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Reading Comprehension Strategies in Secondary Content Area Classrooms: Teacher Use of and Attitudes Towards Reading Comprehension Instruction

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Abstract

The purpose of this mixed methodology study was to identify the frequency of reading comprehension instruction in middle and high school social studies and science classrooms. An additional purpose was to explore teachers' perceptions of and beliefs about the need for reading comprehension instruction. In 2,400 minutes of direct classroom observation, a total of 82 minutes (3%) of reading comprehension instruction was observed. The qualitative findings reveal that teachers did not feel qualified or responsible for providing explicit instruction on reading comprehension. Teachers pointed to the pressure to cover content in preparation for state standardized tests as barriers to providing reading instruction.

Editors Note: We decided to end this volume of *Reading Horizons* with a previously published article from 2009. The article, "Reading Comprehension Strategies in Secondary Content Area Classrooms: Teacher Use of and Attitudes Towards Reading Comprehension Instruction" is as relevant for the success of secondary students in 2015/2016 as it was in 2009. It is essential that each content teacher understands the literacy demands of their discipline and provides their students with strategies for meeting these demands. This article provides useful suggestions for doing just that



In today's middle and high schools, a significant number of students struggle with the complex academic and literacy tasks they encounter in their content area classes. According to the Alliance for Excellent Education, approximately 8 million students in grades 4-12 read well below grade level (Heller & Greenleaf, 2007). Of those struggling secondary readers, nearly 70% struggle with reading comprehension (Biancarosa & Snow, 2006). For the purpose of this study, reading comprehension will be defined as, "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (Snow, 2002, p. 11). The academic importance of reading comprehension cannot be understated, leading researchers to claim that, "the most important thing about reading is comprehension" (Gambrell, Block, & Pressley, 2002, p. 3).

There is clear evidence that reading comprehension instruction is highly beneficial for students of all levels. When teachers explain and model a single comprehension strategy or multiple strategies, as well as provide guided and independent practice with feedback until students begin to use the strategy independently, the reading levels of middle and high school students improve (e.g. Biancarosa & Snow, 2006; Collins, 1991; Deshler, Ellis, & Lenz, 1996; National Reading Panel, 2000; Rosenshine & Meister, 1996; Schorzman & Cheek, 2004; Stevens, 2003; Wood, Winne, & Carney, 1995). As a result of such convincing evidence, perhaps the most widely cited recommendation for improving reading comprehension is increasing explicit instruction in comprehension strategies (National Reading Panel, 2000). In its report, the National Reading Panel (NRP) (2000) highlights the importance of comprehension strategy instruction, explaining, "The idea behind explicit instruction of text comprehension is that comprehension can be improved by teaching students to use specific cognitive strategies or to reason strategically when they encounter barriers to comprehension when reading" (p. 4-39). Highlighting the importance of comprehension instruction, the NRP (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*, which 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, why, what will happen, 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)

Furthermore, evidence shows that reading instruction in specific domains, such as science (Barton, Heidema, & Jordan, 2002; Greenleaf, Brown, & Litman, 2004; Norris & Phillips, 1994) and social studies (Mosborg, 2002; Perfetti, Britt, & Georgi, 1995) can improve student understanding and learning. In spite of this evidence, teachers are often reluctant to provide explicit reading comprehension instruction in their secondary classrooms. Teachers point to the lack of instructional time and the pressure to cover content as barriers to literacy instruction (Bulgren, Deshler, & Schumaker, 1997; Bulgren, Deshler, Schumaker, Lenz, 2000; Deshler, Schumaker, Lenz,

Bulgren, Hock, Knight, et al., 2001; O'Brien, Stewart, & Moje, 1995; Scanlon, Deshler & Schumaker, 1996). Additionally, in seeing themselves as content specialists, secondary teachers may feel that it is not their job to teach reading (Greenleaf, Schoenbach, Cziko, & Mueller, 2001).

Purpose of the Present Study

Despite the evidence highlighting how effective comprehension promotes student achievement, such instruction appears to be a rare event rather than the instructional norm (Block & Pressley, 2002). In her milestone work, Durkin (1978-79) noted that less than 1% of instructional time was used for comprehension strategies in elementary classrooms. Though these findings have been extended to the upper elementary level (Hodges, 1978; Pressley, Wharton-McDonald, Hampston, & Echevarria, 1998), this work has yet to be extended to middle and high schools, leaving researchers to wonder about the degree of reading comprehension instruction in content area classrooms as well as teachers' perceptions about the necessity of such instruction (Trabasso & Bouchard, 2002).

