Student and Teacher Perspectives on the Usefulness of Content Literacy Strategies

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The purpose of this study was to explore the similarities and differences between high school students and their teachers’ perspectives on the usefulness of content literacy strategies for learning. Based on 88 teacher surveys, 500 student surveys, 10 teacher interviews, 12 student interviews, and 30 classroom observations, we note the perceived effectiveness of specific content literacy strategies and how they are used. Implications for future professional development and use of content literacy strategies are noted.

Keywords adolescent literacy, content literacy, school improvement

The purpose of this study was to explore the similarities and differences between high school students and their teachers’ perspectives on the usefulness of content literacy strategies for learning. The participants in this study were affiliated with a large urban high school that used seven content literacy instructional strategies (anticipatory activities, graphic organizers, structured note-taking, read-alouds and shared reading, reciprocal teaching, vocabulary instruction, writing to learn) as a schoolwide focus for staff development activities for several years. The term strategy is not intended to represent the delivery of a single instructional event, but rather represents a conceptual umbrella for a set of teaching approaches that are purposefully used to create a cognitive shift in the learner. The intent of the schoolwide focus was to make these processes transparent and transportable. Strategies become transparent to students when teachers use them frequently and deliberately to teach content. Over time, students develop a growing sense of their metacognitive processes and recognize how their learning is enhanced by the instructional moves of the teacher. Moreover, these strategies should also become transportable over time, as learners recognize that a strategy used in one class can be easily applied in another. This embedded approach to strategies instruction, where the strategy is explicitly taught, then practiced with content material, has been shown to be effective for students and their teachers. Over time, teachers and their students are immersed in the content, and the strategy itself recedes into the background (Prawat, 1993).

Related Research

Reading Strategies Research
Over the past three decades, a body of research related to reading strategies has emerged in the professional literature (Baker & Brown, 1984; Paris, Wasik, & Turner, 1991; Pressley,

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2000). Paris et al. define these as "actions selected deliberately to achieve particular goals" (611). In this view, developing readers consciously utilize strategies such as previewing a text, considering what is known about a topic, and making connections to other knowledge. As the reader becomes more adept at using these strategies, these previously external processes become internalized and the reader devotes less conscious thought to them (Vygotsky, 1978).

Much of the research on reading strategies comes from work with good readers, who share their thoughts on what is occurring in their minds as they read (e.g., Johnston & Aflerbach, 1985; Paris & Myers, 1981). Indeed, much of what is known about strategic reading comes from asking learners about their cognitive processes. A predominant theme that has emerged from the body of research on reading strategies is that improvement is more rapid when learners are made cognizant of effective actions used to comprehend. This metacognitive awareness—what Baker and Brown (1984) call "the ability to reflect on one’s own cognitive processes" (p. 353)—is considered a critical pathway to advanced levels of learning.

**Content Literacy Research**

Although some researchers were pursuing a deeper understanding of the strategies used by readers to support comprehension, others were examining the instructional strategies useful for learning content. Herber’s (1970) seminal work set the stage for a fresh view of the relationship between literacy and learning in content areas such as science, mathematics, and social studies.

Over the next two decades, a number of effective instructional strategies were developed and validated with secondary students. These approaches, used by teachers to teach subject matter, are collectively referred to as content area literacy strategies. Some of these instructional strategies are anticipatory activities intended to engage, arouse curiosity, and activate prior knowledge, such as K-W-L charts, which invite students consider what they know about a topic, what they want to know about it, and later, what they have learned (Ogle, 1986). In addition, read alouds are useful for building background knowledge (Richardson, 2000), as are advance organizers (Auspel, 1960).

Other instructional strategies build knowledge by making vocabulary and conceptual connections more explicit, such as graphic organizers (Robinson, 1998) and student-generating questioning (Andre & Anderson, 1978–1979). A third category of content literacy approaches include methods for teaching students to transform their learning with peers and on paper, such as reciprocal teaching (Palincsar & Brown, 1984), note-taking (Stahl, King, & Henk, 1991), and writing to learn activities (Paris, Cross, & Lipson, 1984). These types of content literacy strategies are associated with positive changes in student achievement (Calweti, 2004). Further, Alfassi (2004) found that when two content literacy approaches were used (reciprocal teaching and think alouds in shared readings), high school students made gains on both measures of reading and on standardized tests.

**Research on Teachers’ Use of Strategies**

Alvermann and Moore’s (1991) review of secondary content literacy practices suggested that most teachers relied heavily on the textbook and lecture to convey information. Despite the reliance on reading in high school teaching, several studies have indicated that teachers use content instructional strategies only intermittently (Hinchman, 1987; O’Brien, Stewart, & Moje, 1995). In some cases, it may be due to lack of knowledge about
strategies for content area instruction. A survey of 435 K–12 teachers revealed that fewer than 50% of the participants could identify well-known content literacy practices such as K-W-L (Spor & Schneider, 1999).

