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Investigating Teacher–Student Interactions That Foster Self-Regulated Learning

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This article describes the use of qualitative methods to study young children's engagement in self-regulated learning. In particular, it describes how fine-grained analyses of running records have enabled us to characterize what teachers say and do to foster young children's metacognitive, intrinsically motivated, and strategic behavior during reading and writing activities in their classrooms. This article argues that in-class observations followed by semistructured, retrospective interviews ameliorate many of the difficulties researchers have experienced in past studies of young children's motivation and self-regulation. The observations and interviews provide evidence of children in kindergarten through Grade 3 engaging in self-regulatory behaviors, such as planning, monitoring, problem-solving, and evaluating, during complex reading and writing tasks. Also, they reveal variance in young children's motivational profiles that is more consistent with older students than has heretofore been assumed. Moreover, the *in situ* investigations of young children's self-regulated learning offer important insights into the nature and degree of support young children require to be successfully self-regulating.

In the past quarter century there has been a proliferation of research on self-regulated learning (SRL), a descriptor for independent, academically effective forms of learning that involve metacognition, intrinsic motivation, and strategic action (Winne & Perry, 2000). Much of this research has relied on survey methods to assess students' self-reports of actions generalized across settings and situations. Also, many researchers have used experimental or quasi-experimental designs to assess the impact of interventions on variables associated with SRL. Although these investigations have identified multiple facets of SRL, their interrelationships, and their relations to outcomes educators value (i.e., success in school and beyond), they have not provided a detailed characterization of SRL in *real* contexts and in *real* time.

Recently, interest in sociocognitive and sociocultural models of learning has prompted investigations of SRL in naturalistic settings (e.g., classrooms) and the application of qualitative techniques to support more in-depth and on-line investigations of particular facets of SRL. We believe these

approaches have tremendous potential to enrich understandings about how students perceive particular teaching–learning contexts and how these perceptions influence their beliefs about themselves as learners, their goals and expectations, and the decisions they make about how to regulate their behavior in school. For example, observations, in the form of running records, can reflect what learners actually do versus what they recall or believe they do. Also, they allow us to link behaviors of teachers and students to contexts and conditions. Discourse analysis allows a fine-grained analysis of what teachers say to support or curtail students' SRL and how students respond. Finally, semistructured and retrospective interviews that are linked to observations can illuminate aspects of students' behavior that are not readily observable (e.g., metacognitive processes).

Each of these tools has proven useful in our investigations of young children's SRL (Perry, 1998; Perry & VandeKamp, 2000; Perry, VandeKamp, & Hopton, 1999). Whereas the preponderance of theoretical and empirical work concerning academic self-regulation has involved students in the upper elementary grades through college, our research targets students in kindergarten through Grade 3 and challenges long-held views that children under age 10 have difficulties coordinating the complex cognitive and metacognitive processes involved in SRL (Pressley, Forrest-Pressley,

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Elliott-Faust, & Miller, 1985; Winne, 1995; Zimmerman, 1990). Our observations and interviews provide evidence of young children regulating their behavior (e.g., planning, monitoring, problem-solving, and evaluating) during complex, multifaceted reading and writing tasks (e.g., writing a research report). Moreover, our findings challenge views that young children are protected from motivational orientations that undermine SRL because they tend to hold incremental views of ability, rate their ability highly, and expect to do well as long as they exert effort (Paris & Newman, 1990).

In our investigations, between 25% and 50% of the children we observed and interviewed demonstrated motivational vulnerabilities that have implications for SRL. For example, they exhibited negative affect when offered feedback that pinpointed errors in their work, and they chose easy tasks over challenging tasks that provided opportunities to develop and practice SRL. Finally, our observations and interviews reveal how features of literacy tasks, authority structures, and evaluation practices influence young children's beliefs, values, expectations, and actions concerning reading and writing, and what teachers do and say to promote (or curtail) SRL in their classrooms.

In part, we attribute our success in documenting young children's SRL to our use of qualitative methods that target issues young children value (e.g., learning to read and write), use language they understand (e.g., the language of their classroom), and assess their SRL in the context of naturally occurring literacy events in their classrooms (Cain & Dweck, 1995). In the sections that follow, we provide a brief overview of our program of research and then focus on how we have used observations in the form of running records to enrich our understandings of what teachers do and say to promote young children's SRL.

OVERVIEW OF OUR PROGRAM OF RESEARCH

Our program of research has two main objectives: to identify features of classroom tasks, authority structures, and evaluation practices that support young children's development of independent, academically effective forms of reading and writing, and to work collaboratively with teachers to design literacy activities that contain these features. Over the past 5 years, we have taken a multipronged approach to meeting these objectives. First, we observed in classrooms and characterized them as high or low in promoting SRL. Next, we worked with primary teachers, supporting their efforts to create literacy environments for their students that were "high-SRL." Finally, we went into classrooms to observe teachers' innovations and to document their impact on students' engagement in learning.

Initial Observations in Classrooms

As part of a multiple and embedded case study, Perry (1998) observed literacy activities in five Grade 2 and 3 classrooms.