The purpose of the present study was to examine the extent to which secondary teachers included explicit comprehension strategies in routine classroom instruction. Additionally, in collecting qualitative data, the researcher hoped to give voice to teachers' attitudes, perceptions, and beliefs about reading comprehension 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.

1. To what degree do middle and high school content area teachers incorporate reading comprehension strategies in their science and social studies classrooms?
2. What are teachers' attitudes towards the need and usefulness of reading comprehension instruction in content area classrooms? What factors influence these attitudes?

Underpinning this research is the belief that reading comprehension instruction is particularly important to middle and high school students as they encounter informational text in their content area classes. Recently, multiple research reports (Alvermann, 2001; Biancarosa & Snow, 2006; Kamil, 2003; Heller & Greenleaf, 2007; Torgesen, Houston, Rissman, Decker, Roberts,

Vaughn, et al., 2007) have endorsed reading comprehension instruction as a significant way to improve students' retention and understanding of the domain-specific information in secondary content area classrooms. With regard to comprehension instruction in secondary classrooms, experts recommend the following: "Continue to teach comprehension processing for as long as students need it. Certainly, that means at least middle and high school" (Pressley & Block, 2002, p. 390).

Methodology

This mixed methodology study occurred during three consecutive months in the 2005-2006 academic year. Data was collected in two phases: Phase I with a quantitative focus, and Phase II with a qualitative focus. The target population for this study consisted of four middle school teachers and four high school teachers in public schools.

Setting

Data collection occurred at two rural schools in Virginia: 1) Pine Wood Middle School, housing 430 students in grades 6-12, and 2) Pine Wood High school, housing 782 students in grades 9-12. According to recent census reports, the surrounding county had a population of 15,244 people, with a racial makeup of 90.99% White, 6.45% African American, 0.19% Native American, 0.45% Asian, and 1.32% Latino. The median household income was \$45,931, with 6.6% of the population living below the poverty line. The only middle and high school in the county, Pine Wood Middle and Pine Wood High Schools, shared conjoined campuses, with nearly 100% of middle school students continuing onto the high school. These two schools were selected because of their mixed-level classes, their high rates of student retention and graduation, their prioritizing reading and writing across the curriculum in school improvement plans, and their high-stakes test scores at or above state averages.

At Pine Wood Middle School, 25% of students participated in the federal free lunch program. Approximately 1.7% of the student body received English as a Second or Other Language (ESOL) support. Based on a school-wide initiative to assess readers using the Bader Reading and Language Inventory (2004), 28% of students read on grade level, 32% read above grade level, and 40% read below grade level. Pine Wood Middle School classes were 45 minutes in length. At Pine Wood High School, 15% of students participated in the federal free lunch program. Approximately 1% of the student body received

Table 1: *Participants*

Teacher	Subject	Grade	Total Years Teaching	Age at time of Study	Gender	Race	Area of Certification	Highest Degree Held
1	Earth Science	6	1	23	Female	White	Secondary Education (6-12) with Natural Sciences	M.Ed.
2	Physical Science	8	11	65	Female	White	Secondary Education (6-12) with Humanities Endorsement	M.Ed.
3	World Geography	8	6	29	Male	White	Middle Grade with Social Studies Endorsement	J.D.
4	World Geography	8	27	55	Female	White	Middle Grade with Humanities & Social Science Endorsement	M.Ed.
5	Chemistry	11	8	50	Male	White	Secondary Education (6-12) with Natural Sciences	M.Ed.
6	Earth Science	9	15	49	Female	White	Secondary Education (6-12) with Natural Sciences	M.B.A.
7	United States History	11	6	33	Female	Asian	Secondary Education (6-12) with Social Science Endorsement	J.D.
8	World History and Geography	10	8	37	Male	White	Secondary Education (6-12) with Social Science Endorsement	M.Ed.

English as a Second or Other Language (ESOL) support and nearly 45% of matriculating seniors continue on to two- or four-year colleges. Based on the Bader Reading and Language Inventory (2004), 65% of students read on grade level, 15% read above grade level, and 20% read below grade level. Pine Wood High School classes were 90 minutes in length meeting every other day.