Even when a strategy is known, it may not be used if the teacher is unsure how to apply it to his or her content. Barry’s (2002) survey of 123 graduates of her content area reading course found that when instructional strategies like reciprocal teaching were seldom used, the respondents usually attributed this to their lack of knowledge, rather than a flaw with the strategy. Many of Barry’s respondents also noted that the lack of time was a barrier to implementation. This finding is consistent with other studies that have noted the time demands associated with content literacy strategies (Lester, 1998; Sturtevant, 1996).

Bean’s (1997) study of factors influencing novice teachers’ selection of content literacy strategies noted that they were strongly influenced by the sociocultural expectations of the school. For example, in schools where a teacher-directed style was valued, the participants were unlikely to use content literacy strategies such as graphic organizers. It would appear that if teachers are to use such strategies, teachers must be familiar with how the strategies can be used in their content areas, and the school environment needs to be supportive of those efforts.

Moje’s (1996) two-year ethnography of the literacy practices of a high school chemistry teacher revealed the role of pedagogical beliefs on teacher practice of content literacy strategies. Moje describes the teacher’s literacy decisions as being “shaped by her philosophy of science and science teaching, her desire for organization and control in the classroom, and her interest in building and maintaining a relationship with students” (190). Her view of science as an organized body of knowledge led her to practice structured literacy strategies that were consistent with this lens, such as Survey, Question, Read, Recite, and Review (Robinson, 1946), more commonly known as SQ3R. This strategy is useful for teaching learners how to extract information from text and emphasizes a step-by-step process.

In contrast, Wineburg’s (1991) comparative study of the ways in which historians and high school students read historical documents suggests a different set of beliefs about literacy. He found that while 98% of historians used a “sourcing heuristic,” that is, they read the source information before reading the document then factored the source into their analysis, high school students did so only 31% of the time (510). While Wineburg did not make the case that history teachers think like historians, it is fair to say that this sourcing heuristic can be found in the best practices of the field, where “problematizing history” is valued (Bain, 2005, 184). In this conceptualization, the teaching of history is less about extracting information from an organized body of knowledge, and more about synthesizing and evaluating information to arrive at new conclusions. In particular, history students are taught to examine their preconceived notions and consider alternative perspectives (Bain, 2005).

Hall’s (2005) review of the existing research on secondary teachers’ use of content literacy strategies suggests that beliefs and attitudes factor heavily into decision making. Her review of 19 studies published between 1970 through 2003 yielded three common themes: (1) lack of confidence in their own knowledge of reading, (2) an admittance that reading was an important component of the curriculum, and (3) a belief that the failure of colleagues resulted in some students who were too far behind to be helped. These beliefs and attitudes are barriers to professional development efforts in secondary schools that are attempting to infuse literacy strategies into content classes (O’Brien et al., 1995).

**Students’ Perceptions of Strategies**

Students provide a window on the use of content literacy strategies and their role in learning. Years of sitting in classroom desks have made them astute observers of their teachers’
instructional practices. One study of the relationship between strategies instruction and use of those strategies by elementary students found that learners were strongly influenced by perceived messages from the teacher (Knight, 1992). They were particularly sensitive to teacher behaviors that stressed task completion over concept development. In other words, when ideas were neglected in favor of the mechanics of the strategy itself (i.e., writing a summary vs. understanding the essence of the text), comprehension was superficial. Teacher behaviors that telegraphed these messages included intolerance for the use of other strategies other than the one currently being taught, and a lack of willingness to allow students to select alternative texts or seek assistance from a peer. In these cases, students implicitly understood that completing the task, not working toward a deeper understanding of the text, was the true intent of the teacher (Knight, 1992).

Older students exhibit a growing awareness of the role of strategies to support their understanding. Two related studies of middle school students highlight this growing metacognition. A survey of 1765 sixth graders found that 62% named teacher read alouds as their favorite literacy event (Ivey & Broaddus, 2001). While this alone may not be a surprise, it is interesting to note that these same participants also identified teacher read alouds as the preferred method for being introduced to new concepts—evidence of their metacognitive awareness (Ivey, 2003).

Moje (1996) found that the high school students in her study were able to understand the purposes for the literacy events their chemistry teacher designed, and were supportive of them even when they did not find them to be personally useful. This raises an important point about the success of school reform efforts in literacy—the influence of students as agents of change. Brozo’s (2006) examination of student attitudes toward a schoolwide reading plan at a high school found that students had not been consulted and did not see themselves as members of the reform effort. The value of student perspectives is argued by Cook-Sather (2002), who explains, “many of them make visible the difficulties and contradictions as well as the illuminations that attend such a re-informing of conversations about educational policy and practice” (p. 7).

