop her metacognitive abilities, Bethany centered her own knowledge in the students' work instead of prioritizing the students' process. By asking leading questions and using statements such as "Does that make sense? No." and "You know that because of what it says, right?," she may have kept Chloe from contributing to the conversation. Over-scaffolding in this example and in many others can prevent students from thinking more critically about a text.

By answering in place of them, adding her interpretations of student answers, and not encouraging students to engage with the text, Bethany seemed to participate more than the students did in the comprehension process. This is seen in contrast with the advanced reading group, where she asks higher-order questions more often, and students independently interrogated the text and each other for clarification. Bethany's role with advanced readers seemed to be an observer, whereas with striving readers, the teacher herself became a participant in the students' reading comprehension and metacognitive processes.

Looking Outside for Comprehension

Striving readers in the studied group also tended to look outside of themselves and the text for reading comprehension, relying more on others to confirm or disconfirm their findings. For example, Chloe would often look directly at the teacher before and during speaking and showed tense body language as she spoke, relaxing only when Bethany provided feedback. Her voice also went up at the end of each statement, indicating a questioning tone. Additionally, in Chloe's individual interview, she said good readers evaluate their comprehension by having a teacher or parent ask questions. Bethany seemed to encourage this initiation-response-evaluate (I-R-E; Elizabeth et al., 2012) technique by consistently confirming or disconfirming Chloe's answers with a "yes" or "good job"

before elaborating. When Chloe gave a wrong answer, she seemed to disengage in the conversation until Bethany displayed her thinking enough so Chloe could pick the right answer. This can indicate that for striving readers, only teachers and parents can determine if comprehension is right or wrong instead of coming from the reader themselves. Excerpt E1 provides an example of Chloe's questioning tone and seeking confirmation instead of using the text in front of her. Prior to this excerpt, Bethany read a contextualised definition of mosaic from a nonfiction text.

Table 5

3.3.A Excerpt E1

Chloe	"They found pictures made of colored stones." (reading from the text)
Bethany	Okay. These pictures are called…
Chloe	Mosics?
Bethany	Mosaics. So then you can kind of use the pictures here, because pictures are context clues too, right? So what do you think a mosaic is?
Chloe	Colorful pictures?
Bethany	Colorful pictures.

Though Bethany just read the answer from the text, Chloe's responses demonstrated a questioning verbal uptick and she looked directly at the teacher for confirmation. She demonstrated tense body language (i.e., tension in shoulders, body curling inward) until Bethany confirms her answer and she relaxes. When Bethany asked another question, Chloe exhibited the same response. Chloe appeared to treat Bethany's answers as an ultimate truth even though she herself could have located them in the text rather than developing her metacognitive strategies.

In the advanced-reader group, students tended to refer to their own thoughts and the text to confirm or disconfirm their findings. They reformulated their thoughts based on ongoing conversations with their peers, but ultimately students' agency and independent actions led to their comprehension. In Excerpt E2, Tyler, Timmy, and Alex co-created meaning from a text to better understand why the main characters in the book *The False Prince* (Nielsen, 2012) might like or dislike each other.

Table 6

3.3.B Excerpt E2

Tyler	I just want to say I feel like I kind of like Tobias more. Cregan kinda hate him, but Conner, but…
Bethany	Hate Sage?
Tyler	Yeah.
Bethany	How come?
…	
Tyler	I don't think Conner really, doesn't really hate him because he was trying to tell him that these scores are (inaudible).
…	
Timmy	For him, and he, Cregan was like helping him. But Mott, but Conner said not to leave scars and not draw blood because if he had like scars all over

him or something he wouldn't be, he wouldn't be able like to be a prince or something like that.

Alex He would be recognized.

Bethany Okay. All right. Oh yeah, and then they'd send Conner up with Cregan.

Tyler But Mott still likes Cregan, er, Sage, but um, he said "I was trying to help you, but you deserve, you have to have this, or you deserve it or something."

Alex And like Cregan and Mott are kind of like Conner's visuals. So they kind of have to listen to him.

Tyler, Timmy, and Alex added to each other's thinking, thereby creating a more nuanced description of the characters and some of the rationale behind the characters' actions. Though Bethany was still a contributor, she acted more as a participant than a facilitator compared to her interactions with Chloe's group. This seemingly more casual and conversational tone adopted with Timmy's group stands in contrast to the more formal and educational tone seen in Chloe's (Excerpts E1 and E2). In this way, Bethany appeared to treat Timmy's group as though it can operate more independently with more rigorous and collaborative discussion for comprehension, so she can participate to a lesser degree.

Overall, the data collected indicated Timmy and Chloe respond to teachers' dialogic moves in different ways. Chloe tended to view the teachers' answers to comprehension questions as the only correct possibility instead of using the text and her peer as a resource, which created fewer opportunities for her to practice her metacognitive comprehension independently. Timmy and his group received more questions from Bethany to facilitate dialogue and were encouraged to use multiple resources within text-based conversations. By engaging with comprehension through metacognitive dialogue differently with readers at different levels, Chloe and Timmy partook in different reading experiences because of Bethany's interactions.

