"WHAT WERE YOU THINKING?": THE USE OF METACOGNITIVE STRATEGY DURING ENGAGEMENT WITH READING NARRATIVE AND INFORMATIONAL GENRES

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This qualitative case study illustrates and compares the metacognitive strategies that a grade-3 female student used while reading narrative and informational texts. Data were collected from interviews, observations, and videotaping of the participant's narrative and informational text oral reading sessions and examined using thematic analysis. Findings showed that she used markedly different metacognitive strategies for each genre, resulting in comprehension difficulties while reading the informational text. This article suggests that for students to meet the challenges of informational texts, they must be taught specific metacognitive strategies while working with explicit text patterns.

Key words: metacognition, comprehension, text, stimulated recall, self-regulation

Cette étude de cas qualitative illustre et compare les stratégies métacognitives utilisées par une élève de 3e année en lisant des textes narratifs et informatifs. Les données, provenant d'entrevues, d'observations et de vidéos des séances de lecture à haute voix de ces textes par la participante, ont fait l'objet d'une analyse thématique. Les résultats indiquent que l'écolière avait recours à des stratégies métacognitives nettement différentes pour chaque genre de textes, ce qui entraînait des difficultés de compréhension pour les textes informatifs. Il semble donc que, pour que les élèves soient en mesure de saisir les textes informatifs, il faut leur enseigner des stratégies métacognitives particulières tout en tenant compte de la structure explicite du texte.

Mots clés : enseignement de la lecture, métacognition, compréhension, texte, rappel stimulé, autocontrôle.

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In this article I report my findings from my instrumental case study (Stake, 1995) which illuminates the metacognitive strategy use of a grade-3, female student while she read narrative and informational texts. I focused on one student to develop my understanding of her use of metacognitive strategy by holding up for analysis her conversation during spontaneous and researcher prompted metacognition. To accomplish this purpose, I made video tapings of sessions while the student read narrative and informational texts orally, and sessions in which I used stimulated recall (SR) to access her metacognition. The following question framed the study: What is the nature of the student's use of metacognitive strategy during oral readings of narrative and informational texts? In answering this question, I sought to enhance awareness of some of the processes of learning, and of reading in particular.

BACKGROUND TO THE STUDY

Simply put, metacognition is the process of thinking about one's own thinking. As individuals engage in any mental activity, in any knowledge domain, metacognition is a tool of wide application for solving many sorts of problems (Flavell, Miller, & Miller, 2002). Its central role in problem solving and learning has important applications in the field of education, with some of the richest applications in the area of reading.

When applied to the field of reading, the concept of metacognition contributes to a constructivist understanding of how reading comprehension occurs, as well as to a body of knowledge regarding instructional strategies that facilitate reading comprehension (Tracey & Morrow, 2006). In constructivist theory, a person learning something new brings to that experience all his or her previous knowledge and current mental patterns. Constructivist learning is intensely subjective and personal, a process and structure that each person constantly and actively modifies in the light of new experiences. As Wilson and Daviss (1994) point out, each individual structures his or her own knowledge of the world into unique patterns and connects each fact, experience, or understanding in a subjective way, ultimately binding the individual into rational and meaningful relationships with the wider world.

With the theory of constructivism, the reading process is one in which a reader constructs his or own meaning while reading. Existing knowledge, organized as schemas, influences the construction of these meanings or, in other words, comprehension. Rosenblatt (1994), in particular, has shown how individuals construct their own interpretations based on their existing schemas or personal background knowledge. Metacognitive theory further extends researchers' understanding of comprehension by elaborating on how proficient readers mentally engage with text during reading.

Interest in children's metacognitive abilities and a concern with developing these abilities with regard to reading has grown out of Durkin's research in the late 1970s. In her seminal study, Durkin (1978) revealed that teachers most often employed the directed reading lesson to develop reading comprehension, as often expounded in teacher education faculties. This technique, still popular and promoted in many basal reading series, dictates that a teacher introduces a reading selection to students, guides their reading of the text, and then discusses the reading with them. This approach to reading instruction offers few tools that students can use independently to facilitate their own reading comprehension. In short, the students are left in a teacher-dependent state.

Concerned with these findings, researchers looked for alternatives to the directed reading lesson that would afford greater opportunities for students to develop independent reading comprehension abilities. The results of this research identified metacognition as a way to understand reading comprehension and as an approach to comprehension instructtion (Duffy, 2002).

In their classic overview of metacognitive skills and reading, Baker and Brown (1984) point out that metacognition is implicated as a constructive process in all theories of reading. In these theories, comprehension is viewed as an active process of hypothesis testing or schema building. Baker and Brown determined that proficient readers employ a number of metacognitive strategies during reading that assist them to understand a text. For example, proficient readers, aware of whether or not they understand what they are reading, will use "fix-up" strategies when comprehension fails, such as rereading, slowing down, or looking up word definitions. They might use other processes to assist

comprehension such as making associations to ideas presented, making predictions about what is coming up in the text, or revising prior knowledge that is inconsistent with ideas in the text (Pressley, 2002). Some of the other metacognitive skills Baker and Brown (1984) identify in proficient readers include clarifying the purposes of reading, identifying important aspects of a message, focusing attention on major content rather than trivia, engaging in goal-setting and determining if these goals are being achieved, and taking corrective action when comprehension fails.