These classrooms were selected from a larger pool of classrooms in a suburban school district in British Columbia. The observations, which took the form of running records, occurred weekly for 6 months (January through June 1995) during regularly scheduled reading and writing activities in the classrooms. Based on these observations, three of the classrooms were characterized as high-SRL classrooms. Teachers in these classrooms engaged students in complex, open-ended reading and writing activities (e.g., "doing" research), offered them choices and opportunities to control challenge in completing those tasks, and provided them with opportunities to evaluate their own and others' work. Also, these teachers provided instrumental support to students, carefully orchestrating instruction to provide students with the domain and strategy knowledge they needed to operate independently, helping them to make appropriate choices, encouraging them to expand their developing abilities by attempting challenging tasks, and using nonthreatening evaluation practices that emphasized personal progress and encouraged students to interpret errors as opportunities to learn.

In contrast, in the two low-SRL classrooms, students were engaged in simple, closed activities, which often focused on specific skills apart from authentic reading and writing (e.g., correcting spelling and punctuation errors in a sentence the teacher wrote on the board). In these activities, students' choices were limited. Challenge and criteria for evaluation were controlled by the teacher and were typically the same for all students. Teachers' support in these classrooms typically targeted the procedural aspects of task completion (e.g., giving directions, distributing materials). In short, there were few opportunities in these classrooms for students to develop or engage in SRL. Therefore, the characteristics of the high-SRL classrooms—what teachers said and did in these classrooms—became the targets for our subsequent work with teachers.

Working With Teachers

Findings from recent research on teacher development indicate that learning to teach in new ways requires opportunities for ongoing reflection, plus support and guidance from peers (Borko & Putnam, 1998). Our project brought teachers together as a community of professionals and provided them with guided and sustained opportunities to collaborate with colleagues. Some teachers have been working with us since April 1997. Palincsar, Magnusson, Morano, Ford, and Brown (1998) characterize communities of teachers as intellectual groups with shared goals and purposes, engaging in collaborative planning, enacting, and reflecting. In these communities, learning proceeds from action, expertise is distributed, and knowledge is socially constructed. Trust among group members is fundamental for functioning as a community, and trust requires a climate in which all views are valued and the cost of errors is small (Lave & Wenger, 1991). In our commu-

nity, teachers were involved in conversations with us and with one another that prompted them to critically examine their current approaches to literacy assessment and instruction, consider alternatives, and experiment with new teaching and learning strategies in their classrooms.

In the spring of 1997, primary teachers from the same suburban district that was used in Perry's original study were invited to join an action research group with a shared goal to develop tasks and assessments that would reflect "best practices" in early literacy instruction. Our group met for the first time on April 10, 1997, and included 10 primary teachers, 3 school-based remedial-resource teachers, 1 district curriculum consultant, and 2 university researchers (who are also teachers). This group stayed fairly constant through June 1998. In total, we worked with 16 teachers who reflected a range of teaching experience (2–20 years), educational backgrounds, and beliefs about what constitutes effective literacy instruction for young children. In September 1998 through June 1999, we worked with subset of five teachers from the larger group who were particularly interested in and adept at structuring tasks and interacting with students in ways that promote SRL. The observations described here are from their classrooms.

During each school year, the group met approximately one afternoon each month for 2–3 hours. Five activities provided structure to those meetings. Each meeting began with a *free write* session in which we wrote for 10 minutes about "what was on our minds" (e.g., what we'd been thinking about or trying to implement since our last meeting). Free write was followed by *air time* in which we each had 2 minutes to speak about our writing, or about something else that occurred to us as others talked. The 2 minutes provided a context in which members could air their views uninterrupted; other group members could ask for clarification but not elaboration, and could not offer evaluations or unsolicited advice. Next, we engaged in a *focus group* discussion. Topics typically arose out of issues raised at previous meetings (e.g., How can we ensure our assessments are trustworthy? To whom are we accountable? And what do they want to know?). During these focused discussions, we examined our beliefs and understandings about fostering young children's literacy, and how our beliefs and understandings get manifested in our practices. Also, we examined what current research has to say about effective teaching practices. Finally, we planned changes to our current practices during *work time* and, during the *reporting out* activity, made commitments to experiment with new teaching-learning strategies in our classrooms between our research meetings. At subsequent meetings, we had opportunities to describe and evaluate how our experiments fared during air time, and to seek advice from other community members during focus group and work time.

Time and emphasis given to each of these activities changed over the course of our work with teachers. In our first few meetings, little time was devoted to work time because teachers were unclear about the specific tasks and assessments

they wanted to develop. They were more interested in discussing general issues and questions about early literacy development and the types of goals and activities they should set to foster independent, academically effective forms of reading and writing. At that time, the bulk of each session was devoted to the focus group activity. Later, however, as teachers became more confident and goal-directed, focus group discussions were brief or nonexistent. Teachers wanted to spend as much time as possible on their individual projects and interacting with one another in pairs or small groups about issues that related to their particular grade level or line of inquiry. This was particularly true in the 1998–1999 school year.

