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Analytical Review of the Literature

Strategies for Integrating Literacy in Middle School Content-Area Classrooms

By

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Spring 2013

A culminating project submitted to the Department of Education and Human Development of The College at Brockport State University of New York in partial fulfillment of the requirements for the degree of Master of Science in Education

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Chapter One: Introduction

At 7:45 in the morning a team of sixth grade teachers gathers around a table for a team meeting. All teachers are considered highly qualified and range in experience from first year to twenty years of teaching. The agenda is long with an extensive number of topics that need to be addressed, including follow up on student behavior and upcoming school events. One factor that has been on the agenda since the beginning of the school year but never seems to be fully addressed or answered is the most effective way to incorporate research-based literacy practices across math, science and social studies. How can these teachers navigate the wealth of strategies and practices to find the most effective approach that will ensure student success? Often the team meetings end in frustration and result in a constant back and forth debate, especially with the stress from the new curriculum based on the Common Core Standards. A lack of resources and, more significantly, lack of time for planning and integrating literacy into each of the content-areas is a growing issue. Teachers know that it is their responsibility to teach the content but what happens when a classroom is filled with students with various abilities, backgrounds and levels of motivation?

Statement of the Problem

Teacher assumptions at the secondary level proclaim that reading instruction is the job of elementary teachers and reading is an isolated skill that should be mastered at the elementary level and, therefore, no further instruction is required in the upper grade levels (Bintz, 1997). Bintz administered writing prompts to 131 secondary teachers through professional development workshops over three years and categorized the problems in various content-areas. Bintz found that math teachers claimed that their students cannot read math word problems, science teachers asserted that students are unable to conduct laboratory experiments due to lacking reading skills, home economics teachers expressed frustration at a lack of student ability to follow instructions,

and ELA teachers stated that students struggle with comprehension of poems, short stories and novels (Bintz). All teachers share the same responsibility of teaching reading strategies within the classroom yet English Language Arts (ELA) teachers and reading specialists have undertaken much of that responsibility (Rhoder, 2002). The number of reading specialists in schools is declining while the pressure on teachers who do not feel adequately prepared to deliver reading instruction is increasing.

Significance of the Problem

A major challenge facing middle school content-area teachers is finding a balance between literacy instruction and content instruction without diluting disciplinary rigor. Content-area teachers recognize that a single textbook is not the solution for students' wide range of reading abilities, yet teachers are unprepared to select supplementary reading materials (Bintz, 1997).

Teachers feel frustrated and overwhelmed with a climate of test scores tied to school and teacher achievement scores which is exacerbated with students who do not value the act of reading or the reading process (Bintz, 1997). According to Tovani (2000), by the time struggling readers get to sixth grade, they have mastered disguising their reading weaknesses and do just enough to complete the assignments but never get any meaning out of the reading. Many people fail to stop and realize the sophisticated thought processes that are involved in reading and the growth of complexity in text as students get older. In a longitudinal study of reading attitudes of middle school students, Ley, Schaer & Dismukes (1994), found that the amount of voluntary reading and the general attitude towards reading declined for students during middle school. The study highlighted that student motivation for reading stemmed from seeking information for which they will be held accountable, both in school and on homework assignments. Statistically,

Ley et al. reported a 32% decline in voluntary reading from sixth to eighth grade. Ley et al. identify this critical literacy period and encourage educators to uncover the values that students place on reading and learn more about their students' reading lives.

Literacy skills at the secondary level are more complex and go beyond the decoding measures of elementary school as they are embedded in subject areas and require students to comprehend (Biancarosa & Snow, 2004). The majority of struggling adolescent readers have the ability to decode words but cannot comprehend for a multitude of reasons: fluency deters comprehension, lack of strategies to aid comprehension, minimal opportunities to transfer learning across texts to generalize strategy use (Biancarosa & Snow). Cited as the main problem for adolescent learners, comprehension is a common problem and becomes alarming when approximately eighty percent of students from fourths to twelfth grade are struggling to read on grade level (Biancarosa & Snow).

Purpose of the Study

The purpose of this study is to become an expert on what the literature proposes for middle school teachers. A plethora of strategies related to literacy instruction are available, and my goal is to examine the practices that are research-based and synthesize this information to make it readily accessible to any reader, but especially my colleagues. What advice is there for content-area teachers? How can I help make literacy instruction less daunting and more of a natural practice? Through this study I hope to integrate the strategies that I read about in the literature, testing the strategies in my own science and math classes. In order to reach this purpose my research question is:

According to the literature, what research-based literacy strategies might content-area teachers incorporate at the middle school level?

Rationale

Many factors contributed to my selection of this topic. I am a long term substitute teacher, looking for a permanent position, teaching sixth grade math and science. My intention in writing this thesis was to find a relevant connection between my master's work and my current work in the school setting. The content-area literacy class at SUNY Brockport piqued my interest and raised my awareness of the importance of literacy, even outside English Language Arts classes. The more I learn about my students and the more I hear from seasoned teachers, I recognize that literacy rates are at dangerous levels. Alvermann (2002) states "young people's literacy skills are not keeping pace with societal demands of living in an information age that changes rapidly and shows no sign of slowing" (p. 189). In addition, the introduction of the New York State Common Core Standards has led to instructional shifts that place a greater emphasis on literacy and college ready skills. Namely, the increasing complexity of texts that students are required to comprehend can be conquered when incorporated regularly into content-area instruction (Common Core Appendix A-C).

I want to be able to integrate what I have learned in graduate school and apply it to my current position and future positions after that. I was unsure how to relate my study to specific students and I did not want to focus on one specific strategy or group of students but take advantage of the wealth of knowledge and begin to sift through research-based practices available in the literature. I believe an analytical literature review will be useful for starting conversations among colleagues and educating me to better my teaching.

My Positionality as the Researcher

I graduated from Mansfield University in Mansfield, Pennsylvania, with teaching certifications in elementary and special education. I started my teaching career as a per diem substitute and currently have a long term position for the 2012-2013 school year. I started working on my master's degree in the summer of 2011 at the State University of New York at The College at Brockport to pursue a degree in literacy education. I chose literacy because I was aware of the need for highly qualified teachers and the emphasis on reading instruction. Through my per diem substituting, I realized my love for older students and decided to pursue a career working with middle school students. No matter how old a student is, however, literacy skills are the foundation for learning. Without the ability to read or write our students will be unable to master text within the content-areas.

Research Context

This literature review is qualitative in nature. My study approach includes an in-depth look at the literature and work from both classic and contemporary authors. I researched journal articles from the American Education Research Journal and the ERIC database in addition to books from contemporary authors. Topics that I focused on include the Reading Apprenticeship Approach, the role of the teacher, reading materials, and specific strategies.

Summary

In order to ease teacher frustration there needs to be a synopsis of how to integrate literacy into content-area classes. Today's classrooms are filled with many resources and conflicting ideas with limited time to navigate and decide what is best to support student literacy development. The purpose of this study is to navigate the literature to become an expert in the research supported strategies and approaches. The rationale behind the analytical literature

review is to bring together my experience with a summary of the literature in order to assert best practices for middle school teachers.

Chapter Two: Literature Review

A position statement from the International Reading Association (IRA) in 2012 defined adolescent literacy as the ability to read, write, understand and interpret, and discuss texts across multiple contexts. Literate adolescents adapt to the multiple contexts by using specific strategies for comprehension as a result of the increasingly complex and multimodal texts in the twenty-first century.

Ivey (1999) recognized the need for specific information on the reading development of students in middle school and was the first to link instructional practices with research on the physical, cognitive, and social characteristics directly. From her own classroom experience, Ivey has found that students can become successful, engaged readers when they have appropriate instruction that includes word identification and comprehension strategies (Ivey). Middle school readers evolve according to their access to interesting text and the ability of the teacher to match reading tasks and texts to student's interests and instructional levels. To address the task of linking instructional practice with research, this literature review covers the Reading Apprenticeship Approach, the role of the teacher, reading materials, the relationship between instruction and amount of reading, and specific strategies that are research-based.

