



Increasing the Inclusion of Reading Comprehension Strategies in Secondary Content-Area Classrooms

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ABSTRACT

This article presents research on the frequency of reading comprehension instruction in secondary content-area classrooms. In 2,400 minutes of direct classroom observation, only 3% of instructional time was allotted to coaching middle and high school readers on the reading comprehension strategies essential to understanding informational text. Finally, suggestions for increasing reading comprehension in such classrooms are provided.

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Today's middle and high schools are flooded with readers who struggle to complete the academic tasks required of them. The Alliance for Excellent Education noted that approximately six million middle and high school students have very low literacy levels that affect achievement and content mastery in all subjects (Biancarosa & Snow, 2004). Perhaps the most important literacy task for our middle and high schoolers involves reading comprehension. For the purpose of this paper, reading comprehension will be defined as an active, problem-solving process; "Reading comprehension is intentional thinking during which meaning is constructed through interactions between text and reader" (Durkin, 1993, p. 5). The academic importance of instruction in reading comprehension is certain. Students who are taught comprehension strategies such as predicting, questioning, and summarizing improve their reading comprehension scores on both experimenter-constructed and standardized tests (Pressley, 1998; Rosenshine, Meister, & Chapman, 1996). Though results suggest that secondary teachers can assist students in becoming proficient readers by arming them with a variety of comprehension strategies, the degree to which teachers provide such instruction is unclear.

Echoing the importance of reading comprehension, the National Reading Panel (2000) found research evidence for the following eight reading comprehension strategies.

1. *Comprehension monitoring* in which the reader learns how to be aware or conscious of his or her understanding during reading and learns procedures to deal with problems in understanding as they arise.



2. *Cooperative learning* in which readers work together to learn strategies in the context of reading.
3. *Graphic and semantic organizers* that allow the reader to represent graphically (write or draw) the meanings and relationships of the ideas that underlie the words in the text.
4. *Story structure* from which the reader learns to ask and answer who, what, where, when, and why questions about the plot and, in some cases, maps out the time line, characters, and events in stories.
5. *Question answering* in which the reader answers questions posed by the teacher and is given feedback on the correctness.
6. *Question generation* in which the reader asks himself or herself why, when, where, what, how, and who questions.
7. *Summarization* in which the reader attempts to identify and write the main or most important ideas that integrate or unite the other ideas or meanings of the text into a coherent whole.
8. *Multiple Strategy Instruction* in which the reader uses several of the procedures in interaction with the teacher over the text. Multiple-strategy teaching is effective when the procedures are used flexibly and appropriately by the reader or the teacher in naturalistic contexts. (p. 4-6)

For more than 90 years, literacy researchers have called on content-area teachers to provide explicit reading instruction in their classrooms (Artley, 1944; Bond & Bond, 1941; Burnett, 1966; Gray, 1925; Herber, 1970; Moore, Bean, Birdyshaw, & Rycik, 1999; Moore, Readence, & Rickelman, 1983; Smith, 1919). This message, however, is not always reflected in instructional practice. O'Brien, Stewart, and Moje (1995) stated that reading instruction may not be widely incorporated in secondary content-area classrooms. There is much room for improvement with regard to reading comprehension instruction in our nation's math, science, social studies, physical education, and fine arts classrooms.

Research Objectives

In the fall of 2006, I set forth to examine the extent to which content-area secondary teachers included explicit comprehension strategies in regular classroom instruction. Additionally, in collecting qualitative data, the researcher hoped to give voice to teachers' attitudes, perceptions, and beliefs about the instructional need for and the role of reading instruction in content-area classrooms. In examining the instructional practices of four middle school content-area teachers and four high school content-area teachers, the following questions were addressed.

- To what degree do middle and high school content-area teachers incorporate reading comprehension strategies in their science and social studies classrooms? What percentage of classroom time is spent on providing reading comprehension instruction?
- Which reading comprehension strategies are most frequently incorporated into middle and high school science and social studies classrooms?