Observing in Classrooms

Between group meetings, the researchers visited classrooms and observed the teachers' implementations of innovations they had designed to help their students become more mindful and independent about their reading and writing. For example, in two Grade 1 and 2 classrooms, we observed teachers who initiated "sharing circle." At the end of each reading and writing period, students in these classrooms gathered in a circle with their teacher and responded to two questions, "What did you learn about yourself as a reader/writer today? What did you learn that you can do again and again?" Over time, the class generated a list of strategies they found helpful for writing (e.g., read your work over; if it doesn't make sense, erase it ... try again; use powerful words; make a plan). In a Grade 3 classroom, we observed as a teacher helped her students to acquire a repertoire of self-help strategies for identifying and coping with reading difficulties (e.g., make predictions, sound out a word, read to the end of the sentence, choose another book—"Maybe the book is too hard").

To document the efficacy of our teacher development and in-class activities, we collected teachers' free writes, videotaped air time and focus group discussions, collected samples of the tasks and assessments the teachers developed. We observed in classrooms, interviewed students, asked teachers to rate their students' motivation and achievement, and collected samples of students' work. The bulk of the evidence gathered from our teacher-development activities is presented in Perry, Walton, and Calder (1999) and Perry, Calder, and Mercer (1999). The student measures are described in detail in Perry and VandeKamp (2000) and Perry, VandeKamp, and Hoption (1999). Here our emphasis is on how classroom observations can illuminate ways that teachers foster children's metacognition, intrinsic motivation, and strategic action during reading and writing activities. Specifically, we describe how fine-grained analyses of running records can illustrate what teachers do and say to support young children's thinking and talking about the processes involved in reading and writing, and their acting out of those processes. Excerpts from air time and focus group discussions will be presented to elaborate the context for activities observed in the running re-

cords, and student outcomes will be presented as evidence of the efficacy of teachers' speech and actions. However, these data are ancillary to our main focus on the running records and, therefore, our methods of collecting them are not described in detail here.

THE RUNNING RECORDS

The Protocol

Our observation instrument (adapted from Perry, 1998) has three sections. The first provides space to record (a) whose classroom is being observed, in what school, and at what grade level, (b) who is observing, (c) the date of the observation, and (d) the nature and duration of the activity in which teachers and students are engaged during that observation (e.g., selecting a topic to research, writing an alternate ending for *The Three Little Pigs*). The second section provides space to keep a running record of "what was going on," including verbatim samples of teachers' and students' speech. The third section lists categories, derived from previous investigations, that distinguish high- and low-SRL environments, including (a) types of tasks (open or closed), (b) types of choice, (c) opportunities to control challenge, (d) opportunities for self-evaluation, (e) support from the teacher (instrumental vs. procedural), (f) support from peers, and (g) evaluation practices (mastery- or performance-oriented). This list of categories provides a conceptual framework for observing in classrooms and then coding those observations. However, observers are encouraged to refine and expand these categories through their observations. Therefore, our "schema" reflects a mix of analytic and emergent categories (Strauss, 1987).

During each observation, we position ourselves so that we can clearly see and hear the teacher and students without being intrusive. We record events and actions, including a list of times related to events and actions, and, as much as possible, verbatim speech in teacher–student and student–student interactions.

After each observation, we read and annotate our running records, adding details regarding events and actions that we did not have time to record during the observation and filling in gaps in teachers' speech with paraphrases of what they said. (Paraphrases are marked with square brackets.) Once we are satisfied that the running record is as detailed and accurate as our memories will allow, we re-read it, noting incidents and examples reflected in our original list of analytic categories in the third section of the observation instrument, as well as events and actions that suggest refinements or additions to those categories (i.e., emerging categories).

Coding

Our analyses of the running records focus on what teachers say and do to promote SRL and on evidence that students are

responding. First, drawing on the list of categories in the third section of our running record, we identify instances of teachers' speech and actions during each observation that are believed to promote SRL (e.g., giving choices, engaging students in various forms of self-evaluation). Next, we assign each running record a rating of 0 or 1 for each of the overarching categories (e.g., choice, challenge, self-evaluation) to indicate the presence or absence of that quality in the activity. These ratings are entered in a summary table for each class to generate a profile of the consistency with which reading and writing activities in that classroom are high-SRL across multiple observations. Table 1 shows the proportion of times a category was noted across observations in the five classrooms in which we observed in the 1998–99 school year. Finally, we return to each instance of teacher speech and action and consider what aspect of self-regulation it promotes and how. These more detailed analyses are the focus here.

The Cases

We have selected two representative running records from two of the five classrooms in which we observed during the 1998–99 school year. One of the running records describes PM's kindergarten and Grade 1 class. The 17 students in

Lawrence Erlbaum Associates, Inc. does not have electronic rights to Table 1. Please see the print version.

PM's class come from a mix of low-middle, middle, and high-middle income families, and are ethnically and linguistically homogeneous (only 8% of the school's population speak English as a second language). The second running record describes MH's Grade 1 and 2 class. Students in this class ($N = 24$) come from families with low to middle incomes (mainly working class), and reflect a greater degree of diversity (more than 30% of the school's population speaks a language other than English at home).