This may also indicate students' manifestations of their own metacognitive abilities. Interviews with Chloe and Timmy at the end of the project indicate that the amount of and rigor of talk in advanced groups led to Timmy's confidence in his metacognitive and comprehension strategies, whereas Chloe felt less confident in her abilities to engage in more abstract thinking about texts.

The next section of the paper will discuss more thoroughly how teachers' dialogic moves can support or dissuade students' metacognitive comprehension development.

Discussion

The purpose of this research was to identify the kinds of talk that manifest in reading groups that implement metacognitive reading strategies, to ascertain the roles the teacher and student play in terms of sharing and verifying information discovered through metacognitive reading strategy instruction and comprehension, and to analyze students' conceptualizations of their own metacognitive reading abilities in one fourth-grade classroom.

Through interpretation of the videos and conversation transcripts, it appears that more monologic talk and less rigorous talk (i.e., fewer questions, more teacher over-scaffolding) are present in striving-reader small group sessions. This is supported by the prevalence of short-phrased answers given by students and the text-focused nature of the

questions asked by the teacher. Questions such as "what does 'mosaic' mean?" and "how would you describe Deborah?" (Excerpts E1, B, and A1) were answered in short order and typically extrapolated upon by the teacher to share what she thought the student meant. Teacher over-scaffolding, similarly observed in Daniel et al. (2016), may have prevented students from engaging with metacognitive strategies independently. They state, "If teachers do not help students scaffold contingently, students may miss out on the advantages of personalized scaffolding during peer-to-peer work" (Daniel et al., 2016, p. 409). By modeling strategy use and providing opportunities to dialogically engage in the classroom with peers rather than the teacher, students can develop their metacognitive and comprehension abilities.

I-R-E (Elizabeth et al., 2012; Mehan, 1979) monologic talk was the most common kind of talk found in the striving-reader group. It appeared Bethany provided nearly instant evaluative feedback to participating students so they could see where they stood. However, Bethany's prompt responses and over-scaffolding led to short, concrete answers from the students rather than more abstract talk which could be contested. The speed and tone with which Bethany provided feedback may have also impacted students' reading and thinking. Chloe, the focal student in the striving reader group, continually sought the teacher's evaluation after every response to the point of making eye contact with Bethany and inflecting her voice until Bethany provided a response. Elizabeth et al. (2012) would advocate for a more participant-centered model with elements of perspective taking, knowledge, reason, and attitude to guide small group instruction so students could develop their skills. And though striving readers operate at the sentence level (Serra & Metcalfe, 2009), asking students about their reading process as a means of understanding could allow them to develop metacognitive skills.

When teacher talk dominated the conversation, it appeared to become less about the students' metacognitive reading process and more about the teacher guiding them to a correct answer. Over-scaffolding can therefore impact a student's willingness to engage in the text for themselves (Daniel et al., 2016). In a social discipline such as reading, a focus on the product rather than the process can keep students from reading metacognitively in the future.

Awareness of how striving readers perceive their comprehension abilities can create opportunities for teachers to promote student/student dialogue (Nystrand et al., 1997). By promoting dialogue between students in small groups, students can hone their reading confidence and metacognitive strategy use with teacher support. In this way, students can use peer-to-peer talk to outwardly process and internally apply metacognitive reading strategies (Almasi & Fullerton, 2012).

Limitations

Though this study provides a foundation for the work to be done in terms of increasing readers' independent metacognitive practices, limitations must be acknowledged. The COVID-19 pandemic and other health-related concerns of the participants limited the study to virtual, scheduled observations over three months which reduced the potential for teachable moments outside of small groups. This study was also conducted with a small sample of students and one teacher in one grade at one rural,

predominantly-white school, which means the results cannot be generalized to a larger audience.

Areas of Future Study

Based on the results of this study, future research should investigate the amount of teacher talk in comparison to the amount and type of student talk and how it influences metacognitive processes in other subjects and in whole-class teaching. Metacognitive think-alouds are used consistently in middle- and high-school math classes (e.g., Zepeda et al., 2018), but other content areas including art, science, and social studies also have the potential to illustrate new and different ways of thinking-about-thinking.

Another worthwhile investigation may be to see how different teachers teach and talk about the same content in metacognitive ways. Building on Shanahan et al.'s (2011) examination of how three distinct professions engage in three different types of text, it would be worthwhile to see if teachers from three grade levels or classrooms all taught the same text using developmentally-appropriate metacognitive strategies. By controlling other variables and focusing on a single text, data could be generated about teachers' use and implementation of metacognitive strategies, which could then be tailored to various levels.