- What are teachers' attitudes towards the need and usefulness of reading comprehension instruction in content-area classrooms? What factors influence these attitudes?

Data Collection

Classroom Observations and Data Coding

Data collection consisted of 2,400 minutes of direct classroom observations in eight middle and high school science and social studies classrooms. Participants included two middle school science teachers, two middle school social studies teachers, two high school science teachers, and two high school social studies teachers. All participants were observed for a total of five hours each, divided into thirty-minute sessions. Acting as a non-participant observer, I coded data into one of two categories: Comprehension Instruction or Non-Comprehension Instruction. Codes focusing on teacher behavior provided information about the nature of classroom instruction with particular regard to reading comprehension, as listed in the table below.

Table 1

Category	Code
Non-comprehension Instruction	Didactic Instruction of New Material (DI-N) Didactic Instruction of Review Material (DI-R) Assignment (AS) Transition (TR) Non-instruction (NI) Participatory Approach (PA)
Comprehension Instruction	Question Answering (CI-QA) Question Generation (CI-QG) Summarization (CI-S) Graphic Organizers (CI-GO) Text Structure (CI-TS) Cooperative Learning (CI-CL) Comprehension Monitoring (CI-MO) Multiple Strategies (CI-MS)

Non-comprehension codes noted typical routines, behaviors, and occurrences in classroom instruction, such as teacher-led instruction of material, the giving and completion of assignments, non-instruction, and transition between shorter instructional segments. Comprehension Instruction codes aligned with the NRP reading comprehension strategies: question answering, question generation, summarization, graphic organizers, text structure, cooperative learning, comprehension monitoring, and multiple strategy instruction. Instruction was coded as Comprehension Instruction when teachers provided explanations of, directions on how to, modeling of, and assignments focused on explicit reading comprehension strategies in relation to text.



While observing the class, I coded teacher behavior in 30 second increments at set time intervals. The 30-second interval was chosen because it contains sufficient evidence of teacher behavior and is shorter than the expected duration of most instructional strategies. The use of set time intervals was intended to avoid the subjectivity of deciding when an activity begins and ends. I began coding at Interval #1, observed for 30 seconds of instruction, then used the next 30 seconds to record observed codes. Each interval was only allotted one code. In instances when multiple codes were observed, I coded for the most prevalent behavior. In addition to recording codes, I also made qualitative notes about the instruction in that interval, including teacher directions, materials used, and student behaviors. This process was repeated for the 30-minute duration of observation. At the conclusion of each observation, codes that appeared during the observation were tallied.

Teacher Interviews

In analyzing the qualitative data collected, I applied a framework set forth by Patton (1990). To answer the third research question inquiring about teachers' perceptions about the instructional need for comprehension instruction, all teachers were interviewed in an open-ended session. Because the nature of the questions could have perhaps influenced instructional tactics of teachers, the interviews occurred at the conclusion of all classroom observations. Questions were open-ended and probed teachers' backgrounds, training, as well as an overview of instructional practices. Interviews were tape recorded and transcribed, with member checking conducted to ensure accuracy of each interview. In Phase I, informal analysis, I read through interviews. In Phase II, coding, I read through all data sources and wrote analytic memos on data. In Phase III, initial category creation, I gathered potential categories that emerged from data. In Phase IV, category confirmation, I continued the coding process of data to establish positive and negative cases for all of the categories. In Phase V, conferencing, I confirmed categories across multiple data sources and, if necessary, resolved discrepancies with participants through triangulation. Through these efforts, I made sense of teachers' perceptions about content-area instruction in secondary classrooms.

