Teaching Reading in the Secondary Content Area Classroom: Teacher Attitudes and Predictors

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TEACHING READING IN THE SECONDARY CONTENT AREA CLASSROOM: TEACHER ATTITUDES AND PREDICTORS

by

Sara L. Norton-Ejnik

A Dissertation Submitted to the Faculty of the Graduate College in partial fulfillment of the requirements for the Degree of Doctor of Philosophy Department of Educational Leadership, Research, and Technology Advisor: Patricia Reeves, Ed.D.

Western Michigan University Kalamazoo, Michigan April 2011
Strategic teaching of reading occurs at the elementary level, and students are expected to “read to learn” once they enter high school. The majority of the nation’s secondary students do not have all the requisite skills to read and learn from high school texts and materials, and even drop-out rates have been attributed to students’ inability to keep pace with the literacy skills demanded by the secondary curriculum. No Child Left Behind legislation now mandates secondary school reading initiatives, from high stakes testing to remediation. Despite the national focus on secondary reading, teachers in America’s secondary schools are not teaching the skills and strategies necessary for their students to grow as readers and learn from what they read (ACT, 2007; Biancarosa & Snow, 2004).

The study quantified Michigan’s secondary content area teachers’ attitudes toward teaching reading and examined the relationship between those attitudes and predictor variables of content area, level/type of training in teaching reading, degree level, and degree of learner centeredness. Data was collected from 191 male and female respondents via email link to a survey using the Otto Smith Inventory Scale to measure teacher attitudes toward teaching reading and a portion of the Learner Centered Battery Scale to measure the respondents’ learner-centeredness.
Teacher respondents had generally positive attitudes toward teaching reading. Math and science respondents had significantly lower attitude scores than English teachers. Post-bachelors’ training/education correlated positively with teacher attitudes toward teaching reading. A positive relationship existed between respondents’ learner centered beliefs and their attitudes toward teaching content area reading. The data showed a negative relationship between non-learner centered beliefs and the respondents score on the OSI. Both correlations were significant at the .01 level.

According to the data, the more learner centered a teacher, the more positive her attitude toward content area reading instruction. Conversely, the stronger a teacher’s non-learner centered beliefs, the more negative her attitude toward content area reading instruction. The findings from this study provide important insights for designing inservice or post-bachelors training programs to create learner-centered belief systems and positively attitudes toward teaching content area instruction.
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ACKNOWLEDGEMENTS

To Pat, who can pick up a strand of thought as well as a relationship on VERY short notice and who never seems to lose her elegant professionalism; My committee, who has served me well and quickly; My cohort, with whom I have laughed and cried and survived stats and who I will never forget regardless of the time and miles that pass; My family, whose belief in me, and “gentle” reminders, prodding, haranguing, and blatant orders to finish have never wavered nor lessened nor seriously caused me to question their love for me; thank you for the summers at the lake so that I could write and watch my children splash in the water with all the people I love the most while still getting the “big stuff” written; and To John, my partner, friend, lover, antagonist, and biggest advocate. Thank you for believing in me when I didn’t; shoving me forward when I stalled; anchoring me when I felt adrift, and supporting me when I floundered. Now I get to keep my pony.

Sara L. Norton-Ejnik
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CHAPTER I

INTRODUCTION

In that box is the bill [No Child Left Behind]. I don’t intend to read it all. It’s not exactly light reading. But if you were to read it all, you would find that it contains some very important principles that will help guide our public school system for the next decades. (President George W. Bush, January 8, 2002)

With that rather ironic statement, President George W. Bush signed into law one of the most powerful pieces of education reform in American history. The No Child Left Behind (NCLB) legislation has brought reading to the forefront of American education. For the first time in American history, secondary school reading initiatives are mandated, from high stakes testing to remediation. Accountability in the secondary schools usually consists of written tests; therefore, a student’s ability to read, comprehend, and answer a question has become the indicator of student and school success.

Despite NCLB’s focus on reading, the facts reported regarding our high school students as readers are alarming. Our most recent national assessments have revealed that the majority of our high school seniors are not ready for college level or for workplace reading (ACT, 2005; NAEP, 2005). Even the increasing high school drop-out rates are attributed, in large part, to the inability of our high school students to read high school materials (Biancarosa & Snow, 2004). Clearly, as long as high school students do not have the reading proficiency to engage successfully with high school level learning material, it will be difficult (if not impossible) to improve overall academic proficiency.
to the point where we have virtually eliminated the drop-out problem and met the NCLB goals of universal proficiency with the core curriculum.

Along with increased national education policy (NCLB) emphasis on reading, testing, and accountability comes an increased emphasis on programs that will help the students who have been left behind "catch up" in terms of reading. In 2005 alone, President Bush requested over $200 million for the secondary Striving Readers Initiative aimed at improving the literacy achievement of high school students. In addition, the United States Department of Education funded a research competition on supplemental reading programs and spent over $20 million (Fisher & Ivey, 2005). The President and his administration sent a clear message that developing and implementing preservice and inservice training programs in effective secondary reading instruction would become a priority to his administration.

This message is not a new one. The importance of content area reading instruction in the secondary classroom has been emphasized in the literature for the past 50 years (Conley & Hinchman, 2004). The research indicates that content area reading instruction in the secondary classroom significantly increases student achievement on different measures, including standardized tests (Alfassi, 2004; Langer, 2001; Greanleaf et al, 2001; Roshenshine & Meister, 1994). At the same time, the research also indicates a lack of content area reading instruction at the secondary level (ACT, 2007; Biancarosa & Snow, 2004). This lack of reading instruction at the secondary level has been attributed by some to be a result of the instructional decisions made by teachers (Blintz, 1997; O'Brien, Stewart, & Moje, 1995; Sturtevant, 1996).
Throughout the late 1960s, the 1970s, and the early 1980s, empirical research on teacher attitude and perception in the realm of content area reading instruction flourished. Researchers investigated the relationships between secondary content area teachers’ perceptions surrounding content area reading instruction and their personal characteristics such as number of years of teaching experience, content area responsibility, gender, and training in content area reading instruction (Flanagan, 1975; Hargrove, 1973; Haque, 1976; Kitely, 1980; Kozev, 1980; O'Connor, 1986; Smith, Otto, & Hansen, 1978).

Overall, researchers have found that secondary content area teachers often feel as though students should come to them reading and that the job of teaching students to read lies in the hands of the elementary teachers and English departments (Blintz, 1997; Donahue, 2000; O'Connor, 1986; Smith, Otto, & Hansen, 1978; Thornton, 1989). It has also been found that secondary content area teachers believe that their primary responsibility to students is to deliver content, and those teachers do not view content area reading instruction as a method of imparting that content (Blintz, 1997; Hargrove, 1973; O'Connor, 1986; Smith, Otto, & Hansen, 1978; Thornton, 1989).

Further research has established that the attitude of the classroom teacher toward content area literacy can be one of the most important factors in the reading achievement and reading practice of secondary students. Research supports the premise that teachers’ beliefs toward reading influence their plans and actions (Hall, 2005; O’Brien & Stewart, 1990; Richardson et al, 1991). Since people usually devote the most time and energy to what they deem important, teacher perceptions of secondary content area reading instruction could have an effect on the success of both the students in their classrooms and teacher training programs (Blintz, 1997).
Since the mid 1980s, however, there has been a dearth of quantititative studies regarding teachers’ attitudes toward secondary content area reading instruction. Recent studies on teacher attitudes toward content area reading have followed a constructivist paradigm (Beswick, 2004; Blintz, 1997; Donahue, 2000; Moje, 1996; Sturtevant & Linek, 2003). Through case studies, questionnaires, journals, and interviews, the constructivist researchers have revealed a wide range of content area teachers’ attitudes toward teaching reading, from reading or English teachers should be responsible for the teaching of reading (Donahue, 2000; O’Brien & Stewart, 1990) to teaching reading in the content areas is important (O’Brien & Stewart) to the students are the problem—i.e., they are not prepared or motivated, they have not learned what they needed to in the early grades, and their behavior stops teachers from being able to teach using best practices strategies learned in content area reading courses (Blintz, 1997; Sturtevant, 1994).

Through the constructivist paradigm, researchers have also examined settings in which content area reading is taught strategically and where students experience success. The voices of exemplary teachers have emerged through these studies and have identified a focus on the students as learners and on the centrality of students’ needs in instructional decisions (Moje, 1996; Sturtevant & Linek, 2003). The teachers in these studies were identified by rigorous processes as teachers who were successful teachers of content area reading strategies. The research has revealed that students feel confident about their ability to learn when teachers form relationships with them, formulate environments that are safe for learning, and choose strategies specific to their content areas that fulfill the needs their students have (Billmeyer & Barton, 2002; McCombs & Barton, 1998; Moje, 1996; Sturtevant & Linek, 2003).
This learner-centered focus is mirrored by the post-positivist studies of the last 15 years that have investigated the effect of strategic instruction of content area reading on student achievement. Studies have shown that students who have been given an increasing responsibility for—and role in—their own learning as well as the scaffolded instruction of strategies for reading have shown significant academic gains (Alfassi, 2004; Greenleaf et al, 2001; Phelps, 2005; Rosenshine & Meister, 1994). The teachers in these studies have utilized strategies that move classroom power into the hands of students through reciprocal teaching, participatory learning, and scaffolded instruction.

