

Becoming a Thinking Thinker: Metacognition, Self-Reflection, and Classroom Practice

Daric R. Desautel

2006

Question

What practices lead to successful self-reflection and promote metacognitive development in young learners?

Rationale for Study

While I have found myself to be fascinated with the mental processes of my 2nd grade students, those same students seemed to not possess explicit knowledge about themselves as thinkers. A tell-tale sign of this lack of self-knowledge was their flat, simplistic self-assessments. A more troubling indication was their reluctance to consciously adopt specific reading and writing strategies. I was led to believe that my students lacked the necessary metacognitive knowledge that comes from successfully reflecting on one's own life as a thinker and learner. I sought to assist my students in developing this mature cognitive skill through a combination of goal-setting, directed use of oral and written prompts, and alternation between descriptive and prescriptive tasks.

Background and Context

P.S. 228, in the Queens neighborhood of East Elmhurst, has 338 students in Pre-Kindergarten through 2nd grades. 74.7% of these students are Hispanic, 11.8% are Asian / Pacific Islander, and African American and White students each constitute around 4% of the overall population.

21.6% of the population has been identified as English Language Learners and English is a second language for nearly 80% of the student population as a whole. Additionally, nearly 15% of our students receive special education services, including speech, occupational, and adaptive physical therapy as well as counseling. Our school is in an economically disadvantaged area in New York City and 78.5% of our students are eligible for free lunches.

Review of Research

Many authors in different domains have written about the development of metacognitive knowledge. A. L. Brown (1975) and J. H. Flavell (1976) wrote about the educational importance of the mind's ability to reflect on its own processes. The common definition of metacognition, "thinking about thinking," echoes Flavell's (1979) formulation: "knowledge and cognition about cognitive phenomena." Since then, dozens of researchers have explored the components of metacognitive knowledge; the role metacognition plays in making meaning; and the relationships between self-reflection, self-assessment, and metacognition. I was particularly inspired by the work of Marlene Scardamalia and Carl Bereiter (1983), who developed the idea of a "co-investigative inquiry" while helping young learners reflect on the own thinking.

Design of the Study

In keeping with my desire to focus on classroom practices, I decided to select 4 instructional activities that offered some promise in helping my students gain insight into their own thinking and learning. I collected some initial quantitative and qualitative data to gain a rough understanding of the metacognitive skills my students already had, and then used this data to select 3 students as case studies. I then conducted the lessons with all of the students. I chose 4

data collection tools and analyzed the effect that my instructional activities may have had on the 3 case studies.

Instructional Practices

I examined the efficacy of the following classroom practices and activities in developing student metacognitive knowledge:

- *Goal Setting* – I planned and conducted a series of minilessons on setting goals. These lessons involved the use of a worksheet that became a weekly routine.
- *Oral Language Practice and Prompts* – I planned and conducted 2 lessons on the idea of articulating thoughts. One result of these lessons was a classroom experience chart of phrases and prompts.
- *Written Self-Reflections* – I led students in a process of writing post-task reflections following writing assignments. This process became a semi-regular routine.
- *Oral Conversations* – I led students in a process of engaging in peer conversations following reading and writing experiences. These conversations were modeled and incorporated the aforementioned oral language practice.

Teachers as Students and Students as Teachers

My experience of becoming enthralled with the mental lives of my students may be typical of enthusiastic first-year teachers (and, it is hoped, veterans). It seems that I spent nearly every free minute with colleagues talking about our students; sharing the remarkable learning connections they made, relating stories about their particular academic identities, and considering their individual learning behaviors. We shared a sense of awe and a deep interest in

the ways that the young minds with whom we worked made meaning, even as we accepted responsibility for the role that we, as educators, played in that process. Towards the end of my first year in the classroom I realized, however, that while I had spent many hours discussing the mental life of my students with fellow teachers, I had rarely discussed the matter with my students themselves. In fact, apart from asking the type of “How did you know that?” questions that I felt, intuitively, should be part of a learning experience, I had done little to make the learning process explicit to my students. In particular, I had not devoted nearly as much energy to increasing their self-awareness and agency as learners as I had spent thinking about it.

This inattention, while perhaps forgivable in a teacher’s first year, was unfortunate, particularly because I had an ongoing example of the fruitful benefits of explicitly self-reflective practices all around me during my initial year as a teacher. These practices were designed to actively involve the learner in the learning process by asking her to consider and assess her own thinking and constituted an integral part of our education and training *as teachers*. I, along with many of my first-year colleagues, benefited from these practices, which our instructors identified as *self-reflective* or *metacognitive*. Thus, when I finally began to research the topic of self-reflection and metacognition in the elementary classroom, it came as little surprise to find that these areas had already been embraced by research into teaching teachers (Bean & Zulich, 1989; Weinstein, 1989, Garmon, 2001).

The present inquiry stands, in many ways, as an attempt to recreate the same robustly self-reflective, self-directed learning in my own classroom that I experienced with my colleagues during those first years as teachers-in-training. Specifically, I want to explore what practices lead to successful self-reflection and promote metacognitive development in young learners.

This inquiry has grown from the aforementioned interest in the mental lives and processes of young students, and has been shaped by observations, both formal and informal, that were made in my years as a teacher. In particular, as I began to develop a modest discourse with my 2nd grade students, I noticed a delineation between those that could talk about their own mental activities with a degree of familiarity and awareness and those that could not. I informally observed that this delineation seemed to extend laterally to other skills, such as the ability to self-assess, the ability to tutor other students, or success with personal narrative writing experiences. Finally, this project is rooted in the belief that students who are aware of, and “own,” their own cognitive process enrich, and are enriched by, the learning experience.