Quantitative Results

Though minimal literacy integration was expected, reading comprehension instruction was quite limited in these eight secondary classrooms. In a total of 2,400 minutes of classroom observations, these secondary content-area teachers allotted only 82 minutes to teach, explain, model, scaffold, and assist students in using effective reading comprehension strategies. Only 3% of instructional time was used to help these adolescent readers make meaning of text through asking and answering questions, summarizing, applying fix-up strategies when comprehension broke down, examining text structures, using graphic organizers, predicting, and clarifying. Thus, over the course of this study, reading comprehension instruction comprised 3% of classroom observations. In order to show how classroom instruction occurred in secondary content-area classrooms, Figure 1 and Table 2 tally and depict the results from classroom observations of all eight participants.



The data indicate that more explicit reading comprehension instruction occurred in middle school classrooms (79 minutes total) than in high school classrooms (3 minutes total). Additionally, social studies teachers were more likely to incorporate explicit reading comprehension instruction (60 minutes) than science teachers (22 minutes). Furthermore, the explicit reading comprehension instruction that was incorporated was limited in its scope; the most heavily relied upon strategies teachers used to build and support comprehension were asking literal questions and having students write summaries of text. Of the eight NRP (2000) reading comprehension strategies, secondary content-area teachers' favored reading comprehension strategy was Question Answering (62 minutes), followed by Text Structure (18 minutes), and lastly Summarization (2 minutes).

Figure 1

Percentage Breakdown of Classroom Instruction

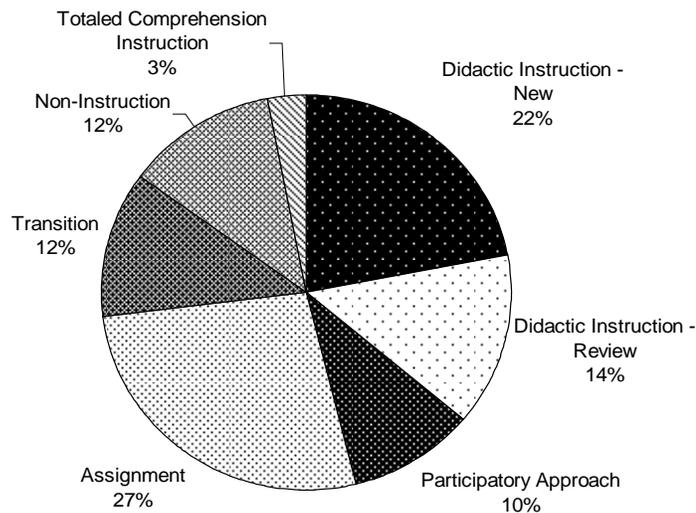




Table 2

Breakdown of Classroom Instruction Across Eight Participants													
Code	Dickinson	Lee	Libert	Miller	Rouse	Shifflet	McCorvey	Wills	Total	Minimum	Maximum	Mean	Standard Deviation
DI-NI	24	69	43	51	92	69	107	80	535	24	107	66.88	26.947
DI-N	51	43	27	94	73	10	15	24	337	10	94	42.13	29.396
PA	6	63	70	0	20	57	0	13	229	0	70	28.63	29.684
AS	150	64	101	40	76	68	63	76	638	40	150	79.75	33.083
TR	20	46	57	23	35	54	21	29	285	20	57	35.63	14.947
NI	37	8	2	32	3	40	94	78	294	2	94	33.00	35.412
CI-QG	0	0	0	0	0	0	0	0	0	0	0	.00	.000
CI-QA	10	2	0	48	0	2	0	0	62	0	48	7.75	16.611
CI-S	0	0	0	2	0	0	0	0	2	0	2	.25	.707
CI-GO	0	0	0	0	0	0	0	0	0	0	0	.00	.000
CI-CO	0	0	0	0	0	0	0	0	0	0	0	.00	.000
CI-CM	0	0	0	0	0	0	0	0	0	0	0	.00	.000
CI-TS	2	5	0	10	1	0	0	0	18	0	10	2.25	3.576
CI-MS	0	0	0	0	0	0	0	0	0	0	0	.00	.000

Qualitative Results

The qualitative data suggest that though secondary content-area teachers viewed reading and literacy as crucial to student learning, they were unlikely to provide explicit reading instruction during class time. Teachers viewed covering their content as their instructional priority and felt that covering content and the pressure to reach high pass rates for standardized testing dictated how they taught.