The literature reveals links between reading achievement and overall success in the secondary schools, between teacher attitudes and the instructional decisions they make, and between teachers' instructional decisions and their view of students (Besswick, 2004; McCombs, Sturtevant, 1994, 1996).

Statement of the Problem

Despite "high stakes" testing measures—which have so far taken the form of reading-based standardized tests—being federally mandated and more states acknowledging the importance of content area reading instruction by instituting content area reading instruction requirements for teacher certification, there has not been a renewed effort to determine today's secondary content area teachers' attitudes toward content area reading instruction. Specifically, there is an absence in the research of studies that quantify secondary content area teachers' attitudes toward teaching reading, analyze potential predictors of those attitudes, and investigate the relationship between a
teachers' orientation toward their students as learners and their attitudes toward teaching content area reading.

Statement of the Purpose

In the last century, studies explored secondary content area teachers' attitudes toward teaching reading in their classrooms through a post-positivist paradigm; however, little recent quantitative research exists in the area. Whereas the earlier researchers focused on identifying the direction and strength of teachers' attitudes and the factors that may affect those attitudes, more recent studies have focused on identifying themes that emerge from teacher voices. One emergent theme focuses on how the teachers view the specific context of their teaching; specifically, how they view the students as learners.

This study attempted to ascertain the direction and strength of secondary content area teachers' attitudes toward content area reading instruction and identify the relationship between the secondary content area teachers' (a) area of content responsibility, (b) amount and type of training in content area reading instruction, (c) degree level, and (d) orientation toward students as learners and their attitudes toward content area reading instruction. This study attempted determined if certain factors (content area, training, and degree work) can predict a teacher's attitude toward the need to incorporate reading instruction into their content area instruction. This study also determined if teachers who are more learner centered had a more positive attitude toward teaching reading in their content area than their corresponding counterparts.
Research Questions

1. Tested separately, to what extent do content area responsibility, amount and type of training in content area reading instruction, or degree level predict content area teachers’ attitudes toward content area reading instruction?

2. To what extent does secondary content area teachers’ orientation toward their students as learners predict their attitudes toward content area reading instruction?

Rationale for the Study

Although the importance of reading in the content areas has been emphasized in the literature for the past quarter century, the stakes involving these reading skills have risen astronomically in the past four years. Under NCLB legislation, accountability in the form of testing is the indicator of success for both the student and the school (Conley & Hinchman, 2004). With the advent of the internet and a large body of electronic and digital learning resources, the trend in education is moving away from students needing to internalize large bodies of specific information in each content area to students needing to have the skills and abilities to glean sufficient data from a vast array of information sources, connect the new information with their own prior knowledge, and process the information into the correct format necessary to fulfill their initial task (Billmeyer & Barton, 2002). Even without these new resources, students in schools encounter more difficult texts as they are asked to move from a predominately narrative, story-based
elementary school experience into the nonfiction world of textbooks and articles in the content area-specific secondary school experience (Howerton & Thomas, 2004).

If students are expected to read increasingly difficult and different texts and then learn from what they read, they must be taught how to read strategically. The concept that in elementary schools children “learn to read” and in secondary schools students “read to learn” is antiquated (Blintz, 1997). It is now theorized that students must continually be learning strategies that will enable them to read the different and difficult texts that they encounter as they move up through the school system (Billmeyer & Barton, 2002; Blintz, 1997; Conley & Hinchman, 2004; Howerton & Thomas, 2004; O’Connor, 1986). These strategies vary from content area to content area, depending on the text structure, purpose for reading, the student’s prior knowledge base, etc. Reading, then, becomes a purposeful method of delivering content to students; therefore, content area teachers who require their students to read content must also become teachers of reading in their content areas. Kitely (1988) states “effective instruction involves not only the content, or subject matter, but also the techniques necessary to acquire that content” (p. 2). It makes sense that the teachers who are the content experts should be the teachers best equipped to teach the skills and strategies that speak to that content.

Content area teachers should be the best teachers of reading because they are already specialists in the content area; however, several studies have found that content area teachers do not feel that teaching reading is their responsibility, nor do they feel qualified to teach reading (Blintz, 1997; Green, 1978; Hargrove, 1973). The Michigan Task Force (2005) stated, “the teacher in the classroom is the heart of instructional excellence. Teachers will need support to deliver more rigorous curriculum and
instruction, make instruction relevant, and adapt instruction so that each and every student is successful” (p. 4). Before that support can be designed and supplied, teacher attitudes must be taken into account (Kitely, 1988; Kolzo, 1972; O’Rourke, 1980; Shuman, 1978). Shuman (1978) proposed that “if attitudinal barriers are not dealt with initially it is doubtful that any program designed to help teachers to teach reading can succeed” (p. 206).

Although quantitative research on secondary content area teachers’ attitudes flourished during the 1960s, 70s, and 80s, the past 25 years yield little empirical study of the concept. Moreover, there is little guidance in the research on how secondary teachers’ attitudes toward the explicit teaching of reading relate to their overall attitudes toward students as learners. Finally, not enough is known about the link between secondary teachers’ own academic preparation, content discipline, and training in reading instruction and their attitudes toward providing explicit reading instruction to students in their content area. This study addressed these voids in the literature.

Current data on teachers’ perceptions of content area reading instruction could have far reaching effects. Information regarding the relationship between secondary content area teachers’ attitudes toward content area reading instruction and level of preservice/inservice training could be beneficial to those who work in and develop programs of teacher preparation as well as designers of inservice training on content area reading instruction. Teachers’ attitudes toward content area reading instruction could also be of interest to school administrators, staff developers, and district level administrators. Data regarding teachers’ orientation toward students as learners and their attitudes toward
content area reading instruction could be of significant interest to educators, administrators, and politicians alike.

Overview of Methodology

This quantitative study investigated the “one true reality” (Gay & Airasian, 2003) of Michigan’s public high school content area teachers’ attitudes toward teaching reading and the relationship between certain predictor variables identified in the literature and those attitudes. Content area teachers who teach in Class A high schools in Michigan were surveyed and a simple descriptive approach to survey research was employed through the use of an on-line survey. Respondents self-reported their demographic characteristics, attitudes toward content area reading instruction, and orientation toward students as learners. The attitude and orientation sections of the instrument entailed self-reporting on five and four point Likert scales, respectively.

The study was correlational in that it attempted to identify the relationships between teachers’ attitudes toward content area reading and selected predictor variables. Finally, the study had predictive qualities as it examined the possible predictive relationship between teachers’ orientation toward students as learners and their attitudes toward content area reading instruction. Data were analyzed using descriptive, correlational, and predictive (multiple regression) statistics.
Limitations and Delimitations

Delimitations

This study was confined to teachers in Michigan’s public high schools (grades nine through 12) who taught math, English, social studies, and science in Class A schools.

Limitations

The sampling procedure chosen for this study offered several limitations. First, fewer sampling points may have produced the potential for homogeneity in respondents. It has been proposed that one stage cluster sampling reduces the generalizability of the findings to the population (Gay & Airasian, 2003). With this procedure, there was a possibility of high sampling error in that cluster sampling could potentially leave a significant proportion of the population unsampled (www.experiment-resources.com). There was also the possibility that the clusters themselves could be biased in that the schools responding may have had a focus on content area literacy including, but not limited to, literacy/reading specialists in the school or active in the district, professional development, or a school-wide focus on reading in the content areas. Finally, by selecting Class A schools with enrollments of 1000 or more students, it is possible that a higher proportion of urban schools were chosen as clusters and content area teachers in rural areas were not represented in the sample.

The method of data collection also offered limitations to the study. First, an online survey may result in a reduced response rate and missing or incomplete data (Gay &
Airasian, 2003). A second limitation inherent to this study involved the Likert response survey tool. In survey studies that illicit self-reporting, the “validity of the information is contingent on the honesty of the respondent” (Mertens, 2005, p. 167). It is possible that teachers did not report their actual beliefs, but rather answered in such way that they would be seen in the best light. Since the study centered on the self-reporting of teachers on two variables—their attitudes toward content area reading and their orientation toward students as learners—this study hinged on the honest responses of the teachers.

To control for the possibility of inflated self-ratings, attitude instruments were chosen that did not indicate what desired responses might be. Neither portion of the instrument included definitions, explanations, or descriptions of desired attitudes. Instead, both attitude portions of the instrument, the Otto-Smith Inventory and the Learner Centered Battery, included both positively and negatively worded items that did not suggest politically correct answers. The researcher identified several instruments in the literature that included competencies and definitions for content area reading and did not select them for this reason. A thorough discussion of these instruments and the reasoning for selection of the Otto-Smith Inventory is found in the Methodology section.

A second control for inflated self-ratings was the use of an online survey. It was hypothesized by the researcher that the anonymity of an online survey may have resulted in more honest responses. With the advent of social networking sites and an increase in online interactions in recent years, respondents may have fewer inhibitions regarding honesty in their responses. This study is limited to individuals who participated in the study and no inferences, or generalizations, will be made beyond those who responded to the survey instrument.
Definition of Terms

The following terms were used throughout this study. They are:

Content area teacher—teachers who identify their primary teaching responsibility in the content areas of English, mathematics, science, or social studies.