Wharton-McDonald, Pressley, Rankin, Mistretta, Yokoi, and Ettenberger (1997) claim that one of the most striking features of the outstanding primary classrooms in which they observed was the "sheer density of the literacy instruction. . . . Highly effective teachers were able to integrate multiple goals into single lessons and could weave together strands from different lessons to form coherent, meaningful patterns of instruction" (p. 520). This was certainly the case for the two teachers we profile in this manuscript. The running record from PM's class describes the continuation of reading and writing activities based on *The Three Little Pigs*. The lesson (April 13, 1999) begins with a re-reading of the story in which PM prompts students' use of tracking and decoding strategies and practices predicting and connection strategies to support comprehension and to prepare for the writing activity that followed. The writing activity was a continuation of a sequencing task—children had created a "story strip" for *The Three Little Pigs* in a previous lesson. Today's goal was to have children rewrite the story's ending (the pigs boil the wolf in a big pot) after giving consideration to their recent discussions about how consequences should fit the crime (e.g., "If someone does something mean to you, should you be mean back?" PM). In this instructional sequence, PM addressed multiple goals for reading, writing, and social and moral reasoning. Also reflected in this sequence is PM's overarching goal of helping beginning readers and writers to attend to the communicative and meaningful aspects of reading and writing, as well as the mechanical aspects, which, understandably, capture much of their attention at this stage in their literacy development (Perry, 1998).

The example we have selected from MH's class describes the first of many reading and writing periods spent on researching a mammal. One of MH's goals for this lesson (November 3, 1999) was to determine what her students knew about mammals and to provide them with some background information. Toward this end, she introduced and read a book on mammals. A second goal was to have students distinguish between factual and fictional writing. Her third goal differed for Grade 1 and 2 students; she wanted her Grade 1 students to attempt some factual writing and her Grade 2 students to choose a mammal as a topic for a research project. In this lesson, we observed MH very successfully juggle multiple and discrepant goals for two groups of students. MH's overarching teaching goal for the 1998 through 1999 school year was to examine how what she said to students and how the discourse of the classroom influenced students' awareness of and ability to

perform reading and writing processes. This running record is an excellent example of how MH promoted students' metacognition and strategic action in the context of meaningful literacy activities.

WHAT DID TEACHERS DO AND SAY TO PROMOTE SRL?

We use five overarching categories from our observation protocol to organize what PM and MH did to support SRL: They gave students choices, opportunities to control challenge, opportunities to evaluate their own and others' learning, instrumental support, and feedback and evaluation that was nonthreatening and mastery-oriented. These categories are not mutually exclusive (e.g., often, choices offered opportunities to control challenge). Moreover, much of what these teachers did to promote SRL is captured in our running records by our verbatim recording of what they said. Therefore, we present evidence for these two variables concurrently.

Offered Choices

In PM's class, students had choices about how the story of *The Three Little Pigs* would be read ("Should we have shared reading or . . .?") and how to follow along as the story was read (e.g., to track or not to track). Both these choices offered students opportunities to "set" the level of challenge and to make a decision based on a quick evaluation of their skills as readers:

If you're someone who needs to follow with your finger. . . . If you don't need to do that . . . you can keep up without. . . . We're starting to have some choices about that. (PM)

Further into the "shared" story reading, one student had difficulty deciphering a word. PM asked all students, "[Student's name] came to a clunk.¹ What could [student's name] do?" Here students had an opportunity to choose from their repertoire of decoding strategies one they thought could solve this reading problem. The class tried each strategy suggested until they successfully decoded the difficult word. In this way, students also evaluated the efficacy of each strategy suggested until they found one that worked.

During the discussion of alternate story endings for *The Three Little Pigs*, PM's students had several opportunities to share their ideas with a peer of their choice. Also, they were encouraged to choose a side in discussing the issue of whether the pigs were acting appropriately in avenging the wolf. Ultimately, each student chose an alternate ending for their rendi-

¹In the language of PM's class, a "clunk" was a reading miscue. "Clicking along" meant reading fluently without errors.

tion of *The Three Little Pigs*, and they chose where to do their writing (“If you want to work on the floor, that’s fine”).

Similarly, students in MH’s class made many decisions concerning what and how they would learn during the lesson described in our running record. After reading the book on mammals to the class, MH indicated to students that they could choose that book during their “shared” reading time. (In MH’s class, shared reading occurred during the first half hour of each morning and involved children reading with children, with parents, or with the teacher.) Later, MH asked her Grade 1 students, “What can you write about?” and students were quick to say, “Anything.” Grade 2 students spent the bulk of this lesson “choosing” a topic for their research projects, choosing materials that would help them do their research, and beginning to decide what kind of information they would gather about their topic. Students chose where in the room to work and some students chose to work with a partner.