Participants

A stratified purposeful sampling approach was chosen for this study. In August 2005, a total of 23 secondary science and social studies teachers were contacted by both letter and email asking for their participation. So as to not influence teacher participation or later classroom observations, teachers were told that the purpose of the study was to observe teachers' instructional strategies in content area classrooms. Ten teachers agreed to the study; purposeful sampling secured eight total participants: two middle school science teachers, two middle school social studies teachers, two high school science teachers, and two high school social studies teachers. Prior to the study, the researcher had no relationship with any of the teacher participants. All of the teachers held state certifications in their content areas. Since earning their teaching certification, only four participants had completed additional graduate classes in assessment and special education. See Table 1 for data on the eight participants.

Data Sources and Collection

Data came from two sources: 1) 2,400 minutes of direct classroom observation over a three-month period, and 2) open-ended teacher interviews subsequent to the completion of classroom observations.

Phase I: Direct Classroom Observations

To determine the frequency of reading comprehension instruction in eight secondary content area classrooms, the researcher observed 2,400 minutes of classroom instruction. Each teacher was observed for a total of five hours, broken into thirty-minute increments. To arrange mutually convenient observation times, the teachers were contacted through email, phone calls, and notes prior to each session. As a result, teachers were fully aware in advance of my coming into the classroom.

To examine the teacher inclusion of reading comprehension instruction, a coding system was modified from previous work (Coyne, 1981; Durkin, 1978-

Table 2: *Classroom Observation Coding System*

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)

1979). Because my focus of investigation was reading comprehension instruction, I adapted previous coding systems by eliminating irrelevant codes, modifying codes, and adding codes specific to reading comprehension instruction. Two categories of codes were created: 1) Non-comprehension Instruction, and 2) Comprehension Instruction. Table 2 provides an overview of the codes, with additional information available in Appendix A.

The Comprehension Instruction codes, taken from the NRP's (2000) meta-analysis, were selected because of the strong body of research proving their efficacy. In order to be coded as Comprehension Instruction, the teacher had to not only provide it but also give some explanation for how, when, and why to employ the comprehension strategies. More specifically, the Comprehension Instruction codes were used when one or more of the following teacher behaviors occurred (Duke & Pearson, 2002):

- An explicit description of the strategy and when and how it should be used.
- Teacher and/or student modeling of the strategy in action.
- Collaborative use of the strategy in action.

- Guided practice using the strategy with gradual release of responsibility.
- Independent use of the strategy. (pp. 208-210)

Non-comprehension Instruction codes included other routine classroom instruction, such as the giving and completion of assignments, teacher-led lectures and presentation of content, and transition between classroom activities. The Didactic Instruction codes (Didactic Instruction of New Material and Didactic Instruction of Review Material) emerged from Alvermann (2002), who noted that teacher-centered instruction, also referred to as the transmission approach, and dominates middle and high school instruction. In Didactic Instruction, the teacher presents information to students through lectures, PowerPoint presentations, and structured note-taking. The Assignment code (AS) pertained to instances when giving and completing in- and out-of-class assignments. In the Participatory Approach code (PA), students acted as the conveyors of information as they worked in small groups or gave oral presentations of projects and research papers. The Transition code (TR) marked instances when the teacher gave transitory directions, including taking out or putting away materials and shifting instructional topics. The Non-Instruction code (NI) noted times when the teacher was not engaged in instructional behavior which included recording grades, behavior management, or off-task conversation.

While observing the class, teacher behavior was coded in 30 second increments adapted from similar protocols (Taylor, Pearson, Clark, & Walpole, 1999). Only one code for each interval was allotted; in the rare instances when multiple codes were observed, the most prevalent behavior was coded. In addition to recording codes, qualitative notes were made 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. Also, being cognizant that teachers often follow a daily classroom routine, observation times were scattered so each teacher was observed during a variety of periods at a variety of times.

Because of the heavy reliance on the definition of codes in this study, a reliability check was performed prior to formal observations. A video of a secondary content area classroom was obtained and independently coded for this video. The results were then compared to the coding of the same video by

a doctoral student well versed in statistics and classroom observations. These checks established an intracoder reliability of 0.92.