There is a wealth of research associated with understanding how students comprehend texts and which instructional strategies secondary teachers can use to model those cognitive practices. For instance, a recent large scale study of all elementary and middle school students in Maryland revealed that engagement with subject area reading declines significantly by eighth grade, and that this drop is associated with a decrease in content literacy instruction that encourages self-questioning and deep reading (Guthrie & Davis, 2003). The researchers call for a model of engagement for secondary that includes strategy instruction using graphic organizers, comprehension monitoring, questioning, and summarizing. However, instituting a schoolwide literacy plan is not enough. With notably fewer studies on teacher beliefs about the usefulness of these content literacy strategies, and even less on students’ perceptions of the extent to which these strategies are valuable for learning, a gap exists in connecting reform practice with implementation. Therefore, the purpose of this study is to explore high school student and teacher perspectives on the usefulness of content literacy strategies implemented in a large urban high school.

Methodology

Background

The high school in this study was purposefully selected because it has had a significant and sustained focus on content literacy strategies since 1998. These efforts have
centered, in part, on seven literacy strategies adopted by school-site faculty (e.g., Fisher, 2001). In addition, the school provides a daily Silent Sustained Reading period during which all students, faculty, and staff read materials of their own choosing (Fisher, 2004). During the 1998–1999 school year, school-site faculty, led by a staff development committee and in collaboration with university faculty, identified and introduced all teachers to specific instructional strategies and the research foundations that supported them, strategies that teachers might productively use across content areas. The high school faculty, with guidance from the staff development committee, made a collective decision to adopt seven of the strategies they believed would be most useful for them and their students. They selected the following literacy strategies and approaches: anticipatory activities, graphic organizers, structured note-taking, read-alouds/shared reading, reciprocal teaching, vocabulary instruction, and writing to learn. Many of these strategies encompass a cluster of instructional events intended to create a cognitive shift for learners. These seven strategies were reinforced through discussions and modeling for teachers, by teachers, at monthly professional development meetings that were held as part of the contract day. A brief description and bibliography of these content literacy strategies appear in Table 1.

This school's overall student population meets the Secretary of Education's definition of "at risk." About 40% of the adult residents of in this community have not graduated from high school, and only 5% have graduated from college. The schools in this geographic area suffer from overcrowding, with enrollment often exceeding the design capacity. In addition, students typically score 20 percentage points below the district average on standardized tests and are several grade levels behind in reading and math skills. This has placed the students in the lowest 10% of all high schools relative to their academic performance in the State of California's accountability system. Nearly 70% of the students are classified as having limited English proficiency, and 99% of the students are eligible for free or reduced-cost lunches (an accepted measure of poverty). This section of town is the city's poorest and most ethnically diverse community, and the median household income is $25,000, 40% less than the city average.

However, at this high school, academic performance is rising. State accountability targets were met. Compared with all other high schools in the district between 1999 and 2005, this school made the single largest gain (136 points) on the Academic Performance Index (API), the measure used to evaluate all schools in the state of California. A focus on literacy across the content areas has led to gains in the reading levels of students as well. In 2006, the average reader at the school read at a 7.2 as measured by the Gates-MacGinitie—a distinctive, and noteworthy, gain from a level of 4.3 in 2000. Historically, students at inner city high schools improve their reading by half a year for every year they are in school. Students in this school have more than doubled the performance of their historical peers and their current peers in other district high schools.

At the inception of the literacy plan, emphasis was placed on working with teachers to implement strategies. By the end of the second year of this literacy reform effort, implementation of strategies had been widely achieved across campus. This study on teacher and student perspectives was conducted at the end of the fifth year of implementation (end of 2004) in order to inform next steps in the ongoing professional development at this school. By gathering and analyzing teacher and student perspectives of the usefulness of the identified strategies, decisions could be made about refining and redefining professional development for teachers and increased usefulness for students.
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<th>Table 1</th>
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<tr>
<td>Selected Bibliography of Content Literacy Strategies</td>
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<td>Used at Participating High School</td>
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**Bibliography of Content Literacy Strategies**

**Anticipatory activities**—activities that provoke interest, curiosity, and gain attention.


**Graphic organizers**—visual displays that represent factual information and conceptual relationships.


**Note-taking and note-making**—organized systems for written student-generated information gleaned from classroom lectures, activities, and readings.


**Read alouds and shared reading**—a text or passage read to students by the teacher, or by the teacher and students.


**Reciprocal teaching**—peer-led reading of a text held in common that emphasizes predicting, clarifying, questioning, and summarizing.


**Vocabulary development**—a collection of strategies for developing definitional and conceptual knowledge of content words

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Table 1 (Continued)

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<th>Bibliography of Content Literacy Strategies</th>
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**Writing to learn**—brief writing events designed to activate prior knowledge, summarize, or generate questions about content.


