

**YOUNG STUDENTS' UNDERSTANDINGS OF THE
METACOGNITIVE EXPERIENCES OF PROFICIENT AND
STRUGGLING READERS:
A PILOT STUDY**

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Abstract

This pilot study used a mixed methods approach to explore young students' understandings of the metacognitive experiences of two fictional peers, one struggling reader and one proficient reader. Participants listened to two audio recordings, one of a same-aged proficient reader, and one of a same-aged struggling reader. Participants completed an interview consisting of multiple choice and open-response questions, asking them to reflect on the metacognitive experiences of each reader. Five metacognitive experiences were addressed: estimate of effort, feeling of satisfaction, feeling of difficulty, feeling of familiarity, and feeling of confidence. From the data, there emerged five types of approaches that students used to characterize the metacognitive experiences of each reader. The implications of this study are that even young children have a complex understanding of the metacognitive experiences of their peers, and should be challenged to utilize that understanding in high-quality collaborative learning contexts.

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Chapter 1: Statement of the Problem

A major goal of early education in the United States is to teach children to become fluent, independent readers. Many parents, teachers, and students equate success in the primary grades with success in learning to read. However, many children struggle to learn to read, giving rise to questions of how to best meet the needs of developing readers. Educational psychologists have long advocated the importance of metacognition for regulating and supporting the development of reading skill. Moreover, the Partnership for 21st Century Skills has identified self-directed learning as one of the life and career skills necessary to prepare students for higher education and employment. A growing body of research exists to suggest that even our youngest students can benefit from direct metacognitive instruction. Nevertheless, metacognitive experiences, which are an important part of the psychological experience of learning to read, and their role in learning to read, are not well understood.

Metacognition is traditionally studied as an individual construct, however, a more complete picture of learning is achieved when social aspects of learning are taken into account. In considering metacognition as a process which is both individual and social in nature, researchers and educators can begin to understand not only how students perceive their own experience of learning to read, but how students perceive their peers' experiences of learning to read. The ability to perceive a peer's mental state is an important skill for collaborative learning contexts. Furthermore, misperceptions of peers' mental states during collaborative

learning may have adverse implications for both students involved. However, previous research is insufficient for understanding students' perceptions of metacognitive experiences of peers in general, but also for providing insight into just how students construct these perceptions.

Chapter 2: Literature Review

Recent research in the field of educational psychology has sought to better understand the role of metacognitive thinking in cooperative learning situations in the classroom. The following literature review will first ground the study in theories of intellectual development. It will then explore the links between metacognition and skilled reading, as well as the role of metacognition in collaborative learning contexts. The final section will discuss the literature relating to children's perspectives on reading, peers' metacognitive experiences, and ability formation.

Theoretical Basis for Socially Shared Metacognition

Early metacognition studies acknowledge social interaction, social context, communication, and role-taking as facilitators of metacognition (Brown, 1978; Flavell, 1976, 1979). Nevertheless, metacognition is treated primarily as an individual construct, and social processes are treated as context variables which facilitate learning (Iisklal, Vauras, Lehtinen, & Salonen, 2011). However, it is widely agreed that learning is not solely an individual process. A more complete picture of metacognition can be achieved when social aspects of learning are taken into account.

Vygotsky's (1978) social constructivist approach to cognitive development stresses the fundamental role of social interaction in a child's learning process. Vygotsky is particularly well-known for his model of a child's zone of proximal development (ZPD), which he defined 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” (Vygotsky, 1978, p.86). It is this concept that previous researchers of metacognitive development have called upon to explain how adults or more capable peers can scaffold learners’ progress so that a student can independently perform a task that might otherwise be too difficult to accomplish (e.g. Brunner, 1985).

The concept of ZPD is as useful for understanding social constructions among peers as it is for understanding the interactions between a teacher or more capable peer and a student (Minick, 1987). In addition to discussing the ZPD in terms of teacher/student relationships, Vygotsky considered the ZPD in the context of equal status partnerships, noting that when children play together, they act above their normal level of development (see Minick, 1987). In educational contexts, this view of the ZPD suggests that there is learning potential in collaborative contexts in which peers have relatively equal expertise. Daiute and Dalton (1993) suggest that in a collaborative context, the “width” of a child’s ZPD (or, the extent of the difference between what a child can do individually versus with support) is affected by the characteristics of both the child and her collaborating peer. In contrast to the high level of support provided by teachers or more capable peers, peers with equal expertise may provide a low level of support. However, both low and high levels of support have been indicative of considerable growth (Fischer, 1980). With a peer, a child may not be able to work

to her ultimate potential; however, interactions between collaborating peers create a “bi-directional ZPD” in which students engage in a reciprocal process of exploring each other’s strengths and skills in order to construct a shared understanding of a task (Forman and McPhail, 1993).

Metacognition and Skilled Reading

Skilled reading consists of the coordination of word reading and comprehension processes to allow the reader to construct meaning from a text (Irwin, 1991; van den Broek & Kremer, 2000). In order to construct meaning, readers need to make inferences and elaborations based on prior knowledge and information from the text (Pressley, 2002). Skilled readers must constantly make decisions that will have an impact on their understanding of the text; for example, when to reread a portion of text, which information to retain in memory, and which information of lesser importance to discard from memory (Griffith & Ruan, 2005). Readers use metacognitive information to make these decisions and monitor comprehension. Griffith and Ruan (2005) argue that the cognitive processes of skilled reading should be thought of as “embedded within the frame of metacognition” because skilled reading inevitably breaks down without ongoing monitoring.

Flavell (1979) described three major components of metacognition: metacognitive knowledge, skills, and experiences. The most common distinction in metacognition research separates metacognitive knowledge from metacognitive skills. Kuhn and Dean (2004) characterize metacognitive knowledge broadly as

epistemological understanding; that is, a person's understanding of thinking and knowing in general. Other research describes metacognitive knowledge as more specific knowledge of oneself as a learner, including knowledge of the factors that might influence performance on a given task (Shraw et al., 2006). In the context of reading, Cross and Paris (1988) define metacognitive knowledge as an awareness of the factors that might affect reading ability. Metacognitive skills, on the other hand, refer to a person's procedural knowledge for regulating problem-solving and learning. Knowledge of strategies, as well as when and why to use a given strategy, is an essential component of metacognitive skills (Shraw et al., 2006). Metacognitive experiences are part of a person's subjective learning experience; they are insights or perceptions that one experiences during cognition (Flavell, 1979). Flavell (1979) notes that these experiences serve as "quality control" checks that help learners to monitor learning and revise goals. Feelings of familiarity, difficulty, and confidence are examples of metacognitive experiences that contribute to students' self-regulation of learning (Efklides, 2002).

Although metacognition research is generally interested in higher level cognitive processes found in more mature and older students, there is evidence to suggest that young children are also able to employ metacognitive thinking during reading and writing activities (Ruan, 2004). Modeling and teaching developmentally appropriate metacognitive thinking can facilitate early literacy skills and empower students to become strategic and independent readers (Griffith

& Ruan, 2005). Griffith and Ruan (2005) cite the Reading Recovery program as an example of developmentally appropriate metacognitive training for young readers. Children receiving Reading Recovery tutoring are taught to self-monitor during reading as well as employ “fix-up strategies” when they encounter difficulties during reading. Griffith and Ruan (2005) go on to suggest that pre-readers can be taught to verbalize their concepts about print and self-report how they identify sounds and syllables, further supporting the notion that even our youngest students can benefit from metacognitive training.

Metacognitive experiences are also believed to play an important role in reading comprehension (Kinnunen & Vauras, 2010; Pressley & Afflerbach, 1995). Pressley and Afflerbach (1995) describe skilled readers as being “constructively responsive” to metacognitive experiences, carefully mobilizing cognitive resources while reading in order to monitor and facilitate comprehension. This type of reading clearly involves more than simply decoding or having the ability to recall details from a text. Constructing meaning from text demands that readers are “strategically engaged” in the learning process, reflecting upon their metacognitive experiences in order to appropriately monitor comprehension (Alexander & Jetton, 2000).

Metacognition in Collaborative Contexts

A relatively recent line of research has aimed at understanding the relationship between young children’s “theory of mind” and subsequent metacognitive development. Theory of mind refers to the ability to estimate and

make judgements about other people's mental states. Interestingly, past research in the areas metacognition and theory of mind have not been related. Flavell (2000) notes several possible explanations for the disconnect between these two lines of research. For example, researchers of theory of mind have traditionally focused on children's basic knowledge about the existence of mental states. Metacognition researchers have focused more on task-related mental processes; that is, what someone is or should be doing with their mind in order to successfully navigate a given problem or task. Flavell (2000) draws a connection between these two approaches by suggesting that metacognition, which is "problem-centered and goal oriented" may be referred to as "applied theory of mind."

A further distinction between these two areas of research is that theory of mind is primarily concerned with an individual's understanding of another person's mental states, whereas metacognition typically deals with what an individual knows about his or her own mind. Metacognition research typically treats social processes as context variables which facilitate individual learning. However, recent research has increasingly begun to consider metacognition as a process that is both individual and social in nature (Efklides, 2009; Salonen, Vauras, & Efklides, 2005).