Content area reading instruction—the purposeful, strategic teaching of content specific reading skills and strategies using texts specific to the content area.

Secondary schools—public high schools in Michigan that include grades nine through 12.

Teachers’ orientation toward students as learners—McCombs and Whistler (1997) developed the definition of “learner-centered” as

- the perspective that couples a focus on individual learners—their heredity, experiences, perspectives, backgrounds, talents, interests, capacities, and needs—with a focus on learning—the best available knowledge about learning and how it occurs and about teaching practices that are most effective in promoting the highest levels of motivation, learning, and achievement for all learners. This dual focus then informs and drives educational decision making. Learner-Centered is a reflection in practice of the twelve Learner-Centered Psychological Principles—in the programs, practices, policies, and people that support learning for all (p. 9).

Summary

In a world of increased, high stakes accountability that is based on a student’s ability to read, analyze, and answer a test question correctly, secondary teachers can no longer pass the responsibility of content area reading instruction to reading specialists or English teachers. Developing strategic reading skills in students and focusing on the
instruction that imparts those skills are two fundamental aspects of secondary education.

Understanding teachers’ attitudes toward content area reading instruction could play an instrumental role in the development and implementation of preservice and inservice training programs.
CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study was to determine the direction and strength of secondary content area teachers’ attitude toward content area reading instruction in their classrooms as well as to identify their orientation toward students as learners. In so doing, this study also examined the relationship between the predictor variables of teacher’s academic preparation, their content focus, and reading instruction training and those orientations and attitudes. Finally, this study investigated the relationship between teachers’ orientation toward students as learners and their attitudes toward content area reading instruction. The review of the literature conceptualized content area reading and instruction, secondary content teacher attitudes toward reading instruction, and secondary content teacher orientations toward students as learners, thus, setting the groundwork for this study by summarizing previous studies that focused on teacher attitudes and perceptions toward content area reading instruction.

The literature review is divided into four sections: (1) a setting of the stage at a national and state level; (2) a description of content area reading and instruction; (3) teacher attitudes and content area reading instruction (which includes prior studies involving teacher attitudes toward content area reading instruction and a discussion of instruments used in those studies); and (4) the case for student centered teaching.
Setting the Stage

In 2001, President Bush signed into law perhaps the most powerful education legislation in America’s history. The No Child Left Behind legislation mandated high stakes testing for high schools and created funding sources for programs to increase the reading skills of high school students. NCLB focused the attention of education stakeholders on the ability, or lack thereof, of our students to read.

The National Picture

The most recent results of the National Assessment of Education Progress (NAEP), also known as “our nation’s report card,” indicate that the focus on secondary reading initiatives is a necessary one. The NAEP was given to a nationally representative sample of 21,000 twelfth graders from 900 schools, both public and private. The NAEP highlights four different aspects of reading: forming a general understanding, developing interpretation, making text/reader connections, and examining content and structure. According to their benchmarks, a reader performing at a basic level can retrieve information from a highly detailed document, whereas a proficient reader is able to make a critical judgment about a detailed document and explain their reasoning. NAEP (2005) results revealed that the average reading scores for high school seniors dropped six percentage points from 1992. In addition, only 35% of the tested seniors scored at or above the proficient level.

ACT (2006) spins a similar tale. Their research reveals that only 51% of the high school students tested by ACT are ready for college level or workplace reading by the time they graduate from high school. Interestingly, ACT also reports that more students
are on readiness track for college level reading in eighth and tenth grades, as evidenced by the national scores on the EXPLORE and PLAN exams, than are actually ready by the time they reach 12th grade. They interpret the data from their 2005-2006 National Curriculum Survey to indicate that “the instruction of reading skills diminishes in high school, suggesting the reading skills students have acquired are not being expanded or enriched in high school” (retrieved from act.org/news/releases/2007/04-09-07.html on July 24, 2007).

Biancarosa and Snow (2004) move their description of our secondary literacy crisis out of the testing seat and into the world. They contend:

- almost 7,000 students drop out of high school everyday, and the most commonly cited reason for this is that students simply do not have the literacy skills to keep up with the high school curriculum;
- only 70% of high school students graduate on time with a regular diploma;
- approximately 40% of high school graduates lack the literacy skills employers seek; and
- approximately 32% of high school graduates are not ready for college level English composition courses. (pp. 7-8)

For students who drop out of high school to students who enter college after high school, reading is an important skill. Barton (2000) advocates that the 25 fastest growing professions have far greater than average literacy demands, while the 25 fastest declining professions have lower than average demands.
The State Picture

In 2006, lawmakers in Michigan responded to a perceived economic crisis by instituting a new Michigan Merit Curriculum, which increased the State’s high school graduation requirements from 0.5 credits to 16 credits. Jeremy Hughes, State Superintendent of Schools, outlined the high school reform in Michigan as being centered on the three “R”s: rigor, relevance, and relationships. He proposes that rigor, in the form of high standards and expectations for high school students that begin their freshmen year and continue on until the end of their senior year, will be supplied by the new state High School Course Content Expectations currently being developed. Hughes contends that teachers will need to make the new, more difficult material relevant so that students can see that it matters to them. Hughes believes that in order to make the rigorous new curricula relevant to students teachers need to have strong, solid relationships with students. Clearly, the development and implementation of new state curricula in each of the content areas will affect teachers’ instructional decisions, and those instructional decisions will play out on the accountability measures demanded by the NCLB legislation as well as by state mandate.

Adequate Yearly Progress (AYP) is NCLB’s answer to school accountability. Under NCLB legislation, each state has set an acceptable percentage increase for student and school performance on an approved testing measure. AYP is the measure of whether that percentage increase, or adequate yearly progress, has been made. Although the states are encouraged to set their own rate of increase, all schools must be at 100% student achievement as measured by the federally approved assessment system by 2014.
In Michigan high schools, AYP is determined by year-to-year student scores on the Michigan Merit Exam (MME). Michigan’s Department of Education describes the MME as

the state assessment administered to all students enrolled in Grade 11 in March of each year. It is three major components—the ACT, the WorkKeys job skills assessments in reading and math, and the Michigan assessments in math, science, social studies, and persuasive writing. The combined MME assessment measures students learning in the Michigan high school standards, benchmarks, and core content expectations. (www.michigan.gov, July 24, 2007)

The MME is the indicator of high school student achievement and school performance for the state of Michigan.

AYP status, indicated by “met” or “did not meet” statements, also determines the success or failure of a school and/or a district. Schools not meeting AYP for two or more years and who receive Title I funds will incur progressive sanctions which range from spending at least 10% of its Title I allocations on professional development that directly addresses the achievement problems that caused it to be identified to districts paying for supplemental educational services and for the transportation of the students who choose to transfer to schools that have met AYP. As the number of years that a school or district does not meet AYP, the sanctions escalate to replacing staff relevant to the failure to make AYP, extending the school day or year, reopening the school as a charter school, or even contracting an outside organization with a record of effectiveness to operate the school (www.michigan.gov, retrieved November 22, 2006).
Since AYP is based primarily on a school’s MME scores, and since the MME is a set of standardized written, content area tests that require students to read, comprehend, and analyze texts including passages and word problems and then read, comprehend, analyze, and select the correct answer to the question, content area reading plays a major role in the assessment of a student and school’s achievement. Blintz (1997) sums up the climate for teachers as he states “teachers work in a climate of high-stakes assessment where the improvement (or lack thereof) in test scores across individual content areas determines the extent to which schools and teachers are rewarded or punished” (p. 19).

Content Area Reading

Although the importance of reading in the content areas has been emphasized in the literature for the past half century, the stakes involving these reading skills have risen astronomically in the past four years. Under NCLB legislation, accountability in the form of testing is the indicator of success for both the student and the school. With the advent of the internet and a large body of electronic and digital learning resources, the trend in education is moving away from students needing to internalize large bodies of specific information in each content area to students needing to have the skills and abilities to glean sufficient data from a vast array of information sources, connect the new information with their own prior knowledge, and process the information into the correct format necessary to fulfill their initial task.

Even without these new resources, students in schools encounter more difficult texts as they are expected to move from a predominately narrative, story based elementary school experience into the nonfiction world of textbooks and articles in the
content area-specific secondary school experience. Often, the textbooks assigned in high
school social studies, science, and mathematics can be written several grade levels
beyond the students for whom the books are written (Braselton & Decker, 1994; Miller,
1997). Even without increasingly difficult concepts, the materials used to deliver them
can be a deterrent to student learning.

Recognizing that concepts and texts become more complex and difficult as
students move up through the grade levels, imagine the difficulty that some students,
especially those described in the preceding section, would have in the high school
learning environment described by Donahue (2000). Donahue described his interpretation
of high school science teaching of reading as

in U.S. high schools, from first-year general science classes to Advanced
Placement physics courses preparing students for college-level credit, one corner
of the classroom chalkboard is devoted to a reminder like the following: ‘read by
Wed., pp. 243-56.’ The message conveyed by these instructions is that everyone
reads the same thing, at the same time, and when the teacher says so. Unstated is
what students will read because in most science classrooms students read only one
thing: an encyclopedic textbook presenting science as a collection of
uncontroversial facts that had been waiting for human discovery. Rarely do
students approach reading with their own questions, discuss their reading with
others aside from teacher controlled recitations, or write about their reading
except for short answer recall questions at the end of a textbook section (p. 728).