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**Participants**

*Teacher Survey*. A survey including questions on demographics and perspectives on content literacy strategies was provided to each teacher. Of the 108 surveys distributed, 88 (81%) were returned. The range of teaching experience was from 1–37 years, with an average of 9.5 years. All but 4 of the teachers were credentialed in the area in which they were teaching. At the time of the study, 70% of the teachers held graduate degrees. This compares with a county average of 36%.

*Teacher Interviews and Observations*. Two teachers from each department, English, science, social studies, math, and electives, *(n = 10)* were randomly selected for interviews and classroom observations.

*Student Survey*. A survey including questions on demographics and perspectives on content literacy strategies was administered to 500 students: 250 sophomores, 150 juniors, and 100 seniors. These students were randomly selected from a pool of students who had been enrolled in the school for two or more years. Of the students surveyed, 58% were Latino(a), 22% were African/African American, 14% were Asian/Pacific Islanders, 4% were white, and 2% were mixed, other, or unknown. The surveys were administered during class time (second period on the same day) and students were told that they could submit a blank survey or complete it.

*Student Interviews*. Twelve students, 4 from each grade level, were randomly selected from the student surveys. All names used in this study are pseudonyms.

**Data Collection Procedures**

*Teacher Survey*. The first part of a single-page survey provided space for teachers to rank order the seven instructional strategies in order of importance for teaching content. The
strategies were presented in alphabetical order. The second section asked participants to rate their current comfort level or expertise on each of the seven instructional strategies, with the following choices:

- I need more info about this strategy.
- Emerging—I am working on this.
- Practicing—I’m getting good at this one.
- Peer Coaching—I can help my colleagues implement this.

The final question in this section provided teachers with an open-ended opportunity to respond to the question, “These teaching strategies are . . .” The final section requested demographic information such as department (English, visual and performing arts, etc.), courses taught, and number of years teaching.

**Teacher Interviews and Observations.** Each interview was audiotaped and then transcribed. Each participant was interviewed using the same questioning protocol, although when appropriate, participants were asked follow-up questions. The protocol included the following questions:

1. Select a content area instructional strategy and describe how you use it in your classroom.
2. How do you decide when to use a content literacy strategy?
3. How do the strategies impact student learning?
4. What do you think about the differences between student and teacher perspectives (rank order) on the usefulness of the strategies?

In addition to interviewing teachers, multiple classroom observations were conducted. Each of the randomly selected teachers was observed on at least three different occasions. These observations were not planned in advance. Data from these classroom observations were captured via field notes.

**Student Surveys.** Similar to the teacher survey, students were asked to rank order the seven instructional strategies in order of importance for helping learning. Students were also asked to respond to the question: “I wish my teachers would use more/less (circle one) of these strategies in their teaching.” The final question provided students with an open-ended opportunity to respond to the question, “These teaching strategies are . . .”

**Student Interviews.** Each interview was audiotaped and then transcribed. Each participant was interviewed using the same questioning protocol, although when appropriate, participants were asked follow-up questions. The protocol included the following questions:

1. Describe how one of your teachers uses one of these strategies (point to the list).
2. How do these strategies help you learn the content the teacher is teaching?
3. What do you think about the differences between student and teacher perspectives (rank order) on the usefulness of the strategies?

**Data Analysis**

Survey responses were quantified to determine frequency of responses made by teachers and students. Data from the surveys were used for measures of central tendency and to create frequency tables. Differences were identified based on the subject the teachers taught and between teachers and students. These differences became part of the interview protocol.
Interview and observational data were categorized using a constant comparative method (Bogdan & Biklen, 1992). A number of coding categories were identified following multiple reviews of the data (LeCompte & Preissle, 1993). Each of these categories was named and quotes that typified the category were identified. In addition, direct quotes were obtained from the surveys and during the observations.

Two teachers and two students were purposefully selected for participation in a member check conversation (Creswell, 1997). These four individuals, all of whom had participated in interviews, were purposefully selected based on the fact that they were very verbal and freely discussed their ideas. Each of them were provided a copy of the findings section, asked to read it in advance, and then engaged in a conversation about the findings and their trustworthiness. Although the conversation added details and richness, no changes in the findings were necessary based on the member check conversation.

Findings

Teachers’ Perceptions of Usefulness of Content Literacy Strategies

The results from the survey indicate that teachers have specific ideas about the most effective literacy strategies (see Table 2). Overall, the teachers at this high school believe that systematic vocabulary instruction is the most important content area instructional strategy ($\bar{X} = 3.31$). A geometry teacher noted, “There’s so much vocabulary to master in my class. Not only are there shapes involved, but there’s the amount of technical language about concepts and theorems. If they can’t use the words precisely, they aren’t getting the concepts, either.” A ceramics teacher shared a similar perspective. “In art, there is so much vocabulary that comes from different languages. I mean, there’s not much chance a student is going to know about scribbio and intaglio. When I get the vocabulary straight with them, we all communicate much better with each other.”