Nevertheless, there is limited research on metacognition in collaborative contexts. The term "collaborative context" refers to the co-construction of knowledge and understanding among a group (Volet, Summers, & Thurman,

2009). Volet et al. (2009) suggest that these contexts not only involve sharing information, but also estimating and representing one another's mental activities. Collaborative contexts in the classroom may involve a teacher and one or more students, or students working as a pair or in a group to solve a problem. Teachers and peers, particularly at the early elementary level, differentially approach collaborative learning contexts, most likely as a result of their differing levels of metacognitive understanding (Efklides, 2002). Teachers' awareness of how students process a given task is based on observation of the students' task performance, as well as on perception of cues indicating the students' metacognitive experiences (Efklides, 2002; Flavell, 1979). Cues that may inform the teacher about students' metacognitive experiences come from the students' verbal and nonverbal behavior, including questions and other verbalizations, the presence of pauses or stops, task engagement and effort, or emotional expressions, for example. Teachers presumably use their own metacognitive knowledge of themselves, the student, and the task at hand, in order to interpret students' metacognitive experiences and adapt their teaching accordingly.

Effective peer collaboration is characterized by a "reciprocal process of exploring each other's reasoning and viewpoints in order to construct a shared understanding of the task" (Goos, Galbraith, & Renshaw, 2002). In a study of high-school students' mathematical problem solving, groups in which students are able to monitor their own and their peers' thinking seem to have an advantage over those who do not (Goos et al., 2002). In this study, transcripts of small group

problem-solving were analyzed to investigate the conditions that led to successful or unsuccessful outcomes. The results indicate that groups with unsuccessful outcomes engaged in significantly fewer “transactive discussions” involving clarification, justification, and critique of one’s own and others’ reasoning. The authors conclude that, in collaborative contexts, individual metacognitive events are not as critical for success as the “socially shared metacognition” that develops through transactive discussion (Goos et al., 2002).

Collaborative learning takes place in many ways and in all aspects of the curriculum, particularly in early childhood settings. Efklides et al. (2005) argue that effective collaboration in learning depends on awareness of one’s own as well as the partner’s metacognitive experiences regarding the task. Although metacognitive experiences are private events, their manifest expressions provide information to the partner regarding the quality of cognitive processing and progress toward task completion (Efklides et al., 2005). Thus, in collaborative tasks, metacognitive experiences may offer important information to oneself and others and, therefore, have an impact not only on one’s own learning but also that of a peer (Efklides, 2006, 2009). Salonen et al. (2005) offer supporting evidence, suggesting that misperception of a partner’s metacognitive experiences may limit the collaborative learning process and have an adverse impact on both students’ learning (Salonen et al., 2005). Despite the importance of metacognition for learning in a social context, metacognition is usually considered an individual

phenomenon, and thus the role of metacognitive experiences in collaborative learning processes is still a relatively unexplored area of research.

Understanding the Child's Perspective

Educational research that incorporates the perspectives of children is critical to our understanding of children's early learning experiences. Early developmental research predominantly viewed children as 'objects' of research. However, recent research in child development has seen a shift from this conventional approach to child research to an approach that employs meaningful dialogue in order to understand the child's world. This section will discuss literature focused on the perspectives of children as they relate to reading, metacognitive experiences, and ability formation.

Students' Conceptions of Reading and What Makes a "Good" Reader

Children's understandings of the purposes and dimensions of reading may influence how they approach the task of learning to read (Paris & Meyers, 1981). For example, a student who understands reading as primarily a process of decoding may approach a text differently from a child who views reading as a primarily a process of constructing meaning. A considerable body of research has compared children of differing ability levels in their conceptions of reading. These studies consistently point to a pattern of better-developed understandings of reading for good readers than poor readers. Canney and Winograd (1980) group student conceptions of reading into three general categories: object focus (focus on reading materials), decoding focus, and meaning focus. In interviews with

students from grades 2, 4, 6, and 8, the authors found that good readers in all grades mentioned more meaning-focused features of reading than did poor readers.

Perhaps unsurprisingly, classroom organization has been implicated as an important component of children's conceptions of reading. Filby and Barnett (1982) examined second- and fifth-grade students' perceptions of which peers were "better readers", and found that students' conceptions appeared to be related to the nature of the reading program implemented in their particular classroom. For example, students whose classrooms used whole-group reading instruction were significantly more accurate in their perceptions of better readers (that is, their choices matched teacher choices) than students whose classrooms used ability-based reading groups. These results suggest that children's understanding of "better readers" is influenced by the organization of reading instruction, because different levels of information about peers' reading performance is available within different contexts. In classes with groups determined by ability, for instance, students in a low-level group may have limited opportunities to witness the reading abilities of students in a higher-level group.

There is considerable research investigating the qualities of proficient readers and the strategies that they use (e.g. Dole, 2000; Pressley, 1998). This research is invaluable for reading instruction, as it is believed that if we understand the strategies that "good" readers use, struggling readers can be taught to employ the same or similar strategies as their proficient peers. However,

teaching students to read like proficient readers is possible only when students have an accurate picture of what strategies proficient readers use. Student perceptions of proficient and struggling readers and the strategies they use are less available in the literature. A questionnaire designed by Johnson (2005) offers some insight into students understanding of what makes someone a “good” or “poor” reader. The questionnaire was administered to a class of fourth-grade students at the beginning and middle of the school year; student responses indicated a shift from decoding-focused responses in August to meaning-focused responses in January, reflecting an evolving understanding of good and poor readers. While this questionnaire begins to touch upon the importance of understanding student perspectives, it is limited in its scope. Further investigations with a wider age range and more comprehensive methodologies are necessary to form a more complete picture of student perceptions of proficient and struggling readers.

Perceptions of Peers’ Metacognitive Experiences

Despite a long and complex line of research in the areas of metacognitive knowledge and skills, research on how students perceive their peers’ metacognitive experiences is nearly nonexistent, indicating an area in need of further investigation. A study by Atras and Efklides (2004) attempted to address this issue, testing the assumption. Fourth and fifth grade students were asked to rate themselves and their peers as either *good*, *moderately good*, or *not so good* in math. All students then solved a math problem; before and after solving the

problem, students were asked to rate their feelings of difficulty, and estimate of effort, and estimate of solution correctness. Students were then asked to rate the presumed metacognitive experiences of those that they rated as *good*, *moderately good*, or *not so good* at math. Self-reported metacognitive experiences were compared with the peer ratings.

Students' self-reported metacognitive experiences correlated with their performance on the math problem, suggesting a relatively accurate perception of their metacognitive state. However, the authors found no significant relationship between the self-reported metacognitive experiences and the peer ratings, suggesting that the basis for judging one's own and another's metacognitive experiences is different. Nevertheless, the results did show some interesting patterns in the students' self-reported and peer ratings. For students rated as "good" in math, peer ratings reflected no feelings of difficulty at all, no need for effort, and a high estimate of correctness. For students rated as "not so good" in math, peers predicted high feelings of difficulty and a moderate estimate of effort and correctness.

Atras and Efklides' (2004) study is particularly useful in highlighting the need for more research in effective ways of measuring perception of students' metacognitive experiences. Measurement of this construct is challenging for a number of reasons, primarily because it is not directly observable. Furthermore, the measures used here are decontextualized from actual in-school learning situations. The authors acknowledge these limitations and stress the need for

continued research on the role of peers in the regulation of metacognitive experiences, as well as student perceptions of peers' metacognitive experiences.

Ability Formation

Additionally relevant to the study at hand is a review of young children's understandings of and reasoning about their peers' abilities. Rosenholtz and Simpson (1984) define ability formation as "the process by which individuals form conceptions of their own and others' abilities". There is some debate about the age at which children develop realistic ability conceptions. While developmental research generally agrees that young children typically overestimate their own capability, some research suggests that Kindergarten-aged children are capable of accurately judging their own and their classmates' abilities (Stipek, 1981).

Recent research in the area of ability formation has sought to determine whether young children are sensitive to mental state information about perceived task difficulty, effort, and outcome when making judgements about ability (Heyman, Gee, & Giles, 2003). Heyman et al. (2003) interviewed 60 children between the ages of 5 and 7. To investigate children's use of information about perceived difficulty when making inferences about ability, participants were presented with scenarios involving two imaginary peers completing a task. Participants were told that one of the imaginary peers thought the task was hard, and the other thought the task was easy; participants were then asked who they believed to be the smarter peer. As predicted, children tended to infer that

someone who found a task to be easy is smarter than someone who found the task to be difficult. This finding is consistent with previous research which suggests that children as young as 6 years old make use of information about mental states when making inferences about ability (Heyman & Gelman, 1998; Yuill, 1992).