One can imagine possible results, both at a classroom level, and an educational policy level, that recognition of the centrality of self-reflection to effective learning would yield. The purpose of this inquiry is to explore some of the results of this orientation in the classroom. It is hoped, however, that a corresponding emphasis in the world of educational policy will continue to be explored, particularly at a time when the desire for assessment data threatens to reduce the focus of evaluative agencies and, in turn, cripple the classroom learning endeavor. To the extent that practices that develop metacognitive knowledge and enable students to become self-directed learners counteract any destructive influence of “teaching to the tests,” they warrant attention.

Reviewing the Literature

As stated previously, the research supporting the use of self-reflective activities in the training of new teachers is established. This research rests on a wide body of literature on the more general subject of metacognition. A fruitful and evolving topic, metacognition has been a subject of study for cognitive theorists, behaviorists, educators, and others. It has been explored

in terms from the technical and theoretical to the practical. In my own preliminary investigative process, I discovered that there is much room for contributions from educators on the role of metacognition in the classroom learning dynamic, and particularly on the practices that can contribute to the development of metacognitive skill. I have found it helpful to organize my study of the available literature into the areas of *definitions and theoretical overview*, into which fits literature that is concerned with the formal study of metacognition as a specialization within cognitive research; *metacognition and meaning*, which deals with metacognition as an element of the meaning-making process; *self-reflection and self-assessment*, in which self-reflection is seen as integral to a regulatory practice that contributes to metacognitive development; and *metacognition in the classroom*, which explores the metacognitive import of pre-existing classroom practices and suggests additional areas for elaboration. It is in this last area that the present study might seem to be, most modestly, participating.

Definitions and Theoretical Overview

Metacognition first surfaced as an element of cognitive research in the 1970s. Brown (1975) and Flavell (1976) posited the delineation between normal cognitive processes and overarching, reflective functions that controlled those processes and constituted an increased level of self-awareness. The oft-rendered definition of metacognition, “thinking about thinking,” echoes Flavell’s (1979) first formulation: “knowledge and cognition about cognitive phenomena” (p. 906).

Numerous scholars have explored the subject and contributed various ideas to the emerging project of constructing a taxonomy of metacognition. Flavell’s (1979) initial model identified “metacognitive knowledge” and “metacognitive experiences” as the two components

of metacognition (p. 906). Brown (1987, building on the clarifications offered by Kluwe's (1982) use of the term "executive processes" to describe regulatory behavior, broadened and strengthened the idea of metacognitive experiences by associating them with the use of metacognitive strategies. These strategies have received much attention from scholars, including Borkowski, Carr, Rellinger, & Pressley (1990) and Paris, Wasik, & Westhuizen (1988), to name only a few.

In another vein, scholars have pursued the idea of metacognitive knowledge. Bereiter & Scarmadalia (1983), as well as Paris, Newman, & McVey (1982) treat metacognitive knowledge as *constructed*, like and other kind of knowledge. More recently, Reynolds, Wade, Trathen, and Lapan (1989) have identified *task awareness*, *strategy awareness*, and *performance awareness* as components of metacognitive knowledge. The salient theme common to the wide variety of scholars who have explored metacognition is the idea of a process that happens when an individual considers her own thinking and uses regulatory strategies to reinforce or alter that thinking. Metacognitive knowledge, a hallmark of metacognition, is knowledge the thinker has about herself, and may inform both a present, task-oriented situation, as well as the thinker's more global conception of herself as a thinker and learner.

Metacognition and Meaning

As metacognition became an intriguing and valid subject of study among cognitive theorists, educators began to examine the fundamental meaning-making activities in the classroom. A wealth of literature attests to their discovery that metacognition plays an important part in activities as diverse as recall, comprehension, and evaluation, as well as in critical thinking skills central to establishing meaning in learning endeavors. In addition to the thorough

analyses of reading strategies offered by Paris, Wasik, & Westhuizen (1988), Schmitt (1990) has “metacomprehension strategies [are] characteristic of good comprehenders” (1990, p. 454). This focus, along with the continual refinement of reading strategies themselves [as developed, for instance, by Cooper (1997)], has shown that many effective reading strategies, such as inferring, self-questioning, monitoring, “fixing,” and summarizing all contain metacognitive components and require metacognitive skill. In the opinion of this author, the self-reflective analysis of these strategies and their use produces metacognitive knowledge about the learner. That is, conscious, active, and purposeful employment of metacognitive strategies results in the kind of global meaning Bereiter and Scarmadalia (1983, p. 62) may have had in mind when they speak of the “informal self-knowledge that appears to constitute a natural part of intellectual maturity.”

Self-Reflection and Self-Assessment

Self-reflection is a term that identifies a wide range of activities and processes that have received research attention. In addition to the aforementioned research into the role of self-reflection in the learning experiences of pre-service teachers, self-reflection has been employed in a wide variety of childhood and adolescent educational settings. Schultz & Delisle (1997) and Yancey (1998), among others, have commented on the encouraging results that reflective activities such as journal writing and directed conversations have had on student comprehension of learning experiences. Oftentimes, however, self-reflection seems to be referred to in research like it is employed in classrooms: in a non-prescriptive yet vaguely laudatory way. That is to say that self-reflection is often encouraged both in professional literature and in the classroom, but seldom explored or explained as a phenomenon. What exactly do students do when the self-reflect? Prescott (2001) offers intriguing ideas about the role of internalization in self-reflection,

and identifies the process with self-awareness of individual learning styles. It has been my suspicion the self-reflection serves the end of constructing metacognitive knowledge by making explicit formerly unconscious, intangible, or reflexive processes or events. Thus a robustly self-reflective experience would result in a state commensurate with that evoked by Flavell's description of metacognitive as an awareness of oneself as "an actor in his environment, that is, a heightened sense of the ego as an active, deliberate storer and retriever of information" (1971, p. 272).