Offered Opportunities to Control Challenge

We have already described how PM offered opportunities for her students to control challenge by giving them choices. PM also challenged or relieved students according to her goals and expectations for them. In this lesson, she challenged students by saying, “I want everyone to come up with at least one idea.” However, she also made it possible for all students to meet that challenge by having them share their ideas with a friend, and later with her, and by recording students’ ideas on chart paper so that they could refer to their own or other children’s ideas when they wrote their story ending. “Writing” in PM’s class could take the form of drawing. For kindergarten and Grade 1 students who found it difficult to provide a detailed rendering of their ideas with print, PM often suggested they begin with drawing. By drawing first, her emergent writers got their ideas down before they were forgotten. The drawings served as a plan or outline and the writing followed, thus easing the burden on working memory of keeping ideas in mind and representing those ideas with print. In this lesson, students drew their endings and PM relieved students who wouldn’t complete their drawings in this writing session while at the same time challenging those who did finish to go a bit further (e.g., “You only need to draw today, but if you have a few extra minutes. . .”).

Like PM, MH enabled students to control challenge by making choices. She accepted “anything” as a response to her question, “What can you write about?” However, she also challenged students to try writing something factual. First, she encouraged students by suggesting, “If you are an expert on [something . . . you might write facts about that].” Then, when students said they could write about anything, she promoted factual writing further by saying, “Can you choose to write something factual?” Some students did choose this less familiar genre for their writing that day, and MH continued to encourage their efforts by saying, “You’re doing some

nonfiction writing. . . . You’re an expert on dogs. . . . You know a lot about dogs.” Also, like PM, MH accepted drawing as writing and other forms of emergent writing. This enabled students to modify task demands to match their level of expertise in writing. The Grade 1 students’ writing books were unlined. However, MH was quick to recognize when a student was ready to move to the next level of literacy and to encourage that movement. In checking one child’s “writing,” she commented, “I notice you are more interested in writing than pictures. I think we should put some lines [on your page].” This student nodded agreeably and appeared enthusiastic. Finally, as was the case in our sample lesson from PM’s class, the content and discourse in MH’s lesson were complex (e.g., What’s the difference between factual and fictional text? What’s an index? How do you use it? Are you an expert at anything?), and would challenge students in higher grades than MH’s students. However, like PM, MH provided young students with the support they needed to be successful in challenging activities. She created an optimally challenging but nonthreatening environment for students to develop and exercise attributes associated with SRL.

Offered Opportunities for Students to Evaluate Self and Others

Opportunities for students to evaluate themselves and others were less a target of instruction in this lesson than in other lessons we observed in PM’s class. One of our running records describes how PM’s students selected samples of their work to share with their parents during student-led conferences (March 2, 1999). To guide students’ choices, PM asked, “What were we doing that we’re proud of? What can you share with your parents? What can we do that we couldn’t do before?” In this lesson, however, there were opportunities for students to review and reflect on themselves as learners (e.g., “If you are someone who needs to follow with your finger. . .”), and to provide feedback to others (e.g., “What could [student’s name do]?”). In addition, PM offered opportunities for students to evaluate the feelings and actions of characters in the text they were studying. For example, she asked students to take the perspective of the mother pig (“We never talked about the mother. How do you think she felt?”), and she asked students to evaluate the actions of the pigs (“Should the pigs have put the wolf in the hot pot?”) in relation to a discussion about what is right or wrong for them to do (“Remember, we talked about if someone does something mean to you. Should you be mean back?”). Finally, PM almost always followed a request for students’ suggestions or opinions with a request for an explanation about why that would be an appropriate thing to do (“Let’s talk about why”). In this way, students were encouraged to be mindful about whether and why a particular strategy worked, whether an answer was correct, or why they thought or felt a particular way.

MH also embedded opportunities for students to monitor and evaluate their learning in class discussions about reading

and writing. When she introduced the book about mammals to her students, she prompted them to be thinking about how “this book is different from the other books I’ve been reading. I’m not going to tell you how it’s different.” Then MH asked students to keep their predictions in their heads and to be “thinking about whether they match” the information she read from the text. When she assigned the Grade 1 students their writing task, she invited them to think about whether they “are an expert on [something].” Later, when she met with students individually to go over their writing, she asked each one to judge whether their writing was fiction or nonfiction. Similarly, when she assigned Grade 2 students the task of choosing a research topic, she asked that they consider three questions: “Am I interested [in this topic]? Can I find books [about this topic]? Can I read the books by myself, with a friend, with an adult?” Consideration of these questions required that students evaluate characteristics of themselves as learners, the demands of the task they were undertaking, and the strategies available to them if they experienced some difficulty. Finally, at the end of the lesson, MH asked students, “What did you learn about yourself as a writer today?” Students’ responses (paraphrased by MH) included “You need to have some reading strategies for nonfiction reading,” “You need to get started right away,” and “You need to stay focused.” For each of the strategies students generated, MH followed up with the question, “Can you do that again?” These were familiar questions for MH’s students. She asked them at the end of every reading and writing period.

Provided Instrumental Support Through Self and Peers

In Wharton-McDonald et al.’s (1997) study, highly effective primary teachers

Used a great deal of scaffolded instruction . . . and enabled students to progress with just the right amount and level of assistance. They encouraged students to be self-regulated learners, so that students could continue to learn and progress on their own. (p. 520)

Often, PM and MH were agents of their students’ self-regulation, providing just enough support to ensure students’ application of independent, academically effective forms of learning. In this way, their support was instrumental as opposed to being merely procedural.