As a part of the same study, Heyman et al. (2003) investigated children's use of information about effort and task outcome when making ability inferences. Participants were presented with scenarios that included information about an imaginary peer's level of effort and the resulting outcome; for example, a scenario might be "Marcus tried really hard on his schoolwork and got everything wrong." Participants were then asked whether the imaginary peer was "very smart, a little bit smart, or not very smart" (Heyman et al., 2003). Findings for this portion of the study offer support for previous research (Nicholls, 1978) which suggests that children tend to see high effort and positive outcomes as being positively correlated. Interestingly, older children (aged 9-10 years) showed the same general pattern as the younger children, but to a lesser extent. That is, they generally expected high effort and positive outcomes to be related, but were more aware than younger children that this is not always the case.

These results conflict with those of Nicholls and Miller (1984), who argued that younger children tend to infer that "people who try harder than another are seen as smarter even if they get a lower score". To account for these two different ways of reasoning about ability, Heyman et al. (2003) propose a "dual schema hypothesis", which suggests that children hold two different

schemas about ability that can be activated at different times. The “effort schema” is characterized by the notion that high effort, positive outcomes, and high ability are positively correlated. The “perceived difficulty schema” is characterized by the notion that a student who finds a task to be difficult compared to others lacks the necessary ability to easily complete the task.

The premise of the current project is to consider children’s perspectives on their peers’ metacognitive experiences by analyzing their responses to multiple choice and open response questions after listening to the reading of a fictional proficient and struggling peer. This project seeks to highlight the ways in which early readers conceptualize metacognitive experiences, and how these conceptualizations differ depending on the ability of the reader.

Research Question

This pilot study aims to understand young students’ conceptual understanding of individual differences in reading ability. Specifically, the research aims to explore young students’ perceptions of the metacognitive experiences of two fictional peers, one struggling reader and one proficient reader. Metacognitive experiences, for the purposes of this study, refer to the things that readers think and feel as they read. Metacognitive experiences differ from metacognitive knowledge, that is, declarative knowledge of goals and strategies, for example, and metacognitive skills, procedural knowledge of how to monitor and control the learning process. Instead, feelings of familiarity, difficulty, confidence, and satisfaction are examples of metacognitive experiences that

contribute to learning (Efklides, 2001). Research in metacognition tends to focus on what a person knows about his or her own mental processes. However, the ability to estimate another's metacognitive experiences is believed to be particularly important in collaborative learning situations. This ability is not well documented in our youngest students. As such, the proposed pilot study aims to answer the question: How do young students understand the metacognitive experiences of a proficient and struggling reader?

Chapter 3: Methodology

Subjects

The study was conducted at the Eliot-Pearson Children's School, a laboratory-demonstration school affiliated with the Eliot-Pearson Department of Child Development at Tufts University. The school reflects a developmental approach to early childhood education, and is committed to valuing diversity and individual differences in the classroom. This philosophy is reflected in the teaching styles of head teachers, who discourage comparison among students on the basis of ability. Students are frequently reminded that "everyone is working on something", meaning that all students have strengths and weaknesses.

Approval for research with human subjects was granted by the university's Institutional Review Board prior to recruitment and data collection (see Appendix A). A total of 6 children, ranging in age from 7 to 8 years, were recruited from the first and second grade classroom at Eliot-Pearson Children's School. At the time of participation, children had been in school with one another for approximately 6 months.

Instruments

The study addressed the research questions by comparing student responses to interview questions based on audio recordings of a proficient and struggling reader.

Audio Recordings

Two audio recordings were made; one of a proficient reader, and one of a struggling reader. The recordings feature two female actors, recruited from the Tufts University drama department. The recordings were matched for age and sex, such that female participants were told that the recording was of a same-aged female, and male participants were told that the recording was of a same-aged male. Only female actors were used, however, in order for the recordings to sound like young children.

Both recordings feature an excerpt, approximately 1 minute in length, from *Frog and Toad Are Friends*, by Arnold Lobel (Lobel, 1970). This is a classic early reading text with which all of the participants in the sample are familiar. The rationale for choosing a text that participants had already read is that they would not need to focus their efforts on deducing meaning from the text while listening to the recording. Because they had prior experience with the text, they would not need to devote as much cognitive effort to making sense of the story.

The following excerpt from *Frog and Toad Are Friends* was featured on the audio recordings:

Frog pushed Toad onto the front porch. Toad blinked in the bright sun.

“Help!” said Toad, “I cannot see anything.”

“Don’t be silly,” said Frog, “What you see is the clear warm light of April. And it means that we can begin a whole new year together, Toad.”

“Think of it,” said Frog, “We will skip through the meadows and run through the woods and swim in the river. In the evenings we will sit right here on this front porch and count the stars.”

The proficient recording has no decoding errors. The reader uses good expression throughout the passage, and reads at a conversational pace. The struggling recording consists of 14 decoding errors. The reader uses minimal expression, and reads at a slow and laborious pace. The reader makes frequent extended pauses, hesitations, and repetitions. See appendix C for audio recording scripts.

The rate of accuracy for each recording is determined using the following formula: $(\text{total correct words}/\text{total words}) \times 100 = \text{accuracy rate}$. For example, a student who correctly reads 90 of 100 words is reading with 90% accuracy ($90/100 \times 100 = 90\%$). This method of determining reading accuracy is used in traditional running record assessments. Running records measure contextual reading accuracy through an oral reading under untimed conditions. Running records and other informal reading inventories categorize reading accuracy at three levels: At the ‘independent’ level, students read the assessment text with 97-100% accuracy. At the ‘instructional’ level, students read the assessment text with 90-96% accuracy. Students who score below 90% in accuracy are at the ‘frustration level’ and find the assessment text too difficult to read, even with assistance. In running records, this information is used to determine the level of difficulty of a text. That is, students reading at the independent level should be

offered a more challenging text, and students reading at the frustration level should be offered a less challenging text. Students reading at the instructional level are considered to be reading an appropriately leveled text. For the purposes of this study, the proficient reader reads at the independent level with 100% accuracy, and the struggling reader reads at the frustration level with 80% accuracy. These particular measurements were chosen in order to make obvious the differences in ability between the two readers.

Interview

The interview (see Appendix D) consists of 5 questions, asked after each recording, for a total of 10 questions. The interview asks participants to reflect on the metacognitive experiences of each reader. Each question relates to one of the five components of metacognitive experiences (as defined by Efklides, 2002). Each question also consists of an open-response component, which allows the participant to further explain his or her answers. The interview was constructed to mirror several questions that have been asked in previous studies of children's metacognitive knowledge and experiences (Clark, Osbourne, and Akerman, 2008; Efklides, 1996; Schmitt, 1990). However, these instruments are primarily designed for older elementary students and call for students to reflect on their own abilities rather than those of a peer. Therefore, original interview questions were constructed for the purpose of this study.

Interview questions ask participants to reflect on the proficient and struggling readers' feelings of familiarity, difficulty, confidence, and satisfaction

with reading, as well as to estimate the readers' level of effort. Feelings of familiarity are related to the frequency or recency of previous encounters with a stimulus (Efklides et al., 1996). As such, the interview measures feeling of familiarity by asking the participant if he or she believes that the reader has or has not already read the passage. Feelings of difficulty are related to task complexity, and are therefore assessed by asking participants if the reader finds the text to be easy or hard. Feeling of confidence is a metacognitive experience that is related to one's awareness of whether one possesses the relevant knowledge or ability to complete a task (Allwood & Granhag, 1996). Confidence, for the purposes of this study, is measured by asking participants if they think the readers would call themselves "good readers". Finally, feeling of satisfaction has to do with the matching of an outcome of a task with a goal set (Ardelt, 1997). To measure feeling of satisfaction, participants are asked to rate the readers' enjoyment of reading on a scale from "not at all" to "very much". Based on the methods of Metallidou and Efklides (2001), estimate of effort is measured by asking participants how much time they believe the reader to spend on the task at hand; specifically, we ask participants often they believe the reader to practice reading outside of school.

Procedures

Recruitment

Participants were recruited from the combined first and second grade classroom at the Eliot Pearson Children's School in Medford, MA. Families were

made aware of the study through a letter sent home with children (see Appendix B). Written permission from a parent or legal guardian was obtained prior to scheduling interviews. Parents were also asked to provide some additional information about their child for purposes of analysis. Parents were asked to provide their child's age, native language, attitude toward reading, and level of reading ability.

Student Interviews

Each interview lasted approximately 30 minutes and was conducted during school hours at a time agreed upon by the classroom teacher. After a brief introduction in which I explained the purpose and procedures of the study, participants were asked two preliminary questions concerning what qualities they believe a "good reader" to possess, and who helps them learn to read. Participants then listened to the first audio recording. The order of the recordings was randomly determined for each participant. After listening to the first recording, participants answered the first set of questions. The questions were asked according to the script (Appendix E). Following the first set of questions, participants listened to the second recording followed by the second set of questions.

Chapter 4: Analysis

This project was designed with both multiple choice and open-ended response components, thus requiring two different approaches to analysis. Analysis of the multiple choice questions involved developing frequency tables to see how answer choices differed for each reader. Participant responses to the open-ended questions were categorized based on the participant's approach to answering the question. Separately, each data set contains valuable information about young students' understandings of metacognitive experiences; multiple choice data is useful for detecting patterns in answer choices, while data from the open-response component allows for an understanding of participants' thought process in choosing each answer.