Just as self-reflection may serve the goal of metacognitive knowledge, self-assessment may facilitate the potentially tricky project of self-reflection. Techniques for encouraging successful student self-assessment, such as student-generated rubrics, portfolios, contracts, and goal-setting, have been seen as important tools for further involving students in their own learning (Herbert, 2001; Jackson & Larkin, 2002; Yancey, 1998). In addition to inviting students to set their own terms on learning and invest more fully in their own performance (summative assessment), these practices encourage students to attend to the processes within their tasks (formative assessment), permit peer-assisted and cooperative learning, and afford unique opportunities for self-commentary and self-reflection. As Carr says, "when students self-evaluate, they step back and reflect on what and how they learn" (2001, p. 195). Here again, however, the link between self-assessment, reflection, and some useful metacognitive knowledge is not explicit. It is hoped that, by closely examining the processes of metacognition as it is facilitated by self-reflective experiences, a fuller understanding of these dynamics can be reached.

Metacognition in the Classroom

As is implied in the discussion of research into reading strategies and reflective practices, metacognition has long been a part of the classroom learning endeavor. As Ogle (1994) demonstrates, many accepted teaching practices, such as the creation of KWL charts and semantic maps, and the use of learning journals, have built-in reflective import. Similarly, Opitz (1995) offers goal-setting and self-evaluative techniques that can easily be incorporated into classroom learning centers. The findings, particularly the endorsement of practices that produce a visual record of student learning, corroborate those of Blakey and Spence (1990) in their survey of strategies that develop metacognition. A greater understanding of how students use classroom practices to reflect on their learning, and thus develop metacognitive knowledge, would permit educators to make predictions about the development of metacognition in a wider range of populations and environments.

A Co-investigative Inquiry

In light of the internal and idiosyncratic nature of metacognition and self-reflection, as well as the focus this author is placing on mental processes and the forms of data that they produce, this study was conceived of as a qualitative, narrative inquiry. In accordance with the author's interest in best practices, it was conducted while participating fully as a teacher in the classroom. The methodological intent was to employ explicitly self-reflective activities with a sample set of students in a variety of settings and tasks to determine if, and how, these activities contribute to the development of metacognition. I chose four classroom activities: weekly goal-setting, oral language prompts and practice, post-task written self-reflections, and oral conversations.

This study was conducted in a New York City public school in the Queens neighborhood of East Elmhurst. The 5-year-old school has 338 students in Pre-Kindergarten through 2nd grades. 74.7% of these students are Hispanic, 11.8% are Asian / Pacific Islander, and African American and White students each constitute around 4% of the overall population. 21.6% of the population has been identified as English Language Learners and English is a second language for nearly 80% of the student population as a whole. Additionally, nearly 15% of our students receive special education services, including speech, occupational, and adaptive physical therapy as well as counseling. Our school is in an economically disadvantaged area in New York City and 78.5% of our students are eligible for free lunches.

While the young students at this Early Childhood Center do not face many of the tests that other elementary students in New York City do, this school has attracted a good deal of attention for its successful teaching practices. Teachers here have spent a great deal of time and energy studying, practicing, and eventually modeling a literacy curriculum and methodology that was adopted by the city school system at large in 2003. This instructional methodology promotes explicit strategy instruction coupled with teacher modeling and developed through routine independent practice and small group support. As I began my 3rd year of practice with this literacy instruction model, I took note of a now-familiar struggle my young readers encountered: they had great difficulty understanding the idea of adopting and employing explicit strategies to solve decoding or comprehension problems when reading. I soon began to suspect that this difficulty consciously adopting specific reading strategies was part of a larger issue of student investment in the learning process. I believe that that investment can be made when students learn to see themselves as learners, and that practices or methods that aim to “trick” students into learning, particularly in early childhood education, fail to induce that investment.

The method of this study owes a great deal to Bereiter and Scarmadalia's (1983) idea of the "co-investigative" nature of research into metacognition. It also employs some of their suggestions about the role of cooperative learning and prescriptive versus descriptive tasks, as well as the self-reflective and self-evaluative practices referred to elsewhere in the literature. Following their co-investigative model, I intended to gather data on the interactions these students had with both the reflective or evaluative apparatus and the content itself. This data consisted of observations of student interactions, written records of students' conferences and goal-setting, and the written products of reflective journal writing and post-task self-reflections. This data was compared against an informal initial survey of student metacognition in the form of early post-task written reflections and a variation on Schmitt's (1990) Metacomprehension Strategy Index (MSI). The MSI variant consisted of a 12-question multiple-choice survey that was designed to measure student familiarity with reading strategies that incorporate metacognitive skills.

This endeavor did not, nor was it expected to, generate quantitative data that can be plotted on any numerical scale. Its strength *and* its weakness, perhaps, is its focus on the intangible mental processes that indicate metacognition. Additionally, the study's reliance on student testimony and commentary raises issues of interpretation while offering intriguing insight into students' own self-conception. This data, then, will be presented as an anecdotal record of student interactions with self-reflection, content, and each other. By closely examining the particular dynamics at work in several classroom practices that are already encouraged (and, indeed, were explicitly taught and, to varying degrees, employed in the classroom at large), it is believed that a deeper understanding of how these practices contribute to the development of

metacognition was reached. To the extent that these practices may empower students with the capacity to become mature, self-directed learners, this aim seems worthwhile.

Teaching the Skills; Seeing Results

I built the assumption of this inquiry, that student's metacognitive knowledge can be developed by familiarity with self-reflective processes such as goal-setting and tracking, into my planning of content and strategy instruction during the fall months of the school year. While the demands of demands of prescriptive, skills-and content-based literacy and math curricula compelled me to "sneak" the development of metacognitive skills into these areas, a greater degree of freedom in the subject of Social Studies allowed me to incorporate related activities without compromising either content or strategies. An overview of the instructional plan follows, with a brief description of some of the apparatuses and activities.