Reading Apprenticeship Approach

Reading Apprenticeship was created at WestEd by the Strategic Literacy Initiative (SLI). Greenleaf and Schoenbach are the co-directors of SLI and define the Reading Apprenticeship approach as an instructional framework that focuses on the why and the how of reading in addition to the what in the content-areas (Schoenbach, Braunger, Greenleaf, & Litman, 2003). Also cited by Creech and Hale (2006), as part of a yearlong literacy routine, the apprenticeship approach encourages reading in classrooms as an active problem-solving process. The reading processes of the teacher are made visible to the students through active engagement with the text

which eventually leads towards independent critical reading skills from the student. The four dimensions to the Reading Apprenticeship framework are built through metacognitive conversations (Jordan, Jensen & Greenleaf, 2001).

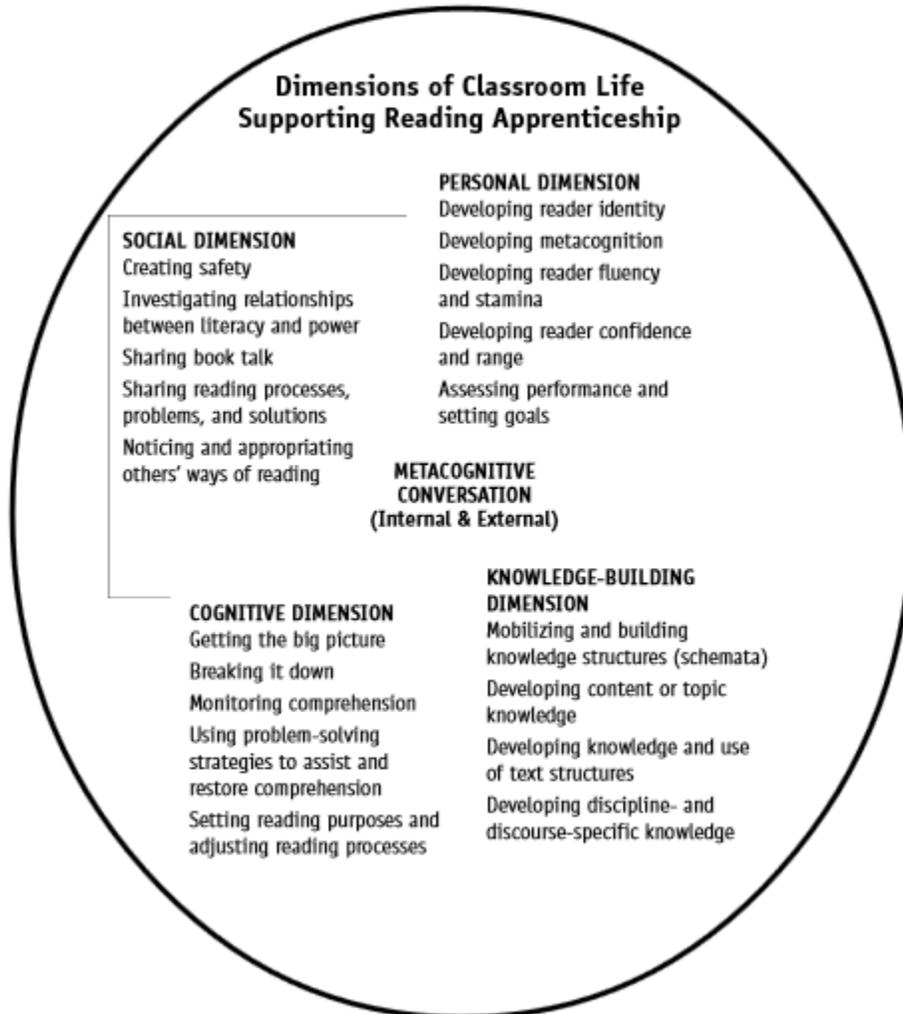


Figure 1. Dimensions of classroom life. This figure illustrates the four social dimensions of the Reading Apprenticeship Approach (Jordan et al.).

The first dimension, social, involves developing a sense of community within the classroom and using adolescent interests to support peer interactions. Students are comfortable enough within the safe community to share questions, confusions and frustrations with the text and learn to ask questions that help them to develop critical reading skills. The social dimension

relies on a safe classroom environment where students are able to learn through the support of others and access the resources in addition to feeling comfortable voicing their confusions and difficulties with the text (Jordan, Jensen, & Greenleaf, 2001). The second dimension, personal, focuses on adolescent identities and uses student skills to bring their outside life into the classroom. For example, responding to metacognitive writing prompts after sustained silent reading (SSR) allows students to read more deeply and build their confidence in reading a variety of texts. The third dimension, cognitive, focuses on comprehension and problem-solving strategies and is aided by discussion. The cognitive dimension refers to the mental tool kit and students' ability to identify why and when strategies need to be applied. Lastly, knowledge building is the final dimension where students take a closer look at the content, text structure, and discourse that a text provides. What brings each of these four dimensions, social, personal, cognitive, and knowledge building, together? The central dynamic to this framework is metacognitive conversations that start with modeling from the teacher. When incorporating this approach into the classroom for the first time, students are encouraged to bring in texts for the teacher to do a cold read and think out loud in front of the class. Students will start to see that comprehension is not an automatic process, instead it requires work on the part of the reader and knowledge of strategies and risk taking to get to the point of comprehension. Teachers should work with a small list of reading and discourse routines to allow for in-depth examples and different perspectives with the ultimate goal of collaborative meaning making.

Jensen's seventh and eighth grade students at John Muir Middle School in San Leandro, California, come from Mexico, Colombia, the Philippines, China, Cambodia, Vietnam, Bosnia and Fiji which leads to a classroom of rich linguistic and cultural diversity. Jordan, Jensen and Greenleaf (2001) describe the Reading Apprenticeship approach through the lens of Jensen's

English language development and drama classroom in a narrative article based on classroom observations over the course of one school year. Jensen designed a classroom environment where students build on teacher expertise and teachers instill strategies and experiences of skilled readers. Each student has a physical tool kit filled with a variety of their favorite writing utensils, highlighters and sticky notes, in addition to the mental tools of questioning, predicting, summarizing, making connections, and re-reading (Jordan et al.). Jensen's classroom focuses on questioning, clarifying, summarizing, predicting and connecting and reinforces these practices daily until students are able to independently transfer these skills between all reading situations. Reading logs are the primary vehicle for practicing and mastering these strategies where students write regularly in a simple composition notebook and these ideas are taken to small and whole-group class discussions (Jordan et al.). In addition to Reciprocal Teaching, students record their thoughts and learning through a Reciprocal Reading Log, a two-page note-taking framework, referred to as a double entry journal. Metacognitive sentence starters, such as While I was reading...I got confused when, I was distracted by, I figured out that or I first thought...but then I realized, are used in Jensen's class and are glued in the front of the student reading logs to facilitate thinking and scaffold metacognitive processes. Another tool is called talking to the text which is a written version of think-aloud and forces students to think about their thinking and interact with the text in a slower manner as they make notes in the margin (Jordan et al.). A list has been generated in Jensen's classroom that records what readers do when they get stuck and includes using background knowledge, asking another, slowing down, re-reading, consulting the dictionary, thinking of a word that looks the same, chunking a word or phrase, making predictions and connections, and, emphasized again, asking questions. The four dimensions, social, personal, cognitive, and knowledge building, create an environment where students

explore what literacy is and examine what good readers do with texts related to the content-areas. As a result of using Reading Apprenticeship, Jensen's students left her classroom able to reveal the invisible processes associated with reading and their tool kit in order to take those strategies and processes with them as they transition to another classroom. When preparing for the standardized SAT 9, an exam that is mandated by the state of California, a student asked if he could talk to the text during the test. Jensen replied that he was not allowed to write in the margins of the test booklet but he could talk to the text in his head. At that point Jensen knew that her students had internalized the process and were able to have the metacognitive conversation required to succeed (Jordan et al.).