At the beginning of the reading activity described in our running record from PM’s class, PM asked students where they might look in their anthologies if they couldn’t remember the page on which *The Three Little Pigs* begins: “If we forget what page . . . and we want to find out real quick, where can we look . . . what’s that page called?” Rather than directing students to turn to the table of contents to find the page where the story starts, or just directing them to the correct page, PM

asked a question that enabled students to enact an effective strategy on their own. Similarly, instead of correcting a student’s reading miscue, she asked all students to think what could be done to decipher the difficult word, prompting students to draw from their arsenal of effective decoding strategies and solve the problem independent of their teacher. In other instances, she provided students with information they might need to make an appropriate choice or modify an activity to an appropriate level of challenge: “If you’re someone who needs to follow along with your finger. . . . If . . . you can keep up without. . . .” Then she allowed students to make the choice but monitored the efficacy of their decision. In this example, one child chose not to track the text during the shared reading activity and lost his place. When PM asked, “Everybody read this sentence,” she identified this student, showed him the correct place and prompted him to begin tracking, all without interrupting the reading activity. Through this subtle intervention, PM intended to communicate, “What you’re doing is not working. Tracking should help.”

PM often created opportunities for students to provide instrumental support to one another. In this lesson, students helped one another to solve decoding and comprehension problems, and they shared ideas during their prewriting discussion. PM fostered a community of learners where listening to, even appropriating, other students’ ideas was valued. In the discussion about whether the pigs had acted appropriately in punishing the wolf, one student indicated that she had changed her mind. PM responded, “That’s OK,” and followed up by asking, “What changed your mind? . . . Was it listening to other people’s opinions?” Similarly, MH’s students had many opportunities to learn from one another because there was so much discussion about learning in their classroom. In our sample running record, MH asked her students to share their ideas about “the smartest animal in the world” and how the book she read them that morning differed from books she had read to them in the past. She invited Grade 2 students to work with one another to consider the three questions she posed regarding their choice of a research topic. Finally, at the end of the lesson, students shared what they had learned about themselves as writers that day and what they had learned that they could use in the future. “Sharing circle” was a familiar participation structure in MH’s class. It had occurred at the end of most reading and writing periods since September. Some days, MH recorded students ideas on chart paper to build inventories of how students were becoming “good readers and writers,” and to document the range of strategies available to them for handling all varieties of reading and writing problems.

Like PM, MH was more likely to ask a question that would help students to solve a problem or generate an understanding than to correct an error or supply information directly, particularly if the information to be acquired involved high levels of thinking or metacognition. Her strategy was to provide the cue that would initiate students’ thought experiments (e.g., “This is different than other books I’ve been reading. I’m not going

to tell you how it's different. ... Be thinking. ..."). MH often engaged in self-talk to model her thought processes for students (e.g., "Sometimes the hardest thing [is to choose a topic]"), or pointed to students' actions or work samples that exemplified something she wanted students to be aware of or learn (e.g., "You're doing some nonfiction writing," "I learned something about you today," "You learned that you need to have some reading strategies [for nonfiction reading]"). Finally, MH often recapped students' responses to her questions with elaboration or with a follow-up question that challenged students to think more deeply about their response. Typically, her prompts began with open-ended queries ("Tell me more about that? What was it that you did today?") and became increasingly specific depending on the amount of support students required to respond correctly (e.g., "Did you get started right away? Did you stay focused?").

These examples demonstrate that, with the kind of instrumental support PM and MH provide, young children are able to function at high levels, thinking metacognitively and acting strategically. Also they demonstrate that instrumental support requires highly skilled teachers who know what they want to accomplish and "how to make it happen" (Wharton-McDonald et al., 1997, p. 520). Both PM and MH had a clear sense of purpose and high expectations concerning what their young students could know and do. They also thought very carefully about what they, as teachers, would need to do to help their students meet their goals. For example, during the group meeting that preceded our observation of *The Three Little Pigs* activities, PM described a workshop she had been to that was "really geared toward Grade 5 and 6 students" (PM, April 7, 1999). However, PM said, "The ideas were very attractive to me, so I took some of what [the presenter] said and did it on a very primary level, and very oral. It was a lot of oral discussion as opposed to written." After this explanation, one of the other teachers in our group commented, "You know, that's great ... because ... there was a kindergarten teacher sitting next to me [at the same workshop] that said, 'This is just too old for [my students].' ... It was too bad" (TS, April 7, 1999).

Evaluation was Nonthreatening and Mastery Oriented

A hallmark of high SRL environments is that they challenge students without threatening their self-efficacy. In these environments, assessment and evaluation are ongoing, embedded in daily activities, focused on personal progress, and promote a view that errors are opportunities to learn (Paris, Lawton, & Turner, 1992; Pintrich, Marx, & Boyle, 1993; Rohrkemper & Corno, 1988.) Such nonthreatening evaluation practices are represented in our running record of PM's class, even though she was not grading students or providing them with detailed feedback on a particular assignment. When PM involved the entire class in solving one student's decoding problem, she

was using that student's error as an opportunity for all students to learn the "problem" word and practice their decoding strategies. Later, when another student gave an incorrect answer to a comprehension question, PM asked the group if they agreed and then, together, they found the correct answer. Singling students out in this way could be upsetting for the child who made the mistake. However, in PM's class, these discussions were a natural part of each instructional event. The tone was helpful, not critical. The message was that "everyone makes mistakes, that's OK, everyone needs help sometimes, and everyone learns by helping."