In Donahue’s high schools, reading assignments are relegated to a corner of the
blackboard with the “one size fits all” mentality. Contrast Donahue’s vision of reading in
America’s high school science rooms with Michigan’s Department of Education and the Michigan Reading Association’s definition of reading as being “the process of constructing meaning through the dynamic interaction among the reader’s existing knowledge, the information suggested by the text, and the context of the reading situation” with the underlying assumption that “the characteristics of the reader (e.g., psychological, social, cultural, linguistic) interact with characteristics of the reading task (e.g., purpose for reading assignment, characteristics of the reading material, setting in which it occurs, nature of reading instruction) to influence the process” (website). In Donahue’s description of an American high school science classroom, there is no room made for teaching the strategies necessary for reading, comprehending, or linking new information and ideas to students’ prior knowledge, all components necessary for learning.

Strategy is the operative term for content area reading. Strategy, as defined in The literacy dictionary: the vocabulary of reading and writing, is a “systematic plan, consciously adapted and monitored to improve one’s performance in learning” (Harris & Hodges, 1995, p. 244). Conley and Hinchman (2004) propose a schema-theoretic approach to supporting reading organized around pre-, during, and after-reading heuristics. Researchers and theorists agree that strategic reading and the teaching of strategic reading must take place in the secondary schools (ACT, 2005; Biancarosa & Snow, 2004; Billmeyer & Barton, 2002; Conley & Hinchman, 2004). Pressley (1998) explained how the concept of strategic reading instruction translates to the classroom as he said
teachers in effective instructional programs were aware of the comprehension strategies in the research literature and selected strategies and methods that made the most sense to them. Teachers explained the strategies to their students, showed them how to use them, and helped students apply these strategies as part of in-school practice” (p. 528).

Content area teachers need to be aware of the strategies that fit best with their specific content areas and then design lessons that allow for modeling of the practices and for guided practice of them.

Research indicates the strategic instruction of reading significantly improves student achievement. In their review of 16 studies involving reciprocal teaching, Rosenshine and Meister (1994) found it to be an effective strategy in promoting student comprehension at both the middle school and adult levels. The authors cautioned, though, that reciprocal teaching may be too “strategy intensive” for high schools, where there is concentrated focus on covering content curriculum and preparing students for high stakes assessments.

Several studies indicate a different reality than Rosenshine and Meister (1994) propose. Greenleaf, Schoenbach, Cziko, and Mueller (2001) conducted a study that indicated that the systematic teaching of strategies can significantly increase student achievement in high schools. In their study, the researchers created a one year long Reading Apprenticeship class, where the ninth graders in a diverse, urban high school were shown the reading and writing that are used within a discipline (subject area) as well as the strategies and thinking that are particularly useful in that discipline. Each unit of the class involved reciprocal teaching, direct instruction in text structures, note taking
and paraphrasing, vocabulary study, and regular independent reading of self-selected works, followed by response log writing and sharing. The researchers cited significant gains in reading comprehension on a standardized test, including average scores increasing from the late seventh to the late ninth grade level.

Alfassi (2004) conducted two quasi-experimental studies designed to measure the effect of strategic instruction on student achievement at the secondary level. In her first study, Alfassi (2004) conducted a study involving combined strategy instruction that included questioning, summarizing, clarifying, and predicting through a four part instructional sequence of teacher modeling and verbalizing, guided practice, reciprocal teaching through group sharing, and maintenance post intervention. Two heterogeneous ninth grade English classes were identified (n = 49), and one (n = 29) was given the intervention. The pre-and post-test design revealed a significant difference in achievement in favor of the experimental class.

In her second study, Alfassi (2004) expanded the concept of strategic instruction to a larger population. She studied 275 tenth graders in general education classrooms to determine if the combined strategy approach would affect the ability of students to answer different types of questions. Teachers trained in the approach incorporated strategy instruction into their subject areas. Instruction started the third week of school and lasted for 20 days. Pre- and post intervention assessment results revealed a significant improvement in students’ ability to answer implicit questions. A key finding in this study was that the instruction consumed little class time and used content area materials.

The literature on content area reading instruction emphasizes not only the strategic teaching of the reading strategies but also embedding those strategies within the
curriculum. Using a nested multi-case study design, Langer (2001) first identified, and then studied, middle and high schools that had “beaten the odds” and increased student achievement by teaching high literacy as taught in English classes and comparable schools that had not—those the researcher labeled “typical” schools. During her five year study, Langer identified 25 schools, 44 teachers, and 88 classes in four states that had “beaten the odds” and scored significantly higher on high stakes assessments than comparable schools. Overall, those schools that had done well on testing despite their circumstances had made systematic use of separated, simulated, and integrated skills instruction, had overt teaching of strategies for planning, organizing, completing, and reflecting on content and activities, and had embedded the knowledge and skills to be assessed on the exams into their curriculum throughout the year.

Phelps (2005) sums ten years of research on adolescent literacy as he concludes:

A common theme running throughout this review is the effectiveness of scaffolded strategy instruction. Students achieve maximum learning when teachers present new learning strategies in small steps, model the strategy carefully, and provide opportunities for ongoing feedback as students practice the strategy with increasing independence. Scaffolded instruction appears to work best in classrooms where teachers encourage active, thoughtful participation by students in the discussion of ideas and where students feel that their voices are welcome and important (p.26).

Phelps also points out that “research illustrates the constraints placed on content area teachers by the pressure to cover curriculum and prepare students for high stakes assessment. In such an environment, there are limits to how much explicit strategy
instruction a teacher can provide" (p. 26); however, some researchers, like Alfassi (2004), point to the importance of embedding strategy instruction within the curriculum itself to speak to the barriers of time and amount of content to be covered (Biancarosa & Snow, 2004; Langer, 2001). Alfassi (2004), Langer (2001), and others have found that strategic instruction, embedded within the curriculum and using content area materials, increases student achievement.

Despite these findings, however, there is evidence in the research that the strategic instruction of reading in the secondary schools does not exist (ACT, 2007; Biancarosa & Snow, 2004). Researchers conducting the ACT National Curriculum Survey (2007) found a decreased focus on reading strategies after ninth grade along side a postsecondary need for focus on reading strategies with complex texts. According to the results of their survey of a national representative sample of more than 35,000 middle/junior high school, high school, and postsecondary teachers, there was a “general lack of reading courses in high school and a decline in the teaching of targeted reading strategies after ninth grade.” The researchers indicate a need for the strategic instruction of reading throughout the high school years and across all content areas. They contend in a nation where 13- and 17 year olds have increasingly less exposure to or interaction with books outside of the classroom, high schools must still play the primary role in providing students with the kinds of complex reading materials and experiences they need in order to be college and work ready and must continue to teach and reinforce reading strategies that deal with increasingly more complex reading tasks (p. 6).
In summary, research has shown that the strategic, embedded instruction of reading increases student achievement on different measures of assessment, including high stakes tests; however, it also illustrates that the strategic instruction of reading is not pervasive throughout America’s secondary schools. Clearly, there is a gap between what research has shown to be effective methodology in increasing student achievement and what exists in our content area classrooms. O’Brien, Stewart, and Moje (1995) propose that content area teachers have resisted embedding literacy instruction into their curricula because of deeply embedded values, beliefs, and practices.

Teacher Attitude

Researchers and practitioners alike agree that attitude and perceptions frame instruction. Researchers have found that “what teachers believe to be true about education and students makes a pronounced difference in student performance and achievement” (As cited in Thompson et al 2004, p.11; McCombs et al, 1997). Darwin & Fleischman (2005) point out that “to meet the challenge of improving adolescents’ literacy skills, educators must embrace a new attitude, and recognize that reading is not a static skill, but one that needs to grow along with the individual” (p. 85). In order to offer teachers training and programs to initiate this “new attitude,” researchers must explore existing attitudes.

Conley and Hinchman (2004) conducted a metaethnography, a synthesis of recent research and reviews that included both quantitative and qualitative studies of adolescent literacy, and found attention to content area reading, which they referred to as “literacy across the curriculum” apparent in the literature for close to 100 years. The 1970s and 80s
were a time of focus on content area reading and content area reading instruction as many researchers studied both the teaching and learning of content area reading. After Sputnik, there was a marked decrease in the literature followed by a recent resurgence of content area literacy, mostly focused around school-wide reform affecting urban and rural students. The authors also found that much of the recent work in adolescent literacy has been qualitative in nature.

Conley and Hinchman (2004) also found limited attention to teachers in the literature. They state “the kind of research cited as most credible by those who authored NCLB has not examined teacher learning in detailed, replicable ways. It says little about how teachers are to learn best practices or to adapt practices to different kinds of learners. The legislation authorizes staff development in scientifically based methods of reading instruction but does not acknowledge that many important questions remain about how best to contribute to teachers’ ongoing learning” (p. 45). The authors also point to the fact that there is a lack of empirical studies in the field of adolescent literacy and content area reading instruction, even though funding proposals at the national and state levels require practices and evaluations grounded in experimental research.

The current study focused in on the various gaps identified in the literature. It was a quantitative study aimed at determining how current secondary content area teachers view content area reading instruction.