Building upon the apprenticeship approach, the disciplinary literacy framework for inquiry-based instruction (McConachie, Hall, Resnick, Ravi, Bill, Bintz, & Taylor, 2006) consists of five principles: knowledge and thinking must go hand in hand, learning is apprenticeship, teachers mentor students, instruction and assessment drive each other, and classroom culture socializes intelligence. McConachie et al. highlights classroom stories that bring the disciplinary literacy principles to life. A tenth grade U.S. History teacher at Central High School in Providence, Rhode Island, used two overarching questions to guide the class intellectual work when starting a new unit on immigration. Overarching questions push students to construct their own explanations beyond lecture and textbooks and support the first principle that knowledge and thinking go hand in hand. Together with Becky Coustan who developed the unit, Ed Abbott taps into the prior knowledge of his students who are first or second generation immigrants and they show students how to digest materials as historians do by reading and analyzing a variety of primary and secondary sources. Sara Weaver, a seventh grade teacher at Washington Middle School in St. Paul, Minnesota, helped her students develop criteria for an

experiment with mealworms based on processes an ecologist would use in the field. Weaver recognizes that one of the biggest challenges as a teacher is to sustain students' natural curiosity and enthusiasm and constantly challenges her students to think scientifically as she incorporates vocabulary interchangeably with terms found in the science community. With teacher modeling and guidance, students are able to understand the ways that they are expected to interpret text or create scientifically oriented questions to guide experiments. The fourth principle, instruction and assessment drive each other, is shown through Tara Brash's seventh grade math class, also at Washington Middle School. Brash conducts conferences, discussions, quick writes and quizzes to formatively assess student understanding, skills, and interests to guide further instruction (McConachie et al.). Each of these stories shows that content knowledge and literacy development go hand in hand and through an apprenticeship approach.

Reading Materials

An important aspect of an effective content-area classroom involves the texts that are available to students and should include textbooks, trade books, primary source materials, videos, Web-based resources, journals, magazines, and student generated materials (Wade & Moje, 2000). After examining the research on using materials in the content-areas, Fisher and Ivey (2005) caution against using textbooks that are too hard and suggest texts where students are able to focus on the content instead of their reading weaknesses. Disadvantages of textbooks include inaccurate headings, authors who jump from one topic to another, and different structures embedded within the same section. In addition, students have little knowledge of the common structure of expository texts (Rhoder, 2002) due to the over exposure of narrative texts in the elementary grades. Students are not prepared for the science, social studies or math

textbooks because their anticipation of main characters and story parts is met with facts and cause and effect, compare and contrast, and time order structures (Rhoder).

Diversity of texts has two meanings, topical diversity and range of difficulty (Biancarosa & Snow, 2004). Listed as one of the key elements of effective adolescent literacy programs, diverse texts have a substantial research base and are included in the Report to Carnegie Corporation of New York under the context of presenting a wide range of topics at a variety of reading levels. In both classroom and school libraries, adolescent readers require high-interest and low-difficulty texts to foster reading skills and strategy transfer and mastery (Biancarosa & Snow).

After ten years of compiling children's literature through university-based remedial reading clinics, teaching and working with pre-service and in-service teachers, and gathering student input, Worthy (1996) identified comics, series books, and magazines as popular texts for middle school readers. As a former teacher and university level instructor at the University of Texas, Worthy stresses that readability should not be the primary factor in choosing what to read; instead the students' personal interest is most important when selecting materials to read for pleasure as it is tied to motivation (Worthy). Ley et al. (1994) administered the Teale-Lewis Reading Attitude Scale and the Reading Behavior Profile to one hundred and sixty four sixth, seventh and eighth grade students in order to examine general reading attitudes and values in addition to current levels of voluntary reading activity. One suggestion to enhance adolescent reading attitudes is to permit student choice of reading material. When students realize what a text has to offer through interactions with peers and teachers, including logs, journals, discussions, and conferences, they are more likely to recognize the benefits and that texts have more than a utilitarian value (Ley et al.).

Instead of the traditional textbooks, schools are now using e-books, and computers have been replaced with tablets and laptops (IRA, 2012). The term hypermedia is defined as the links that readers simultaneously make between computer windows and a mix of media texts such as sounds, images, words, and movies (Alvermann, 2002). With the growing trend and reliance on technology, teachers need to treat texts as tools for learning and use a mix of textbooks, magazines, student-generated texts, hypermedia productions, and visuals to support and extend the curriculum (Alvermann). Alvermann reminds teachers that instruction is affected by many factors and teachers must consider motivation, background knowledge, and adolescent interests as they are tied to technology.

The purpose of Ivey's (1999) study was to examine the reading performance and dispositions of three sixth grade students. Data was collected over five months and consisted of field notes across all content-areas, interviews, one-to-one shared reading experiences and journaling which led to in-depth and detailed portraits of three middle school readers that addresses a multitude of factors that influence reading behaviors. One concluding factor of Ivey's study was that easy materials belong in the classroom because they motivate students to read. Each of the three students frequently chose books that were not cognitively demanding such as picture books or light reading books with predictable plots (Ivey). On the other hand, the Common Core Curriculum Appendix A-C highlights the consequences of students reading at too low a level in order to be college and career ready. Research supporting the Common Core Standards suggests that the downward trend in text difficulty leads to low reading achievement in adults. The goal of the standards is to have a student read complex text, particularly expository text, independently and proficiently to decrease the number of students with low achievement in college and the workplace. To decrease the gap between adolescent reading

ability and what is expected after graduation, there must be a balance between complexity of text and its sophistication at each level for students to read independently (Common Core Appendix A-C).

Ivey makes an argument for a book selection that covers a wide span of genres, interests, and difficulty levels that is infused through the curriculum. “A one-size-fits-all reading curriculum, regardless of whether it is implemented in heterogeneous groups or in ability groups, may be limited in its usefulness for addressing individual student needs in the middle school” (Ivey, 1999). An interdisciplinary curriculum and reading workshop both provide a common thematic focus and address the diverse needs of middle school students. Ivey calls for a curriculum that reflects the students in the classroom and reports three significant findings: 1) students are complex and multidimensional, 2) there is variability amongst readers, and 3) performance and disposition are dependent on the instructional environment (Ivey).

The element of motivation and self-directed learning involves student choice in not only the selection of the materials they read but the topics they research and books they select for independent reading time (Biancarosa & Snow, 2004). Motivation and self-directed learning is a recommendation by the 2004 panel with representatives of Carnegie Corporation of New York and the Alliance for Excellent Education. When students self-regulate through chosen and relevant reading tasks they will be able to employ reading skills learned flexibly throughout their lives. However, students still need to be provided the instructional support that enables students to succeed at their chosen tasks (Biancarosa & Snow). Districts often provide a course textbook to supplement classroom instruction and activities with the incorrect assumption that students have “learned to read” in the elementary grades and now possess the skills necessary to “read to learn” in the middle grades (Chehayl, 2008).

The classroom setting used for Ivey's (1999) study had strategy skills instruction addressed through both mini-lessons and impromptu lessons. Ivey states that teachers need to select texts that span a range of difficulty levels, dedicate instructional time for self-selected reading and teach strategies to students for reading and writing increasingly complex text (Ivey).

Role of the Teacher

Content-area teachers have an important role that requires meeting qualifications and delivering effective instruction. The IRA's position statement (2012) argues that adolescents deserve prepared content-area teachers, a school culture that supports literacy, access to multiple multimodal texts, differentiation of instruction, and oral communication opportunities. Unfortunately, the IRA reports that content-area teachers feel ill-prepared to meet the current literacy demands, especially with the implementation of the Common Core Standards that call on teacher expertise within their specific disciplines (IRA). The Reading Next Report does not advocate for content-area teachers to become reading and writing specialists but instead to reinforce reading and writing skills taught by other team and grade level teachers (Biancarosa & Snow, 2004). Teachers need to actively seek strategies that will promote student learning and apply what they learn through careful planning and reflection (Misulis, 2009).

Nichols, Young and Rickelman (2007) used a professional development initiative to explore the use of literacy strategies among middle school teachers. Monthly professional development seminars were conducted for an academic year at a Title 1 middle school in southwest Virginia. The needs assessment identified sixty-two instructional strategies, and teachers chose Note-Taking, Graphic Organizers, Brainstorming, Guided Reading, and 3-Minute Pause/Reflection more than the other strategies. The content-area teachers each selected a different strategy as their number one choice. Nichols et al. examined the instructional design

within the school and found that ELA, science, and social studies teachers report Whole Class Direct Instruction as the main design for instruction while math teachers used cooperative grouping practices more often. Science teachers were the only content-area to select Inquiry-Based instruction, and social studies teachers were the only teachers to select Technology-Based instruction. Nichols et al. concluded that in order for lasting change to occur, teachers need to be forced to analyze and critique their current classroom practices and be exposed to the research tested instructional strategies and designs.

Teacher qualifications.