As noted, different departments rated the strategies at different levels of importance, with the science and social studies departments ranking vocabulary development fourth out of seven. This is surprising in light of the vocabulary demand associated with science instruction, estimated at anywhere from 2,173 terms in a physical science textbook to over 17,000 for an

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<th>Table 2</th>
<th>Teacher Perspectives of Effectiveness of Content Literacy Strategies (Rank Order)</th>
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<td></td>
<td>English</td>
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<td>Anticipatory activities</td>
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<td>Graphic organizers</td>
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<td>Note-taking</td>
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<td>Read aloud/ Shared reading</td>
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<td>Reciprocal teaching</td>
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<tr>
<td>Vocabulary instruction</td>
<td>2</td>
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<td>Writing to learn</td>
<td>4</td>
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advanced chemistry text (Yager, 1983). It may be that while all of the strategies are important, the emphasis may differ by content area. Instead, the science department considered graphic organizers to be the most useful. A chemistry teacher said, “We use graphic organizers all the time to show relationships between phenomenon. The textbook has them in every chapter. Maybe it’s because they’re used so much in the field of science. It just seems like a logic fit.”

In contrast, the social studies department ranked anticipatory activities as the most useful of the literacy strategies. This may be due to the narrative nature of the content. One social studies teacher remarked, “The best way to teach [U.S.] history is to get the kids caught up in the human drama of it all. I use [anticipatory activities] because it let’s them see these people as flesh and bones, not just old dead guys.” This variance by content area is consistent with a study by Jackson and Cunningham (1994), which described a differential relationship between perceived value of content literacy strategies and the amount of reading required in the subject.

Conversely, reciprocal teaching uniformly challenged teachers at this school ($\bar{X} = 4.58$). This content literacy strategy never ranked higher than 5 (by the mathematics department), and was named as the least useful by three other departments—English, social studies, and electives. An English teacher said, “It’s [reciprocal teaching] complicated. By the time I’ve gotten everyone in their places and ready to go, I’ve got to review again the purpose of the piece they’re reading.”

The difficulty with reciprocal teaching at this high school may be related to perceived competence in implementing the strategy. The multiple-year professional development plan at the school resulted in different levels of skill and comfort with the various instructional strategies (see Table 3). Although the strategies were initially introduced together, subsequent professional development activities highlighted one strategy at a time. Results of the survey suggest that teachers were least comfortable with reciprocal teaching, as evidenced by the 34 responses requesting more information on the strategy. In every one of the interviews conducted with the ten teacher participants, proficiency was cited as a barrier to implementation. A biology teacher said, “I haven’t been able to get a good grip on it [reciprocal teaching.] I understand the roles and the purpose, but I just don’t feel comfortable with it. I don’t want it to bomb, so I guess I haven’t really used it.” Another algebra teacher remarked, “I tried it once, but I guess the students weren’t ready for it, or maybe I wasn’t. That negative experience hasn’t exactly made me eager to try it again. I just need more information before I am ready to try it again.” These results parallel the timeline of the professional development plan at the school because reciprocal teaching was the last strategy to be studied by the school. The lack of perceived competence also explains why reciprocal teaching was only used once during the 30 classroom observations.

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<tr>
<th></th>
<th>Needs Info</th>
<th>Emerging</th>
<th>Practicing</th>
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<tr>
<td>Anticipatory activities</td>
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<td>Writing to learn</td>
<td>21</td>
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Table 3
Teachers’ Self-Reported Level of Skill
On the other hand, read alouds/shared reading (which were the first in the professional development plan to be considered for implementation) were perceived as a very comfortable strategy to implement, and relatively high in usefulness (ranked as the third most useful, \( \bar{X} = 3.73 \)). Indeed, 23 teachers identified themselves as capable of coaching colleagues in this approach. One teacher (unidentified) drew a star next to this strategy, an indication of his or her enthusiasm for read alouds. This perceived competence was witnessed 26 times during 30 classroom observations.

Follow up interviews help explain the comparatively high number of responses to “I need more info” (\( n = 10 \)). Several of them mentioned the need for new information on interesting informational texts, picture books, and electronic media that lend themselves to read alouds or shared reading. “I know there’s good stuff out there, but I don’t have time to look for it,” said an algebra teacher. “I could really use a list of readings that have an algebraic slant to them.” Unlike the requests for more information about reciprocal teaching, which related to procedural knowledge, teachers wanted more information about good texts to use for read alouds.