*Early Studies*

From the middle to the end of the last century, quantitative studies regarding content area teachers’ attitudes toward content area reading instruction flourished. It
seems as though as states began to require content area reading courses and credits for secondary certification, researchers conducted studies to determine teachers’ attitudes toward content area reading. Researchers were interested in determining the strength and direction of secondary content area teachers’ attitudes toward teaching reading (Hargrove, 1973; Haque, 1976; O’Connor, 1986; Smith, Otto & Hansen, 1978) as well as their perceived competency in and degree of implementation of content area reading instruction (Flanagan, 1975; Kitely, 1980; Kozey, 1980). All of the studies indicated here attempted to identify predictor variables for those attitudes and perceptions. A description of the instrumentation, attitudes, and predictor variables follows.

Instrumentation and attitudes. Otto (1968) developed an instrument that he believed would identify the strength and direction of secondary content area teachers’ attitudes toward teaching reading. The instrument designed yielded data about secondary teachers’ perceptions of their personal role in teaching reading in the content area; the role of the reading specialist at the secondary level; their personal preparation and ability to teach reading; and the actual task of teaching reading skills relative to its being an enjoyable or distasteful one. Teachers were asked to respond to 14 statements using a five point Likert scale that included the responses strongly agree, agree, undecided, disagree, and strongly disagree.

In his initial study with the instrument, Otto reported Hoyt reliability coefficients of .848-.857. After surveying 87 teachers—38 junior high and 49 senior high—in Wisconsin who were not currently involved in any special in-service or experimental activities connected with reading at the time, Otto found generally positive attitudes ($x^- = 45.3$) toward teaching reading. Despite the generally positive attitudes, however, over
half the senior high teachers in the study did not believe that “every high school teacher should be a teacher of reading,” and almost a third believed that the teaching of reading should be the responsibility of reading teachers only. In addition, over 65% of the senior high teachers believed that students should know what there is to know about reading before they are permitted to leave elementary school. On the other hand, almost 80% of the high school teachers indicated that the teaching of reading skills can be incorporated into content area courses without interfering with the major objectives of the courses.

Smith and Otto (1969) used the instrument first reported by Otto (1968) and then referred to as the Otto-Smith Inventory to detect changes in teachers’ attitudes after pre- or inservice training. The inservice course described by Smith and Otto was a personal reading improvement course where experts in the field came in to instruct the teachers how to improve their own reading by using best practice strategies. Nineteen secondary teachers from nine content areas volunteered for the course. Although these strategies could have been taught as strategies to use in the teachers’ classrooms, Smith and Otto purposely did not refer to the teachers’ classrooms or craft at any point during the six week course. Instead, they operated under the assumption that “such a course would convince teachers that reading instruction is appropriate and worthwhile at academic levels beyond the elementary school and would incidentally demonstrate techniques applicable to reading instruction beyond the elementary school” (p. 299).

Used as a pre- and post test for this inservice course, Otto and Smith found little to no change in the teachers’ attitudes toward teaching reading as measured by the Otto-Smith Inventory. The mean scores were not reported in the article other than to indicate no significant change had occurred as a result of a personal reading improvement course.
The researchers did report a marked negative decrease in the scores for the three statements that had to do with the teaching of reading as a technical process best handled by specialized teachers. Smith and Otto contend that bringing different experts in to class each night may have overwhelmed the teachers and encouraged them to believe that teaching reading is a highly specialized, technical process. They also questioned the sensitivity of their instrument to change. It is important to point out; however, that the inservice provided by Smith and Otto was a personal reading improvement course, and no mention of, discussion regarding, or reflection on the usefulness of the strategies in the classroom was made.

Using the Otto-Smith Inventory, Smith, Hesse, and Otto (1970 surveyed 90 junior high teachers of English, social studies, mathematics, and science in Wisconsin. The mean score for the content area teachers in this study was 46.07, which would be characterized as a generally positive attitude toward content area reading instruction: however, the researchers did notice a trend in responses that included teaching reading is not their (the content area teacher’s) concern, that it is an intrusion, and that they are reluctant to make changes in materials or the pace of their instruction. These studies all involved teachers participating in inservice training in content area reading instruction, many of whom were junior high school teachers (Smith, Otto, & Hesse, 1970).

Whereas earlier studies utilizing the Otto-Smith Inventory attempted to detect changes in attitudes after a treatment (inservice), Hargrove (1973) replicated Otto’s (1968) original study with the Inventory. She used the inventory to measure content area teachers’ attitudes toward teaching reading who were not necessarily enrolled in an inservice training program or course. In fact, Hargrove administered the survey
instrument in Georgia, where no instruction or credit of any kind was required for secondary certification by the state. Seventy-two percent of the 286 teachers surveyed in Hargrove’s study reported that they had received no preservice or inservice training in content area reading instruction. Fifty-one percent of the teachers in her study scored 42 or below on the Otto-Smith Inventory, which would indicate a negative attitude toward teaching reading in the content areas.

Hargrove (1973) noted trends in the data that indicated teachers believed students should already know how to read when they leave elementary school and that teaching reading is neither fun nor a necessary and legitimate part of teaching a content course. Hargrove found that although 73% of the respondents to the Otto-Smith Inventory agreed that secondary school teachers can teach reading effectively without special university courses in methods of teaching reading, 68% believed teaching reading would interfere with major objectives of the course. In addition, 67% believed students should know what there is to know about reading before they leave the elementary school.

Vaughan (1977) developed a survey that attempted to quantify secondary content area teachers’ attitudes toward teaching reading through the use of 15 attitudinal statements. The Vaughan Attitude Scale items were responded to on a seven point scale which included the following responses: strongly agree, agree, tend to agree, neutral, tend to disagree, disagree, and strongly disagree. O’Connor (1986) used the Vaughan scale to survey 182 content area teachers in Michigan from randomly selected rural and urban schools in one county. Although data involving the level of training/inservice was not collected for this study, Michigan had required secondary preservice teachers to take classes in content area reading instruction prior to secondary certification since 1980. It is
interesting to note that, although secondary teachers in Michigan had been required to take content area reading courses for certification in Michigan for six years before this study, the teachers responded that they believed knowing how to teach secondary reading should not be a requirement for secondary certification.

O’Connor (1986) identified the lack of a definition for content area reading instruction as a deficiency in earlier studies and provided a one line definition of content area reading at the start of her instrument. The researcher reported all content area teachers surveyed (as well as the enrichment, vocational, and other teachers) as having positive attitudes toward teaching reading; however, she quantified the results on the following scale:

- scores of 91 and higher indicate a positive attitude,
- 81-90 indicate above average attitudes,
- 71-80 indicate average attitudes,
- 61-70 indicate below average attitudes, and
- 60 and below indicate low attitudes toward content area reading instruction.

O’Connor reported the content area teachers’ scores as 77, 76.25, 75, and 75 respectively for social studies, English, math, and science teachers. Although she reported these scores as positive, they actually fall in the “average” range, which seem quite a bit lower than 91 and above, which would be considered “positive.” In his development and explanation of the tool, Vaughan (1977) did not include a description of an “average attitude” toward content area reading instruction.

O’Connor (1986) also reported some interesting trends in teacher responses to the attitudinal survey. She found that, although secondary teachers tended to feel content area
reading instruction was necessary, they seemed to feel a greater responsibility to the content they taught than to any reading instruction they were able to provide for the students. They tended to feel that secondary teachers have a greater responsibility to impart subject matter knowledge than to provide any reading instruction. Furthermore, the teachers felt students should have acquired all they needed to know about reading by the time they enter the secondary school.

Yore (1991) also used the Vaughan Attitude Scale in his mixed methods study of science teachers in British Columbia. Using findings from a previous study, Yore modified the 15 item VAS survey for use with science teachers only by specifying “science, science reading, science textbooks, and science teachers” where appropriate on the VAS and adding a 13 item “Beliefs” section to it in order to measure the science teachers’ beliefs about models of reading, factors influencing science reading, and science reading skills. He surveyed 215 science teachers (grades 6-12) and conducted follow up interviews with and observations of 15 volunteers to further examine the validity of his instrument. Yore found teachers’ “attitudes toward science reading and science instruction can be measured reliably and validly by a simple Likert scale” (p. 69). Teachers who scored higher on the attitude scale and total scale reported significantly (p=0.05) more frequent use of reading skills assessment, direct content reading instruction, reading enhancement activities, and other techniques to improve content reading skills. Teachers with higher attitude scores also reported significantly (p=0.05) frequent use of pre- and post reading strategies such as word webs/concept maps, previewing text, discussions, reports, and outlines.
Whereas the Otto-Smith Inventory and the Vaughan Attitude Scale consisted of attitudinal and opinion statements, other instruments were designed to identify specific reading instruction competencies (Flanagan, 1975; Kitely, 1980; Kozey, 1980; Vigil & Dick, 1987). The competency based instrument developed by Flanagan (1975) and revised by Kozey (1980) was designed to quantify content area teachers’ perceptions of the importance (attitude) of content area reading instruction, perceived qualifications for teaching reading, and perceived degree of implementation of content area reading instruction. Flanagan identified 27 competencies content teachers should have for the teaching of reading and developed a behaviorally based instrument to which teachers replied on a five point likert scale from very important to not important for the attitude portion and from very qualified to not qualified on the qualification portion. The same 27 competencies were used in both sections; however, the statements were worded “To me,...” in the first section and “How qualified are you to...” in the second.