In order to determine what states have a reading requirement for teachers seeking middle or high school certification, Romine and McKenna surveyed certification officers at each state department in the United States and the District of Columbia by telephone. Building from a survey conducted in 1973 by Estes and Piercey and one ten years later by Farrell and Cirrincione, this study determined that the trend of increasing coursework in content literacy methods has continued in the past decade. Romine and McKenna (1996) found an increase in the number of teachers exposed to content literacy techniques, specifically since the initial study in 1983. While requirements for in-service preparation programs and specifications for certification is a step in the right direction, it is only a small step with a likelihood that the required coursework may not translate to practice (Romine & McKenna).

Thomas and Wexler (2007) introduce an English teacher reflecting on her work with the literacy coach in her ninth grade classroom who remembers how ill prepared she felt as her class filled with diverse students that struggled to access the skills necessary to master the curriculum. To teach and support struggling adolescent readers, Thomas and Wexler suggest using up-to-date, evidence based strategies. The ask for help strategy guides teachers to stay current in best

practice by consulting the reading specialist, special education teacher, and/or speech and language pathologist. Information from these people will allow for greater differentiation of instruction and the ability to renew and refine practice (Thomas & Wexler). Teachers adopting the mentality of lifelong learners and seeking professional development through conferences and workshops can lead to positive teacher change, and in turn, student outcomes also improve (Thomas & Wexler).

Even with the initiative “every teacher a teacher of reading,” pre-service and in-service teachers are hesitant to provide literacy experiences (Fisher & Ivey, 2005). In their examination of the literature Fisher and Ivey propose a great question: “How much time is a content-area teacher willing to devote to student-led discussions of contemporary issues and field-based research on student-selected topics when they know students are being tested on specific mandated content at the end of the year?” Instead of shying away from providing literate experiences, teachers are encouraged to capitalize on reading and writing (Fisher & Ivey).

Effective teachers.

Lacina and Watson (2008) stress that effective teachers must understand the developmental characteristics of young adolescents. The effective teacher creates an opportunity to develop relationships with students and uses strategies from their instructional repertoire. Effective content-area instruction requires explicit teaching and seamless combinations between the subject matter and literacy. Instead of trying to teach reading and writing, teachers should capitalize on opportunities to engage students. Lacina and Watson use the metaphor of coaching to describe effective content-area instruction because teachers need to model reading, writing, and thinking strategies. Teachers need to be able to not only explain the strategies they are teaching but also why they are important and how to employ these strategies across multiple

contexts and subjects (Biancarosa & Snow, 2004). In addition to effective strategy instruction, the teacher needs to ensure that students have adequate background knowledge and hands on experience while integrating reading and writing as often as possible (Alvermann, 2002).

Moats (2001) reminds educators that it is never too late for a student to learn how to read with effective instruction that applies best practices grounded in reading research. Moats points out the challenges of working with an adolescent reader and offers several principles that support effective instruction. Teachers who work with adolescents struggling with reading should not avoid the critical skills such as phonological awareness, decoding, fluency, word recognition, and vocabulary. Because students who are older have been faced with years of labored and unsatisfying reading experiences, students need a renewed investment of energy to prevent future reading failure. Cumulative instruction should teach language at the sound, word, sentence, and passage levels and be sequential and systematic to overcome the guesswork of decoding unknown words (Moats). Teachers can support vocabulary acquisition through daily use of new words in conversations and reward students for using new vocabulary outside class. Ultimately, adolescents with poor reading skills will not progress unless they are taught the critical reading skills that they missed in primary school and are given ample opportunities to apply the skills learned to meaningful text (Moats).

Technology.

According to Rycik (2008), secondary teachers face a widening gap between the ever-growing technology driven life of an adolescent and the experiences provided in school. Students need more than a teacher who simply exposes them to the technology tools that are now available; adolescents need teachers who can help them navigate and critically interpret the information that is on the web. In the age of instant access to information, sometimes a quick

search on the internet leads to more misinformation than information and teachers need to take advantage of opportunities to teach critical literacy skills to determine the validity of information (IRA, 2012).

Nichols et al. (2007) found that effective teachers explicitly demonstrate how to apply strategies before, during and after reading for their students. Language arts teachers typically teach a technique and apply those skills using content-area materials and content-area teachers reinforce instruction in the skills and strategies that are specific to their content-areas. Content-area teachers should emphasize reading and writing practices that are specific to their subjects and use aids and devices to help students learn and remember the content (Biancarosa & Snow, 2004).

Amount of Reading

Using a quantitative approach, Guthrie (1995) conducted a reanalysis of the 1986 National Assessment of Educational Progress (NAEP) and focuses on the seventy-four questions related to instruction, reading activity, social factors and cognitive variables. Guthrie collected data from 9-, 13-, and 17- year- olds examining connections between social, cognitive, instructional, and home factors. Guthrie implied that students in the 9- year- old group who reported reading broadly possessed strategies for study and comprehension to comprehend text, learn new words, and study efficiently (Guthrie & Schafer). While independent observations of teachers would assist in defining the frequency and complexity of strategy instruction, Guthrie based conclusions on student report data under the assumption that the data was accurate. Students at age 13 reported sharing their literacy reading and writing often with friends and family and reported library use played a role in fostering a greater amount of reading. Comprehension strategies that were emphasized by their teachers included the use of background

knowledge, a focus on the main idea of a passage, and being able to adjust reading speed according to the text at hand. Instruction for the thirteen year old age group was student-centered meaning that there was an emphasis on student opinion, debate, and comparison of books (Guthrie & Schafer). Guthrie states that schools need to make student choice, including the capabilities and dispositions for doing so, a priority in order for students to successfully participate in community and workplace literacy activities. Guthrie identified a definite progression in the reading activity which grew from reading for pleasure, to reading sports and biographies, to reading books in a series to reading magazines, comic books and newspapers in 9- year- olds. The reading of 13- and 17- year- old students extended to poems, plays, science, biographies, novels, songs, and reference materials (Guthrie & Schafer). Behaviors of highly active readers included note-taking, creating outlines, rereading, self-questioning, and addressing issues brought up by the text or their social interactions (Guthrie & Schafer). Teachers who supported reading promoted social interactions and developing interpersonal relationships (Guthrie & Schafer). Teachers gave multiple opportunities for student self-expression and taught cognitive strategies that included note taking, outlining, self-questioning, and using background knowledge (Guthrie & Schafer). Guthrie concluded strategy instruction increases the amount and breadth of activity and at all three age levels; active reading resulted in active writing and both were highly associated with social interactions.

Strategies

Many researchers have introduced sound strategies that, when taught explicitly, lead to mastery. Each of these strategies can be categorized based on the purpose of the literacy task. Rhoder, an instructor at the American University of Beirut, Lebanon, presents three models of strategy training that lead to mindful reading. The embedded model of strategy training is

recommended because instruction is explicit. Explicit strategy training contains three steps: direct instruction, guided practice that is not content bound, and then curriculum-bound practice (Rhoder, 2002). In her report, Rhoder uses the example of identifying and using expository text structure to describe the three step method. A whole class mini lesson would be first as students are introduced to expository text structure and discuss how knowing the structure will lead to reading and studying more effectively and understanding and recalling information more proficiently. Step two is in the form of individual and group work to practice using text structures in short one-page texts. In this step, texts are discipline based yet neutral materials so the focus is on the strategy instead of passing the curriculum related assessment. Step three is either small group or whole class work where students discuss and defend their ideas on text structure with peers in a process that forces them to think deeply and actively about text. Rhoder suggests that students should only be exposed to and practice one or two new strategies at a time and can be adapted to teach a variety of strategies.

Tompkins (2009) spent time in K-8 classrooms, working with teachers and students alike, and identified twenty-eight different research-proven and classroom-tested strategies that relate to content-area literacy. Figure 2 is a list of strategies taken from *50 Literacy Strategies: Step by step* that have content-areas identified as an instructional focus.

Rhoder (2002) outlines how to deliver strategies to students and Tompkins (2009) lists the numerous strategies found in her research. In the following pages, I will expand upon research-based strategies by categorizing into content-areas and breaking down into the following areas: text selection; before, during and after; oral; vocabulary; fluency; study; writing; and comprehension strategies.