Familiarity appeared to be a factor influencing the use of graphic organizers as well. No surveyed teachers indicated they needed more information about this strategy, and 50 of them indicated that they were “getting good” at it. Interview responses indicate that the concrete nature of graphic organizers appeared to increase comfort and familiarity with this strategy. “I’ve got a folder full of them,” said a social studies teacher. However, field notes from classroom observations indicated that many of the teachers had not yet reached an advanced level of usage with graphic organizers. Five teachers used graphic organizers during eight separate observations, but only in two cases did students utilize the graphic organizer to transform information. Rather than seeing graphic organizers as an adjunct visual display of information to be used as a bridge to student-generated talk or writing, these teachers viewed the graphic organizer as an end unto itself. Successful completion of the graphic organizer was the final goal. In the case of the two more advanced applications of graphic organizers (one in an English class and the other in a World History class), the students transformed information collected on the graphic organizer to compose essays on the topic being studied. In the case of graphic organizers, comfort alone is not an indication of advanced application. Surveyed teachers may be unaware of the potential of a strategy in attaining higher levels of student understanding.

Students’ Perceptions of Usefulness of Content Literacy Strategies

The student participants in this study held perceptions similar to their teachers about some of the content literacy strategies. In three cases, their rankings matched the teachers exactly (note-taking ranked fifth, writing to learn was sixth, and reciprocal teaching was seventh on both teacher and student surveys.) Interestingly, these were the bottom three strategies, and this may be influenced by their teachers’ perceptions, a finding in Knight’s study (1992). For example, reciprocal teaching was not being widely used in the school, and the relative infrequency may have left students with the impression that it was too difficult. Jameer, a junior, said, “I had to do that a couple a times in [U.S. History.] All that stuff with who says what—I’d rather just read it myself.”

Students may have ranked other strategies relatively low because their role in learning was not fully understood. Interviewed students widely perceived note-taking and writing to learn activities as a compliance issue, rather than a tool for learning. Tenth grader Ali remarked, “We have to take notes all the time. Even Ms. [music teacher] makes us keep a notebook. You have to keep a good notebook to get a good grade in the class.” Marina, a tenth-grade student, commented on the use of writing to learn activities used at the beginning of class. These are widely referred to as “bellwork” in this school. “The teachers put

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bellwork on the board to get everyone quiet. It makes class get started quicker.” When asked if the opening writing activity was followed by class discussion, Marina conceded that it was but still did not view it as part of her learning. “I think they [the teachers] do that, you know, because they have to. Otherwise, kids will just think it’s a big waste of time.” While bellwork was used at the beginning of 28 observed classroom lessons, several interviewed teachers viewed it as a tool for classroom management. “I like to use it [bellwork] to get the class started. It gives me time to take attendance and deal with the little disruptions that happen at the beginning of class,” said a social studies teacher. “It’s great after lunch,” noted an algebra teacher. “It quiets the room and gets their heads focused on math.”

We found the students’ differing perspectives to be the most enlightening. The students rank ordered the strategies, most helpful to least helpful, in the following way: graphic organizers, read alouds, vocabulary instruction, anticipatory activities, note-taking, writing to learn, and reciprocal teaching (see Table 4). One of these, graphic organizers, is perceived in a markedly different way from the teachers. While teachers ranked this as fourth overall in effectiveness, students saw this strategy as the most useful as a tool for learning. After analyzing the interview data from both groups, we conclude that this is due to the difference in expert knowledge. Teachers seemed to view graphic organizers as important, but not critical. “I like using a graphic organizer once in a while,” an English teacher stated. “It’s a different way for them to take notes.” When probed about its role in learning, the teacher said, “I think it’s a good way for them to review what we’ve done in class. I don’t see it as being much different from taking notes.” We asked some of these teachers to draw a concept map of a recently taught unit, and all of them were able to fashion one within three minutes. As they did so, they talked at length about the conceptual relationships represented. One social studies teacher created an elaborate concept map of the influence of the Civil War on the legislation of the late-nineteenth-century U.S. Congress. Clearly, we were witnessing high levels of content expertise among these teachers.

In contrast to the teachers’ perspective on the importance of graphic organizers, students spoke at length about the usefulness of graphic organizers. Twelfth grade student A’nh said, “Sometimes it’s hard to get all the words down on paper. You’d have to write a whole paragraph sometimes. If I can draw it [draws a Venn diagram as she speaks], I can see it. I get it when my [English] teacher talks about the monster and Dr. Frankenstein.” Miguel, an eleventh grader, explained why he likes graphic organizers. “My science teachers use them a lot. There’s so much to remember in those classes—mad crazy words! These [graphic organizers] help me keep it all sorted out.”