Analysis of Multiple Choice Questions

Because of the small sample size, inferential statistics were not appropriate for analysis of the multiple choice responses in this pilot investigation. Descriptive statistics lend themselves well to this analysis, however, allowing for a beginning conceptualization of children's understandings of metacognitive experiences by exploring trends in group responses. I began analysis of the multiple choice data by creating a frequency table for each question, detailing the number of participants who chose each potential response for each reader. This allowed me to begin identifying patterns and determining which responses seem to be most salient in differentiating between the proficient and struggling readers.

Question 1: Estimate of Effort

Estimate of effort was measured by asking participants how often they think the reader practices reading at home. The majority of participants (N=4) responded that the proficient reader practices reading at home all the time; while most answers for the struggling reader indicated that participants believed the reader to practice at home only sometimes. Table 4.1 shows the frequency of responses for each question, separated by reader.

Table 4.1: Estimate of Effort Frequency Table

Response Item	Proficient Reader	Struggling Reader
All the time	4	0
Sometimes	1	4
Never	1	2

Question 2: Feeling of Satisfaction

Feeling of satisfaction was measured through the question: How much do you think he/she enjoys reading? Answers for this question were clustered around “very much” and “a little bit” for the proficient reader, and “a little bit” and “not very much” for the struggling reader. No participants answered “not at all” for either reader (see Table 4.2).

Table 4.2: Feeling of Satisfaction Frequency Table

Response Item	Proficient Reader	Struggling Reader
Very much	4	0
A little bit	2	2
Not very much	0	4
Not at all	0	0

Question 3: Feeling of Difficulty

Feeling of difficulty was measured by asking participants to decide whether the reader thought that the story was easy or hard to read. The difference between the two readers is particularly marked here, as 5 of 6 participants responded that the proficient reader thought that the story was easy to read, and all 6 participants responded that the struggling reader thought that the story was hard to read (see Table 4.3).

Table 4.3: Feeling of Difficulty Frequency Table

Response Item	Proficient Reader	Struggling Reader
Easy	5	0
Hard	1	6

Question 4: Feeling of Familiarity

Feeling of Familiarity was measured by asking participants if they thought that the reader had or had not ever previously read the story. Responses to this question were identical to the previous question, with the majority of participants responding that the proficient reader had previously read the story, and all participants responding that the struggling reader had no prior experience reading the story. Table 4.4 shows the frequency of responses.

Table 4.4: Feeling of Familiarity Frequency Table

Response Item	Proficient Reader	Struggling Reader
Yes	5	0
No	1	6

Question 5: Feeling of Confidence

The final question, measuring feeling of confidence, asked participants if they thought that the reader would call him or herself a “good” reader. All participants responded that they thought the proficient reader would call him or herself a “good” reader. Unlike the previous two questions, responses for the struggling reader were not in direct opposition to those for the proficient reader. Instead, only two participants responded that the struggling reader would not call him or herself a “good” reader (see Table 4.5).

Table 4.4: Feeling of Familiarity Frequency Table

Response Item	Proficient Reader	Struggling Reader
Yes	6	4
No	0	2

Analysis of Open-Response Questions

During data collection, I began to notice that participants took a number of different approaches in answering each question. While some participants focused on the sound of the reader’s voice, others focused on how fast or slow the reader was, for example. From the data, there emerged five broad approaches to answering the questions, many of which are grounded in the literature relating to metacognitive experiences and children’s ability formation. Participants tended to approach the open ended questions by focusing on the readers’ speed, accuracy, fluidity with which they read the passage, expression used during reading, or emotions they believe the reader to experience during reading. These five

approaches were used by all participants and were seen in responses to both recordings.

Focus on Reader Speed

Participants who focused on the reader's speed made comments referring to the pace of the reading, using words such as "fast" or "slow", or phrases such as "took a long time" or "needed lots of time". Consider the following example, reflecting a response to Question 1, meant to gauge estimate of effort, that focuses on the struggling reader's speed:

Example 4.1: Participant focuses on struggling reader's speed.

Question 1: *What makes you think that she practices at home sometimes?*

Response: *She was pretty slow like she hasn't practiced a lot and only reads once in a while.*

Focus on Reader Accuracy

In example 4.1, the participant focused on the reader's speed in her answer. Contrast this approach with another participant's response to the same question:

Example 4.3: Participant focuses on struggling reader's accuracy.

Question 1: *What makes you think that she never practices at home?*

Response: *She didn't get most of the words; she probably only reads at school but doesn't practice at home.*

This participant chose to answer the same question by focusing on the reader's accuracy in reading the passage. For the purposes of analysis in this study, accuracy refers to the reader's ability to correctly identify and read a word. Participants who approached the questions by focusing on accuracy typically

referred to the reader's ability to "get" the words. Through clarifications, I was able to determine that by "get" the words, participants were referring to the reader's ability to correctly read a word.

Focus on Reader Fluidity

Many responses also focused on the reader's ability (or inability) to read the passage smoothly, without breaks (or with breaks, in the case of the struggling reader). I classified these responses as responses that focused on reader fluidity.

The following example reflects a response focused on fluidity:

Example 4.3: Participant focuses on proficient reader's fluidity.

Question 4: *What makes you think that he has read the story before?*

Response: *He just said all the words one after the other without even thinking, like he already read them before.*

Focus on Reader Expression

Other responses focused on the reader's use of expression in his or her voice during reading. This approach was less easy to identify, as participants often struggled to make their thoughts clear. Consider the following example:

Example 4.4: Participant focuses on struggling reader's expression.

Question 1: *What makes you think that she enjoys reading "not very much"?*

Response: *She sounded... "blah". I don't know, she just didn't put any power into the words.*

For lack of a better word, this participant characterizes the struggling reader's expression during reading as "blah". Other participants focus on expression by referring to the sound of the reader's voice; for example, if it "didn't change" during the reading.

Focus on Reader Emotion

The fifth and final response approach concerns participants' beliefs about the emotions that the readers experienced as they read the passage. Because metacognitive experiences are believed to be related to the affective aspect of cognition, emotion-focused approaches are of particular interest in the study at hand. I considered an emotion-focused approach to the questions to be any response that mentioned the reader's feelings or concerned the readers internal state. Emotion-focused approaches were evident in a number of forms, from the readers' desires (e.g. desire to be a good reader), to the pride a reader may or may not feel in his or her ability. Consider this example of a participant's emotion-focused approach:

Example 4.6: Participant focuses on struggling reader's emotion during reading.

Question 2: *What makes you think she likes reading very much?*

Response: *She sounds happy when she's reading, like it's something she really likes to do.*

Using Response Approaches for Question Analysis

Categorizing participant responses according to these broad approaches allowed me to see which approaches were most frequently used for each question. Because each question was constructed to reflect a different metacognitive experience, this information is particularly helpful in beginning to understand participants' conceptualizations of each metacognitive experience. Table 4.6 shows the number of occurrences of each approach for every question.

Table 4.6: Occurrences of response approach by question.

	Q1: Estimate of Effort	Q2: Feeling of Satisfaction	Q3: Feeling of Difficulty	Q4: Feeling of Familiarity	Q5: Feeling of Confidence
Speed	5	2	8	4	3
Accuracy	7	4	9	5	5
Fluidity	5	2	3	3	2
Expression	1	6	3	5	2
Emotion	1	8	2	1	9

Participants used a range of approaches in responding to each question. At first glance, it is obvious that certain approaches are used more frequently for certain questions; for example, participants frequently approached question 3, relating to feeling of difficulty, by focusing on the reader’s speed and accuracy. Additionally, emotion-focused approaches to answering questions were popular for questions 2 and 5, relating to feeling of satisfaction and feeling of confidence. Further discussion of these and other patterns can be found in the following chapter.

I then further refined the data to specify which responses, if any, were used most frequently for the proficient reader versus the struggling reader. This information and its relevance will be further discussed in the following chapter. Table 4.2 shows the frequency of approaches to each question, separated by proficient reader (PR) and struggling reader (SR).

Table 4.7: Occurrences of response approach by question and reader.

	Q1: Estimate of Effort		Q2: Feeling of Satisfaction		Q3: Feeling of Difficulty		Q4: Feeling of Familiarity		Q5: Feeling of Confidence	
	PR	SR	PR	SR	PR	SR	PR	SR	PR	SR
Speed	2	3	1	1	4	4	1	3	1	2
Accuracy	3	4	2	2	6	3	3	2	3	2
Fluidity	2	3	1	1	1	2	2	1	1	1
Expression	1	0	3	3	2	1	4	1	2	0
Emotion	1	0	5	3	1	1	0	1	6	3

This table brings to light some patterns that are specific to each reader. For example, participants seemed to use a greater range of approaches in responding to question 4 for the proficient reader, whereas responses to the struggling reader are generally focused on speed and accuracy. Further discussion of these patterns can be found in chapter 5.