Although researchers have demonstrated how good readers use metacognitive strategies effectively, others have shown that less proficient readers have far less metacognitive awareness than proficient readers and that young children are less likely to display metacognitive strategy use than are older children (Brown, 1980; Flavell, 1979). These findings have encouraged researchers to investigate the effectiveness of teaching metacognitive strategies to all readers. Although comprehension instruction has been studied since the middle 1970s, more recent work reflects instruction that can fit well in classrooms and can go far in stimulating students to engage text in the ways in which proficient readers engage with it.

The purpose of metacognitive instruction is to help readers become more aware of their own thinking during the reading process. During instruction, teachers provide explicit instruction on the use of metacognitive strategies that students can employ while reading. Explicit teaching of comprehension strategies begins with a teacher clearly explaining and modeling the strategies, followed by discussion about when and how a reader should apply the strategy while reading, and finally moving to provide scaffolded student practice of the strategies during reading. Modeling strategies often occurs through teacher think-aloud methods. Through this instructional cycle, gradual transfer or release of responsibility from teacher to student is possible. Over time, students gradually become able to independently initiate and utilize that particular strategy. The cycle then repeats with another targeted strategy.

Research on the effectiveness of metacognitive instruction to improve students' reading comprehension ability has shown that this type of instruction does lead to significantly strengthened reading compre-

hension ability (Block & Pressley, 2002). Despite its effectiveness, explicit metacognitive instruction has not seen widespread use in classrooms. Instead, comprehension instruction in classrooms may actually look quite different. As Pressley, Wharton-McDonald, Mistretta-Hampston, and Echevarria (1998) point out, although teachers intend to teach students how to comprehend, they are, in many cases, testing only reading comprehension. The pedagogical implications of these findings alert researchers to the fact that teachers need to direct attention more explicitly to the processes of learning while students are reading, rather than to the processing of text after students have completed their reading.

This point has particular impact as children continue their journey from the early to the later elementary years to become proficient readers, as they encounter many different genres and many different patterns of texts. One of the goals of my research has been to explore how different genres might influence students' metacognitive strategy use and, as a result, to assist them to comprehend and therefore to construct knowledge. To foreground this, I turn to a discussion of the use of narrative and informational text in schools.

Narrative and Informational Text Use in Schools

Historically, literacy lessons in schools reflect the belief that educated persons must read and understand literature and their understanding must be displayed in the writing of stories and essays. As students progress through school, they develop a literacy repertoire that includes reading and writing stories and analyzing their text structures, investigating different authors and poets, and examining classic literary works. Narrative genres (e.g., personal and fictional stories) have been dominant in primary classrooms because they were considered easiest for young children. Erickson (1998) also noted this dominance of the narrative genre stating that in the United States, fiction is used in classrooms four times more that nonfiction. Similarly, Duke (2000) found in her study involving first graders, only 3.6 minutes per day were spent with informational text during classroom written language activities. As a result of this research, teachers should provide their students with equal opportunities with information books to acquaint them with the numerous non-narrative forms and to the range of new concepts

encountered in texts, particularly in the content areas (e.g., science and social studies) that are read to learn (Manning, 1999; Smolkin & Donovan, 2001).

At the same time, researchers contest the teaching sequence of first learning to read/write (through stories) in primary grades and then reading/writing to learn (through informational genres) in later grades. Some researchers contend that this instructional method may be contributing to an "expository gap" at about grade 4 and to the persistent "fourth grade slump" in overall literacy achievement (Chall, Jacobs, & Baldwin, 1990; Erickson, 1998). The "fourth grade slump" is described as an overall decline in reading achievement with reading comprehension problems that occur as texts becoming more varied, complex, and challenging. In other words, students not only need exposure to informational texts in the early years, they also need to be explicitly taught how to read these types of texts.

As a case in point, Symons, MacLatchy-Gaudet, Stone, and Reynolds (2001) found that elementary school students had significant difficulties with information-seeking literacy tasks. When randomly assigned students in third, fourth, and fifth grade were taught to identify indexed terms, to skim text carefully, and to monitor how well extracted information fulfilled the search goal, they were successful in locating information efficiently. Students also transferred the strategy to an unfamiliar book, suggesting that children can develop transferable metacognitive knowledge about locating information in text. Those students who were not instructed in these strategies performed less well in locating information than those students given specific instruction in strategy use, suggesting that children in the elementary grades do not spontaneously use an efficient approach to locate information in text.