Conclusion

In summary, teachers can inhibit striving readers' opportunities to develop their metacognitive reading abilities through pedagogic moves such as over-scaffolding, using (non-)verbal cues to indicate the answer's degree of correctness, and overall time spent talking. Teacher training and professional development might therefore consider a focus on how readers develop metacognitive awareness and use of open-ended questions supportive of a range of answers, with intent to facilitate student-to-student talk. Additionally, the teacher in this case study was found to interact differently with her striving and advanced readers. As Bethany asked fewer dialogic/critical questions and controlled the discourse, striving reader Chloe was not invited to engage in complex thinking about text. Conversely, advanced reader Timmy utilized his peers' knowledge and Bethany's questioning to deeply engage in metacognitive talk. This suggests the teacher became more interested in advanced readers' metacognitive processes and striving readers' comprehension products. Taken together, these insights suggested the degree of teacher control and interaction in small group settings, and thus metacognitive reading strategy use by the students, may vary based upon the teacher's perceived ability of the group.

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Author Biography

Jennie Baumann is a PhD candidate at Michigan State University. Her research is at the intersection of (funds of) knowledge, dialogic talk, and reading comprehension. She works with teachers and community partners to center students' knowledge and thinking, and support students' abilities to talk about what they *read.*

Appendix A: Codebook

Name of Code	Source	Definition	Examples	Who is doing the work?
Changing speed as they read to understand; CSP	MARSI	Moderating speed as they read	(Typically used with text)	Student
Going back and forth in text to find relationships among ideas in the text; BFR	MARSI	Using examples from previous parts in the text to connect with what they are reading presently		Student
Previewing the text; PRT	MARSI	Examining the text before reading	Picture walk, skimming text, looking for text features	Student

Put ideas in own words to understand; IOW	MARSI	Paraphrasing the text to ensure comprehension or clarify understanding	(Typically used with text) "Mott is trying to help Sage, and he, like, Sage likes Mott more, because he's not, I want to say, rough.	Student
Use of context clues; CON	MARSI	Reading before and after a word or idea they don't understand to confirm or clarify understanding	(Typically used with text)	Student
Visualizing; VIZ	MARSI	Creating a clear mental picture of what's happening in the text and sharing it aloud.	"They're all kinda looking at each other, like enemies ready to, about to fight."	Student
Guess what the material is about; GSM	MARSI	Using information from the parts of the text on the onset to predict/infer what the rest of text will cover	Making predictions; making inferences	Student
Asking self questions; ASK	MARSI	Asking questions they want answered in relation to the text; can also be applied to peers or the teacher	"Wait, who killed Latamer again?"	Student

Checking/revising predictions, questions, and guesses; CRP	MARSI	Confirming or modifying thoughts made due to new or restated information in the text		Student
Stopping to think about reading; SAT	MARSI	Pausing when they don't understand something	"I'm not really understanding why Mr. Henshaw didn't write back."	Student
Summarizing; SUM	MARSI	Creating a concise summation of the text		Student
Rereading when it's difficult; RER	MARSI	Rereading sections of text for clarity of understanding or comprehension; can be unprompted or prompted by a teacher	(Typically presents with text)	Student
Have a purpose in mind when they read; PUR	MARSI	Setting a purpose for reading	"Today we are going to practice using context clues to help us figure out tricky words."	Student OR teacher, context dependent
Recognizing what is important v. what is interesting; IVI	MARSI	Figuring out what is essential to comprehension rather than including everything the author does		Student

Scaffolding; SCA	Vygotsky (1976)	Teacher provides information or prompting questions to initiate student metacognition--the focus is on building on what was already said	"So you think Mott should not have thrown the dagger? Why?"	Teacher
Knowledge Acquisition; DOK1	Webb (2002)	Content driven; focuses on regurgitation of facts	"Who was Sage again?" "Why was Deborah more free?"	Teacher
Knowledge Application; DOK2	Webb (2002)	Procedural; how does it function, how does it work, how is it used?	"When would be a good time to use context clues?" "What does it mean to infer?"	Teacher
Knowledge Analysis; DOK3	Webb (2002)	Thinking strategically; why is this essential and relevant, why does it produce the result it does, how can we use this information to categorise/classify/clarify?	"What can you infer about Cregan's character from that example?" "How do you know Mott didn't like Sage?	Teacher

Knowledge Augmentation; DOK4	Webb (2002)	Recognizing how and why information is beneficial for the situation at hand; what influences or impact it has across and beyond curriculum; what can you make or do as a result	"How does the theme we determined from *The False Prince*, 'you can't own people or knowledge' show up in other topics we've studied this semester? What might you do going forward, knowing that this theme is prevalent throughout time and history?"	Teacher
Clarifying; CLA		Distilling an answer or multiple answers into a shorter and more concise version		Teacher
Confirming; YES		Confirming a student's answer by any of the following: restating; nonverbal cue like a head nod; praise words		Teacher

Extending; EXT		Extending a student's answer	Alex: "...you still kinda gotta be nice..." Teacher: "Right? And there's kind of, there's no sense to be mean just for the sake of it."	Teacher
Modeling; MOD		Modeling the skill to be practiced in the session	"I can infer that 'generous' means kind because they're talking about how Suzi helped Mr. Ben fix his broken window."	Teacher
Content Connections; CCC		Connection to content covered in reading curriculum		Teacher or student, context dependent
Meta-Awareness; MTA		Awareness of their own capabilities	"I am definitely..." "I probably do this somewhere around 3 or 4 times a day."	Student