Strategies with Content-Area Focus	
“All About...” Books	K-W-L Charts
Alphabet Books	Learning Logs
Anticipation Guides	Prereading Plan
Book Boxes	Question-Answer-Relationships
Book Talks	Questioning the Author
Collaborative Books	Quickwrites
Clusters	Quilts
Cubing	Reciprocal Questioning
Data Charts	SQ3R Study Strategy
Double-Entry Journals	Tea Party
Exclusion Brainstorming	Venn Diagrams
Hot Seat	Word Sorts
Interactive Read-Alouds	Word Walls
Interactive Writing	

Figure 2. Strategies with Content-Area Focus. This figure illustrates an alphabetized list of strategies from Gail E. Tompkin’s *50 Literacy Strategies: Step by Step*.

Content specific strategies.

Content-area strategies can be used in the math, science, social studies and ELA classrooms. Books In Action (Chehayl, 2008) and Science in the News (SIN) (Creech & Hale, 2006) are two specific projects that promote literacy in the content-areas. Strategies that support learning in the math and science classroom include webbing, anticipation guides, semantic feature analysis (Barton, Heidema & Jordan, 2002), and reading logs, double entry journals, sentence stems, and 250-word vignettes (Creech & Hale, 2006).

Chehayl (2008) introduces Books In Action as a tactic to incorporate literacy skills into the content-area classroom. Teachers start this project by taking students to the media center and suggesting a list of books that will help get them started. For example, math students can read about a famous mathematician or all about the history of math. Once the guidelines are described and the books are selected, students are told about the Books In Action! Day where students present their book after choosing their presentation method. Endless options are available and each is tied to a point value that increases with the complexity of the project.

Students are challenged to figure out how to put their book into action and given the opportunity to create their own projects and assign their own point values and justifying their project's worth. The teacher meets with students periodically to conference with them to talk about their book and project selection. On presentation day, each student gives a summary of the book, without giving away the ending, and explains if they would suggest the book to others and why. The Books In Action project allows students choice and the chance to engage in the subject matter (Chehayl).

Barton, Heidema, and Jordan (2002) suggest strategies for teaching reading in mathematics and science. In general, mathematical and scientific information is presented in unfamiliar ways that include signs, symbols, and graphics. Webbing activates prior content knowledge where the teacher writes the lesson topic on the board and students volunteer related terms or ideas. An anticipation guide is a set of four to six teacher-generated questions that challenge or support students' prior knowledge, beliefs, and experiences. Students complete a chart with the semantic feature analysis strategies that identifies the characteristics that concepts have in common. All these strategies allow students to manipulate ideas, discover their relationships to familiar concepts and create a visual representation. Barton et al. highlight the Survey, Question, Read, Question, Compute and Question (SQRQCQ) strategy to tackle word problems. To survey, read quickly for a general understanding of the word problem, question what the problem requires, reread and identify relevant information, facts, and details needed to solve the problem, question what must be done and in what order, compute or construct, and question whether the solution seems correct and if the answer is reasonable (Barton et al.).

Creech and Hale (2006) describe science projects that incorporate reading and writing in the science classroom. Yearlong literacy routines are created and include metacognitive

conversations and metacognitive reading logs. The reading logs are a place for students to record their thinking and can take on many forms. The double entry journal, sometimes referred to as a t chart, consists of a vertical line drawn in the center of the paper with headings. Another variation of the reading log includes sentence stems that are open ended such as “I was confused by” or “This reminded me of” (Creech & Hale). Students are able to write questions, comments, and connections in these logs either on a formally printed log or even in the margins of the reading. Science in the News (SIN) is a quarterly reading project that focuses on one genre of text where students read and respond to share with the rest of the class. Even though students are given instructions on how to respond, it is necessary to teach the students how to read science in the news. SIN objectives include highlighting researching methods or procedures and results or conclusions in different colors and then use highlighting to summarize procedures and results for the science article. Then, report the name and expertise of a researcher or scientist involved and draw a picture or diagram of an important aspect of the research and finally ask a question of the researchers or the author (Creech & Hale). Another science project is reading a nonfiction book and then, in order to demonstrate their understanding of the topic, students write a children’s science book on the same subject. A writing project that allows students to assume the identities of scientists is writing a 250-word vignette about a major event in a scientist’s life after reading their biography (Creech & Hale).

A technique typically found in the classroom across the content-areas is literature circles. Students are assigned segments of the text and a specific role within a group (questioner, clarifier, summarizer, predictor, and artist) that maximizes students’ strengths as the group explores a text together (Dieker & Little, 2005).

Text selection strategies.

Thomas and Wexler (2007) argue that selection of appropriate materials needs to be taught to students so that they can read fluently enough to comprehend. Text selection is critical across the content-areas (Thomas & Wexler, Rhoder, 2002, Worthy, 1996, Common Core Appendix A-C). In order to select appropriate material, students need teacher support and guidance to learn how to identify their instructional and independent levels. One specific strategy to help is the Five Finger test, where students 1) look at the title and cover, 2) read the synopsis, 3) open to a page and hold up a finger each time an unknown word is read and decides if the book is right for them. The book should be easy to read if the student can decode and understand the words but when three or four fingers are raised, it signifies the book might be a more challenging text that might require assistance, and five or more fingers means another book might be more appropriate because the current selection will be too difficult to enjoy (Thomas & Wexler).

Before, during, and after strategies.

According to AdLit.org, an online resource for parents and educators of kids in grade 4-12, good comprehension instruction includes explicit strategy training (*Classroom Strategies*, n.d.). In order to build comprehension, teachers need to teach before, during, and after reading strategies (Barton et al., 2002, Benjamin, 2013, Dieker & Little, 2005, Fisher & Ivey, 2005).

Before reading strategies activate prior knowledge and set a purpose for reading (*Classroom Strategies*, n.d.). Dieker and Little (2005) describe a prediction strategy that allows students to interact with the text without the risk of being wrong. Once students are in pairs, one student reads aloud while the other makes a prediction and then the roles switch. The students then analyze their predictions and summarize, in ten words or less, what was read. This

prediction strategy (Mathes, 1994) focuses on a classwide peer-tutoring model. Previewing strategies conducted before the reading of the text include advance reading of titles, graphics, headings and key words.

During strategies help students make connections, monitor their understanding, generate questions and stay focused (*Classroom Strategies*, n.d.). During reading strategies include Read a paragraph, Ask yourself questions, and Paraphrase the main idea (RAP). In order to recall main ideas and facts, the students use the following steps to accomplish RAP: students read silently, identify the main idea and details and put these in their own words. The students may repeat the paraphrase in their own words, perhaps with the assistance of a tape recorder, and then write their paraphrases (Dieker & Little, 2005). Additionally, a social strategy for during reading is a read-aloud where all students have access to complex text and can learn from teacher modeling. During a read-aloud the teacher models thinking processes by making comments related to confusing sections of the text and can make inferences and identify main ideas while the students are observing the effective reading behaviors (Barton et al., 2002). Read-alouds of quality and authentic literature encourage students to reading increasingly complex text (Fisher & Ivey, 2005).

After strategies provide students with an opportunity to summarize, question, reflect, discuss and respond to text (*Classroom Strategies*, n.d.). Graphic organizers or semantic maps can be used after reading to help students organize and remember the content (Barton et al., 2002). After reading the text, Benjamin (2013) uses a classic outline as a summarizing activity which supports student ability to identify the main idea and supportive details.

Oral strategies.

Literacy is social (Jordan et al., 2001), and oral participation supports vocabulary and syntax acquisition and a deeper understanding compared to independent learning (IRA, 2012). When students are asked to talk about what they have learned, they are able to analyze, synthesize, and evaluate new information (IRA, 2012). In addition, engaging in civil discourse and debating issues fosters student communication within their diverse subject areas (IRA). Specific strategies for oral communication include think-alouds, self-questioning, and book clubs. Students benefit from seeking clarification and sometimes sharing personal and critical reflections through peer-peer and whole-class conversations (IRA). Creech and Hale (2008) describe book clubs as discussion groups of four to five students who have all read the same text. Independent journaling activities, where students answer metacognitive log prompts, are brought to the table and used as a basis for discussions that often lead to new insights (Creech & Hale).

Vocabulary strategies.

Vocabulary needs to include the teaching of the structure of words, including roots, affixes, derivation, and meaning. Strategies such as semantic mapping, DISSECT and cloze support vocabulary mastery. Semantic maps teach vocabulary by creating a visual of how words are related (Thomas & Wexler, 2007).