<table>
<thead>
<tr>
<th>Content Literacy Strategy</th>
<th>Student Rank (Teacher Rank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipatory activities</td>
<td>4 (2)</td>
</tr>
<tr>
<td>Graphic organizers</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Note-taking</td>
<td>5 (5)</td>
</tr>
<tr>
<td>Read aloud/Shared reading</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Reciprocal teaching</td>
<td>7 (7)</td>
</tr>
<tr>
<td>Vocabulary instruction</td>
<td>3 (1)</td>
</tr>
<tr>
<td>Writing to learn</td>
<td>6 (6)</td>
</tr>
</tbody>
</table>
Although not dramatically different from their teachers’ perspectives, students professed a great fondness for teacher read alouds and shared readings, ranking them second in overall usefulness for learning. Like Ivey and Broady’s (2001) middle school participants, they noted that it was an effective way to learn new information. Alex, a sophomore, recounted an experience with a read aloud in his geometry class. “Ms. [geometry teacher] was gonna teach us about angles and shapes—this was in September. I thought, ‘uh, boring’ but then she gave us these tangram shapes and read us this book about making pictures with the shapes. I started thinking maybe this class wouldn’t be so bad after all.” [The book the teacher read was Grandfather Tang’s Story by Ann Tompert.] Tenth grade student Ivan remarked on the relevance of the information he learned from shared readings. “My [biology] teacher, he’s really good at finding newspaper articles about what we’re studying. He has an article just about every week. He puts it on the overhead [projector] and just starts reading it. I used to think the newspaper was kinda boring, but he talks about the article while he’s reading it. He reminds us about what we already know.”

Discussion and Implications

This study examined the perspectives on content literacy learning strategies by the teachers of a high school immersed in these approaches, as well as the perspectives of a representative sample of students from the same school. Several themes have emerged from the results of these surveys and interviews. These themes can be used to inform professional development and related classroom practice.

The Effectiveness of Content Literacy Strategies is Influenced by the Content Being Taught

We noted discrepant results when comparing the rankings of strategies by content area. Many of the strategies had large ranges across content areas. Read alouds/shared reading had the largest discrepancy, with two departments (English and electives) ranking it number one, whereas another department (mathematics) ranked it seventh. This may be due in part to a disconnect between professional development about content area reading strategies and the ability to customize these strategies to meet the needs of a discipline. It also may be an artifact of different perspectives on literacy that are discipline-specific. It may be, as Shanahan, Shanahan, and Mislishia (2006) suggest, that literacy practices vary by discipline and that once students develop some basic transportable skills, they need to focus on reading like a scientist, artist, literary critic, or historian. In the case of mathematics, Dynak (1997) noted that the teachers had difficulty adapting literacy strategies for classroom use, and lacked models and examples in professional literature.

Graphic organizers and anticipatory activities had nearly as large of a range, rating anywhere from first to sixth, depending on the department. The science department’s selection of graphic organizers as the most useful strategy is consistent with Moje’s (1996) observation of the relationship between the epistemology of science as an organized and logical body of knowledge and the choice of a strategy that displays information in an equally organized fashion. In contrast, the social studies department selected anticipatory activities as the most useful strategy. Given the emphasis on problematizing history and examining preconceived notions (Bain, 2005), activities that invite students to activate background knowledge and compare new understandings fit well into the pedagogy of history instruction. Relevance to the discipline appears to be an important part of the equation for staff development. Content area teachers not only need to understand the strategy.
but also understand how it can be effectively applied to each content area. Peer coaching and teacher-led demonstration lessons for specific disciplines during staff development events can assist in this regard.

There was widespread support for vocabulary development strategies across the disciplines. Three of five departments ranked it either one or two, suggesting that teachers had incorporated this into their practice. This could reflect a degree of comfort with infusing perceived “less burdensome” literacy strategies into content instruction. A study conducted by Stieglitz (1983) suggested that vocabulary dominated literacy instruction in content area classes. However, we are cautious about the choice of vocabulary development as the teachers’ most useful strategy because it may suggest a transmission model of education, where the purpose of schooling is to convey information (O’Brien et al., 1995).

**Content Literacy Strategies Require Sustained Focus to Build Capacity**

The negative view of teachers toward reciprocal teaching is illustrative of this theme. Palincsar and Brown (1984) advise that it can take as many as 20 lessons to fully implement reciprocal teaching in a classroom. This requires dedicating a good deal of instructional time and effort to build student capacity. Teachers undertaking a complex content literacy strategy like reciprocal teaching need time to be able to practice, and staff development should reflect the intermediate steps needed to fully realize this strategy. Two elements of the school’s professional development model will likely contribute positively toward this goal. First, the school made a schoolwide commitment, which means that over time students should benefit from multiple exposures across content to this strategy. Second, the school made a multi-year commitment to “get good” at these strategies. Knowing that everyone is using these strategies, and that next year’s focus will not be something completely different, creates the needed professional space for teachers and students to learn the strategies. These sustained commitments make content literacy strategies transportable, as they are utilized across subjects.