Although exposure to informational texts was important, these students required explicit process-oriented instruction with informational texts for comprehension to be successful. Recalling the earlier discussion of metacognition and the deliberate strategies students may use to facilitate their own comprehension, I argue that if comprehension problems occur because of differences in text structures, some differences (perhaps even deficiencies or deficits) may occur in metacognitive strategy use as students engage with different texts.

Assessing the Use of Metacognitive Strategy

Historically, metacognitive strategy use in young children has been very difficult to assess because some cognitive knowledge and processes are tacit and inaccessible. As a result, educators have used a variety of tools to access strategy use in young children. These methods include self-report surveys, interviews, think-aloud protocols, and stimulated recall (SR).

Self-report surveys, which have increased in popularity, provide valuable information about a learner's perceptions. However, in the case of young children, self-report measures may prove problematic because of the sophisticated language used in the response formats and the tendency of young children to display positive response bias (Turner, 1995).

The think-aloud is a technique by which an individual voices her or his thoughts during reading. Think-alouds have been used to provide information about user cognition and processing during reading or problem solving. The intent behind using think-alouds is to help students develop the ability to monitor their reading comprehension and employ strategies to guide or facilitate thinking (Baumann, Jones, & Seifert-Kessell, 1993).

Used as a tool for assessing the use of metacognitive strategies, think-alouds and other verbal report data (e.g., interviews) have been criticized for a variety of reasons. These include children's lack of language and verbal facility to discuss mental events, an interviewer's behaviour to elicit answers perceived to be desirable, participants "forgetting" that might interfere with introspective reports, and interviewers' asking questions during cognitive processing, thereby disrupting thinking (Jacobs & Paris, 1987).

Research has also indicated that observations and semi-structured and SR interviews can help researchers understand how young children construct knowledge and how they can and do regulate their engagement in reading (Neuman & Roskos, 1997; Perry, 1998). SR is an introspective research procedure through which researchers can investigate cognitive processes by inviting participants to recall, when prompted by a video sequence, their concurrent thinking during that event. This method is particularly effective for use with young children to gain access to how they construct meaning of text. As Juliebo, Malicky, and

Norman (1998) point out, children might be aware of strategies that they are using during reading, but they may not always verbalize this awareness as they read. Viewing a videotape after reading can prompt participants to verbalize what strategies they might have used. Further, the authors suggest that interviews with young children after their reading without the use of video, using questions out of context, could be more a reflection of the difficulty younger children have in expressing instances of metacognition in response to interview questions than a real difference in their metacognitive awareness and control.

To understand metacognitive strategy use in comprehending narrative and informational text, I undertook a qualitative instrumental case study (Stake, 1995), an appropriate method to research a question, a puzzlement, or a need for general understanding and insight by studying a particular case. Although I make no claim that this study's case is representative or could be generalized to a larger population, its "usefulness" (Brooker, 2002) as a small-scale study brings to the forefront some considerations for practice. More specifically, I designed the study to address the following question: What is the nature of a student's use of metacognitive strategy during oral readings of narrative and informational texts?

METHOD

The Participant

Nicole (a pseudonym), the focal participant for the study, is an engaging eight-year-old Caucasian girl. She lives in a middle-class community of a suburban area of Western Canada, and attends grade 3 at her local public school, a short two-block walk from her house. Her parents, Marcia and Terry, who are both university graduates, place high value on education. They are actively involved in Nicole's school life. Eleven-year old brother Matt attends the same school and enjoys the company of his sister, often playing games and reading with her.

Data Collection Procedures for the Study

The study took place in the latter part of the first term of grade 3. Over a two-month period I visited Nicole and her family in their home. During this time I observed and made field notes regarding her literacy practices

and those of her family. I also observed and noted family literacy materials, the genres of the materials, and how these materials were mediated in the family. I collected reading and writing artifacts from the school and from the home. I conducted interviews with Nicole and her mother regarding Nicole's literacy development. At the same time I observed Nicole in her grade-3 classroom, making field notes regarding school literacy practices, particularly around the teaching and learning of comprehension strategies. I also interviewed Nicole's teacher, Mrs. Murphy, regarding Nicole's school literacy development. At the end of the observations, I conducted a specific stimulated recall interview with Nicole.

Analysis of the Data

To begin my data analysis, I first examined the field notes of the observations I had made of Nicole's home and school literacy practices, looking for themes and patterns. In the same manner, I analyzed the reading and writing artifacts I had collected. I then transcribed all the interviews with Nicole, Marcia, and Mrs. Murphy and analyzed these transcripts for themes and patterns. This triangulation of the data allowed me to obtain a sense of who Nicole was as a learner and as a reader. With this foundation, I then reviewed the video tapings of the SR interview. I fully transcribed these interviews, subjecting them to a thematic analysis. Specifically, I analyzed the data from each retrospect-tive tape for possible instances of metacognitive strategy use. I then grouped these instances into thematic categories, illustrative of the strategies that Nicole employed while reading the two types of texts. As a final piece of the analysis, I analyzed Nicole's retellings of the two text types.