PM made her students accountable for thinking and learning, but in a nonthreatening way. For example, by randomly selecting student readers during the shared reading activity, PM ensured most students were actively following along and ready to participate. When a student was caught not following, PM asked another student to carry on reading while she went to the student who was off task, pointed to the place where he should be, and prompted him to track the text with his finger so that she could be sure he was following along. Similarly, when a student offered an ending to *The Three Little Pigs* that was the same or similar to the original ending, PM said, "I was hoping we'd change the ending. I'll give you another minute." Rather than putting the student on the spot by having to generate a different ending immediately, she challenged the student to think of a new idea and indicated she would check it in "another minute." In these interactions, PM communicated to students that she expected high levels of achievement from them. However, she also communicated that she would help them to be successful. Notice that no child was left with an error uncorrected. The decoding error, the comprehension mistake, and unoriginal story endings were all corrected before the lesson ended and students left the group to work independently. In fact, PM asked all students to describe their writing ideas to her before leaving the group to work independently, and asked one student to stay behind to discuss his idea ("[Student's name] stay here a minute. I'm not sure about that one"). By creating a nonthreatening environment and ensuring each student's success, PM promoted a mastery orientation to learning; students were encouraged to persist in challenging circumstances, and to focus on learning and personal progress.

MH also created a challenging but nonthreatening evaluation context for her students. In addition to turning students' errors or omissions into opportunities to learn (e.g., "One thing I'd like you to do tomorrow ..."), she often told students about mistakes she made, things she forgot to do, or things she was learning (e.g., "I learned something about you today"). Like PM, MH held students accountable for their learning but made sure they had the knowledge and support they needed to be successful in her teaching-learning environment. In our example, she checked Grade 1 students' understanding of their writing task before asking them to work independently, and informed them that she would want to "conference" with them when they were done. Later, she met with students indi-

vidually to read their writing and offered praise and corrective feedback (“I like ... One thing I’d like you to do tomorrow ...”). Similarly, as Grade 2 students considered books as potential resources for their research project, MH reminded them to check whether they could read the books (“If you haven’t checked that, do it now”), and she informed them that she would be asking them to “tell me something you’ve discovered about your animal. You’re going to report back to me in five minutes.” Finally, as was the case in PM’s class, students were never put on the spot in a punitive way. If, in checking a students’ understanding, MH discovered a child was having difficulty, she either gave the student more time (as she did during sharing circle when she “came back” to students who weren’t ready), or worked with the student to solve his or her learning problems (as she did during conferences with Grade 1 students about their writing).

STUDENT OUTCOMES

Although our primary focus has been on what teachers do and say to promote SRL, it seems appropriate to end with a summary of how students benefit when teachers design tasks and interact with them in the ways PM and MH did. In Perry’s original study (1998), students in high-SRL classrooms adopted skills and attitudes that are characteristic of self-regulated learners, whereas children in low-SRL classrooms adopted attitudes and actions that have been associated with defensive and self-handicapping approaches to learning (Covington, 1992). For example, Perry observed Grade 2 and 3 students in high-SRL classrooms engaging in complex writing activities, such as researching and writing about a topic, and managing all aspects of the writing process independently, flexibly, and recursively. Students in these classrooms monitored and evaluated their writing progress in productive ways and sought instrumental support from their peers and teachers when they experienced difficulties. Moreover, in interviews, these students communicated attitudes and approaches to learning that focused on learning and personal progress. Even the low-achieving students in these classrooms had high efficacy for learning and did not shy away from challenging tasks. In contrast, students in low-SRL classrooms were more focused on their teachers’ evaluations of their work (e.g., how many they got right on a particular assignment, and whether or not they got stickers). In these classes, low-achieving students especially, avoided challenging tasks and, in interviews, communicated perceptions of low ability and low efficacy for learning. Finally, Perry observed students in these classes passing over, or even rejecting, opportunities to regulate some aspect of their learning and choosing academically ineffective strategies such as procrastinating and hiding their work.

Since that original study, we have observed changes in student attitudes and actions that link to our work with teachers. For example, at the end of our first year of collaborating with

teachers (Spring 1998), 64% of the students we interviewed indicated that errors made them feel unhappy, and 47% indicated that they believed errors made their teacher unhappy. At the end of our second year, the year from which our sample running records were drawn, only 37% of the students we interviewed reported negative affect as a response to errors, and only 22% indicated their teacher experienced negative affect when she observed children making mistakes. In addition, the proportion of students indicating a preference for easy tasks decreased from 50% to 26% from year one to year two. These findings are in line with our goal of promoting views that errors are opportunities to learn and challenging tasks are worthwhile and fun. Finally, students in both years provided us with a list of strategies they use, or recommend others use, when faced with challenging reading or writing tasks. A summary of these strategies is presented in Table 2. Although the strategies they report are much less sophisticated than those reported by more mature learners, they do list both general executive and domain specific tactics that reflect the broader categories of strategies that self-regulated learners use (e.g., modifying tasks to control challenge, applying specific strategies to cope with the meaningful or mechanical aspects of reading and writing).