The instruction I had planned in support of this study was roughly divided into two units. The first unit was built around the two ideas of self-reflection and conversation. The second unit was devoted to introducing the idea of goals and teaching students how to make and use goal-setting worksheets. The first unit was part of the ongoing effort to develop students' ability to engage in accountable talk, but was implemented sequentially and augmented with instruction in self-description, mentalistic vocabulary, and "looking in." A dominant motif that emerged from this unit was the idea of "the mirror." Some minilessons from this unit include "Talking about others; talking about ourselves," "Thinking about yourself," "Writing your thoughts," and "Giving directions." An important component of this unit was a series of lessons around oral language prompts that we found useful in describing our own mental moves. These lessons resulted in a chart of prompts and phrases. While some of these lessons aimed at transferring

awareness from a behavioral or interpersonal realm to an intra-personal one, or using prescriptive tasks to circumnavigate difficulty with self-descriptive tasks, the common thread to these and the other lessons was that they were all oriented towards increasing students' self-awareness.

The second unit was more compact and focused on the concept of goals and the process of setting, tracking, and meeting them. Our class used the metaphor of climbing a tree to better understand the skill of setting goals. It began with a general discussion of the concept of goals and increased through a set of minilessons to examine the ideas of personal and academic goals, planning to meet goals, and recognizing and evaluating achievement. The six lessons devoted to this instruction resulted in some tangible products and a wealth of intangible discovery and areas for further inquiry. Some tangible products included a classroom definition of a goal ("A goal is something you want to do or be. It can be big or little but has to be specific."), class charts of academic goals, and individual goals sheets with personal goals. Areas rich with discovery for further exploration include the idea of specificity, "realism," and attainment. The common result of these lessons was an enriched understanding of the student as agent in the classroom and of the students' general self-conception as a learner. This seemed to support the use of accountable talk by giving concrete "talking points" for discussion and reflection. Additionally, the use of goal-setting sheets provided a routine apparatus to which many students responded. The formalization of this self-reflection seemed to aid in many students' ability to make sense of the abstract idea of metacognition.

"Looking Within"

The phrase "looking within" presented itself to mind early on when teaching the skills within the first unit, and I used it often with the students. As the developed, to varying degrees,

an awareness of the process associated with the phrase, it took new meaning for me as well: I began to “look within” the minds of my students, too.

Several Students became prominent in my exploration of metacognition. Initially, I was drawn to investigate the metacognitive knowledge of the most verbal students. In this group was a boy named Christopher, who prone to sudden, “ah-ha” announcements. Other, quieter students, however, began to demonstrate similar proclivities when their conversation was contained within peer groups or other trusted situations. In general, I assumed that oral language development was closely tied to the ability to participate in self-reflective activities leading to metacognitive knowledge, but wondered if this correlation was consequence of the centrality of verbal activities in my classroom. Accordingly, I developed a keen interest in the mind of a girl, Vicky, who offered interesting developmental case study. Vicky was a very quiet student who rarely contributed to whole-class or large group discussion but who was more animated in small groups. Additionally, Vicky’s writing skills were noticeably more assured than her oral language skills, and demonstrated promising written descriptive skills. Finally, I included in this set of student case studies Jose, an energetic and motivated student with strong academic and oral language skills but a tendency to rush through tasks and focus exclusively on project completion.

As an aid to my initial, anecdotal, and subject assessment of these students, I created and administered a variation on Schmitt’s (1990) Metacomprehension Strategy Index as a diagnostic tool. This questionnaire asks students to respond to questions about reading comprehension strategies and offers an assessment of their knowledge and use of those strategies that have been shown to have metacognitive components. The results of this questionnaire, shown below, seemed to confirm my initial thoughts on Christopher, Vicky, and Jose.

Table 1 – Results of Metacomprehension Strategy Index (MSI)

	MSI Data						
	P / V (4)	Pre (1)	Pur (3)	Que? (2)	B / K (1)	S / Fx (1)	Total (12)
Christopher	4	1	2	0	0	1	8
Vicky	1	1	1	0	0	1	4
Jose	3	1	2	2	1	1	10

Key: P / V = Predicting and verifying; Pre = Previewing; Pur = Purpose-setting; Que? = Questioning; B / K = Accessing background knowledge; S / Fx = Summarizing and fixing up; number in parentheses indicates number of questionnaire items in that category.

Christopher performed well on the MSI, selecting 8 of the possible 12 strategies indicative of metacomprehension awareness. This suggested to me that his metacognitive development had already begun, and that it either contributed to, or was enhanced by, his use of certain literacy strategies. Vicky, conversely, scored at low level on the MSI. Coupled with the knowledge that Vicky's performance in reading comprehension assessments is inconsistent and that she occasionally selected strategies on the MIS that were illogical in terms of the phase of reading (i.e., before, during, and after), I was led to suspect that Vicky **did** have emerging metacognitive development, but that her literacy comprehension skills were neither contributing to, nor reflecting it. Jose's high performance on the MSI seemed to corroborate my impression of his reflective, insightful use of reading strategies. It may be that his desire to finish books quickly has inspired him to internalize a number of different reading strategies, or that his command of different strategies enables him to read faster. Overall, the MSI offered a helpful

starting point for the purposes of this inquiry as well as some suggestions for future literacy strategy instruction.

I continued to observe, listen to, and converse with Vicky, Christopher, and Jose as the course of instruction unfolded and noted many expected and unexpected connections to my own thoughts on this topic. During the phase devoted to accountable talk and self-reflection I encountered an important, although perhaps not surprising, consideration for instruction in metacognition and comprehension in general. While Jose (and, to a lesser extent, Christopher) adapted with the anticipated ease to the lessons on talking about our own mental moves, Vicky was unable to contribute significantly to these discussions when they occurred in groups of more than 4 or 5 students. Initially, I felt comfortable only in taking this to mean that instruction in, or assessment of, metacognitive skills that relies inordinately on verbal proficiency, oral language, or large group settings was less than ideal. This seems to align with theories of multiple intelligences, different learning styles, and instruction for English language learners.