FINDINGS

Nicole's Home Literacy Practices

Nicole's home was filled with literacy materials. The entire family had access to books, magazines, computers, papers, pens, pencils, games, catalogues, the Internet, computer games, and software. All members of the family had their own workspace that they could uniquely call their own. Nicole's space was filled with drawing and writing paper, felt pens, crayons and pencils, and craft materials. Her numerous collections of rocks, beads, easers, and knick-knacks vied for competition among her

favourite books. These books, a mixture from personal, school, and community library collections, were predominantly fiction. On one occasion, Nicole showed me the family's communal bookshelf which held over 200 picture and easy chapter books that her parents bought for her and Matt or were given to them as gifts. Nicole seemed to have familiarity with almost every book and she was able to pick out and show me her favourites.

The books on the family bookshelf were predominantly narrative, with a very few information books, which were largely hard cover tomes that included topics such as nature, dinosaurs, the human body, and amazing facts about a host of different subjects. Nicole's parents' personal bookshelves were filled with mainly work-related books and manuals, although a specific section of Marcia's bookshelf contained a large number of classic novels that she collected as a member of a monthly book club. Terry, a classic car buff, had a bookshelf that held treasured car manuals, collections of British car journals, and sports magazines.

Interviews with Nicole's mother Marcia revealed that Nicole loved to be read to and had been read to from birth. The bedtime story ritual, well-established over the years, has continued despite Nicole's learning to read. Marcia did the majority of reading to and with the children, sharing her childhood favourites with them. Marcia stated that she invoked a great deal of discussion of the stories with Nicole before, during, and after the reading. She mostly read fiction to her children, "following the tradition that was passed down from her family to [her]." Marcia has always allowed Nicole to select her own books at the library or for the bedtime stories, based on Nicole's interests; these were usually fiction.

Nicole stated that she enjoyed reading, particularly the easier chapter books. During my visitations to the home, I did not see Nicole reading a book. Rather, she was usually in the middle of some craft project, or making notes and to-do lists. To this end, Marcia bought a number of project craft books that typically contained the materials to make such things as window decals, tissue paper flowers, painted rocks, or jewellery. Nicole did not read the instructions for the crafts per se, but looked at the illustrations and proceeded from there. If she had difficulty, she usually asked her mother or brother to assist her: This usually involved

Marcia or Matt reading the instructions with her, scaffolding her to the next step.

Marcia reported that although Nicole did "fairly well" in school, she assisted her when she had difficulty with homework or home assignments. She commented that Nicole learned to read in grade 1 and has been making steady progress. Interestingly, Marcia relayed that Nicole "loves the idea of books"; she frequently requested that they be bought for her, or be taken to the library to borrow them. She spent a lot of time piling them up in her bedroom for later perusal. However, her mother found this curious because, as she explained, "Nicole is not a voracious reader and will start a book, and usually abandons it before finishing it." Marcia suspected that Nicole chose books that were appealing to her because of the illustrations but may in fact be too difficult for her to read.

The family spent a great deal of time together with much of their free time engaged in physical activities such as soccer, skiing, and golf. Photos displayed around the home indicated that the family has had many traveling experiences together.

Nicole's School Literacy Practices

The 23 students in Nicole's classroom were instructed by Mrs. Murphy, a teacher of 10 years experience. The language arts program consisted of basal readers, individualized writing programs, weekly spelling lists, novel studies, poetry, grammar, and informational reading and writing. During my time observing in the classroom, Mrs. Murphy was selectively following a locally designed core reading program, based on 12 particular reading strategies (e.g., accessing background knowledge, predicting, figuring out unknown words, self-monitoring, and self-correcting). These strategies were taught over the entire school year, with Mrs. Murphy focusing on two strategies each month. These strategies were usually taught through direct instruction in a single activity lesson using a piece of narrative literature. In fact, most of the reproducible graphic organizers supplied by the program to support the lessons dealt primarily with fiction to teach the strategy. During my observation time period, I saw four strategies being taught: accessing background knowledge, predicting what will be learned or what will happen, figuring out unknown words, and making inferences and drawing conclusions. After

Mrs. Murphy taught these strategies, I did not see students' independent use of them, nor did I observe Mrs Murphy make further reference to them.

I collected information regarding Nicole's current reading ability through interviews with Mrs. Murphy. In sharing Nicole's assessment file, Mrs. Murphy explained that in language arts, Nicole was making satisfactory progress, meeting the expectations designated for reading fluency for grade-3 students and demonstrating comprehension of a range of grade-appropriate, literary texts, including stories from a variety of genres (folk tales, legends, adventures), series and chapter books, picture books, and poems. In addition, Nicole was making satisfactory progress in fluently reading and demonstrating comprehension of grade-appropriate, informational texts such as non-fiction books, textbooks, or charts and maps. "Nicole can," Mrs. Murphy went on, "retell, follow directions, infer, draw conclusions, and respond critically when working with these different texts." Nicole was also making satisfactory progress in using a variety of strategies before, during, and after reading to construct, confirm, and monitor her reading.