Teachers' Instruction and Beliefs: Content Breadth over Depth

In examining the quantitative and qualitative data, it is clear that the secondary teachers in this study saw their major instructional responsibility as covering their particular content in preparation for state standardized tests, and as such, identified themselves by their content area. Of equal importance, secondary teachers did not see reading comprehension instruction as their responsibility, even if it meant enhanced understanding of assigned materials.

When asked about their instructional role, all eight participants explicitly referred to the necessity to cover content. For example, a high school science teacher explained, "Teachers are so test driven. We have an enormous amount of information to pour into students' heads in order to fulfill the yearly requirements of the standardized tests." No doubt the pressure the participants felt about covering content was linked to preparing students for state standardized testing. A middle school social studies teacher noted, "My instructional priority is content with an emphasis on test scores." It was also apparent that the teachers in this study felt the best preparation for the tests was covering content;



teachers did not use classroom instruction to explore test-taking strategies during my fall observations.

With content being a central focus, the secondary teachers in my study often envisioned themselves as the primary conveyors of information. All eight of the classrooms involved in my study followed the teacher-centered transmission model, where teacher talk and lecture was a central focus of instruction. Additionally the majority of classroom instruction I observed followed the three-prong instructional delivery format, known as the Initiation Response Evaluation pattern (Mehan, 1979), which involves teacher-initiated questioning, student response, and teacher evaluation of student responses. The results of this study seem to agree with the literature pointing out the teacher-directed culture of secondary schools. More specifically, the themes of teacher-dominated instruction, of minimal literacy integration, and of the pressure to cover content mirror Wilson's (2000) findings that teachers' beliefs are likely influenced by state testing. It is possible that teacher-dominated classrooms and the current culture of high stakes testing mutually reinforce each other; because teachers in this study felt limited in their instructional autonomy, they resorted to teacher-led instruction.

Content Focus Defines Instruction

The pressure that teachers in my study felt to cover state-mandated content had a heavy influence on their instructional identities. Jacobs (2002) explained that secondary teachers consider themselves teachers of content areas such as math, history, and science. As such, content-area teachers do not believe that literacy integration is their instructional responsibility (Greenleaf et al., 2001; Jacobs & Wade, 1981). The following quotation from a high school science teacher reveals his sense of self as a content teacher, not a teacher of reading. "I'm not a reading specialist, so I'm not able to do all the things they say. If I did all those things, after a while I'd be a reading specialist and not a science teacher." The data suggest that the teachers in this study did not recognize that "content literacy has the potential to maximize content acquisition" (McKenna & Robinson, 2006, p. 12).

Thus, it appears that participants' sense of themselves as content teachers was influenced by their domain-specific knowledge necessary for preparation for standardized testing. In turn, the pressure to cover content and to prepare students for the state tests influenced the methods of their instruction. Teachers placed such a high value on their domain that they perceived that literacy integration would detract from content-area instruction.

These data align with past research that found "subject-area teachers increasingly view their role as getting across the content of their discipline" (Greenleaf et al., 2001, p. 84). Finally, Alvermann and Moore's (1991) revelation that teachers' beliefs and instructional practices are shaped by contextual factors including adhering to state policies and preparation for standardized tests would appear to apply to the teachers in this study.



Implications

These results suggest significant trends about the nature of secondary classroom instruction. First, with middle and high school curricula that emphasize breadth over depth, teachers see their major instructional responsibility as covering their particular content in preparation for state standardized tests. Teacher-led instruction of material through lectures, discussions, and films, rather than through direct exposure to print, prevailed in these classrooms. As such, students' had minimal exposure to text and virtually no support for how to comprehend that text. When teachers feel instructional time is best spent by delivering content, reading instruction may hold a minimal role.