Chapter 5: Discussion

Background Information: School and Classroom Community

The school in this study is a small, university-affiliated laboratory-demonstration school that serves as a training and observation site for teachers and child researchers, in addition to providing a high quality early childhood program. The school is made up of about 80 students ranging in age from 3- to 8-years old. The educational program is based on a social constructivist approach to early childhood, and the school day is structured to provide students with a range of developmentally appropriate learning opportunities, including both teacher-planned activities and those that emerge from a child's interests and abilities.

As a self-described "inclusive" program, the school seeks to include a variety of students in its community, including children with various racial, ethnic, religious, and cultural backgrounds, as well as students with special rights. The family is an important part of the school community; families at the school are active in their children's classrooms and the broader school community, adding further emphasis to the importance of a strong home-school partnership. This discussion of the school community is essential to the study at hand, as

previous research places emphasis on the role of classroom organization of children's developing sense of their own and their peers' abilities (Rosenholtz & Simpson, 1984). Because the school in this study is adamant about not only including children from a wide variety of backgrounds and abilities, but taking an active stance against bias in all its forms, it is important that students' understandings of metacognitive experiences are considered in the context of the broader classroom and school community.

Participants in the present study are students in the combined first- and second-grade classroom; this is the oldest group of students at the school. At the time of the interviews, students have been in this class together for approximately 6 months, although many students have been with their classmates since beginning at the school in the preschool or kindergarten classrooms. As such, there is a sense of mutual respect and appreciation among the students that should not be forgotten as interpretation of the data proceeds. The curriculum in this classroom integrates creative expression and exploration, while emphasizing early academic skills in the areas of literacy, math, science, and the arts. The rhythm of the day includes whole-group meetings as well as small study groups, independent work periods, and outdoor play. Students engage in literacy experiences throughout the curriculum, but there is dedicated time for literacy small groups and literacy workshop. Literacy small groups are collaborative learning experiences; rather than separating children based on ability, these small groups are based on different genres of literature and allow for children to receive

individualized instruction from teachers while working with peers with a range of abilities.

Background Information: Participant Characteristics

The present study included the perspectives of 6 children, all of whom were 7 or 8 years old and native English speakers. In addition to providing consent and information about their child's age and native language, parents were also asked to rate their child's attitude toward reading as positive, indifferent, or negative. Although the full range of possible attitudes was included in the study, the majority of parents characterized their child's attitude toward reading as positive. Parents were also asked to choose from three statements pertaining to their child's reading ability: "My child excels in reading," "My child is performing satisfactorily in reading," or "My child has difficulty with reading". Here, a larger range of responses was given, with half of the sample rated as performing satisfactorily in reading, two participants rated as excelling in reading, and one participant rated as having difficulty with reading. Although a larger sample size would allow for more effective analysis in accounting for reading attitude and ability, I was nevertheless pleased to work with children encompassing all possible levels of attitude and ability. Discussion of the results will incorporate information relating to reading attitude and ability where appropriate, though I will be careful not to imply a relationship between these variables and the results, since the data is so limited by the small sample size.

Table 5.1 includes a summary of the participants' attitudes toward reading and reading abilities, as reported by parents.

Table 5.1: Summary of participant attitudes toward reading and reading abilities.

Participant	Attitude	Ability
1	Positive	Excels
2	Positive	Excels
3	Positive	Performing Satisfactorily
4	Indifferent	Performing Satisfactorily
5	Negative	Has Difficulty
6	Positive	Performing Satisfactorily

In addition to background information obtained from parents, I began each interview by asking participants two background questions in attempt to provide some context for their responses. I first asked participants to describe what they believe makes someone a “good” reader. This question was meant to provide insight into the ideas students have about proficient readers. Four of six participants emphasized that good readers read frequently, reflecting an understanding that extensive reading can contribute to proficiency in reading. In further support of this understanding, two participants referred to the capacity of good readers to build proficiency over time. This idea was reflected through answers such as “Good readers practice a lot; they start at the lowest level and go up.” Another participant stated that good readers “get better every time they read more and learn more words”. These responses reflect an understanding that a “good reader” is not necessarily someone who reads perfectly, but someone who shows persistence and improvement over time.

Other answers to this first question take into account readers' feelings about reading and learning in general; some participants mentioned that good

readers “like reading”, while others note that good readers “enjoy learning”. These responses begin to capture student understanding of metacognitive experiences, which are closely related to a person’s feelings about a cognitive task. Other participants chose to respond to this question by emphasizing the specific strategies that good readers use, such as sounding out words and asking questions.

Interestingly, both students whose parents stated that they “excel in reading” mentioned that good readers read with the ultimate goal of comprehension. For example, one participant stated that good readers “really focus on getting the words right, but also on what happens in the story because when you actually get the story, that’s when you know you’re a good reader”, while another suggested that good readers “think about the story and imagine what’s coming up”. Because previous research has suggested that until about fourth grade, students are still in the early phases of understanding that they have influence over their comprehension, the fact that these early readers had such a complex understanding of reading is indicative of a high level of thinking and quality, comprehension-focused reading instruction.

The second preliminary question that I asked participants concerned the people in their life who help them learn to read. The purpose of this question was to gain an understanding of the major influences on participants reading. Every participant identified their mother as the first person who helps him or her read. The second most popular response to this question, mentioned by five out of six

participants, was that their friends help them learn to read. This response was particularly interesting, as the present study asks participants to consider the experiences of a same-aged (though fictional) peer. Since participants clearly look to their friends as a source of support in learning to read, it is reasonable to infer that they have some experience working collaboratively with their peers and may therefore have some experience estimating the mental states of their friends during reading-related tasks. Interestingly, only two participants reported that their teachers help them learn to read, despite the fact that each child receives individual support from their teachers on a regular basis. This suggests to me that peers play a more important role in the early stages of learning to read than I had originally expected based on literature review.

Trends in Understandings of Metacognitive Experiences

The primary goal in analyzing the data was to understand how participants characterize the metacognitive experiences their peers, and how these characterizations differ depending on the ability level of the peer. The following subsections will explore participant responses to each multiple choice question and its corresponding open-ended component, emphasizing the response approaches that were used most frequently in answering each question. I will also compare responses between the proficient reader and struggling reader in an attempt to determine how children's understandings of metacognitive experiences differ based on peers' abilities. Discussion of each question will also take into account the role of the classroom context and school culture as it relates to the

results, as well as similarities and differences between individual participants.

Taken together, each subsection will work towards a complete picture of participants' understandings of the metacognitive experiences of their peers.

Question 1: Estimate of Effort

I used Metallidou and Efklides' (2001) definition of estimate of effort to begin analysis of participant responses to this question. According to the authors, estimate of effort is a judgement that refers to the qualities of one's own cognition that does not take into account the affective response, a distinguishing feature that separates it from other metacognitive experiences. Participants in this study for the most part ignored the readers' affective responses in their estimates of effort, approaching this question by focusing primarily on the speed, accuracy, and fluidity of the readings. Consider the following example, which approaches this question by focusing on accuracy:

Example 5.1: Focus on proficient reader's accuracy in estimate of effort.

Question: *What makes you think that he practices at home all the time?*
Response: *He got so much words. You don't just get all the words if you don't practice reading a lot because, how else would you learn them?*

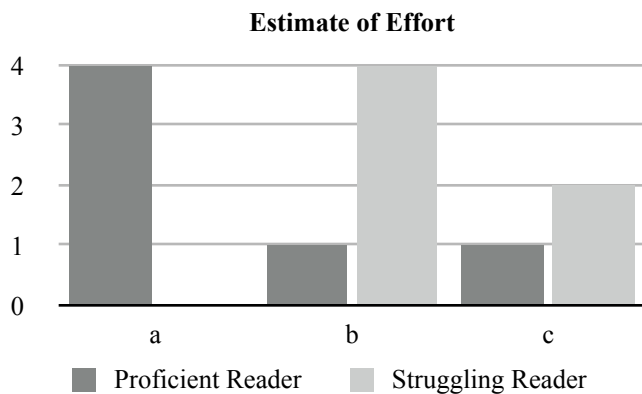
This response reflects an understanding that sustained effort in reading is necessary in order to "get all the words". Several other participants make similar statements such as "if he didn't read a lot he couldn't just read Frog and Toad and be that good". Responses to the struggling reader reflect a similar understanding; in the case of the struggling reader, however, participants note that lack of

consistent effort is likely the cause for the struggling reader’s difficulty with the text.

Answer choices for this question are depicted below in Figure 5.1.

Responses show that participants are in general agreement that the struggling reader definitely does not practice every day. Interestingly, answer choices for the proficient reader were somewhat spread out, with two participants believing that the proficient reader practices reading sometimes, or never. Participants support these answer choices by stating that the readers already know all of the words, so they do not need to practice reading at home. Initially, I was surprised by these answers, as they seem to suggest that sustained effort in reading is not necessary for proficiency. Upon further analysis, however, it is possible that participants were referring only to the Frog and Toad text featured in the recording, rather than reading in general, in answering this question.