During the day, the students followed a schedule that took them through separate blocks of reading, writing, and spelling; math; science and social studies based on thematic topics; then physical education, music or art. I seldom observed integration of subject areas or skills. Mrs. Murphy demanded high expectations for organization and for work, evident in the neat classroom displays of published writing and art. The classroom, tidy and neatly furnished, contained bookshelves that housed mainly picture books and chapter books. Thematic information books were displayed on a separate shelf based on the current topic of study.

This information from the home and the school provided me with a basis for the next data collection procedure that I undertook with Nicole at the end of the observation period: the metacognitive stimulated recall (SR) interview.

The Stimulated Recall Interview

To do the first part of the SR interview, I took Nicole into a vacant room beside her classroom where I had displayed a number of narrative and information books on a table, sorted by genre. I had selected these books

from a reading series that is matched to the interests and reading abilities of primary children to maintain an element of consistency (e.g., visual appeal, reading difficulty) among the selections. These books were relatively short in length (approximately 15- 20 pages) with illustrations on every page. They were very suitable for an oral reading session. Thus with assessment information provided by Mrs. Murphy, I selected books at Nicole's instructional level; therefore the texts were slightly challenging. I made this decision because the selected texts would require Nicole to use metacognitive strategies to comprehend them.

I gave Nicole some time to handle and look through each book on her own and then asked her to select one narrative book and one informational book to read to me. Nicole chose *The Dog Show* (Crebbin, 1996) as her narrative choice because she "never had a dog and [she thought] it would be fun to find out what happens at a dog show." During our interviews over the course of the study, Nicole told me that her parents, particularly her mother, did not want to have a dog. She explained that her "mom thinks that she [Marcia] would be the only person looking after the dog after everybody got tired of it." Nicole then chose *Camouflage* (Gates, 1997), as her informational text choice, "because it looks like there are neat pictures in [the book]."

We began the oral reading session with the selection, *The Dog Show.* Again I gave Nicole a brief time to look through the book but this time I gave her the opportunity to do a "picture walk," a strategy I had observed Mrs. Murphy using in the classroom. A picture walk is used to access background knowledge, to predict what will happen in the text, or to assist in figuring out unknown words (North Vancouver School District, 1999). I then asked Nicole to read the book to me as I videotaped her. Upon completion of the reading, I asked Nicole to "Tell me what you just read about" to elicit a retelling of the story and to show comprehension. Lipson, Mosenthal, and Mekklesen (1999) confirm that children can successfully show their understanding of stories through retelling. I asked only one or two questions at the end of the retelling for clarification purposes (e.g., "What did you say was the reason for Dad being mad?") because "questions, even when carefully constructed, provide students with information that they may not have recalled or understood and they impose a sequence for recalling the story" (Lipson et al. 1999, p.

118). I followed the same procedure for the information book, *Camouflage*.

During this same session, and immediately after the *Camouflage* retelling, I rewound and played for Nicole the videotape of her oral readings of the two texts. This immediacy is an important aspect of the SR interview technique because any time lapse may interfere with a participant's recall of strategies employed during the reading process. As Nicole first watched the video taping of her oral reading of *The Dog Show*, I asked a series of structured, but relatively open-ended questions specific to her act of reading to elicit retrospective comments (e.g., "What were you thinking there?"; "What made you notice it wasn't right?"; "You said '____.'; Why did you go back and change it to '_____'?"; "What were you thinking when you paused at that spot in your reading?"; and "Why didn't [the word] fit there?"). I asked follow-up questions to clarify Nicole's responses. I then followed the same procedure for the information book, *Camouflage.* Each retrospective session was videotaped for analysis.

Although I tried to stay within the pure categories of the strategies I discuss below, often the events I observed and the data I collected were difficult to categorize under one particular strategy type. It is apparent to me, based on the background information that I collected, that Nicole used a number of different strategies during reading to construct meaning. Although she was usually only able to articulate one strategy, my observations indicated otherwise.

Figuring Out Unknown Words. Nicole used this strategy most frequently in reading both the narrative and informational texts, with a slightly higher incidence in the informational text than in the narrative text. Within this strategy of figuring out unknown words, Nicole used a number of different mechanisms to figure out the unknown word, including letter cues, word parts, picture cues, and context cues. For example, when asked what she was thinking when she came upon an unknown word in an informational text, Nicole stated, "I was thinking that if I [read the word] in chunks, it would be better." Using this strategy, she was able to continue with her reading of the text. Similarly, when she came to the words "looper caterpillar" in the informational text, she stopped once again. At this juncture, however, she looked over

at the picture that showed the caterpillar inching along a branch, its body making a loop as it moved. After studying the pictures for some moments, she returned to the text, and back to the picture, then back to the text, decoded the word "looper" and then continued reading. When asked what she was thinking at this point, she said,

> I've never heard of a looper caterpillar and when I glanced over at the picture, it looked like it was a stick, but stick didn't start that way, so I went back and thought what starts with 'l' and I thought maybe it was 'loop' because it looks like a loop and so I guessed and I was right. (Nicole, SR interview)

It is evident here that Nicole also used letter cues and hypothesizing to figure out the unknown word.