An interesting and accidental anomaly in this pattern of performance with Vicky was her ability to talk in a larger group, and then later with me, about a literary character that illustrates self-awareness. After reading Jamaica Louise James by Amy Hest, Vicky spoke animatedly about Jamaica Louise James and identified that “she knows what she wants.” Although time constraints prevented further exploration of this particular effect, I would like to have “looked within” Vicky’s preference for this particular character. I can imagine a narrative-based approach to metacognitive knowledge could be explored with Vicky based on her higher confidence in textual situations and her inclination character analysis.

This second intellectual hallmark was illustrated in another interesting and somewhat accidental discovery involving both Vicky and Jose. After reading aloud from a historical fiction

text (Revolutionary War on Wednesday by Mary Pope Osborne) on George Washington and the Revolutionary War that was presented in a cross-curricular unit with both expository and fictional historical texts, I asked students to share their general responses with partners in conversation. Jose responded with characteristic enthusiasm to the story, saying that he “liked story a lot and it was fun. I like soldiers and that is why it was fun.” Vicky, however, offered a simple “I didn’t like the story. It was not fun it was boring and confusing.” When I asked Vicky to elaborate for me, she had difficulty telling much more. When I prompted her to think about the characters and why the story was confusing and boring, however, she had more to say. She soon stated that she doesn’t like books where it’s “mostly boys” or “the people aren’t like me.” Both students’ responses indicated a high level of metacognitive knowledge with regards to their own preferences for literature **and** how that preference affects their comprehension.

Writing About “I”

In addition to the oral language and conversation practice in which we engaged, I was eager to see the students grow in their ability to produce written self-reflections. Christopher and Vicky, in particular, had produced bland, platitudinous, and undifferentiated self-reflections after writing tasks early in the year (see **figures 1** and **2**).

Name: [redacted] Title: the time I went to chir

I wrote a small moment or many moments story from my life.

I used . . . (dot dot dot) to slow down the action.

I used a “comeback” line or repeated something.

I added expert facts and details to make my story sound real.

I used the right verbs to show action and feelings.

How do you feel about your story? because I feel happy about my story

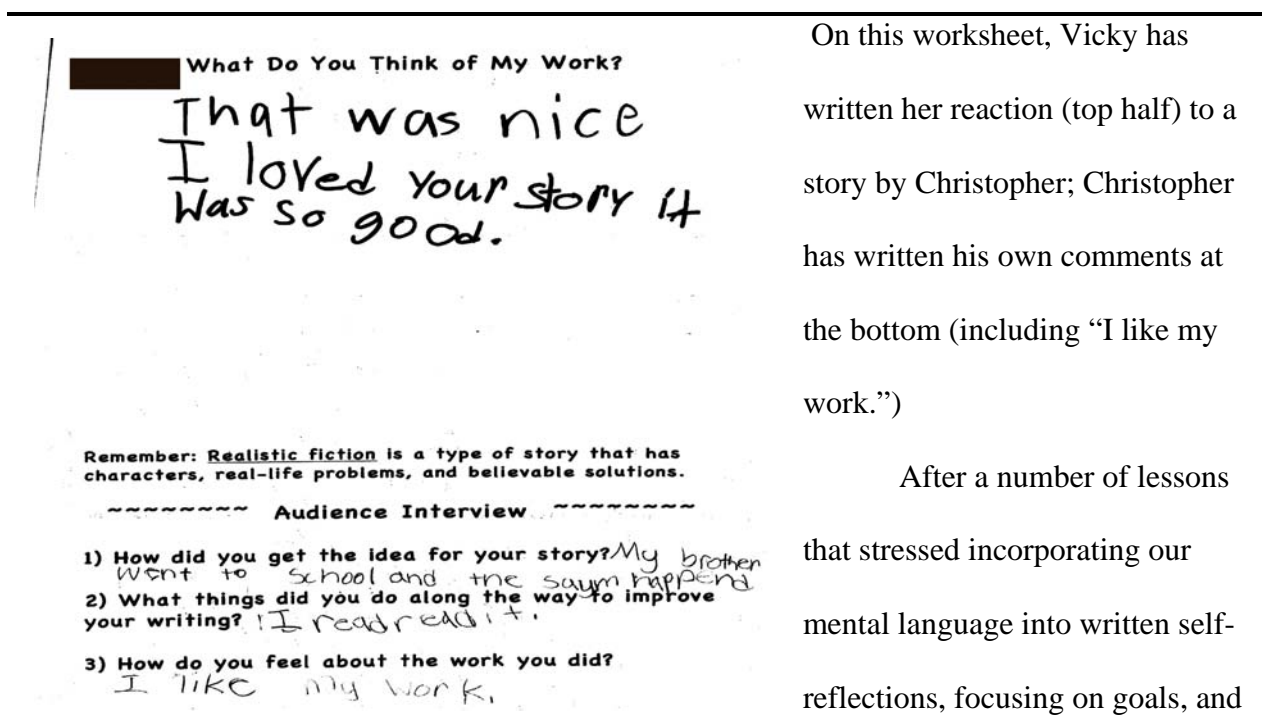
5 ✓ 3-4 ✓ 2 ✓ 0-1 ✓

Figure 1 – “I feel happy

about my story”

An early post-task written self-reflection from Vicky

Figure 2 – “That was nice”



On this worksheet, Vicky has written her reaction (top half) to a story by Christopher; Christopher has written his own comments at the bottom (including “I like my work.”)