Figure 5.1: Estimate of Effort Multiple Choice Responses



Interestingly, the participant who reportedly struggles with reading was the only participant to respond that the proficient reader never practices reading at home, offering the explanation that the proficient reader is “already good” at

reading, and therefore does not need to practice at home. Although it is most likely that this participant is referring to the proficient reader's ability to read the Frog and Toad story in question, rather than referring to the reader's ability in general, this response is nevertheless intriguing and reflective of a conception of reading that is different from the other participants. For the struggling reader, this participant indicated that the reader practices at home "sometimes", a response that is consistent with the other participants. Because this participant struggles with reading herself, it is possible that she is better equipped to interpret the effort expenditure of the struggling reader, whereas she has difficulty judging the metacognitive experiences of a proficient reader.

In accordance with Metallidou and Efklides, participants generally did not consider the readers' emotion in their answers. Indeed, only one participant mentioned the reader's emotions in response to this question:

Example 5.2: Estimate of effort using emotion-focused approach.

Question: *What makes you think that she practices at home all the time?*
Response: *She's happy to read; she's a good, smooth reader. To get to be that way you have to practice a lot.*

Although this participant initially focused on the proficient reader's emotion, she also refers to the reader's fluidity, calling her a "smooth reader". This quote, therefore, reflects two approaches to answering this question; the participant suggests that a reader's emotions play a role in judging effort expenditure, as well as fluidity.

Question 2: Feeling of Satisfaction

Question 2, and all questions following, ask participants to reflect on the metacognitive feelings of the readers. Unlike estimate of effort, these metacognitive feelings are believed to have an affective character; as such, I expected to see more recognition of the reader's emotions in response to these questions. This did indeed seem to be the case, as emotion-focused approaches were used more frequently than any other approach. Participants provided rich descriptions of the emotions that the readers felt; this was particularly evident for the proficient reader. Consider the following example:

Example 5.3: Emotion-focused response to feeling of satisfaction.

Question: *What makes you think that he enjoys reading very much?*

Response: *He just sounds happy when he's reading, like it's something he really likes to do.*

It is interesting to note that participants used more emotion-focused approaches in their response to the proficient reader than the struggling reader. It is possible that because the proficient reader did not have any obvious mistakes, participants were better able to attend to the possible emotions that the reader was experiencing.

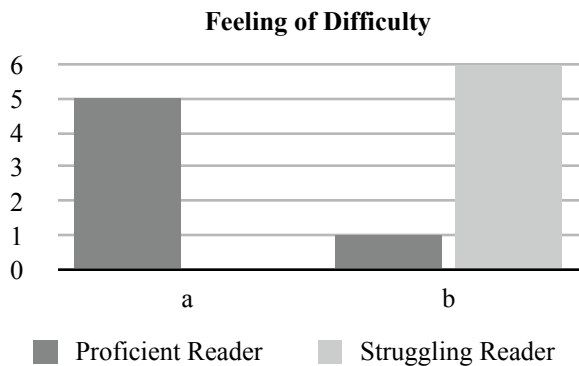
Responses for the struggling reader were generally spread across all five possible approaches, suggesting that the reader's slow speed and lack of accuracy, fluidity, and expression was more obvious to participants than possible emotions. This is important as we work towards an understanding of participants' conceptualizations of feeling of satisfaction. It may be that it is more difficult for

students to recognize the affective component of feeling of satisfaction for struggling peers than for proficient peers.

Question 3: Feeling of Difficulty

Feeling of difficulty “monitors the obstacles or interruptions of processing” (Efklides, 2001). Responses to this question are quite marked in the difference between the two readers (see Figure 5.2). All but one participant responded that the story was easy for the proficient reader, and all participants responded that it was hard for the struggling reader.

Figure 5.2: Feeling of Difficulty Multiple Choice Responses



In their responses, participants clearly approached this question by focusing on speed and accuracy. This was the case for both the proficient and struggling reader. This suggests that among participants, difficulty is assessed through the reader’s ability to read quickly, accurately, and fluidly from one word to the next.

In her response to this question, the participant who struggles with reading responded that the proficient reader thought that the story was difficult to read.

Further analysis of the open-response component of this question provides useful insight:

Example 5.4: Feeling of difficulty open-response for proficient reader.

Question: *What makes you think that it was hard for her to read this story?*

Response: *Even good readers think reading is hard sometimes. She got all the words right but it's still hard to read some things.*

This participant acknowledges that the reader was accurate in her reading, and we can reasonably assume that she thinks the proficient reader is a “good reader”. However, she makes a more general statement about the difficulty of reading to support her answer choice, rather than focusing her response on the reader’s ability. This response supports previous research on ability formation that suggests that younger students are only beginning to develop an awareness of others’ abilities. Furthermore, and perhaps more importantly, this response reflects this participant’s unique experience in coping with difficulties in learning to read. By stating that “even good readers think reading is hard sometimes” she is acknowledging that difficulties with reading are normal for all readers, a notion that is likely reinforced in her classroom and at home.

Though it was used less frequently, expression was also an important component of participant responses to this question. The following example:

Example 5.5: Expression-focused response to feeling of difficulty.

Question: *What makes you think that it was easy for him to read this story?*

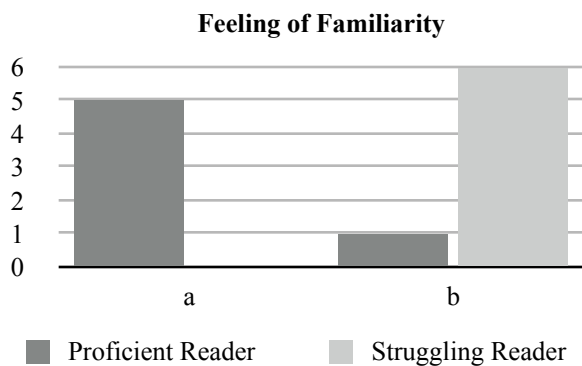
Response: *He reads like someone reading a story to someone else, with different sounds in his voice.*

This response suggests that the ease with which the proficient reader was able to read the story is reflected in the “sounds in his voice”, or, the expression used while reading. In general for this sample, however, feeling of difficulty is understood as a straightforward reflection of reading speed and accuracy.

Question 4: Feeling of Familiarity

Much like for feeling of difficulty, participant responses to feeling of familiarity were clearly divided between the two readers (see Figure 5.3). This similarity is expected in the literature, because feeling of familiarity, like feeling of difficulty, is also related to processing fluency (Efklides, 2001). Feeling of familiarity, however, involves the understanding that the sources of fluency is located in the past; that is, prior experience has contributed to the outcome.

Figure 5.3: Feeling of Familiarity Multiple Choice Responses



Response-approaches used in answering this question are more varied than for feeling of difficulty, however. Participants seemed to use the full range of approaches in determining whether the reader had previous experience with the text. Many participants refer to the idea that continued practice (that is, familiarity with the text) is linked with proficiency. The following example reflects this:

Example 5.5: Participant acknowledges that practice leads to proficiency.

Question: *What makes you think that he has read the story before?*

Response: *He had no trouble, even with the hard words. He probably had trouble with the hard words when he read it the first time but I think this isn't the first time he's reading it.*

This idea was also conveyed for the struggling reader; several participants suggested that with more opportunities to practice reading, the struggling reader would improve:

Example 5.6: Participant recommends continued practice for struggling reader.

Question: *What makes you think that she hasn't read the story before?*

Response: *It took her a long time, like she didn't ever see the words before. I think she should practice more because if she reads them again and again she'll get a little better every time.*

In general, participants seem to understand feeling of familiarity as being reflected in many aspects of reading. While no approach seemed most useful to participants, the main understanding among participants was that familiarity with the text will ultimately lead to proficiency over time.

Again for this question, the participant who struggles with reading is the only participant to answer that the proficient reader has never read the story before. This is interesting, considering that in her response to the first question, she responded that the reader did not need to practice because she “knows all of the words already”, suggesting that the reader had prior experience with the text. Her response to this question is very similar to her response to the first question, however. She says, “She was reading it like she already knew the words and what was going to happen.” At first glance, these two responses seem to contradict one

another; she believes that the proficient reader has never read the story before, and yet she suggests that the proficient reader does not need to practice reading because she already knows all of the words. However, these responses may be further indications of this participants' own understanding of proficient reading. Because this participant struggles with reading, proficient reading may be difficult to understand, and therefore her ability to perceive the metacognitive experiences of a proficient reader may be impacted. In her experience, it may appear that proficient readers simply "know all the words" and therefore can read a text quickly and accurately, even with no prior experience.

Question 5: Feeling of Confidence

Feeling of confidence, according to Efklides (2001), is an experience related to the outcome of cognitive processing. Although this is typically measured through judgements of the probability of an answer being correct, the present study choice to take a different approach by asking participants to make a judgement about whether the reader would call him or herself a "good reader". This question provided unique insight both into participant understanding of the metacognitive experience, but also into participant understanding of what it means to be a good reader.

Participants used an emotion-focused approach in responding to this question more than any other approach. This is not surprising, given the affective nature of the metacognitive feeling, as well as participants inclusion of personal anecdotes about what they believe makes someone a "good" reader. As I

expected, all participants believed that the proficient reader would call herself a “good” reader. Even within emotion-focused approaches, there was a range of explanations. For the proficient reader, some participants emphasized the pride that he or she likely experiences while reading, for example:

Example 5.7: Emotion-focused approach to feeling of confidence.