Nicole also used context cues to figure out unknown words, using this strategy slightly more in the narrative text than in the informational text. For example, in the narrative, *The Dog Show*, the main character, Alice, is preparing the dog for a show by giving him a bath. As Alice is quickly cleaning the tub so that she won't get caught bathing the dog in the bathtub, she lifts great handfuls of dog hair into the toilet. At this point in the text, Nicole read the sentence, "Then she rushed the toilet." Nicole stopped, frowned, and then went back to read, "Then she flushed the toilet." When I asked her why she said "rushed" the first time, Nicole explained that "I wanted Alice to hurry before her dad found out and [the word] sounded like rushed and then I noticed that it didn't go with the sentence so I went back and changed it." Nicole self corrected several times during her reading of *The Dog Show,* using the strategy of figuring out unknown words, and she was successfully able to monitor her comprehension.

Making Predictions. Nicole used the strategy of making predictions to assist comprehension of the narrative text almost as often as figuring out unknown words, but she did not use the prediction strategy when reading the informational text. During the stimulated recall interview of *The Dog Show*, I asked Nicole what she was thinking when she paused at the end of a particularly interesting part of the story when tensions between the characters were high. Nicole responded, "I was thinking about the story and what was going to happen and like if the dad would know about the wet hairs and stuff." At this point in the text, it was evident by

Nicole's speeding up her reading of the text and her laughter at the pictures that she was not only very engaged with the story but in an anticipatory mode. Nicole did not use the strategy of prediction in the informational text, but to be fair, it was evident that the informational text did not lend itself as readily to make predictions as did the narrative.

Making Inferences and Drawing Conclusions. Nicole used the strategy of making inferences and drawing conclusions for monitoring comprehension slightly more in the informational text than in the narrative text. Although Nicole was able to use this strategy, she actually did so incorrectly, which impeded her understanding. In the following example, a passage from *Camouflage* reads as follows:

> When a mother red deer goes to look for food, she has to leave her fawn behind. The markings on the fawn's coat look like dappled sunlight. This makes it difficult to see the fawn when it sits in the long grass. (p. 7)

Nicole read the passage as such:

> When a mother red deer leaves to look for food, she has to leaves her fallen behind. The marker of the fallen coast looks like a dampled [*sic*] sunshine. This makes it difficult to see the swan when it sits in the long grass. (Nicole, SR Interview)

As Nicole watched herself reading this difficult passage, I asked her what she thought was happening in her thinking as she read. She replied, "I was imagining that it would be kind of weird if a deer's mom would put leaves over the baby because that wouldn't do anything." Here, Nicole knows that her understanding is impaired, but does not employ any other strategy to fix it up. Because she read the word "leave" as "leaves," she inferred that the mother had covered her fawn with leaves. But again, she did not think that this covering of the fawn with leaves would help in camouflaging the fawn. Her confusion is further evidenced in her reading of the next line of the passage where she made a number of word substitutions seemingly to move herself along to get to the end of the passage. Near the end, she substituted the word "swan" for "fawn," even when the picture shown immediately left of the passage

showed a fawn (not a swan) sitting in the long grass, and in the absence of leaves. Although she had used pictures earlier in the text to aid her understanding, she did not employ this strategy at all. In the end, Nicole "checks out" of this chunk of the text, and moved to the next part of the information book, seemingly relieved to be finished with this difficult passage.

Asking Questions. Nicole used this strategy particularly well and predominantly in the narrative text. For example, while reading *The Dog Show*, Nicole miscued at the words "show ring." After reading "shoe ring," she went back and self-corrected. When asked what she was thinking at this juncture, Nicole stated, "I thought it was the 'shoe ring' and then [I asked myself] why would it be 'shoe ring' when we're not at a shoe store? It's a show so it's got to be [the word] 'show'."Asking questions of herself during reading assisted Nicole's comprehension monitoring and enabled her to self-correct, and move on almost seamlessly.

Accessing Background Knowledge. Nicole used the strategy of accessing background knowledge equally well in both the narrative and the informational texts. As an example, a sentence from *The Dog Show* reads, "Spike brought the newspaper from the front door" (p. 14). Nicole read it as follows: "Spike bounced the newspaper from the front door." After reading it this way, Nicole stopped, returned to the beginning of the sentence and read, "Spike brought the newspaper from the front door." When I asked Nicole what made her think that the word was "brought" rather than "bounced," she replied, "A dog usually goes out to the front door to get the newspaper every morning so it would be 'brought'." Similarly, in the informational texts, Nicole read, "The hermit crabs pick up sea enemies and stick them onto their shells" but she went back to correct the word "enemies" to "anemones" – a particularly difficult word to figure out without background knowledge. When asked about this, Nicole stated that she has "been to the beach and to [her favourite holiday island] and [she has] has seen all kinds of them." In fact, Nicole had so much background knowledge about anemones that she proceeded to spend a great deal of our interview time explaining their appearance and qualities to me. Accessing background knowledge was certainly a very helpful strategy for Nicole.