Phase II: Teacher Interviews. In the second phase of the larger study, the same eight teachers were interviewed during hour-long, open-ended interview sessions. The purpose of the interviews was to examine teachers' instructional strategies with regard to content area literacy and reading comprehension. Teachers were asked to define and explain the reading comprehension instruction they provided, to discuss their beliefs about reading and literacy in their classrooms, and to explain their instructional priorities and challenges. All interviews were recorded and transcribed, which were member-checked as participants confirmed their interview transcripts.

Data Analysis

Quantitative data was analyzed using a three-step process: 1) the total comprehension instruction across all eight teachers, 2) the total comprehension instruction across science and across social studies teachers, and 3) disaggregating the data by individual teachers. Data was examined by the means and standard deviations for the total of reading comprehension instruction, as well as disaggregated by content area, grade level, and individual teacher.

In analyzing the teacher interviews, Patton's (1990) framework was applied. In Phase I, informal analysis, interviews and notes recorded in classroom observations were read. In Phase II, coding, all data sources were reread with analytic memos added. In Phase III, initial category creation, potential categories that emerged from data were gathered. In Phase IV, category confirmation, the coding process of data continued to establish positive and negative cases for each category. In Phase V, conferencing, categories across multiple data sources were confirmed and, if necessary, resolved discrepancies with participants through triangulation.

Reading Comprehension Instructional Findings

The overarching intent of this study was to examine the frequency of reading comprehension strategy instruction in secondary content area classrooms, as well as to give voice to teachers' beliefs about reading comprehension instruction. In 2,400 minutes of instruction, a total of 82 minutes of reading comprehension instruction occurred. Thus, over the course of this study, reading comprehension instruction comprised only 3% of

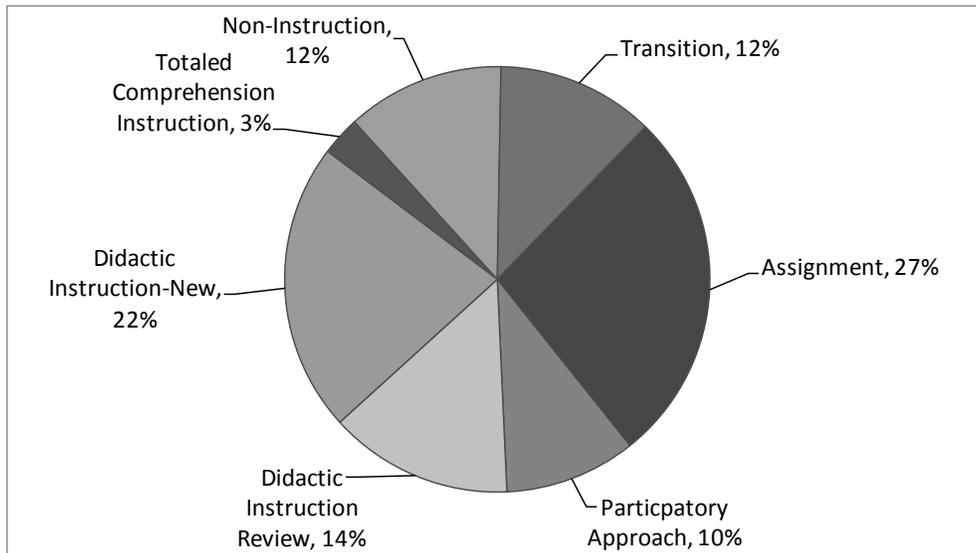


Figure 1: *Percentage Breakdown of Classroom Instruction*

classroom observations. In order to show how classroom instruction occurred in secondary content area classrooms, Figure 1 and Table 3 tally and depict the results from classroom observations of all eight participants.

Phase I Findings

Of the reading comprehension instruction that occurred, the reliance on only three comprehension strategies was noted: Text Structure, Question Answering, and Summarization. Of these three, Question Answering was most prevalent, with 62 minutes overall. The use of Text Structure as a reading comprehension strategy occurred in middle school science and social studies and high school science classrooms, for a total of 18 minutes. Lastly, two minutes of Summarization as a reading comprehension strategy occurred in one middle school social studies classroom.

Reading Comprehension in Middle School Classrooms

Of 600 total minutes observed in middle school social studies classrooms, reading comprehension strategies made up 60 minutes (10%) of instruction. Reading comprehension instruction in middle school social studies classrooms far exceeded comprehension instruction in other grades and in science classes. Though reading comprehension instruction was highest for middle school social studies teachers, only one teacher, Teacher 4, provided reading comprehension instruction.