After a number of lessons that stressed incorporating our mental language into written self-reflections, focusing on goals, and

remembering the experience of the writing process, I began to see more robust self-reflections. Often students merely found new adjectives to describe their creative, thoughtful, realistic, gripping, surprising, and moving stories. Increasingly, however, the student self-reflections indicated a greater awareness of the effort and process involved in their writing, as well as a self-referential orientation. Beyond pride in their work, some students displayed insight into their own life as a writer, such as Jose’s declaration that he “like[s] nonfiction books better than stories” (figure 3). Christopher displayed a particularly astute understanding of the relationship between reading, writing, and knowledge when he commented that he learns about a topic as much from writing about it as from reading about it (figure 4).

Figure 3 – “I like nonfiction books better than stories.”

U [Redacted] **Writing Portfolio**

Report of Information
Title: Let's play baseball

Informational Text Checklist

Did you pick a topic that you know all about? ✓

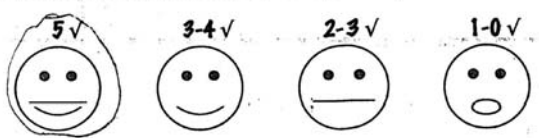
Did you write a special beginning that makes the reader want more? ✓

Did you organize your thoughts and make a Table of Contents? ✓

Did you pick the right kinds of paper and illustrate your book clearly? ✓

Did you re-read your work to check for SOUND, SENSE, ORDER, and COPS? ✓

5 ✓ 3-4 ✓ 2-3 ✓ 1-0 ✓



What Primary Standards are being met?

Writing Standard 1:
 Habits and Processes

Writing Standard 2:
Writing Purposes and Resulting Genres

- Sharing Events, Telling Stories: Narrative Writing
- Informing Others: Report or Informational Writing
- Getting Things Done: Functional Writing
- Producing and Responding to Literature

Writing Standard 3:
Language Use and Conventions

- Style and Syntax
- Vocabulary and Word Choice
- Spelling
- Punctuation and Capitalization and Other Convention

Student Comments: I worked hard and did my best to make this book. I like nonfiction books better than stories. Next time, I would write about a different sport.

Jose's written self-reflection after publishing an informational report

Figure 4 – “When I write I get more thoughts”

Writing Portfolio

Report of Information

Title: All About School

Informational Text Checklist

Did you pick a topic that you know all about?

Did you write a special beginning that makes the reader want more?

Did you organize your thoughts and make a Table of Contents?

Did you pick the right kinds of paper and illustrate your book clearly?

Did you re-read your work to check for SOUND, SENSE, ORDER, and COPS?

5 ✓

3-4 ✓

2-3 ✓

1-0 ✓

What Primary Standards are being met?

Writing Standard 1:

Habits and Processes

Writing Standard 2:

Writing Purposes and Resulting Genres

- Sharing Events, Telling Stories: Narrative Writing
- Informing Others: Report or Informational Writing
- Getting Things Done: Functional Writing
- Producing and Responding to Literature

Writing Standard 3:

Language Use and Conventions

- Style and Syntax
- Vocabulary and Word Choice
- Spelling
- Punctuation and Capitalization and Other Conventions

Student Comments: I liked my all about book because when I write I get more thoughts about the topic I choosed. The story makes me feel something that's special inside.

Christopher's written self-reflection after publishing an informational report

I was greatly encouraged to see this increased level of self-awareness, and was particularly heartened to see examples of it both in the students' conversations and in their written self-reflections. These written self-reflections, in particular, proved to be a very valuable component of our classroom's writing workshop, and allowed the students a rare but indispensable opportunity for self-assessment. Student self-assessment became not only a very

powerful way to enrich specific learning experiences and strengthen student understanding of specific content, but also an important way to undergird academic accountability in the classroom and promote self-directed learning.

Setting and Meeting Goals

The introduction of the unit on goals and goal-setting seemed a logical extension of the work done in the first unit in two respects: first, it built upon the critical self-appraisal that was introduced by oral and written reflections, and second, it allowed students a consistent and (importantly for some) written venue in which to monitor their own learning. As all the students adapted to the idea of creating specific, attainable goals in the classroom, they began to refer to themselves in terms of their performance at meeting those goals. The technique of identifying weekly classroom goals on Monday or at the onset of a unit of study proved to be amenable to both conversation and written scaffolding. While some students preferred to discuss their goals with partners or with me before committing them to paper, Jose felt comfortable enough writing his goals down to do so with out extensive consultation. A key component in the goal-setting work, in terms of developing metacognitive knowledge, was establishing regular routines and “following through.” We eventually keep our goals in a public part of the classroom, and revisited, or tracked, them on a weekly basis throughout the 5 weeks of the unit. The public nature of the goals became a source of pride and subtle accountability, while the goal tracking worksheets offered a valuable way to assess student performance with respect to those goals. Jose, for instance, tackled his overzealous speed-reading in one goal sheet, committing to try and take a picture walk before reading (**figure 5**). His weekly follow-up worksheet indicates not only that he experienced some success in willfully changing his behavior as a reader, but that he

was cognizant of the strategy he used to overcome his desire to dive straight into the text (“I covered up the words.” **figure 6**).

Figure 5 – “I want to take a picture walk”

Go for Your GOAL!