In her explanation of the development and use of the instrument, Flanagan (1975) expressed that the instrument might suggest and define reading competencies and thus create positive attitudes toward reading instruction. She advocated that the instrument should be kept by the teachers and could be used as a teaching guide. In a study of 224 secondary content area teachers in Oregon, Flanagan reported positive attitudes toward teaching reading in the content areas using the initial instrument which measured the teachers’ perceived importance of content area reading and their perceived qualifications to teach reading.

After revising the instrument to include the degree to which the teachers’ perceived themselves to implement content area reading instruction, Kozey (1980) found
the 213 content area teachers to have positive attitudes toward teaching reading; however, she did note that both science and math teachers scored negative means in the area of implementation. The researcher also noted math and science teachers tended to respond that the questions were not applicable to their own content areas and were only applicable to teachers of English.

Kitely (1980) developed a competency based instrument to measure secondary content area teachers' attitudes toward 28 recommended practices in content area reading instruction and their ability to implement the identified strategies. The recommended practices were turned into statements which were responded to on a likert scale of very important to not important for the importance factor and from almost always implemented, frequently implemented, occasionally implemented, seldom implemented to no opinion. Kitely found that secondary teachers do have knowledge about recommended practices and they do attempt to employ most of the practices in their classrooms. Kitely took his study a step farther, though, as he interviewed subjects from his study who volunteered to suggest explanations for the rating patterns of their colleagues. The interviewees identified time for preparation, lack of materials for students' different skill and ability levels, and large class sizes with notable differences in skills and ability levels of the students as barriers for the teaching of reading in their classrooms. Although Arizona had mandated courses in secondary reading five years before his study, Kitely found that 61% of the teachers surveyed had not taken a course in reading.

Vigil and Dick (1987) were interested in examining whether social studies teachers believed reading strategies were important, whether they perceived themselves as using reading strategies in the classroom, whether there were discrepancies in attitudes
toward reading strategies between junior and senior high social studies teachers, and whether social studies teachers differed in their attitudes toward and perceived use of the reading strategies compared to English, math, and science teachers. The researchers developed a two part instrument using items that were identified as appropriate pre-, during, and post reading strategies by a panel of seven reading and social studies professors. Attitude was determined by the extent to which the respondents rated the statement on a five point Likert scale as most important to unimportant. Perceived practice was determined by the extent to which respondents rated their behavior in the classroom as most like me or most unlike me.

In the earlier competency based studies, the researchers measured the different variables within the same population. Vigil and Dick (1987), on the other hand, surveyed all of the content teachers in each selected metropolitan school but gave half of each content area teachers Form A, which assessed the teachers' perceived practices, and gave the other half Form B, which assessed teacher attitudes toward the desirability of the strategies. No explanation was given for splitting the respondents into two groups while still aggregating the results of the study. Vigil and Dick found that the social studies teachers in their study had predominantly positive attitudes toward reading strategies. On a five point scale with 5.0 as the most positive attitude, the overall mean was nearly 4.0. Both junior and high school teachers rated their attitudes toward the strategies as higher than their perceived use.

In summary, there were several different instruments identified in the literature for determining the strength and direction of teachers' attitudes toward content area reading in the past century. Whereas the Otto-Smith Inventory and the Vaughn Attitude
Scale were designed using attitudinal and opinion based statements, the instruments
developed by Flanagan (1975), Koze (1980), Kitely (1980), and Vigil and Dick (1987)
identified competencies and best practices. Each of these instrument types has its
strengths and weaknesses. The attitudinal/opinion based surveys tend to be shorter and
much more general in nature. These instruments refer to content area reading in broad
terms that do not offer explanations or definitions; however, they do seem to capture the
essence of teachers' attitudes toward content area reading. The Otto-Smith Inventory, for
example, has several statements that investigate whose role the teachers believe it is to
teach reading in the secondary schools.

The competency based instruments, on the other hand, are much more specific
about content area reading instruction. The researchers who use the competency based
instruments define teacher attitude in terms of how much importance they place on the
identified strategies. Flanagan's (1975) discussion of her instrument indicated that it may
"suggest and define" what good reading instruction might look like and may act as a
teaching guide for content area teachers. Vigil and Dick (1987) discussed the need to
"acquaint" teachers with the varied strategies that foster efficient reading and
comprehension of textbooks. It is possible that a competency based instrument could
suggest what is good teaching and thus encourage teachers to respond based on what they
"should" answer rather than what they actually believe or do in their classrooms.

Since this study focused on investigating teachers' attitudes rather than their
perceived competencies in or use of content area reading strategies, the Otto-Smith
Inventory was used to measure secondary content area teachers' attitudes toward teaching
reading. Although two attitude-based measures were identified in the literature, the Otto-
Smith Inventory was the only one that would supply a generally positive or negative attitude score. The Vaughan Attitude Scale, on the other hand, included “average” and “below average” and “above average” ranges, with no clear description of what an average score entailed, and how it was differentiated from those above and below it. The Vaughan Attitude Scale was rejected on this basis.

*Predictor variables.* The early researchers were interested in identifying potential predictors of teachers’ attitudes toward teaching reading in the content areas. Gender (Hargrove, 1973; O’Connor, 1986), level of instruction which delineated junior, middle, or senior high school (Flanagan, 1975; Hargrove, 1973; O’Connor, 1986; Vigil & Dick, 1987), and years of teaching experience (Flanagan, 1975; Hargrove, 1973; Haque, 1976; Kozey, 1980; O’Connor, 1986) were not found to significantly influence secondary content area teachers’ attitudes toward, qualifications for, or implementation of teaching reading; however, the literature did point to content area responsibility, the amount of training in content area reading instruction, and the degree level attained by the teacher as possible predictors of teacher attitudes.

The variable of content area responsibility was identified by all researchers as the teachers’ major teaching assignment in English, mathematics, social studies, or science. All of the research that included content area responsibility as a variable noted a significant difference in the attitudes of the content area teachers by content responsibility (Flanagan, 1975; Hargrove, 1973; Kozey, 1980; O’Connor, 1986; Smith, Hesse, & Otto, 1970; Vigil & Dick, 1987). Both Flanagan (1975) and Kozey (1980) used the same instrument and identified the order of attitude (from most to least positive) and perception of competency to be language arts (English), social studies, science, and math. O’Connor
(1986) found a slightly different order using the Vaughan Attitude Scale. She found that social studies and English teachers scored more positively followed by math and then science. Using the Otto-Smith Inventory, Hargrove (1973) found a very different order of attitudes. Although her study found a generally negative attitude toward teaching reading in the content areas, Hargrove found the highest score (indicating the most positive attitude) to be attributed to the science teachers, followed by English, math, and social studies teachers, respectively. She proposed the advent of Sputnik and an increased focus on inservice training for science teachers in the secondary schools as a possible explanation for the science teachers’ more positive attitudes toward teaching reading in their classrooms. Vigil and Dick (1987) found no significant difference between the attitudes toward and perceived use of reading strategy instruction between social studies and English teachers in their study; however, a significant difference did exist between social studies and both math and science teachers.

Other researchers proposed that the amount of training a teacher has in content area reading instruction influences her/his attitudes toward teaching reading (Flanagan, 1975; Hargrove, 1973; Smith, Hesse, & Otto, 1970; Thornton, 1989). Hargrove (1973) reported that teachers who had no courses or instruction in content area reading instruction had negative attitudes toward content area reading instruction as measured by the Otto-Smith Inventory. Smith, Hesse, and Otto (1970) reported that attitudes of teachers in their study were more positive in schools that had devoted more time to structuring and presenting inservice experiences in reading instruction for content area teachers. Flanagan (1975) advocated that, although training in the content areas did not seem to affect teachers’ attitudes in her study, it did influence teachers’ perceptions of...
competency in the same order as content area responsibility. Flanagan proposed this phenomenon could be explained as a positive relationship between training and perceptions of competency. In her extension of Flanagan’s study, Kozey (1980) found that teachers who had received instruction scored significantly higher means in all three areas—importance, qualifications, and implementation—than those who had received no instruction.

In each of the earlier studies that investigated the relationship between training and attitudes/perceptions of competency, the predictor variable was delineated into “received instruction” or “received no instruction” in content area reading instruction. Other researchers have indicated that training that is the longest and closest to the classroom teacher has a greater impact on teacher beliefs and competencies (Hall, 2005; Haque, 1976; Smith, Hesse, & Otto, 1970); therefore, this study attempted to quantify the level of training more specifically than prior studies by breaking this variable into amount/type of pre-service training and the amount/type of inservice training.

Although she did not investigate the amount/type of training teachers had in content area reading, O’Connor (1986) found the degree level a teacher attains seems to influence the attitude of the teacher toward content area reading instruction. She found the higher the degree attained by the teacher, the more positive the teacher’s attitude toward content area reading instruction. Thornton (1989) also found teachers with advanced degrees have more positive attitudes about teaching reading than do teachers with Bachelor’s degrees. Since earlier studies identified degree level as having an influence on a teacher’s attitude toward content area reading instruction, it was a predictor variable explored in the current study.
A Paradigm Shift: A New Century, a Constructivist Paradigm

Whereas content area reading instruction studies of the 1960s, 70s, and 80s were predominantly post-positivist in nature, the 1990s saw the rise of constructivist research. Alverman and Moore (1991) noted that experimental research had convincingly demonstrated that explicit strategy instruction was effective in controlled settings, but they questioned the ecological validity of much of this work. They called for more qualitative studies to help explain which factors might be critical to success in specific, authentic contexts. The researchers stated “to put it plainly, quantitative research can suggest ‘what works’ but qualitative research can give us insights into why, how, and with whom it works” (p. 14).