Furthermore, results suggest that teachers view literacy integration and reading comprehension support as an additional time-consuming burden, rather than an effective way to improve student understanding and retention of content information. Secondary schools must encourage content teachers to reshape their understandings of reading and writing across the curriculum; only then will secondary teachers begin to see literacy integration as a fruitful opportunity rather than an instructional obstacle.

In addition, the lack of reading comprehension instruction in this study might also be explained by teachers' limited knowledge of what reading comprehension entails. Of the eight research-based reading comprehension strategies discussed by the National Reading Panel (2000), teachers in this study only provided comprehension instruction on three strategies: question answering, summarizing text, and examining text structure. The use of only three reading comprehension strategies may suggest that teacher training and professional development opportunities are not effectively conveying the range of possibilities within reading comprehension strategy instruction. Perhaps if middle and high school teachers understood that reading comprehension instruction can occur in group work, as with Reciprocal Teaching, or can encourage students to note their own comprehension breakdowns, as in comprehension monitoring, they may be more likely to understand the wide variety of effective reading comprehension instructional opportunities in science and social studies classrooms.

How Secondary Schools Can Increase Reading Comprehension Instruction

The minimal inclusion of reading comprehension strategies would appear to have implications for professional development for in-service teachers, inquiry-based reflective teaching, and the instructional capacities of literacy coaches in supporting content teachers.

Suggestion #1. Provide meaningful professional development opportunities that convince teachers of literacy integration as an instructional priority.

To increase reading comprehension in secondary classrooms, schools must critically reflect about the quality of professional development. Of the utmost importance is that professional development helps teachers understand the opportunity and value of literacy instruction in content classes. With meaningful professional development, teachers can begin to understand that literacy integration does not detract from content coverage, but actually improves student comprehension and retention of content. In-



service teachers must have meaningful professional development including mentoring and coaching to allow them to see the realm of possibilities in content literacy, as explained in *Reading Next: A Vision for Action and Research in Middle and High School Literacy*.

The idea is not that content-area teachers should become reading and writing teachers, but rather that they should emphasize the reading and writing practices that are specific to their subjects, so students are encouraged to read and write like historians, scientists, mathematicians, and other subject-area experts. (Biancarosa & Snow, 2004, p. 15)

Suggestion #2. Create school environments where teachers critically reflect on their instructional goals and priorities.

Additionally, secondary schools can provide opportunities for meaningful teacher reflection. Though the majority of in-service professional development opportunities provide teachers with a plethora of reading and writing strategies, these opportunities rarely ask teachers to critically examine how literacy may come to support their instructional goals. When schools create collaborative environments where teachers share their instructional successes and struggles, literacy integration becomes a schoolwide priority, rather than a mere buzzword. Ideas include teacher-led book clubs, where colleagues read and discuss professional development books by authors such as Kyleene Beers and Chris Tovani, or case studies in effective literacy integration in content-area classrooms (Moje, 1996). Through meaningful professional development opportunities which highlight literacy as a crucial means to content acquisition, teachers can begin to critically examine their own instruction and set literacy integration as an essential instructional goal.

Suggestion #3. Utilize secondary literacy coaches and curriculum specialists to support teachers as they attempt to implement literacy strategies.

Given the minimal literacy instruction integrated by participants in my study, secondary teachers may benefit from literacy coaches acting as experts in literacy integration. The Alliance for Excellent Education (Biancarosa and Snow, 2004) estimates that 10,000 literacy coaches will be needed to assist the nine million secondary readers who read at 'below basic' levels. If literacy coaches were commonplace in our nation's middle and high schools, content teachers might begin to understand the need for literacy integration across the curriculum. By establishing a collaborative environment, literacy coaches could assist teachers in reflecting on their own instructional practices and beliefs. Literacy coaches have the ability to help secondary teachers understand that reading comprehension strategies do not detract from students' learning of content, but rather assist in their ability to engage in, critically think about, and retain content.