By far, the most heavily favored reading comprehension strategy was Question Answering, with 48 minutes of inclusion in these middle school classrooms. Teacher 4 led the class in orally answering the questions taken directly from the end of the chapter, then providing feedback about the correctness of students' answers. After concluding a chapter, he then directed students to independently work on questions from the end of the chapter. Teacher 4 used Text Structure as a comprehension strategy, primarily through coaching students on how to examine maps, bold type, and chapter titles and subtitles. In a geography lesson on third world countries, the teacher called students' attention to charts, graphs, and pictures in a text- book chapter on the factors that impact global life expectancy. In that same class, Teacher 4 assisted students in reading bar graphs and pie charts, explaining, "Let's examine the pie

Table 3: *Breakdown of Classroom Instruction Across Eight Participants*

Code	Teacher								Total	Min.	Max.	Mean	Standard Deviation
	1	2	3	4	5	6	7	8					
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

chart. What information does it give us? Why did the publisher include it on this page?” The same teacher also provided two minutes of instruction on Summarization. In a lesson on latitude and climate zones, he led whole-group practice in “summing up what the chapter tells us about precipitation and climate zones.” As students raised their hands to orally summarize the reading, the teacher provided feedback to the students about omitted material of importance.

Reading Comprehension in High School Classrooms

Of 600 total minutes observed in high school social studies classrooms, no explicit instruction on reading comprehension strategies occurred. In that same time, reading comprehension instruction accounted for only three minutes (0%) of instruction. Similar to the middle school science classrooms, high school science teachers relied only upon teaching Text Structure and Question Answering. During instruction on climate zones, high school science students worked in small groups to research the temperature, climate controls, latitude and longitude, and average precipitation of a predetermined city. During this activity, Teacher 5 instructed students to look at information provided in textbook tables and charts. She asked students, “What information can we gather from that chart? Remember, it’s there for a reason, not just to fill up space.”

Reading Comprehension Instructional Findings

Thus, in disaggregating a total of 82 minutes of reading comprehension instruction, the data indicated that more reading comprehension instruction occurred in middle school classrooms (79 minutes total) than in high school classrooms (three minutes total). Additionally, social studies teachers were more likely to incorporate reading comprehension instruction (60 minutes) than science teachers (22 minutes). Of the eight NRP (2000) reading comprehension strategies, middle and high school content area teachers favored three: Question Answering (62 minutes), Text Structure (18 minutes), and Summarization (two minutes).

Phase II Findings

Responses from teacher interviews provided a wealth of information to explain why reading comprehension instruction was essentially absent in these classrooms. The following categories describe the teachers’ responses.

Teachers' Understandings of Literacy and Reading Comprehension

All participating teachers espoused their beliefs that reading was a vital part of their classroom instruction, as exemplified by a high school history teacher's statement, "Reading is very important because being able to read is the key to the student's success. It helps them remember and be able to understand the material when it is discussed in class." Though teachers understood and promoted the importance of literacy in their classroom, some participants did acknowledge that they did not provide explicit reading comprehension instruction. A high school science teacher admitted, "We don't really talk strategies in my class. I operate under the assumption that they can read it. If they get stuck, I'll help them, but I'm not spending a lot of time getting them to read." Accordingly, data from Phase I indicated this teacher provided no comprehension instruction during five hours of observation.

On the other hand, three of the eight teachers pointed out that they do provide reading comprehension instruction. Their self-reported reading comprehension strategy instruction largely included discussion of text and answering text-based questions. One high school history teacher, who provided no comprehension instruction during Phase I observations, explained, "I assign independent reading. We go over it by reading aloud and answering questions. Discussion of the readings the next day let me see if they understood the text."

Furthermore, when asked about what reading comprehension instruction meant, teachers expressed uncertainty. A middle school science teacher explained, "I often try to guide them through readings, although I am not sure if that helps reading comprehension." Other participants equated comprehension instruction with assessing whether their students understood text. A middle school social studies teacher noted, "I help students comprehend the text by asking them about the text. If they know they are held responsible for the content, students are more likely to take the time to focus on understanding the reading." Absent in their discussions about reading comprehension instruction were explanations of teacher-led think-alouds to model reading strategies, explicit explanations for when and why to use strategies, or coaching students on how to apply strategies to their independent reading.