Together, vocabulary and decoding skills contribute to comprehension. The decoding strategy, called DISSECT, assists students in monitoring their decoding abilities. The steps include discovering the content, isolating the prefix, separating the suffix, saying the stem, examining the stem, checking with someone and trying the dictionary. Each step increases the amount of support when students find a difficult word and aren't able to use context clues to guess or pronounce the word correctly on their own (Dieker & Little, 2005).

In an article listing seven routines to promote literacy skills, Benjamin (2013) reiterates the fact that practice has to be guided by instruction. In order to have students practice reading informational text in class, a cloze strategy strengthens vocabulary when you omit every seventh word and give students the chance to provide what word would make the most sense to fill in the blanks. To differentiate with the cloze activity provide a list of words for students to select from or multiple choice options (Benjamin).

More specific vocabulary strategies include using context to derive meanings, finding root morphemes, mapping word derivations, understanding word origins, and paraphrasing idiomatic or special uses for words (Moats, 2001). Vocabulary activities include use of brainstorming, word puzzles, categorizing exercises (which promote higher level thinking skills), multiple choice, analogies, graphic organizers, projects, writing activities, and demonstration/performance activities (Misulis, 2009).

Fluency strategies.

Benjamin (2013) recommends several routines that take minimal time in the classroom and act as a system to deliver information through practice. A reading fluency activity called The Last Word can be used in the content-area classroom. The teacher reads from a text while students take turns reading the last word of each sentence. This strategy forces students to pay attention and teaches them the appropriate pacing of a fluent reader (Benjamin). Ways for older students to increase fluency include reading with a tape recorder, choral reading of dramatic texts, and rereading of familiar texts. These practices allow adolescent readers to increase their speed through repetition with sound-symbol, word reading and text reading practice at an easy level (Moats, 2001).

Study strategies.

Study strategies include techniques that facilitate students' learning, understanding and retention (Misulis, 2009). Examples of study strategies include the Survey Technique, Get-Inside-the-Test, note taking, outlining, and reading and interpreting diagrams, charts, and graphs. The Survey Technique is a six step study strategy and is applied one chapter at a time (Misulis). First, students discuss the title and answer questions about the content and make predictions. Next, students review the subtitles and pictorially presented information in the chapter. In the fourth step, students read the introductory materials at the beginning of the chapter. Next, students read the concluding material at the end of the chapter. Lastly, the sixth step is identifying the main idea of the chapter. Once students finish the six steps, they are able to return to the text to read the chapter word for word. The Survey Technique provides a sense of direction for the in-depth reading to follow (Misulis).

Benjamin (2013) explains the Get-Inside-the-Test strategy as a procedure that includes creating test questions to prepare for a reading comprehension test. Students would address the main idea, vocabulary, inferences, tone, and cause and effect with multiple types of questions such as multiple choice or short answer (Benjamin).

Note-taking, outlining, and interpreting information provide guidance through the literacy experience and combine reading and writing with a purpose and give students something substantial to reflect on (Misulis, 2009). Graphs in the mathematical and scientific texts are often organized right to left, top to bottom and sometimes diagonally (Barton et al., 2002) which may be unfamiliar to students. Explicitly teaching how to interpret graphs will aid student comprehension. Each of the study strategies presented in this section allow students to take ownership of their learning.

Writing strategies.

Writing strategies vary in length and may include journals and diaries, anecdotal records, writing the steps and/or solutions to mathematical problems, or documenting notes for a science experiment or observation (Misulis, 2009). Specific writing strategies related to writing fluency include webbing/clustering, free-writes, guided free-writes, quick-writes, and journaling (Nichols et al., 2007). Tompkins (2009) describes clusters as a graphic organizer with words and phrases written on circles connected by lines that look like a spider web. There are two kinds of clusters: organized and unorganized. The organized clusters are organized around a central idea, and each ray provides details and examples to complete each main idea. An unorganized cluster, on the other hand, resembles more of a sun that is typically used for brainstorming activities. Clusters are beneficial because they are visual representations of ideas and more motivational with the element of drawing added (Tompkins). Free-writes are a form of writing that is unrestricted in form, style, content, and purpose that is designed to help find voice through uninhibited expression (Nichols et al.). Tompkins defines quick-writes as an impromptu writing used for exploring a topic or responding to a question that typically lasts for five to ten minutes. The emphasis is on the flow of ideas instead of correct punctuation and grammar, and the goal is to write without stopping for the set time. Quick-writes can be used at the beginning of a lesson or thematic unit as a warm-up or after as a reflection exercise. Quick-writes bring a personal touch to the classroom without stress on conventions (Tompkins). Each of these writing strategies gives students an opportunity to demonstrate their learning and provide a springboard for discussion when shared with the class.

Comprehension strategies.

Students should gain facility with comprehension at all levels: from acquiring information, to making inferences, to carefully analyzing, synthesizing, and evaluating what has been learned (Misulis, 2009). Approaches to comprehension instruction include strategy instruction, monitoring and metacognition instruction, teacher modeling, scaffolded instruction and apprenticeship models (Biancarosa & Snow, 2004). No one approach is necessarily the best approach, ideally a combination of all approaches will be utilized.

Alvermann (2002) describes the National Reading Panels' (NRP) findings related to effective comprehension strategies. These strategies are: comprehension monitoring, cooperative learning, use of graphic and semantic organizers, both generating and answering questions, use of text structure, and summarizing (Alvermann). Strategies to aid comprehension include grasping the gist of the text and noticing and repairing misinterpretations, in addition to varying strategy use depending on the purpose (Biancarosa & Snow, 2004).

Strategy training for comprehension results in more active and mindful learners (Rhoder, 2002). Using spatial organizers (Rhoder), utilizing the five gears of comprehension (Benjamin, 2013) in addition to incorporating study strategies into comprehension lessons strengthen student ability to comprehend on a manageable level.

Teachers using the embedded approach, which includes a focus on the particular strategy while reading and learning about the content, are able to help students identify the text structure and then reorganize the information and ideas through the use of spatial organizers (Rhoder, 2002). These spatial organizers in turn become a visual yet concrete representation of complex concepts that students read. Ultimately, the demands of academic literacy are met by developing a student's ability to comprehend.

Benjamin (2013) describes the five “gears” of reading comprehension as a gradual approach to reading complex text. The routine involves skim, scan, sample, read and study and requires students to skim to get an overview, scan for specific targeted information, sample an interesting section, read each word and finally study by re-reading. Students are provided with scaffolding that supports their comprehension and ability to absorb information with higher level passages when using these gears (Benjamin). A study strategy that Benjamin recommends involves students writing test questions that address each type of question that they may see on a comprehension assessment as a way to prepare for the exam.

Conclusion

Middle school readers are more likely to succeed when teachers understand and develop an instructional framework that supports students as they read content material. The Reading Apprenticeship Approach is an authentic way to navigate text through social interaction with scaffolded support (Schoenbach et al., 2003, Creech & Hale, 2006). The social, personal, cognitive, and knowledge building dimensions (Jordan et al., 2001) guide students to a level of comprehension that is tied to the successful reading of complex text. With a focus on metacognition, students are able to dig deeper and create and use a tool kit that will lead to successful reading in the content-areas (Jordan et al.).

The term ‘text’ is evolving to mean so much more than the standard textbook that previous generations have used. Research states that text and reading materials need to be at a variety of reading levels to fit the instructional level of all students (Biancarosa & Snow, 2004). Balancing exposure to texts by including trade books, primary sources, videos, Web-based resources and magazines is evidences of effective use of materials (Wade & Moje, 2000).

Furthermore, when students are given choice of materials and topics, with proper instructional support, students are more likely to employ the necessary reading skills (Biancarosa & Snow).

Standards and qualifications for pre-service teachers are growing and students deserve highly qualified teachers prepared to meet the current literacy demands of adolescent learners (IRA, 2012). Working together with colleagues, teachers become effective when they understand the developmental characteristics of the students they are working with (Lacina & Watson, 2008). Additionally, an effective teacher has the ability to help students navigate and critically interpret information presented to students considering the influx of technology. Explicitly demonstrating how to use reading and writing strategies (Nichols et al., 2007) while teaching the critical foundational skills (Moats, 2001) will allow students to employ strategies across multiple contexts and subjects. Reinforcing reading and writing skills across the content-areas is necessary, along with critique and reflection of current teaching practices (Nichols et al.).