Question: *What makes you think that she would call herself a “good” reader?*

Response: *I think reading is maybe something she’s proud of about herself because she can read so smooth and make hardly any mistakes.*

Another participant explained her own understanding of “good” readers by answering this question:

Example 5.8: Participant explains her own understanding of “good” readers.

Question: *What makes you think that she would call herself a “good” reader?*

Response: *Everyone thinks they are a good reader, because everyone IS a good reader.*

Although this participant did not answer this question in relation to the specific aspects of reading that might lead the reader to call herself a “good” reader, I was nevertheless intrigued by this response, which I believe is indicative of the high level of support that students receive in this classroom context. Although no other participant stated it as plainly as this, participants’ hesitation to say that the struggling reader would not call him or herself a “good” reader indicates to me a similar point of view.

Because most of the previous questions had been so divided in their responses between the proficient and struggling reader, I initially expected to see

a similar trend with this final question. Instead, I found that most participants tended to respond that both readers would say that they are “good” readers. In this particularly insightful quote, this participant notes that despite the struggling reader’s difficulties with the text, she would still call herself a “good” reader:

Example 5.9: Participant characterizes struggling reader’s feeling of confidence.

Question: *What makes you think that she would call herself a “good” reader?*

Response: *It took her a long time and it was so hard for her and she didn’t even give up! She just kept going even though it was hard and the words were hard--she’s probably so happy that she got all the way to the end, of course she would say she’s a good reader.*

I suspect that participant responses to this final question are an indication of the encouragement they receive in school and at home to persist with reading despite difficulties. Even those students who responded that the struggling reader would not call him or herself a good reader indicated that the reader may call themselves “good” readers of other texts, just not the text presented here.

Consider this example:

Example 5.10: Participant reasons about feeling of confidence for struggling reader.

Question: *What makes you think that he wouldn’t call himself a “good” reader?*

Response: *He was slow and just sounded sad. For this book I think he’d say he’s not good. But that’s okay, because there is other books he’s a good reader for.*

Participants seem to understand feeling of confidence in reading as being specifically related to individual texts, rather than as an all-encompassing feeling about reading in general.

Influences of Classroom and School Culture

Participants responses to the open-ended questions reflect many of the values and beliefs about learning to read that are embedded in the classroom and school culture. Many participants used language reminiscent of “teacher talk” to describe their understandings of the metacognitive experiences of each reader. For example, participants’ understandings of estimate of effort generally reflect an understanding that proficiency in reading is the result of sustained practice. This is a notion that is highly reinforced in this particular classroom and at the school. Because of the inclusive nature of the school, children with a wide range of abilities are included in each class. Furthermore, because reading groups are not separated by ability, students have frequent opportunities to work collaboratively with peers of all levels of reading skill. Although students likely recognize the differences in reading ability among their peers, they are consistently reminded by teachers that “everyone is working on something” and that all students have areas of strength and weakness. This idea is further reinforced by teachers who frequently remind students that consistent practice with reading is essential for improvement. Literacy is embedded in all aspects of the curriculum, providing students with ample opportunities to practice reading at school. Participant responses to this first question seem to indicate an understanding that proficient readers are those students who frequently choose to practice reading. For struggling readers, reading is something that they are “working on” and with practice, they will eventually become proficient. This use of language that mimics

“teacher talk” in the classroom suggests that students draw upon the language used by teachers in the classroom in their interpretations of the metacognitive experiences of their peers. As such, it is important for teachers and staff to be deliberate in the language used to describe proficient and struggling readers, and the language used to discuss metacognitive experiences.

In considering the role of school culture on participants’ responses, a discussion of the school’s anti-bias curriculum is also warranted. As a part of the anti-bias curriculum, students are encouraged to recognize and appreciate the differences among their peers. Open discussions about differences are encouraged, and children are taught to take an active stance against any form of bias. Differences in ability are just one of many types of differences that are addressed in this curriculum. This philosophy of education is evident in participants’ responses to many of the questions; especially in the case of the struggling reader. Many students acknowledge that although the reader struggles, he or she is “still a good reader” and has many strengths.

Study Limitations

This study faced several limitations in its design and methodology which may have impacted the results. First and foremost, this study was limited by its small sample size. Although the six interviews provided rich data, additional participants, particularly those with varying in age, attitude toward reading, and reading ability, would have added more depth to the data. The majority of participants in this study had a positive attitude toward reading, and either

excelled or performed satisfactorily in reading. As such, it is possible (indeed, probable) that the data obtained from the interviews is reflective of a more positive view of reading than might otherwise be obtained with a larger sample size.

A second factor that may have impacted student responses was the order of presentation of the audio recordings. Although the order of the recordings was randomly determined for each participant, it is impossible to prevent participants from comparing the audio recordings and adjusting their responses accordingly. It is possible that participant responses were impacted by the role of the audio recordings. A possible solution to this problem would be to randomly assign participants to listen to either the proficient reader or the struggling reader, rather than both, then compare responses. Given the small sample size, however, this method was not feasible for the present study.

This study was also limited by its focus only on participant interviews. A more complete picture of student understandings of metacognitive experiences could be achieved by considering participants within the broader classroom context, through more in-depth parent and teacher interviews, for example, or by observing real-world collaborative situations. Although the present study achieved its primary goal, the results could have benefitted from additional contextual information.

Future Directions

Throughout data collection, it became clear that participants in this study were part of a larger classroom context that greatly influenced their understanding of reading ability and, in turn, metacognitive experiences. Future research would greatly benefit from including this classroom community in its investigation. Once a better understanding of students' understandings of metacognitive experiences is achieved, it will be important for researchers to investigate the role of classroom organization in the development of these understandings. For example, how do student understandings of their peers' metacognitive experiences differ among classrooms with ability grouping? Furthermore, what role, if any, does a students' own reading ability play in her understanding of her peers' metacognitive experiences? Do student understandings of their peers' metacognitive experiences differ depending on the amount of opportunities for collaborative learning? These questions and others related to the broader classroom context will be important in future research.

One major limitation to the present study was its use of fictional peers to assess student understanding of metacognitive experiences. Wherever possible, future research should use real-world collaborative learning scenarios as the basis for assessing student understanding. Although participants in the present study were able to effectively answer the interview questions based only on the audio recording, ultimately, this scenario was unrealistic. In order to obtain the most impartial results, real scenarios involving actual classmates is necessary. This type

of methodology would also allow for exploration of the role of different types of peer relationships in students' understandings of metacognitive experiences. For example, do students' understandings of the metacognitive experiences of their peers differ based on familiarity or friendship with peers?

This is an exciting area of inquiry for researchers in child development, as the field has been largely dominated by studies with older students and adults. Continued research in this area will prove useful for teachers and educational researchers who strive to identify teaching strategies that build metacognitive awareness in students. This area of research is ripe with possibility and ready for new perspectives.

Chapter 6: Summary and Implications

The children who participated in this study shed light on the ways in which young students understand and make sense of the metacognitive experiences of their peers. Exploring their perspectives on the thoughts, feelings, and abilities of the proficient and struggling readers have allowed us to begin to recognize the high level of thinking employed by even our youngest students. Participants easily recognized the differences in ability between the two readers; these differences were made obvious in their answer choices and supporting responses. Nevertheless, participants made it clear that despite differences in ability, both readers were viewed as highly capable students.

The current study accomplished some very important goals. First, it defined metacognitive experiences and highlighted the importance of metacognition in collaborative learning contexts and for skilled reading. Importantly, it shed light on the need for further research on metacognitive experiences both in general, and especially with younger populations. This study presented five broad approaches that participants used to respond to questions, which were the basis for constructing an understanding of students' perceptions of metacognitive experiences. Furthermore, it identified that students who struggle with reading themselves may have very different interpretations of the metacognitive experiences of their peers compared to their proficient counterparts. It acknowledged limitations in study design and methodology that could be improved upon in future research, and offered additional suggestions for

future research directions. Ultimately, continued exploration of these questions will allow for a more complete understanding of the ways in which peers interact in the learning process, and for development of effective teaching strategies to help students effectively recognize their own metacognitive experiences and those of their peers.

Implications for Education

Metacognitive knowledge and awareness is already highly valued in educational settings; it is believed to be an important aspect of the self-regulated learning process. This manuscript calls for increased awareness about the importance of metacognitive experiences in the classroom, particularly in collaborative contexts. Because they are individual, internal experiences, they are difficult to explain and cannot be directly “taught” to students. However, students can be made aware of the importance of paying attention to these internal states and using them to aid in monitoring progress on a task. Furthermore, collaborative learning situations could be made more effective if peers are able to recognize external indications of internal metacognitive experiences, as well as strategies for more effective collaboration.

Participant responses also indicate that they are highly receptive to language used in the classroom relating to learning to read. For example, many participants expressed the sentiment that “everyone is a good reader”, language that is frequently used in this highly supportive classroom. This language becomes a part of the ways in which students understand reading and evaluate

their own and their peers' reading-related experiences. As such, it is essential that teachers are deliberate in the language they use to describe "good" readers and the language used to address difficulties in reading.