Content Coverage as an Instructional Priority

These middle and secondary teachers saw their major instructional responsibility to be covering their particular content in preparation for state standardized tests, and as such, identified themselves by their content area. Overwhelmingly, teachers identified covering content as their most pressing instructional priority. For example, a high school science teacher reasoned, “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 state standardized test.” In fact, five of the eight teachers ranked content coverage in preparation for state tests as their most pressing instructional priority. No doubt the pressure that teachers felt to cover content was closely aligned with the need to successfully pass state standardized tests.

Teachers’ Self-Identifications as Content Specialists

The secondary teachers in this project identified themselves as content specialists, and as such, may have shirked any responsibility for reading comprehension instruction. One high school social studies teacher identified himself as a content teacher, explaining, “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.” Another high school teacher professed that reading comprehension instruction was not her responsibility. “The role of the secondary teacher should be to improve reading but not have to teach reading comprehension at the high school level.”

Reading Comprehension Detracting from Content Coverage

With the pressure to cover content, several teachers in this study saw comprehension instruction as an instructional burden which detracted from instructional time. Consider the following statements:

- “Content area teachers don’t have time to teach students how to read. We have to get them to get the content. As long as they can read and answer the questions on the SOL test, I don’t worry about reading.” (Teacher 8)
- “My priority is to teach the students the science curriculum to the best of my ability while fostering a love for science. It is hard to take time to focus on reading in a content area classroom.” (Teacher 2)

- “I’m quick to assess whether students can read the text, but I don’t have time to work on their weaknesses. We have to move on to expose them to everything on the test. Content teachers don’t provide more reading instruction because of standardized testing. I don’t have the time to sit and teach students how to read. Although it’s beneficial in the long run, I’d have to give up instructional time to teach my content.” (Teacher 4)

It appears that teachers in this study saw reading comprehension as an instructional add-on, rather than a way to promote students’ understanding and retention of content.

Lack of Training in Reading Comprehension Instruction

Teacher participants also pointed to their lack of professional knowledge and training as barriers to reading comprehension instruction. One middle school social studies teacher explained, “My students have to be able to read. However, I’m not qualified to teach them how to read. In my training, I didn’t learn to teach children to read. I never felt comfortable working with reading.”

Thus, it appears that these middle and high school teachers were unlikely to provide reading comprehension for several reasons: 1) their belief that reading comprehension instruction would detract from content coverage and preparation for state testing, 2) their self-identification as content specialists, and 3) their lack of training and confidence regarding reading instruction.

Limitations of the Study

Readers must keep in mind the possible limitations that might have impacted the internal and external validity of this study. Foremost, the sample size of eight participants is small. Though the amount of observational time was carefully considered and compared to similar research, 2,400 minutes of classroom observations may not have been sufficient to see comprehension instruction in action in content classrooms. In addition, observation time could have been configured in very different ways. For instance, rather than devote five hours to eight teachers, more teachers could have been observed for shorter time periods. Additionally, despite efforts to standardize the coding system, observational study inherently may have a subjective nature. Lastly, the mere presence of a researcher and the nature of observation itself may influence teacher instruction. Teachers’ behaviors might have been altered because of researcher presence.

Discussion and Implications

The primary reason for conducting this research was to determine the frequency of reading comprehension instruction in middle and secondary content area classrooms and how teachers' perceptions of reading comprehension influenced their instructional decisions. Findings indicate that reading comprehension instruction in social studies and science classrooms was essentially absent because these teachers saw reading comprehension as a time-consuming detraction from their content coverage, or doubted their responsibility for or skill in providing such instruction.

The data from this study seem to suggest that middle and secondary teachers are uncertain about the what and the how of reading comprehension instruction. When asked to define reading comprehension instruction, teachers pointed to discussing text, answering questions about text, and assessing students to determine whether they understood text. The use of only three of eight National Reading Panel (2000) reading comprehension strategies suggests that teachers in the study may not have a sense of the wide range of possibilities within reading comprehension strategy instruction.