Explicit strategy training (Rhoder, 2002) requires identifying the correct strategy depending on the content-area and purpose, and modeling how to use the strategy in addition to explaining why that strategy is important. There are numerous strategies that are research-based and it is up to the teacher to select the strategy most appropriate for the task at hand.

Chapter Three: Summary and Conclusions

Content-area instruction must cover the curriculum in addition to reading processes in order to provide students with the skills they need to survive in the twenty-first century. Especially with the new Annual Professional Performance Review (APPR) process, all teachers need to take responsibility for the progress of our adolescents; we cannot leave that important role to English teachers alone. The research question guiding this literature review was according to the literature, what research-based literacy strategies might content-area teachers incorporate at the middle school level? The answer to that question is complex and includes explicit strategy training, modeling and explaining the value behind using the strategy for students and determining which strategy achieves the content area-objectives. Thinking back to the sixth grade team meeting, what can teachers do to decrease frustrations related to the wealth of strategies available to determine best practice? First, we must know our roles as teachers, coaches or mentors. Second, educators should create a strategy tool box for direct strategy instruction. Third, know and make available a range of resources and materials. And finally, change the mindset that reading instruction is the job of elementary teachers and carry that responsibility to the secondary level.

Conclusion 1: Know Role

In order for teachers to successfully incorporate literacy instruction into their content-area classrooms, they need to understand their roles. Within the Reading Apprenticeship Model, it is expected that the teacher models and scaffolds for the students (Schoenbach, Braunger, Greenleaf & Litman, 2003, Litman, 2003, Creech & Hale, 2006). Whether teachers are considered a model, mentor, or coach (Lacina & Watson, 2008), they need to encourage students to take a closer look at the text and guide them through a decision making process to make sense of what they are reading. Incorporating background knowledge and hands on experiences will

aid students as their teacher models for them how to employ reading and writing strategies (Alvermann, 2002).

Part of differentiating instruction is adapting the role of the teacher from collaborator, to co-learner, to authentic assessor of student progress. Content-area teachers are experts in their specific field and should balance discipline content with reading instruction so that students are not hindered by reading weaknesses (IRA, 2012). If a teacher feels unqualified to incorporate reading instruction into curriculum delivery, then it is his or her professional responsibility to seek coursework and information to aid their literacy instruction (Misulis, 2009, Thomas & Wexler, 2007).

Conclusion 2: Direct Strategy Instruction

With all the new standards and evaluation systems and the increasing demands of students, it is critical that direct strategy instruction occurs at the middle school level and beyond. Students are faced with a lot of change as they transition from elementary school to middle school but one thing needs to remain constant: strategy instruction. As the students get older, the content that they are required to master becomes increasingly more difficult and teachers need to be equipped with a tool box of strategies to teach (Jordan et al., 2001). The various strategies that are in that tool box are undoubtedly going to be different within content-areas depending on the desired instructional outcomes and the curriculum. The strategies a science teacher models for digesting an informational text will look different than the strategies a math teacher will use to attack a word problem. The important factor is that each teacher is comfortable with a set of strategies, knows each strategies purpose, and is able to model and convey the appropriate way to use those strategies to read within their discipline.

Scaffolding strategy instruction and focusing on one strategy at a time for mastery leads

to internalization and generalization (Rhoder, 2002). The list of research-based strategies is long and each strategy has a specific purpose. Content based strategies align with the uniquely presented scientific and mathematical information (Barton et al., 2002). Math and science teachers have multiple opportunities to incorporate reading and writing through projects like Books In Action, utilizing graphic organizers to synthesize information and recording thinking and learning through reading logs and research projects (Chehayl, 2008).

In order to set a purpose, make connections, and reflect, students need before, during, and after reading strategies (Nichols et al., 2007). Making predictions can be either a formal or informal process, but is crucial for student interaction and teaching them how to make educated guesses based on prior knowledge (Dieker & Little, 2005). Once predictions are made they can be confirmed with a close reading of the text followed by outlining the information with the use of graphic organizers.

Reading is a social process and oral participation supports a deeper comprehension and increases interaction with the text. Think-alouds and peer discussion give students a voice and allows them to voice and defend their opinion and developing understandings (IRA, 2012).

The underlying factor driving each of these strategies is comprehension. Vocabulary acquisition continues through the secondary level and as complexity increases, the demand for vocabulary strategies to support students also increases. The breadth of vocabulary ranges from categorizing to morpheme analysis but all contribute to comprehension (Thomas & Wexler, 2007, Misulis, 2009, Moats, 2001). Decoding and fluency demand attention at the secondary level and are achieved through strategies such as DISSECT, cloze activities, choral and rereading activities (Dieker & Little, 2005). Students need to be able to monitor their own comprehension and stop and repair any breakdowns. Benjamin's gears of comprehension guide students through

scaffolding so that they can manage instructional level texts as strategies are embedded to promote active readers.

Literacy is made up of both reading and writing. Content-area teachers need to include writing strategies such as journals, admit and exit slips, and anecdotal records to track learning (Misulis, 2009, Nichols et al., 2007). If students are able to connect their thoughts from reading to their writing then they have the tools necessary to tackle a multitude of tasks at the secondary level.

Conclusion 3: Resources

Supplemental reading materials have started to outweigh the need for traditional text books, and this trend will only continue. While teachers may feel unprepared to select appropriate texts at times (Bintz, 1997) it is crucial that an effort is made to build a diverse classroom library. Textbooks, trade books, primary source materials, videos, Web-based resources, journals, magazines, and student generated materials are examples of the diverse texts that support literacy development. Worthy (1996) also noted that comics, series books and magazines are especially motivational for middle school readers. From my own personal experience, graphic novels are also becoming increasingly popular and are most often checked out at the school library. In consideration of the technology trend, e-books, tablets and laptops (IRA, 2012) also need to be considered forms of text. When building a classroom library it is necessary to consider diversity in regards to topic and difficulty (Biancarosa & Snow, 2004). If unable to accomplish diversity in the classroom, teachers can and should seek the help of librarians and the resources provided within the school library. Strategies such as SIN (Creech & Hale, 2006) and Books In Action (Chehayl, 2008) require the support of a library media

specialist. When students find texts that are interesting and that match the literacy task and their reading level (Fisher & Ivey, 1999) then there is an appropriate use of resources.

A word of caution in regard to use of reading materials relates to the proper instructional level, the use of textbooks, and the incorporation of the internet. Ivey (1999) calls for a mix of easy and instructional level texts in order to foster reading skills and strategy use. An important factor to remember is that the focus should be on the content of the text and this should not be overshadowed by the reading weaknesses of the student (Fisher & Ivey, 2005). Unfortunately, text complexity is increasing (Common Core Appendix A-C) yet students' ability to comprehend these texts is not keeping pace. Infusing texts into the curriculum (Ivey) and promoting active engagement with the text (Jordan et al., 2001) will help to level out the discrepancy. The traditional textbooks have their list of disadvantages, not to mention the cost to the district, and should remain solely as a supplement to instruction. Finally, the IRA (2012) warns educators that the use of the internet may lead to misinformation and specific strategies to critique that information need to be taught and supervised.

When considering literacy resources, it is most common to think of reading materials and texts but one cannot forget about writing materials. The other half of the literacy component, writing materials such as reading logs and double entry journals (Jordan et al., 2001) should also be readily available and used often.

Conclusion 4: Change Mindset

The mindset of reading instruction stopping after elementary school needs to be changed to incorporate all educators because all teachers foster literacy development. For sixth graders that transition from elementary to middle school, the "read to learn" process is not an automatic one. The belief that students "learned to read" in elementary school is a fallacy and cannot

continue. Another common misconception is that English Language Arts (ELA) teachers are solely responsible for teaching students how to read and write when ELA is a content-area of its own (Bintz, 1997). While students learn important tools in ELA class that should transfer to other content-areas, each content-area has its own form of text that requires specific skills to understand. For some content-area teachers this may mean that they need to adopt the mentality of being a lifelong learner and pursue graduate classes, professional development and the help of colleagues to gain the expertise needed to reinforce literacy skills within their classroom.

Fisher and Ivey (2005) call on educators to capitalize on literate experiences as curriculum is navigated. Content-area teachers have the responsibility to teach the subject matter that is pertinent to their discipline and ultimately assessed. Misulis (2009) poses a great question:

If it is possible to use instructional strategies that help students learn subject matter more effectively while equipping them with tools that can contribute to their future independent learning of subject matter, and if this can be done manageably, then – in this age of accountability and assessment – can we really afford not to do so? (p. 18).