Extracting Information from Illustrations, Photos. Nicole used the strategy of extracting information from illustrations and photos, particularly in the informational text. Unfortunately, the information she extracted was not always helpful. For example, she read the following sentence from *Camouflage*: "Snowshoe horse [*sic*] are white, like the snow." The sentence should read: "Snowshoe hares are white, like the snow" (p. 4). Although she looked at the picture, she did not self-correct here. When I asked her during the SR about the picture, Nicole stated that the picture was "a bunny rabbit." Although she was correct, it was not in her schema to consider this animal anything else but a bunny rabbit, let alone a hare. When I told her that the word in the text was "hare," she looked at me quizzically and said, "So a hare is a rabbit? Ohhhh……so that's why there wasn't a picture of a horse!" I also found this interesting considering that the text for this picture was right beneath it, and the publishers had also used an arrow to indicate that the text belonged with the pictures. Nicole did not use this signpost to assist her comprehension. Moreover, she did not employ any other strategies (e.g., figuring out unknown words through letter cues or word parts) as she experienced success with using them earlier in the text.

The Retellings of the Narrative and the Informational Text

These findings indicate Nicole's comprehension of the narrative and the informational texts. Retelling is a generative task that requires a reader to construct a personal rendition of a text by making inferences based on the original text and prior knowledge (Gambrell, Koskinen, & Kapinus, 1991). Learning to interpret and reconstruct text is a vital part of the reading process. For reading comprehension to occur, a reader must engage in constructing relationships with text information.

Based upon criteria from Fountas and Pinnell (1996) for narrative text, Nicole's retelling of *The Dog Show* included the main idea or problem, an accurate reporting of events with some details, and a general organization and sequence.

In contrast, the results for Nicole's free retelling of *Camouflage*, based upon criteria for informational text "retelling" (Saskatchewan Education, 2002), showed few identifying key ideas and pertinent details, little

recognition of text order, and a marginally stated main idea or the point of the text.

CONSTRUCTING UNDERSTANDING

Although Nicole applied metacognitive strategies to assist in comprehending both texts, she constructed relationships to comprehend the narrative text to a greater degree than the informational text. What became significant is that the type of strategies that Nicole used for the two texts was similar, even though the demands of the text were different.

Reading the narrative text and using a variety of strategies with success, Nicole read the informational text and began to employ the same type of strategies. Her use of the strategy of figuring out unknown words was put to the test because she met many words with which she had little familiarity (e.g., comma, hare, hover-fly, woodcock, dappled). Nicole tried to figure the words out, but this strategy did not give her the assistance she needed with comprehension. She knew the strategy she had chosen was not working, but she had little idea how to repair her understanding. Although she was in a position to self-correct, she did not know what to do, nor did not know what other strategies she could employ, and so she simply went on reading. In comparison to the informational text, Nicole regulated or self-corrected to a higher degree in the narrative text, employed strategies more efficiently, and as a result, was able to self-correct more readily, leading to greater understanding of the text.

Why might this be occurring? One possibility may be that although Nicole was using strategies to assist her comprehension, they were not the type of strategies that were particularly useful for informational texts. Duke (2004) suggests that strategies useful for informational text include monitoring, understanding, activating prior knowledge, making predictions, thinking aloud, and generating questions, all strategies that Nicole did not readily employ when reading the informational text.

Although figuring out unknown words may be helpful in decoding some of the more unfamiliar vocabulary, it did not assist Nicole with her overall comprehension. One would expect greater use of such strategies as generating questions, attending to and uncovering text patterns, or

accessing background knowledge when reading informational text. Nicole did not use these strategies sufficiently to assist her. As Nicole's comprehension weakened, she was aware that she did not comprehend what she was reading, but did not know why. She employed strategies to help her, but her use of them was faulty. This problem lead her to continue, as Symons et al. (2001) note, as if she were on automatic pilot. In fact, this problem is revealed in one of her metacognitive instances when she was faced with comprehension breakdown. In this example, Nicole came upon a passage that described a particular type of fish known as a rock goby. She stated: "I didn't know what type of fish it was and I didn't know what the word was so I kind of thought of what it would have been and I just went on with what I thought it was." In other words, because Nicole knew that she needed to complete the task that was being asked of her (i.e., reading the selection), she made the decision to continue reading as best she could.