Conclusion

The stakes are high for our nation's middle and high school students; secondary students are expected to read a variety of texts with complex vocabulary and dense



content. Our secondary schools and teachers simply cannot shirk the responsibility of preparing our students for their literacy and academic demands. There are tremendous opportunities for schools and teachers to rise to the challenge; a wide body of research, including professional development journals and books, shows what effective literacy integration in middle and high school content-area classrooms entails. Through improved professional development and collaboration between teachers, literacy coaches, and curriculum specialists, reading comprehension instruction may be a classroom norm, rather than an unlikely occurrence.

References

- Alvermann, D., & Moore, D. (1991). Secondary school reading. In R. Barr, M. L. Kamil, P. Mosenthal & R. D. Pearson (Eds.), *Handbook of reading research: Volume II* (pp. 861-884). New York: Longman.
- Artley, S. (1944). A study of certain relationship existing between general reading comprehension and reading comprehension in a specific subject matter. *Journal of Educational Research*, 37, 464-473.
- Biancarosa, G., & Snow, C. (2004). *Reading Next - A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- Bond, G., & Bond, E. (1941). *Developmental reading in high school*. New York: Macmillan.
- Burnett, R. W. (1966). Reading in the secondary school: Issues and innovations. *Journal of Reading*, 322-332.
- Durkin, D. (1993). *Teaching them to read* (Vol. 6th ed.). Boston, MA: Allyn and Bacon.
- Gray, W. S. (1925). A modern program of reading instruction for the grades and high school. *Twenty-fourth Yearbook of the National Society for the Study of Education*. Chicago, IL: University of Chicago Press.
- Greenleaf, C., Schoenbach, R., Cziko, C., & Mueller, F. (2001). Apprenticing adolescent readers to academic literacy. *Harvard Educational Review*, 71(1), 79-129.
- Herber, H. L. (1970). *Teaching reading in content areas*. Englewood Cliffs, NJ: Prentice-Hall.
- Jacobs, V. (2002). Reading, writing, and understanding. *Educational Leadership*, 58-61.
- Jacobs, V. & Wade, S. (1981). Teaching reading in secondary content areas. *Momentum*, 12(4), 8-10.
- McKenna, M., & Robinson, R. (1990). Content literacy: A definition and implications. *Journal of Reading*, 34, 184-186.
- Mehan, H. (1979). *Learning lessons: Social organization in the classroom*. Cambridge, MA: Harvard University Press.
- Moje, E. B. (1996). "I teach students, not subjects": Teacher-student relationships as contexts for secondary literacy. *Reading Research Quarterly*, 31, 172-195.
- Moore, D., Bean, T., Birdyshaw, D., & Rycik, J. (1999). Adolescent literacy: A position statement. *Journal of Adolescent & Adult Literacy*, 43, 97-112.



- Moore, D., Readence, J., & Rickelman, R. (1983). An historical exploration of content-area reading instruction. *Reading Research Quarterly, 18*, 419-438.
- National Reading Panel (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implication for reading instruction: Reports of the subgroups*. Washington, DC: National Institute of Child Health and Development.
- O'Brien, D. G., Stewart, R. A., & Moje, E. B. (1995). Why content literacy is difficult to infuse into the secondary school: Complexities of curriculum, pedagogy, and school culture. *Reading Research Quarterly, 30*, 442-463.
- Patton, M. (1990). *Qualitative evaluation and research methods* (2 ed.). Newbury Park, CA: SAGE Publications.
- Pressley, M. (1998). *Reading instruction that works: The case for balanced teaching*. New York: Guilford.
- Rosenshine, B., Meister, C., & Chapman, S. (1996). Teaching students to generate questions: A review of the intervention studies. *Review of Educational Research, 66*, 181-221.
- Smith, B. M. (1919). Correlation of ability in reading with the general grades in high school. *School Review, 27*, 493-511.
- Wilson, E. K. (2000). *From university classroom to secondary classroom: An examination of two teachers' beliefs and practices about literacy in the social studies*. Paper presented at the National Reading Conference, Scottsdale, AZ.