This study identified one participant whose responses frequently differed from other participants' responses; this participant struggled to read herself, and her unique experiences in learning to read were reflected in her open-responses. This participant seemed to have difficulties understanding the metacognitive experiences of the proficient reader, likely because she is not a proficient reader herself. It is essential for teachers to understand that their students' experiences in learning to read have an impact on the way they perceive the metacognitive experiences of their peers, and to incorporate metacognitive strategies into their reading instruction, particularly during collaborative learning scenarios.

Student understandings of a peer's metacognitive experiences are complicated and multifaceted, taking into account the broader classroom community, as well as the student's unique ideas about and approaches to learning. However, the students featured in this study were capable of providing deep insight into the metacognitive experiences of a fictional peer. The insight that students have about their own peers, their friends, could prove to be incredibly valuable for collaborative learning situations in the classroom. This call for increased attention to metacognitive experiences is ultimately for teachers to be aware of the internal experiences of their students and to allow their students opportunities to share and reflect upon these experiences with peers. These

considerations of metacognitive experiences will not only help teachers to better understand their students, but help students to understand one another.

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Appendix A: Institutional Review Board Approval Letter



OFFICE OF THE VICE PROVOST

Social, Behavioral, and Educational Research
Institutional Review Board
FWA00002063

Title: Young Students' Understanding of the Metacognitive Experiences of Proficient and Struggling Readers

February 13, 2012 | Notice of Action

IRB Study # 1201022 | Status: ACTIVE

PI: Elizabeth Hamel
Faculty Advisor: Calvin Gidney

This research protocol now meets the requirements set forth by the Office for Human Research Protections in 45 CFR 46 under Expedited Category 7.

Reviewed 2/11/2012 – Expires 2/10/2013

- Approved for 10 participants for the duration of the study.
- Only copies of approved stamped consent documents may be utilized when enrolling participants.

Protocol Management:

- The PI is responsible for all information contained in both this notice of action and on the Investigator Responsibilities Sheet.
- For all changes to the protocol, submit: *Request for Protocol Modification* form
- All Adverse Events and Unanticipated Problems must be reported to the Office of the IRB promptly (no later than 7 calendar days after first awareness of the problem) using the appropriate forms.
- Six weeks prior to the expiration of the protocol on 2/10/2013, investigators must submit either a *Request for Continuing Review* or a *Request for Study Closure*
- All forms can be found at: <http://www.tufts.edu/central/research/IRB/Forms.htm>

IRB Administrative Representative Initials: _____

Handwritten initials "JNS" in black ink, written over a horizontal line.

Appendix B: Letter to Families and Permission Form

Dear Families,

My name is Elizabeth Hamel, and I am a Master's student in the Department of Child Development at Tufts University. Last year, I worked with some of your children in the Kindergarten here at EPCS, and this year I work in the Extended Day program. I am currently doing research for my Master's Thesis, and I would like to invite your child to participate!

I am studying children's understandings of their peers' experiences in learning to read. As a participant in this research, your child will listen to two audio recordings of students reading a familiar story, then answer questions based on the recordings. The questions will ask your child to think about the things that proficient and struggling readers think about and feel as they read. This is not a measure of your child's reading abilities, and there are no right or wrong answers! By participating in this research, your child will help us to better understand the psychological experience of learning to read. As you know, most children enjoy sharing their point of view, so I expect that your child will enjoy taking part in this research!

The total interview is expected to take approximately 30 minutes and will be conducted during school hours. Although it is not expected, it is possible that listening to the recording of a struggling reader may bring about some feelings of anxiety. In the event that your child expresses any discomfort, the interview will be stopped. In fact, participation is voluntary and your child may decide to stop at any time, for any reason. Furthermore, you may remove your child from the study at any time. You and your child will not be treated differently if you choose not to participate, and all information gathered will be treated confidentially so that your child's name will not be associated with his or her responses.

If you would like your child to participate, please complete the attached form and return it to the front desk at EPCS by Wednesday, February 29th. If you have any questions or concerns, please feel free to contact me directly at Elizabeth.Hamel@tufts.edu. You may also contact my thesis advisor, Chip Gidney, at Chip.Gidney@tufts.edu, or the IRB Administrator, Lara Sloboda, at Lara.Sloboda@tufts.edu. Thank you for your consideration!

Sincerely,

Elizabeth Hamel

_____ YES, I give permission for my child,
_____, to participate in this research.

_____ NO, I do not give permission for my child,
_____, to participate in this research.

Parent/Guardian Signature:

Date: _____

Additional information:

1. How old is your child? _____
2. What is your child's native language? _____
3. How would you describe your child's attitude towards reading?
 - a. Positive
 - b. Negative
 - c. Indifferent
4. How would you describe your child's reading ability?
 - a. My child excels in reading.
 - b. My child is performing satisfactorily in reading.
 - c. My child has difficulty in reading.

Appendix C: Audio Recording Scripts

Proficient Reader (PR): No errors in decoding or fluency.

Frog pushed Toad onto the front porch. Toad blinked in the bright sun.

“Help!” said Toad, “I cannot see anything.”

“Don’t be silly,” said Frog, “What you see is the clear warm light of April. And it means that we can begin a whole new year together, Toad.”

“Think of it,” said Frog, “We will skip through the meadows and run through the woods and swim in the river. In the evenings we will sit right here on this front porch and count the stars.”

Struggling Reader (SR): Decoding errors are underlined with the correct word in parentheses. SR will also have fluency errors characterized by “choppy” reading and minimal phrasing.

Frog pushed Toad onto the front p..p.. patch (porch). Toad b.. blanked (blinked) in the bright sun.

“Help!” say.. sad (said) Toad, “I cannot see an.. any.. anyone (anything).”

“D..d..on.. dont (don’t) be silly,” say.. sayed (said) Frog, “What you see is the clear worm (warm) L..lay..late (light) of April. And it means that we can begin a w..w..wole (whole) new year to..ge..ther, Toad.”

“Think of it,” sayed (said) Frog, “We will skip th.. throw (through) the meadows and run throw (through) the woods and swim in the river. In the e.. eye... eye... (evenings) we will sit right here on this front p.. patch (porch) and count the stars.”

Appendix D: Student Interview Protocol

1. How often do you think he/she practices reading at home? (estimate of effort)
 - a. All the time, every day or almost every day
 - b. Sometimes, once or twice a week
 - c. Never, or almost never
 - i. What makes you think that he practices reading at home (*a, b, or c*)?

2. How much do you think he/she enjoys reading? (feeling of satisfaction)
 - a. Very much
 - b. A little bit
 - c. Not very much
 - d. Not at all
 - i. What makes you think that he/she enjoyed reading the story (*a, b, c, or d*)?

3. Do you think he/she thought that it was easy or hard to read this story? (feeling of difficulty)
 - a. Easy
 - b. Hard
 - c. Don't know
 - i. What makes you think that it was easy/hard for him/her to read this story?

4. Do you think he/she has ever read this story before? (feeling of familiarity)
 - a. Yes
 - b. No
 - c. Don't know
 - i. What makes you think that he/she has/hasn't read the story before?

5. Do you think that he/she would call him/herself a "good" reader? (feeling of confidence)
 - a. Yes
 - b. No
 - c. Don't know
 - i. What makes you think that he/she would/wouldn't call him/herself a "good" reader?

Appendix E: Student Interview Script

Interviewer: *First, I'd like to know what you think makes someone a good reader. What do you think?*

(Participant responds.)

Interviewer: *Who helps you learn to read?*

(Participant responds)

Interviewer: *Great, thank you. Now we're going to listen to a recording of a student who is just your age. He/she is reading a Frog and Toad book. We'll listen to him/her read, then I'm going to ask you some questions. Are you ready to start?*

After listening to the first recording, participants will answer the first set of questions.

Interviewer: *First, how often do you think he/she practices reading at home? Does he/she practice reading all the time (every day or almost every day)? Does he/she practice reading sometimes (once or twice a week)? Or, does she never (or almost never) practice reading?*

(Participant responds)

Interviewer: *What makes you think he/she practices reading all the time (sometimes, never)?*

(Participant responds)

Interviewer: *How much you think he/she likes reading? Do you think he/she likes to read very much, a little bit, not very much, or not at all?*

(Participant responds)

Interviewer: *What makes you think he/she likes to read very much (a little bit, not very much, not at all)?*

(Participant responds)

Interviewer: *Great. Now, do you think he/she thought it was easy or hard for her to read this story?*

(Participant responds)

Interviewer: *What makes you think that he/she thought it was easy (hard) to read?*

(Participant responds)

Interviewer: *Ok. The fourth question is, do you think he/she has ever read this story before? Yes or no?*

(Participant responds)

Interviewer: *What makes you think that he/she has (has not) read the story before?*

(Participant responds)

Interviewer: *Great. This is the last question. Do you think he/she would call him/herself a "good" reader? Yes or no?*

(Participant responds)

Interviewer: *What makes you think she would (wouldn't) call herself a good reader?*

(Participant responds)