An alternative explanation for this action can be seen in the literature on comprehension. In struggling to decode some of these unfamiliar informational words, a child may not have much capacity left for comprehension (Pressley, 2002). This theory would also explain why Nicole made very few self-corrections when reading the informational text.

Nicole did not make great use of pictures in the informational text. I found this most surprising, based on the richness of experiences that Nicole had with her family. However, I also note that Nicole's rich narrative literature background from the home and school may not have afforded her experiences with informational texts.

Informational texts may be rich in photographic pictures (as was the case in *Camouflage*), but Nicole did not use the strategy of picture cues to assist her. I find this curious because I believe that Nicole chose this book because of the interesting pictures. But this response also reveals to me information about the kind of reader that Nicole is: a reader who enjoys reading the pictures, rather than the connected text. This approach could be due to Nicole's lack of schema for the concept of camouflage, or perhaps she had not had sufficient exposure to visual literacy. Similar to some of the vocabulary found in informational texts, pictures in informational texts may be unfamiliar and, in fact, could be distracting. While looking at the pictures to gain comprehension of the text, a student

might need to spend more time here, simply to study and to make sense of a picture. As a result, this increased expenditure of time at a picture may interfere with a student's ability to remember what she had just read, resulting in further comprehension failure. Expanding a child's world through informational read-alouds, content study, and informed and strategic reading of informational texts may help with this process.

If children have had a greater exposure to narrative text as Erickson (1998) suggests, then there is a possibility that they may have less background knowledge to access for use with informational text. This situation again would suggest (as is Nicole's case with her unfamiliarity with the concept of animal camouflage) that background knowledge would have an impact on comprehension. Teachers must be aware, then, to help students develop appropriate schemata for some texts.

Nicole did not use patterns that were available in the informational text. For example, *Camouflage* had bold text headers to indicate a change in topic, the text was written so that each small paragraph was adjacent to each corresponding photograph, and arrows were drawn to point to and connect the text with the photograph. Nicole seemingly ignored these signposts because she made no mention of them as aiding her comprehension in the stimulated recall interview. This finding suggests that teachers need to explicitly teach text patterns to students to assist them in navigating informational text and to aid in comprehension.

For some children, reading informational text may be difficult, even in the early primary grades. Nicole commented to me early on in her oral reading of the informational text that certain passages were "hard." She seemed to disengage with reading them, and I suspect that had she not been in an interview situation, she would have abandoned them. This experience corroborates the data from Nicole's mother's interview, abandoning books part way through reading was a common occurrence for Nicole. However, Nicole tried to compensate for her difficulty with the text by slowing down her reading, a good first strategy to use, and then began to use her finger to follow the text. Indeed, the text was situated in chunks around pictures so using her finger might have been helpful in negotiating the pathway of the text.

Often, teachers have an implicit expectation that students know how to use these comprehension strategies and therefore do not teach them.

This problem might also be the case for Nicole. Although she had been given instruction in strategy use, a gap appeared in Nicole's knowledge about when to apply these strategies, how to apply them effectively, and how to switch strategies when some were not working. In Nicole's case, more scaffolded instruction would be needed.

CONSIDERATIONS FOR PRACTICE

The results of this study support the notion that some students could indeed experience the "fourth-grade slump" based upon their inability to effectively use strategies such as accessing background knowledge, using picture cues, and asking questions to comprehend informational text. Although it may be beneficial to introduce more information-type books in the earlier or primary school years, it appears that specific strategic instruction when teachers work with informational text needs to occur. Such strategies as teacher think-alouds, mental imagery, question generation, analysis of text structure, and comprehension monitoring would be necessary. These strategies need to be taught in context, and explicitly. Once these strategies have been taught, it is necessary to ensure that students transfer them to unfamiliar texts. To be truly effective, a learner's use of these strategies must become spontaneous. Strategy instruction alone is not enough.

Students should read and comprehend informational text for authentic purposes. Rather than answering a list of comprehension questions or completing worksheets after reading informational texts, students can work within experiences and issues that impact their world. For example, one teacher had her class research and write brochures about recycling after collecting data on the amount of garbage they had found on a walk in their neighborhood. Another class pored over anatomy books after a classmate broke a bone playing baseball to find out the name of the bone and how long it would take to heal.

Students also need instruction to monitor their comprehension. To ask students to "think about their thinking" may not be explicit enough for students to understand how they need to monitor and regulate their understanding, which they can accomplish through explicit instruction and guided practice with familiar and then unfamiliar texts.

I have found this case study to be useful to understand metacognitive strategy use from a constructivist perspective. To view the construction of meaning through articulation of thinking adds to the body of knowledge on metacognition that goes beyond a solely cognitive perspective. The results of this study suggest a need for further research investigating children's metacognition while reading different genres. Using different measures of metacognition (other than stimulated recall) could also describe a different picture of children's metacognition. Finally, future studies could also include how specific strategy instruction for informational text impacts students' metacognition. Such research would ensure that all students achieve strong literacy skills for learning across the curriculum.

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