Furthermore, teachers' knowledge of how to teach such strategies was equally narrow. Students learn how to apply reading comprehension strategies through explicit descriptions of strategies, teacher explanation of how, when, and why to apply particular strategies, teacher modeling, guided practice, and gradual release of instructional responsibility until independent use of the strategy is established (Dole, 2000). Even when teachers in this study did provide reading comprehension instruction, they merely directed students to use the strategy, not how or why to do so. For instance, rather than coaching students how and why to use Question Answering as a comprehension strategy, one middle school social studies teacher responded only to the correctness of students' responses. It is possible that teachers in this study provided explicit instruction in reading comprehension strategies earlier in the school year. It is also possible that students already knew how to rely on some of these approaches and that, at the time of my observations; students were already able to use these strategies independently. Still, Duke and Pearson (2002) remind us that in effective comprehension instruction, teachers coach readers each time they approach the text.

Yet another possibility is that teachers in this study found comprehension instruction beyond their professional expertise. Walker (2005) explains that, “Because comprehension is a complex process, teachers are mystified when demonstrating how to construct meaning using content knowledge and comprehension strategies” (p. 688). In any case, absent in both participants’ teaching and in their interviews was evidence of explicit instruction in a wide variety of reading comprehension strategies.

It is also possible that teachers in this study did not provide comprehension instruction because they viewed it as a time-consuming burden. Multiple teachers pointed to the lack of instructional time as an obstacle to reading comprehension. These findings echo previous literature in which teachers felt that they did not have enough time to include reading instruction into their classroom routines (Bulgren, Deshler, & Schumaker, 1997; Bulgren et al., 2000; Deshler et al., 2001; Scanlon, Deshler & Schumaker, 1996). If teachers do not understand how or why to teach reading comprehension, they may be unlikely to give up any precious instructional time to provide such instruction.

The minimal inclusion of reading comprehension strategies would appear to have implications for teaching preparation and on-going professional development. Firstly, it may be prudent to make significant improvements in how we train secondary teachers as they enter the field. In Virginia, where this study occurred, candidates pursuing secondary (6-12) licensure are required to take only three semester hours of reading across the curriculum. Secondly, the majority of states require only one course in literacy across the curriculum (Heller & Greenleaf, 2007). This minimal coursework may not be enough to expose content area teachers to the instructional importance of reading comprehension.

We cannot overlook the possibility that secondary teachers may come to the field because of their love for a particular domain of knowledge. Schools of education and teacher training programs would be wise to encourage future teachers to see the possibility of content area literacy integration. Moje (1996) explains that unless content literacy methods courses provide pre-service teachers with classroom contexts and reflective opportunities, these future educators may remain unconvinced of the importance of reading instruction. Thus, teacher training programs may need to show a high school biology

teacher or a middle school social studies teacher how reading comprehension instruction can support, extend, and improve student learning.

Just as teacher education programs must highlight the need for and opportunity for reading comprehension instruction, professional development must do the same for in-service teachers. In-service teachers must have meaningful professional development, including mentoring and coaching to allow them to see the realm of possibilities in reading comprehension. Such professional development initiatives may be a vast change from the status quo, as researchers Heller & Greenleaf (2007) explain, “Relatively few of the nation’s secondary school teachers have had meaningful opportunities to learn about the reading and writing practices that go on in their own content areas” (p. 18). These professional development opportunities will be even more significant if they encourage inquiry-based teacher reflection (Jacobs,

2002). Jacobs (2002) points out that though the majority of in-service professional development opportunities provide teachers with a plethora of reading strategies, these opportunities rarely ask teachers to critically examine how literacy may come to support their instructional goals.

Truly meaningful professional development opportunities may provide secondary teachers with an understanding of how reading comprehension strategies are beneficial for students’ understanding and retention of content. We must keep in mind that improving teachers’ knowledge of effective reading comprehension instruction is a long-term project. Pressley & El-Dinary (1997) indicate that it takes about a year to become proficient in teaching reading comprehension, and that teachers must understand such instruction quite well before successful implementation (e.g. Brown, Pressley, Van Meter, & Schuder, 1996). Fortunately, when secondary teachers do receive intensive professional development that emphasizes reading instruction in content areas, the results are promising (Greenleaf & Schoenbach, 2004). Until middle and secondary teachers view reading comprehension instruction as a crucial means to content acquisition, reading comprehension in middle and secondary content area classes may be pushed aside.