The simple answer to this question is no. Educators at the secondary level need to be proactive and continue to search for new ideas and techniques that promote student learning.

Limitations of the Study

Research is limited in the content-areas of Social Studies and ELA. I found it interesting that the content specific articles related to strategy instruction were very scientifically based. The presentation of content in both math and science is graphic- and number- based and research is tied to this specific presentation of material. One could assume that the genres of text in Social Studies and ELA are similar but there should still be explicit strategies related to both

content-areas. This lack of research is a limitation for discipline teachers looking for research-based support to include in their teaching.

The extent and implications of a technology-driven generation have not been researched. Alvermann (2002) mentioned hypermedia in relation to the types of reading materials available but more research is warranted. The demands of a technology driven society will greatly change the way instruction is delivered in the classroom, and the strategies that are used for print text may become outdated as we transition to a more technologically dependent world. More research is needed to identify technology strategies that will aid students as they read on a computer or tablet and learning becomes more multi-modal. Until that research has been conducted students are in a world where the range of technological experience varies so much that it is challenging for the teacher to implement best practices that meet the needs of all students.

Implications

Implications related to my own career are the use of strategies and my role as a beginning teacher. Implications for teachers include material selection and use, striving for effectiveness, and correct strategy use. Finally, implications for schools are related to resource allocations and professional development opportunities.

Many research-based strategies for adolescent learners support students in their navigation of new material in the content-areas. I have learned that knowing and implementing all of the strategies is not necessary to be an effective teacher. Having a 'tool kit' of a handful of strategies (Jordan et al., 2001) that have been proven effective will equip me for my next group of students. As the years go by and the students change, however, it will be important to revisit the research to stay abreast of new research-based strategies to add and subtract from my tool kit

to maintain the best repertoire possible throughout my career. I now realize it is more important to design lessons and pull strategies depending on the purpose of the lesson.

As a pre-service teacher with graduate work completed in the field of literacy, I am anxious and excited to bring my knowledge to my content-area classroom. I understand that my future colleagues may not have the same experiences or enthusiasm for incorporating literacy into their specific discipline. I strive to bring about a community that supports and builds upon literacy experiences, differentiating instruction to meet the needs of all students and their abilities, and providing access to multimodal texts and oral communication opportunities (IRA, 2012). The Common Core Standards Appendix A-C reemphasizes the importance of the content objectives and standards that need to be covered and it is my job to always search for ways to capitalize on reading and writing opportunities (Fisher & Ivey, 2005). I feel that this research has made me an advocate for middle school learners and will enable me to have a voice when discussing best practices and text selection with future colleagues.

Teachers at the secondary level have to consider adolescent interests as well as the presentation of materials. While the world of resources is ever changing, particularly with the influx of technology, one size does not fit all in regards to the reading level of the text that is presented. Texts need to be at the instructional level (Biancarosa & Snow, 2004) for students to focus on content (Fisher & Ivey, 2005). Teachers need to be well versed in the types of text so they can accurately decide what is best according to student needs.

What makes a secondary content-area teacher an effective teacher of literacy? Participating in the lesson through modeling (Lacina & Watson, 2008) is the first step so that students can see first hand how to approach the reading process. When teachers can explain what they are doing and why it is important (Biancarosa & Snow, 2004) students are more likely to

emulate teacher actions. Ultimately, secondary teachers need to remember that it is not too late for adolescent learners to become successful readers. With the right questions and guidance all students can read no matter what their background from elementary school.

Correct strategy instruction goes beyond identifying and simply practicing once. When introducing a new strategy, teachers need to employ Rhoder's (2002) three steps of explicit strategy training. Direct instruction introduces the students to the terminology and purpose of the strategy. Guided practice allows students to apply what they have learned and test out the new strategy in manageable chunks. It is not until students have had a chance to try out the new strategy that they apply what they have learned to new content material. This process may be new to many seasoned teachers yet students need a chance to learn, practice, and then apply new strategies so they are more likely to use them effectively in the future.

Schools can use textbooks to supplement instruction but a textbook cannot be the primary vehicle for delivering content. Administration, along with reading specialists and coaches, need to advocate for a diverse wealth of resources that are accessible to students. This may mean buying iPads or tablets and updating wireless connections or it may mean vamping up the library media center with updated series and non-fiction resources that relate to current curriculum pushes. Examples of text that are more accessible than traditional textbooks and have a higher interest for the secondary students include trade books, magazines, and Web-based resources. Building in student choice by asking for student opinion and input when assigning projects and assignments will be helpful in maintaining the attention of adolescent learners as choice is directly related to motivation (Biancarosa & Snow, 2004).

Research promotes oral communication and opportunities for students to discuss what they have read (IRA, 2012, Jordan et al., 2001). Shouldn't this same idea be applied to teachers?

Schools need to provide opportunities for teachers to discuss their use of resources and strategies with other colleagues at their grade level and within content-areas. Creating a formal structure for those conversations to occur will lead to professional growth and ultimately student achievement.

Recommendations

In order to ease frustrations regarding the most effective literacy approach for the sixth grade team I would recommend dedicating time during each team meeting to share out their strategy attempts and approaches within each classroom. If one teacher can share one strategy per meeting then the rest of the team is aware of what the students are learning in other classes and the teachers can celebrate any success and reflect on any failure. There may not be a new strategy each time the team has a meeting but teachers can share their min-lessons and scaffolding approaches and show evidence of the students mastering and internalizing the strategies through examples of reading and writing. Having a literacy discussion on the agenda for each team meeting will force the teachers to identify, reflect and adapt their instruction in a way that will only support the students on the team.

A plethora of research-based strategies are available, yet one of the best resources for a teacher to use is their colleagues. When given ample time and a little encouragement the opportunity to share literacy experiences is priceless. In every classroom there will be different strategies that are successful and some that are not and those successes and failures need to be talked about in order to move forward and support the students in the best way possible. Bintz (1997) recommends professional staff development in order to foster discussions around strategy use within the classroom. In the age of accountability, Dieker and Little (2005) call for cooperation from all educators and collaborative structures and efforts in order to facilitate

change. Discussions on strategies use, both formal and informal, should occur between grade level teachers, content-area teachers and include library and reading specialists.

In addition to sharing with grade level colleagues, teachers should take time out of their classes to incorporate a literacy mini lesson, either daily or weekly, to demonstrate behaviors of a good reader in each of the content-areas (Bintz, 1997). The stress of covering a state mandated curriculum can be overwhelming and teachers should take advantage of common team time such as study hall or the home base period at the end of the day to model these reading behaviors. Allowing for free reading at those times gives the students opportunities to practice the strategies they are learning in class which is key to mastery. Bintz recommends a school reading program in order to foster a school wide reading environment. If not at the school level, classroom teachers can cater a reading program based on articles or poems or short stories related to their specific content-area.

Allowing students to see that adults read on a daily basis and use the skills that they were taught in middle school will hopefully motivate and encourage youngsters to take a risk and mirror those good reading behaviors. Chehayl (2008) reminds us that modeling reading for pleasure in addition to school related tasks provides some students with opportunities that they may not have at home. Teachers need to be able to share their reading experiences, both past and present, and demonstrate that reading is not an automatic process and requires some risk taking and work to reach comprehension. When working with adolescent learners, it is important to remember that effective and targeted instruction can lead to reading success, even if a secondary student has been unsuccessful in their elementary years. When teachers open up and talk to their students by thinking out loud and explaining successes and failures they will assist adolescents and get them to tackle the reading process.

Summary

A more comprehensive understanding of content literacy instruction and familiarity with instructional strategies that are known to be effective can help teachers address issues of literacy across all subject areas for all grade levels and for all students (McConachie et al., 2006). When teachers share their expertise with students they not only model the importance of reading but pass on the strategic processes that they have mastered and still use on a daily basis. Teachers have to realize that an interest in reading is ultimately an interest in learning and learning to read and reading to learn are interrelated processes (Bintz, 1997). In order to internalize these complex processes, students need to be equipped with strategies and tools that tie together reading and success. If reading and writing are shared and celebrated then the old perception of reading as a nagging problem can transform into a tool for learning and thinking.

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