Interestingly, several of the qualitative studies that stemmed from this call for qualitative research pointed to what is not being done and why (Blintz, 1997; O’Brien & Stewart, 1990). Blintz (1997) developed an open-ended survey tool and surveyed 131 inservice teachers over three years, 102 high school teachers and 29 middle school teachers, enrolled in his professional development workshops in reading across the curriculum. Analysis was three-phased and stemmed from the questions “What are these teachers really saying?;” “What do these teachers really mean?;” and “What are these teachers mean collectively?” Using these three questions to guide the analysis, Blintz identified preliminary patterns and categories and then refined the emerging patterns.

What Blintz (1997) heard the teachers’ voices saying was not so different from the trends indicated by the response trends in some of the earlier attitudinal studies. The teachers in Blintz’s study shared a common vision of the problem with content area
reading in secondary schools: “students can’t read, won’t read, or will read but fail to comprehend important information from the text” (p.19). Four overarching beliefs emerged from the data. First, the students themselves are the problem. They do not want to read; they will not read; and “they do not find school-based reading personally meaningful or socially relevant to their lives” (p. 20). Second, the teachers believe it is someone else’s responsibility, and, therefore, someone else’s failure to teach students to read. The teachers’ voices expressed “betrayal, frustration, and confusion” at having to teach what they were not trained or hired to teach—reading. Next, the teachers pointed to problems with textbooks written well above the reading level of the students. Although these teachers questioned a single text for teaching, they did not believe they have the experience or formal education to select alternative or supplementary reading texts. Finally, the teachers in Blintz’s study believe those who have come before them are not doing their jobs. One teacher in his study summed the situation as “it seems that not only am I now expected to teach what I don’t know, which is reading, because those who preceded me didn’t teach it, but also I am now being held accountable with reading, which is like me being held responsible for others’ irresponsibility” (p.22).

Whereas Blintz conducted a large scale qualitative study with predominantly inservice teachers, O’Brien and Stewart (1990) conducted their study with 250 preservice teachers enrolled in their content area reading courses over a span of two semesters and eight courses. Acting as participant-observers, the authors and two other researchers collected data to examine specific dimensions of pre-service teachers’ resistance to content area reading through a pre-course questionnaire, logs, group discussions, course evaluations, and interviews. Data were analyzed using constant comparative analysis and
were triangulated. Course grades were not contingent on any of the data sources or activities in which data was collected. Students volunteered for logs and interviews, and all other data sources were not personally identifiable.

O’Brien and Stewart (1990) found a wide range of beliefs about teaching content reading in their study. These beliefs include content area teachers either cannot or should not teach reading; teaching content reading in the content areas is important; preservice teachers do not feel qualified to teach reading to their students; and reading or English teachers should be responsible for teaching reading.

Studies by Donahue (2000) and Sturtevant (1996) focused on smaller numbers of preservice teachers in their studies. Donahue studied 10 preservice science teachers during his “Reading and Writing in the Content Areas” course, required for secondary certification in California. During this case study, Donahue expressed a need for a different literacy reality in American high schools. He stated “I want new secondary teachers to view reading as a social activity of constructing meaning from prior knowledge, current experience, and information from a variety of texts” (p. 728). The study involved asking the preservice teachers in class to read regularly outside the required reading for the course, to reflect in writing about their outside reading, and to read and respond to the reflections of other preservice teachers in class. The discussions and journals were not graded and provided most of the data (along with abstracts of literacy inquiry projects conducted during the semester) for the study. The data were coded into beliefs and questions, which were then categorized and constantly reexamined for further evidence of questions about the students’ conceptions of the discipline and literacy.
One belief expressed by half of the new science teachers in Donahue’s study was that only English majors know how to read and write. The prevailing mood with this half of the students was that they had gone into science, in part, because they wanted to avoid reading and writing. The other students initially saw themselves as readers and writers. Throughout the course, the preservice teachers gained or rediscovered an understanding of reading as a social activity through a sharing of their reading journals, and all explicitly connected the content or the process of their reading to their teaching. It is Donahue’s hope that “as curriculum planners and curriculum inquirers, these teachers may draw on this experience in the future to design reading assignments that resemble the collaboration, talk, and messiness of experimenting and also make a powerful contribution to learning science” (p. 738).

Whereas Donahue (2000) focused on preservice teachers in his classroom, Sturtevant (1994) followed five of her preservice teachers out into their student teaching experience in order to explore (a) what influences affected the student teachers’ uses of and beliefs about content literacy instructional strategies in secondary mathematics and (b) how their content literacy-related beliefs changed or remained the same during the student teaching semester. Sturtevant identified five non-traditional math teachers who expressed positive attitudes on an open-ended exit questionnaire in which the students were asked to describe their beliefs about using strategies taught in the course. Data were collected from two transcribed interviews, one at the beginning of the participants’ student teaching experience and one at the end. Field notes from one classroom observation, and written materials, including text materials, sample lessons plans, tests, and worksheets, over a span of the student teaching semester supplemented the data.
collection. Data were then analyzed and summarized using qualitative case study methodology.

Sturtevant (1994) found that despite the students' expressing positive attitudes toward content literacy strategies at the beginning of their student teaching experience, their actual practice of the strategies differed substantially. Interestingly, several of the student teachers believed their students were not reading, when, in fact, they were solving written problems and making and reading graphs. It is possible that content area teachers, especially in math and science, do not understand the full scope of reading. Earlier studies did reveal math and science teachers as having significantly lower attitudes toward, and perceptions of competence in, teaching reading (Flanagan, 1975; Hargrove, 1973; Kozey, 1980; O'Connor, 1986). Sturtevant also found that the student teachers were concerned about their behavior of their students and made educational decisions about teaching strategies based on that behavior. For example, one student who had expressed a strong belief in cooperative grouping only grouped older, more advanced classes. Sturtevant’s participants pointed to several factors which hindered their use of literacy practices. Lack of time, a large number of students and/or preparations, and a large number of students with many academic or personal problems were cited as primary factors. Kitely (1980) had identified many of the same barriers to teaching reading in the content classroom in his quantitative study nearly 15 years before.

The qualitative studies reviewed that focused on preservice and large-scale inservice teachers’ attitudes identified many issues surrounding teaching reading in the secondary content area (Blintz, 1997; Donahue, 2000; O’Brien & Stewart, 1990;
Many issues mirrored those identified through the earlier quantitative studies.

Other qualitative studies have focused on examining current realities by listening to teachers’ voices regarding content area reading and the specific contexts in which they teach. Two such studies, by Moje (1996) and Sturtevant and Linek (2003), explored the lived experiences of exemplary teachers who successfully combined content area reading/literacy with their content areas.

Moje (1996) used a purposive selection technique to identify a science teacher known for effectiveness by students, peers, administrators, and parents. This ethnography included a year-long study and relationship with “Landy.” In this study, student achievement was measured in terms of students’ generally positive attitudes about science and with a great deal of confidence in their abilities to learn science. Their confidence stemmed in part from Landy’s commitment to build students’ self esteem by helping them become successful. Moje found that the relationships established in the classroom contextualized and shaped the literacy practices used there. Landy wanted to be effective at meeting students’ needs so she used the strategies and organizational practices that met those needs.

Whereas Moje (1996) focused her study on one high school science teacher who combined content and reading instruction effectively, Sturtevant and Linek (2003) identified nine teachers who were exemplary teachers of content area literacy instruction through a rigorous process of nomination by peers and administrators, interviews with and about the candidates, and classroom observations during which the researchers looked for engaged reading practices. Four of the nine teachers taught grades nine
through 12. One of the themes that emerged from the data centered on the teachers’ perceptions of the qualities of a good teacher. The teachers in this study indicated that a good teacher focuses on a) classrooms that are “student centered” in which students are “problem solvers,” b) students’ needs beyond the classroom, c) the value of their own relationships with students, and d) on life-long learning.

The voices that have emerged from the exemplary teacher studies have sang of student-centeredness as being critical to success in specific, authentic contexts. In fact, Moje (1996) contends that the students of an exemplary science teacher “made an effort to use the various literacy strategies not because they saw inherent value in them, but rather because of the positive relationship they had with their teacher” (in Phelps, 2005, p. 19). Sturtevant and Linek (2000) suggest “‘good teaching’ may be as much an environment conducive to learning and positive teacher attitudes toward students as it is any particular curriculum or methodology” (in Phelps, 2005, p. 25).