It can be argued, as well, that these teachers do not see a benefit to reciprocal teaching as a tool for teaching their subject. O’Brien and Stewart (1992) noted the resistance of content area teachers in adopting reading strategies that were perceived as being extraneous to the discipline. Although the research on the effectiveness of reciprocal teaching is robust, this does not necessarily translate to classroom practice. For this reason, future professional development should focus on the needs of each discipline as it relates to reciprocal teaching.

The students’ perception further confirms the need to re-examine professional development on reciprocal teaching. The consistency across participants demands a deeper look at this issue. The next step in professional development for this school should focus on identifying a small group of teachers from each department to study reciprocal teaching in their classrooms, with feedback from their students throughout the process to inform the development of the practice as a useful tool for learning the content.

**Students Need to be Taught for Metacognition as well as Content Proficiency**

Although the purpose for using content literacy strategies is to facilitate learning (e.g., Alvermann & Moore, 1991; Baker & Brown, 1984; Paris et al., 1991), many of the students interviewed were not always able to elaborate on how these strategies supported their own learning. In some cases, the strategies were seen as an activity, as in Marina’s comment about writing to learn as classroom management tool. The National Research
Council's (2005) meta-analysis of effective approaches for teaching secondary students history, mathematics, and science describes three necessary conditions: anticipate misconceptions, build factual knowledge, and teach for metacognition. This awareness of how one supports one's own learning is critical for advanced levels of understanding in content area because "students learn to take control of their own learning by defining learning goals and monitoring their progress to achieve them" (p. 2). As teachers utilize content literacy strategies, it is essential that they also explain how this promotes learning. This is the transparency of content learning strategies. There were positive examples of this kind of teaching evident in the student interviews. Alex and Ivan both understood how read alouds and shared reading supported their learning. An excellent example of this is A'nh's insightful observation of her own learning in an English classroom that used graphic organizers. When students are able to explain their learning, they are more likely to independently support further learning (National Research Council, 2005).

Understand the Difference between the Knowledge of the Adult and the Learning of an Adolescent

Secondary teachers of content possess a great deal of advanced knowledge about their subject. This level of expertise causes them to organize information differently from those who are new to the subject (Ericsson & Smith, 1991). As novices to a subject, adolescents need strategies for organizing that knowledge in ways that experts do not. Based on survey and interview results, we believe that teachers may at times be unaware of this difference. Nathan and Petrosino (2003) refer to this as the "expert blind spot . . . that educators with advanced subject-matter knowledge . . . tend to use the powerful organizing principles, formalisms, and methods of analysis that serve as the foundation of that discipline . . . rather than being guided by knowledge of learning needs and developmental profiles of novices" (p. 906). The surveyed students identified graphic organizers as the most useful tool for their own learning, in contrast to the teachers' ranking of fourth. Follow up interviews demonstrated that they understood why this was helpful to them. In this context, we believe that content literacy strategies can, and should, be used as a means for scaffolding factual knowledge and promoting metacognition.

Student Perspectives Hold Valuable Insights for Teachers and Professional Development Committees

As consumers of the content area literacy strategies used at this school, students have insightful observations about what works and what does not. The feedback from students about writing to learn activities at the beginning of class ("bellwork") as a classroom management device can help teachers at this school re-examine the role of this strategy. Ideally, this strategy should be used to activate background knowledge, surface misconceptions, or apply new knowledge in a novel way. It is possible that this strategy needs to be revisited in a new way, with student perspectives made a part of the discussion. The same can be said for note-taking strategies, which were also identified as a compliance issue, not a tool for learning.

As noted by Cook-Sather (2002), student perspectives on literacy reform efforts can illuminate issues that have not been noted by teachers and administrators. Jameer's frustration with reciprocal teaching may be indicative of views held by older, higher achieving students who may not feel a personal need for literacy strategies. Bill, one of Brozzo's (2006) student participants, raised this concern in an interview when he stated, "I already
know how to read. I need to get ready for college. They should help all those students who
don’t know how to read and, like, leave the rest of us alone” (p. 412). In all likelihood, this
literacy strategy would be useful to college bound students; what is informative is that
Jameer does not think so. An analysis of student perspectives similar to Jameer’s can
inform future reform efforts as they relate to differentiation, and to the needs of higher
achieving students in particular.

Although this study possesses limitations, in that it profiles the perspectives of teachers
and students at one high school, it is informative to educators engaged in school reform.
As content literacy strategies gain prominence as an organizing framework for school
improvement (Fisher, 2001), this study serves as a reminder to listen to teachers and
students. Their voices can contribute greatly to the continued growth of a school as it
seeks to improve teaching and learning.

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