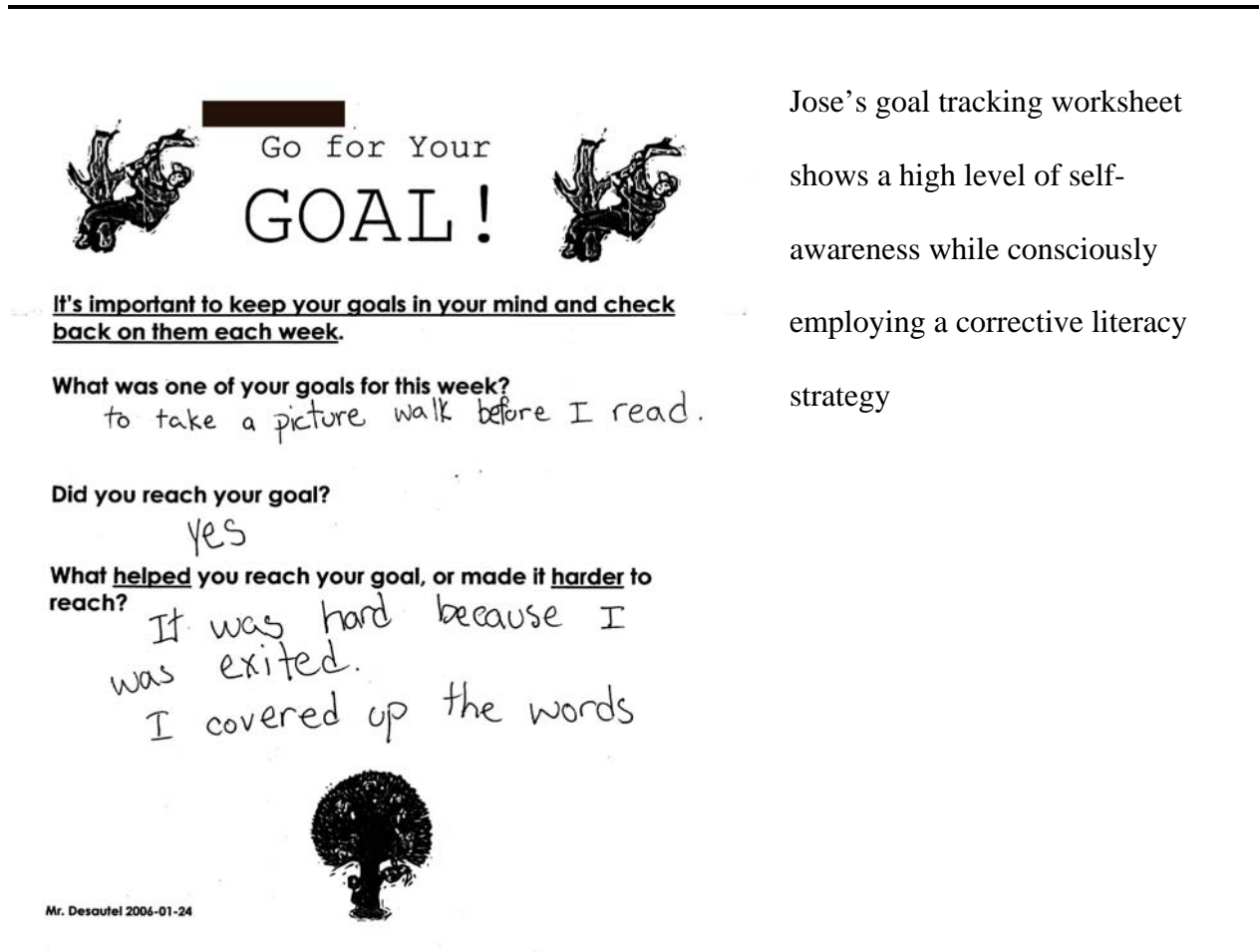
A goal is something you want to do or be. It can be big or small, but it has to be specific.

What is your writing goal for this week?
I want to write a poem.

What is your reading goal for this week?
I want to take a picture walk through a book.
I want to read a lot of horrible Harry books.

Jose’s goal worksheet indicates that he wants to use a preview strategy before beginning to read

Figure 6 – “I covered up the words”



Go for Your
GOAL!

It's important to keep your goals in your mind and check back on them each week.

What was one of your goals for this week?
to take a picture walk before I read.

Did you reach your goal?
yes

What helped you reach your goal, or made it harder to reach?
It was hard because I was exited.
I covered up the words

Mr. Desautel 2006-01-24

Jose's goal tracking worksheet shows a high level of self-awareness while consciously employing a corrective literacy strategy

Most students, to my delight, made very concrete use of their goals in self-assessment. The weekly goal sheets became more than abstract standards or hopes, but useful yardsticks for evaluating learning at the end of a given learning period. Christopher and Vicky both used their identified goals as “talking points” in oral conversations and written reflections to evaluate their success at achieving those goals. This functionality took varied forms, but most often appeared as a starting point for “What I did, what I didn't do” conversations. Of particular significance for the development of metacognitive knowledge, students (such as Jose) were able to discuss or explain **why** they felt they succeeded or failed in meeting a given goal. This unexpected benefit

of goal-setting and tracking leads me to believe that such devices can be particularly useful in cultivating latent self-awareness in learners who struggle with oral language.

Tools

I used four tools to collect data on the metacognitive knowledge of the students in this study:

- *Metacognitive Strategy Index* – Students completed a 12-question multiple-choice survey that was designed to measure their familiarity with reading strategies that incorporate metacognitive skills. This survey was based on the Metacomprehension Strategy Index developed by Maribeth Cassidy Scmitt (1990).
- *Goal Review Sheets* – Students conducted weekly goal-setting sessions and reviewed their performance with respect to those goals. This review included written reflections.
- *Post-Task Written Self-Reflections* – Students produced written self-reflections regarding their performance on reading and writing assignments.
- *Post-Task Oral Conversations* – Students engaged in oral conversations with their peers regarding the performance on reading and writing assignments. These conversations were recorded and transcribed.

Results and Analysis

- *Metacognitive Strategy Index* – The 3 case studies originally displayed a range in their knowledge of metacognitive skills, with two performing in the “low” category. The summative use of the questionnaire indicated that all three had slightly increased in their familiarity with metacognitive skills and strategies.