Suggestions for Future Research

In order to gain a more comprehensive picture of reading comprehension in content classrooms, the research reported in this study must be replicated across a larger number of teacher participants and across schools set in different

contexts. It would also be beneficial to replicate this study in states which require more pre-service reading coursework than the three semester hours required in Virginia, where this study occurred. More research on whether teachers' explicit instruction of reading comprehension strategies impacts student outcomes, such as performance on standardized tests, is needed. There also appears to be research opportunities which contrast students' performance from teachers who actively pursue professional development opportunities in literacy comprehension instruction against teachers who do not.

Conclusion

Just as elementary teachers provide minimal reading comprehension instruction (Durkin, 1978-79; Pressley et al., 1998), middle and secondary teachers are equally unlikely to utilize their instructional time to explain, model, and coach students through reading strategies. Unless avenues of teacher training and professional development convince teachers of the value of reading comprehension instruction, content coverage may trump the explicit strategy instruction which promotes students' understandings of text.

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Appendix A

Classroom Observation Coding Protocol

CODE: The category in which the observed behavior occurs.

DI-NI: Didactic Instruction: New Information

Here the teacher orally leads the class in delivering content area information, through PowerPoint, overhead projector, or lecture. Teacher behavior here focuses on information presentation. This may also include the teacher orally reading from informational or narrative text. This may also include the teacher presenting vocabulary, activating background knowledge, and setting a purpose for reading.

DI-R: Didactic Instruction: Review Material

Here the teacher leads students in a review of past material. This may include review games, asking questions, or working on test/quiz study guides. This code is also used when the teacher leads the class in reviewing answers from past tests, quizzes, or assignments.

PA: Participatory Approach

This code is reserved for instances in which students present information to the class or act as conveyors of information. As defined by Jetton and Alexander (2004), the participatory approach provides students with learning opportunities that promote peer collaboration and increase the likelihood that students will construct knowledge for themselves.

AS: Assignment

The teacher checks, gives, or assists students with an assignment. The assignment may be in-class or outside of school, and includes both assignments focusing on reading and assignments focusing on content material. Assignments may also include the teacher leading students in a writing assignment. This code also includes the teacher giving tests, reviewing homework or classwork assignment, and conferencing with students on

individual work. In these assignments, students work independently without teacher-centered instruction.

TR: Transition

The teacher gives transitory directions, including taking out or putting away materials and shifting instructional topics.

NI: Non-Instruction

This code is used when the teacher is not engaged in instructional behavior. This may include recoding grades, behavior management, or Non-Instructional conversation. This may also include announcements and material distribution.

CI-QA: Comprehension Instruction – Question Answering

The teacher asks students to answer questions from the text as a comprehension strategy. Students independently search for answers in the text. Here the teacher provides feedback of the correctness of student responses.

CI-QA: Comprehension Instruction – Question Generation

The teacher asks students to generate questions from the text as a comprehension strategy. Questions can be of the who, what, why, when, where, and how nature. In addition to posing questions, students are responsible for answering them.

CI-S: Comprehension Instruction – Summarization

The teacher asks students to summarize informational text either orally or in writing. Here the teacher asks students to identify the main ideas and central points in a text.

CI-GO: Comprehension Instruction – Graphic Organizers

The teacher employs graphic organizers as a means for students to process and comprehend text. Graphic organizers can include any type of visual or semantic organizers intended to assist students with comprehension and to understand the meanings and relationships in text. This can include guided practice or independent practice.

CI-CO: Comprehension Instruction – Cooperative Learning

The teacher gives students independent practice in cooperative learning, where readers apply comprehension strategies together. This may include small groups or partners reading and comprehending texts together.

CI-CM: Comprehension Instruction – Comprehension Monitoring

Here the teacher asks and encourages students to be metacognitive and aware of their understanding during reading. The teacher provides students with fix-it strategies to deal with such problems. Comprehension monitoring can include teacher-led think-alouds. Additional comprehension monitor includes teacher-generated discussions of comprehension difficulties and application of strategies.

CI-TS: Comprehension Instruction – Text Structure

The teacher provides students with information on how to use narrative and informational text structure to understand text. This can include plot, sequencing, characters, and events in narrative text and text features such as titles, headings, pictures, captions, typography, charts, graphs, glossaries, and appendices in informational text.

CI-MS: Comprehension Instruction – Multiple Strategies

Here the teacher guides students in applying several procedures with flexibility and appropriate application to increase comprehension. For this code, comprehension instruction must include at least two or more combinations of the following four strategies: question generation, summarization, clarification, and prediction (NRP, 2000).