At one of our group meetings, PM described what her students learned by engaging in activities like the one described in our example:

I thought, very naturally, a debate came out of it. ... They realized that some questions are really difficult to answer. ... It isn’t so black and white. So it was a really excellent discussion. ... The book ... was quite difficult for them to read. ... We read it together. ... I read some and they read some. And they handled it and it was really neat to see them doing that. (PM, April 7, 1999)

PM also noticed the impact this activity had on her students’ motivation:

I found that, particularly during the discussion, there wasn’t anybody that wasn’t engaged, which is not always the case with my group. ... I looked around and everybody was really into what we were doing. And we went for 40 minutes, which is, for them ... a long time to be doing one thing. (PM, April 7, 1999)

At the same meeting, MH described how she and her students “talk so much more about reading now and we do so much more reading.” Also, MH described how the students were enacting the “talk” she was modeling in her classroom.

One morning, when MH was reading with a child, “he came to the word puffin and he figured it out. ... I said, ‘Well how did you know that?’ [He said], ‘I just knew that word.’ I said, ‘Oh, OK,’ and then he said, ‘I like that word puffin.’ ... I’m always talking about ... like the word ‘lurking.’ And then he says, ‘Say that word.’ I said, ‘Puffin.’ [He said], ‘Doesn’t it

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sound neat?' ... It was so good because all that stuff that you're talking about ... some of them are getting it. ..." (MH, April 7, 1999)

We might add that MH's students are not only getting it (witness the level of metalinguistic awareness evidenced in the above conversation), some of them are ready to teach it.

SUMMARY AND CONCLUSIONS

We have summarized our program of research which seeks to (a) identify features of classroom literacy tasks, authority structures, and evaluation practices that support young children's development of and engagement in SRL, and (b) work with teachers to design tasks and interact with students in ways that foster this approach to learning early in children's school careers. Particularly, we have highlighted the utility of conducting in-depth observations in classrooms for identifying what teachers say and do to support young children's thinking and talking about themselves

as readers and writers, and the processes involved in reading and writing. Our observations, in the form of running records, confirmed that young children can and do engage in SRL in classrooms where they have opportunities to engage in complex open-ended activities, make choices that have an impact on their learning, control challenge, and evaluate themselves and others. In addition, our observations revealed the ways in which teachers provide instrumental support to students (e.g., through questioning, clarifying, correcting, elaborating, modeling) and create opportunities for students to support one another (e.g., through collaborating, sharing ideas, and brainstorming problem-solving strategies). Last but not least, we observed how teachers created nonthreatening and intrinsically motivating learning contexts by embedding assessment and evaluation in the ongoing activities of their classrooms, making students accountable without being punitive, and encouraging students to focus on personal progress and view errors as opportunities to learn. In these contexts, students demonstrated attitudes and actions that are aligned with independent, academically effective learners: metacognition, intrinsic motivation, and strategic action (Zimmerman, 1990).

Our research supports claims that observations have three important strengths as measures of SRL (Winne & Perry, 2000). First, they reflect what learners actually do versus what they say they do. Second, they illuminate links between features of the teaching-learning context (e.g., what teachers do and say) and students' engagement in SRL. These two contributions reflect an important development in research about SRL. Increasingly, researchers are looking for ways to provide more fine-grained descriptions of SRL as an event (i.e., as it unfolds in real contexts and real time). Our running records offer the potential to mark an opportunity for students to engage in SRL (e.g., teacher offers choice and opportunity to control challenge through that choice), and then to observe whether, in fact, they do (What choice does the student make? How might the choice create further opportunities for SRL to occur?). The third benefit, which we have realized in our work, is that observations are particularly helpful for studying young children's engagement in SRL. Not only do they ameliorate the difficulties associated with assessing young children's SRL (e.g., positive response bias and limited language for describing cognitive processes), they illuminate the nature and degree of support young children require to be self-regulating, and offer insights into teaching practices that promote (or curtail) young children's SRL.

In addition to recognizing the strengths of observational methods, we believe it is important to address several limitations. First, it is important to recognize that there are some aspects of SRL that are impossible to observe (metacognitive processes such as planning and monitoring are often covert). Also, it is important for researchers to recognize that what is observed often reflects a view about what is important to observe. Our observations were framed by our interest in SRL, our understandings about what supports SRL, and our knowledge of what the teachers participating in our study were trying to accomplish with their students. Although we made every effort to be open to emergent categories, we learned that it was impossible to capture everything teachers said and did, and every student's response, in a single running record. We may have missed something important. For these reasons, we recommend the use of multiple methods to triangulate findings from observations. In our research, we use semistructured interviews to check and compliment our classroom observations. In addition, we believe it is important not to lose sight of the forest for the trees. We have found it most enlightening to continually move back and forth between our detailed descriptions of single events and our summaries of what occurs across multiple classrooms or in individual classrooms over time.

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