- *Goal Review Sheets* – All 3 students showed an increased ability to generate appropriate learning goals. Significantly, students began to use the idea of setting goals in different academic areas (i.e., math).
- *Post-Task Written Self-Reflections* – Student self-reflections indicated a slightly more robust level of self-assessment. Their self-reflections were often longer and more often oriented towards their own performance with respect to goals and the learning process. These writings also reflected the nature of the assignment in question, and indicated that tasks with very rigid or narrow guidelines and parameters permit fewer chances to demonstrate metacognitive knowledge.
- *Post-Task Oral Conversations* – Student conversations reflected an increased eloquence regarding mental events, as well as the personality of the student in question. That is, all students adopted at least some of the phrases and language that enabled them to articulate their self-reflections, but students who were shy originally retained their conversational shyness. Interesting patterns developed, however, around the possibility of using personal interests to evaluate student metacognitive knowledge and the differences between descriptive and prescriptive tasks.

Conclusions and Recommendations

In the course of these explorations I feel that I am constructing some useful knowledge about the value of some activities in promoting metacognitive development. I have challenged my initial assumption that advanced oral language development is somehow a prerequisite to metacognitive knowledge. Indeed, I now believe that activities or practices that are biased in favor of the orally expressive student not only fail to give a complete picture of all students'

metacognitive development, but may also inhibit that development. Additionally, I have confirmed my own confidence on the value of instruction in oral and written self-reflection coupled with academic and personal goal-setting as a means to enrich students' self-awareness as learners.

These classroom practices cannot exist, however, without school system practices that support them. On this basis I make the following policy recommendations:

- Curricula should contain, as an objective, the development of student self-awareness as a learner. Instruction should support this goal by allotting sufficient time for these or similar activities: goal-setting, explicit strategy instruction, self-reflective writing and conversation. Consistent and sufficient instructional time should also be allotted for activities that permit open-ended inquiry and emphasize process discovery rather than product completion.
- Classroom instruction and assessment should include activities in which students are included as partners in both the creation of rubrics and the assessment of work. Student self-assessment should be a regular component of learning experiences.
- Professional development resources should be allotted to familiarize elementary school teachers with the importance of self-reflection to the development of their students, and to provide teachers with training in techniques that support that development.

References

- Bean, T.W., & Zulich, J. (1989). Using dialogue journals to foster reflective practices with preservice, content-area teachers. *Teacher Education Quarterly*, 16, (1), 33 – 40.
- Bereiter, C. & Scarmadalia, M. (1983). Child as coinvestigator: Helping children gain insight into their own mental processes. In S. Paris, G. Olson, & H. Stevenson (Eds.), *Learning and motivation in the classroom* (pp. 61 – 82). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Blakey, E., & Spence, S. (1990). Developing metacognition. Syracuse, NY: ERIC Clearinghouse on Information Resources.
- Borkowski, J. G., Carr, M., Rellinger, E., & Pressley, M. (1990). Self-regulated cognition: interdependence of metacognition, attributions, and self-esteem. In B. F. Jones & L. Idol (Eds.), *Dimensions of thinking an cognitive instruction* (oo. 53 – 92). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Brown, A. L. (1975). The development of memory: Knowing, knowing about knowing, and knowing how to know. In H. W. Reese (Ed.), *Advances in child development and behavior* (Vol. 10). New York: Academic Press.
- Brown, A. L. (1987). Metacognition, executive control, self-regulation, and other more mysterious mechanisms. In F. E. Weinert & R. H. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 65 – 116). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Carr, S. C. (2002). Self-evaluation: Involving students in their own learning. *Reading and Writing Quarterly*, 18, 195 – 199.
- Cooper, J. D. (1997). *Literacy: Helping children construct meaning*. 3rd ed. Boston: Houghton Mifflin.
- Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-development inquiry. *American Psychologist*, 34, 906 – 911.
- Garmon, M. A. (2001). The benefits of dialogue journals: What prospective teachers say. *Teacher Education Quarterly*, 28, (4), 37-50.
- Herbert, E. (2001). How does a child understand a standard? *Educational Leadership*, 59, (1), 71 – 73.
- Jackson, C. & Larkin, M. J. (2002). Rubric: Teaching students to use grading rubrics. *Teaching Exceptional Children*, 35, (1), 40 – 45.

- Kluwe, R. H. (1982). Cognitive knowledge and executive control: Metacognition. In D. R. Griffin (Ed.), *Animal mind – Human mind* (pp. 201 – 224). New York: Springer-Verlag.
- Ogle, D. (1994). Self-assessment and learning centers: Do they go together? *Teaching PreK – 8*, 25, (4), 104 – 106.
- Paris, S. G., Wasik, B., & Westhuizen, G. (1988). Metacognition: A review of research on metacognition and reading. In J. E. Readence and R. S. Baldwin (Eds.), *Dialogues in literacy research* (pp. 159 – 190). Chicago: National Reading Conference.
- Paris, S. G., Newman, R. S., & McVey, K. A. (1982). Learning the functional significance of mnemonic actions: A microgenetic study of strategy acquisition. *Journal of Experimental Child Psychology*, 34 490 – 509.
- Prescott, H. M. (2001). Helping students say how they know what they know. *Clearing House*, 74, (6), 327 – 331.
- Reynolds, R. E., Wade, S. E., Trathen, W., & Lapan, R. (1989). The selective attention strategy and prose learning. In M. Pressley, C. McCormick, & E. Miller (Eds.), *Cognitive strategies research* (pp. 159 – 190). New York: Springer-Verlag.
- Scmitt, M. C. (1990). A questionnaire to measure children's awareness of strategic reading process. *The Reading Teacher*, 43, (7), 454 – 456.
- Schultz, R. A., & Delisle, J. R. (1997). School, curriculum, and the good life: Knowing the self. *Roeper Review*, 20, (2), 99 – 105.
- Weinstein, C. D. (1989). Teacher education students' preconceptions of teaching. *Journal of Teacher Education*, 40, (2), 53 – 60.
- Yancey, K. B. (1989). Reflection, self-assessment, and learning. *Clearing House*, 72, (1), 13 – 18.