These examples of exemplary teachers and teaching of content area reading contrast with the findings of Blintz (1997) and others who have found teachers believe students cannot read and understand reading in their areas and do not perceive reading as meaningful or valuable. Teachers feel as though those shortcomings are related to someone else’s failure and are not theirs to fix (Donahue, 2000; O’Brien & Stewart, 1990). Blintz heard the teacher voices in his study say that they “feel overwhelmed because they were trained and hired to teach content, but are now being asked to also teach reading. The bottom line is that teachers feel they are being asked to teach what they do not know how to teach in addition to an already bloated curriculum in their content area. Individuals who know the least about reading are being asked to teach
reading to students who need it the most” (p. 22). With Michigan’s new Merit Curriculum, its increased academic expectations (rigor) for high school students, and its mandated assessments—both end of course and MME, which consists of a conglomerate of reading based standardized tests—there are increased expectations for content and for delivery of that content (through relevance and relationships) that will have high stakes ramifications for students, teachers, schools, and school districts. In Michigan’s educational climate, it will be important for teachers to find new and better ways to both connect with students and to connect students to the content. As Blintz points out, “teaching reading in secondary school isn’t just an addition to an already bloated curriculum; it also provides the potential for teachers to use reading to create personally meaningful curriculum with students” (p. 24).

The Case for a Learner-Centered Classroom

One possible explanation for the lack of strategic reading instruction in the secondary classrooms noted earlier in this study might be that it involves a paradigm shift from teaching content to teaching students. McCombs (2003) describes the shift as one from “what teachers teach” to “what students learn” (p.96). In her quantitative study of 213 content area teachers from urban Saskatchewan, Canada, Kozey (1980) discovered that secondary content area teachers ranked the two content area reading instruction competencies addressing small group activities among the three lowest in importance. Her interpretation of that finding was that it may reflect a more traditional orientation of teachers toward whole class instruction and teacher-centered classroom control. Almost 25 years later, Alverman (2001) recommends literacy instruction for adolescents build
motivation by addressing students’ self-efficacy and engagement and include participatory approaches that engage students and involve them in higher order thinking. She advocates that these student or learner centered practices should replace passive, teacher centered instruction.

In their definition and description of content area reading, Billmeyer and Barton (2002) propose three interactive elements of reading—the reader, the climate, and the text features—that teachers must be aware of in the teaching of reading in the content areas. First, teachers must enable students to access their prior knowledge of the subject and teach them to self evaluate their mental dispositions toward the reading. Teachers must also maintain a climate conducive to reading. Climate refers to physical conditions—temperature, noise level, etc.—as well as the affective dimensions, defined as “how safe the reader feels, how competent, even how he feels about others around him” (p.12). Marzano and Pickering (1997) and McCombs and Barton (1998) advocate that students learn best when they feel accepted by their teachers and peers; feel a sense of safety and order because academic expectations, instructions, and the purpose for assignments are clear; feel confident in their ability to complete tasks successfully; and see the value in the learning activities. Billmeyer and Barton (2002) propose that teachers can create feelings of competence in their students by

- helping students develop confidence in their ability to access prior knowledge;
- filling in any gaps in necessary background knowledge prior to assigning reading;
• showing students how to ‘chunk up’ assigned work into manageable pieces;
• acknowledging small successes as well as large ones;
• encouraging risk-taking in answering questions about what they have read; and
• validating responses, giving credit for correct aspects of an incorrect response (p. 15).

Finally, teachers must consider the features of a text, which include reader aids, vocabulary, and text structure, when they plan their lessons. Students must be taught strategies for, and develop skills in, the actual reading of the text features. In each of these three elements of reading—reader, climate, and text—the teacher must be aware of the students as learners.

With a focus on reader, text, and climate, teaching reading in the content areas necessitates a shift away from a passive, teacher centered method of teaching content to a learner centered one. Lee (2001) notes that teaching is always dependent on positive human relations, that there must be a “high degree of principled improvisation as a teacher interacts with students on a daily basis” (p.128), and concludes that “loving and respecting young people is the mortar from which good teaching is built” (in Phelps, 2005, p. 133). In their study of nine exemplary secondary teachers of content area literacy, Sturtevant and Linek (2003) found several common threads that ran through each of their perceptions of what makes a good teacher. The researchers found a focus on classrooms that are student centered in which students are problem solvers, on student
needs beyond the classroom, on the value of their own relationships with students, and on life-long learning.

Even high school students speak of the importance of a learner-centered classroom. In his ethnographic study of low achieving students from an urban high school, Lee (1999) trained and used student researchers to conduct interviews with 40 low achieving students in ninth through twelfth grades. The participants were identified as having a grade point average of less than 2.0, two or more suspensions for delinquent behavior, and excessive absenteeism. Two themes emerged from the data. First, the low achieving students offered suggestions for modifying instructional practices for their learning. They believed that more group work, more enthusiasm from teachers in teaching class materials, more interesting, upbeat lectures and discussions, more communication, discussion, and freedom of expression, more culturally relevant material, greater student voice in deciding class topics, and higher involvement of classroom materials that directly relate to real life would help them learn. Second, the students also suggested adults in the school get to know students on an individual level, both inside the classroom and out, be more encouraging of all students, irrespective of past experience with them, communicate their belief in students and their ability to learn, and provide more individualized attention and tutoring for students. The students in Lee's study seemed to identify the very concepts that the exemplary teachers spoke of in Sturtevant and Linek's (2003) study.

McCombs et al (1997) took the concept of learner-centeredness one step father as they studied the relationships between teacher perceptions of their beliefs about learners, teaching, and learning, students' perceptions of teacher's practices and beliefs, and
student achievement. McCombs et al define the learner centered teacher as viewing each student as unique and capable of learning, holding the perspective that focuses on the learner knowing that this promotes learning, understanding basic principles defining learners and learning, and honoring and accepting the student’s point of view. Using a survey tool that assesses teacher perceptions of their beliefs and practices as well as students’ perceptions of teacher beliefs and practices and compares those perceptions to student motivation and achievement, McCombs et al conducted multiple studies involving nearly 10,000 students and over 900 teachers and found that “teachers’ characteristics influence their learner-centered beliefs, which impact students’ perceptions of teacher practice; and those perceptions, in turn, influence students’ motivation and, finally, classroom achievement” (p. 33).

These findings support the research involving learner based reading instruction in the content area classroom. Scaffolded instruction, reciprocal teaching, group sharing, and strategy instruction that moves the responsibility for learning to the students—all have been shown to produce significant gains in student achievement (Alfassi, 2004; Applebee et al, 2003; Greanleaf et al, 2001; Langer, 2001; Phelps, 2005; Rosenshine & Meister, 1994).

Since the current theory in content area reading instruction, as well as the high school reform movement in Michigan, is tied so strongly to a learner-centered classroom, the independent variable of orientation toward students as learners was measured in this study. As Beswick (2004) stated, “it is insufficient to assist teachers to develop beliefs that are considered helpful without attending to other beliefs that they may hold in relation to specific contexts” (p. 117). The research implies that a teacher who is learner-
centered would be more open to effectively infuse content area reading instruction into
the classroom. In this case, a teacher’s orientation toward her students as learners,
whether she is learner centered or non learner centered, was compared against the
teacher’s attitudes toward teaching content area reading.

A review of the literature on learner centered teaching revealed the Learner
Centered Principles (LCPs) developed by the American Psychological Association’s
(APA) 1993 Presidential Task Force for Psychology in Education (Weinberger &
McCombs, 2003) and updated in 1995 (McCombs, 2000). Based on an analysis and
synthesis of the research on the personal and environmental conditions that best support
high levels of learning and achievement, the LCPs consist of metacognitive and cognitive
factors, affective factors, developmental factors, personal and social factors, and
individual differences.

Using these domains, McCombs and Whistler (1997) developed the definition of
“learner-centered” as

the perspective that couples a focus on individual learners—their heredity,
experiences, perspectives, backgrounds, talents, interests, capacities, and needs—with a focus on learning—the best available knowledge about learning and how it
occurs and about teaching practices that are most effective in promoting the
highest levels of motivation, learning, and achievement for all learners. This dual
focus then informs and drives educational decision making. Learner-Centered is a
reflection in practice of the twelve Learner-Centered Psychological Principles—in
the programs, practices, policies, and people that support learning for all (p. 9).
<table>
<thead>
<tr>
<th>Principle</th>
<th>Cognitive and Metacognitive Factors</th>
<th>Motivational and affective factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principle 1</td>
<td>Nature of the learning process</td>
<td>The learning of complex subject matter is most effective when it is an intentional process of constructing meaning from information and experience.</td>
</tr>
<tr>
<td>Principle 2</td>
<td>Goals of the learning process</td>
<td>The successful learner, over time and with support and instructional guidance, can create meaningful, coherent representations of knowledge.</td>
</tr>
<tr>
<td>Principle 3</td>
<td>Construction of knowledge</td>
<td>The successful learner can link new information with existing knowledge in meaningful ways.</td>
</tr>
<tr>
<td>Principle 4</td>
<td>Strategic thinking</td>
<td>The successful learner can create and use a repertoire of thinking and reasoning strategies to achieve complex learning goals.</td>
</tr>
<tr>
<td>Principle 5</td>
<td>Thinking about thinking</td>
<td>Higher order strategies for selecting and monitoring mental operations facilitate creative and critical thinking.</td>
</tr>
<tr>
<td>Principle 6</td>
<td>Context of learning</td>
<td>Learning is influenced by environmental factors, including culture, technology, and instructional practices.</td>
</tr>
<tr>
<td>Principle 7</td>
<td>Motivational and emotional influences on learning</td>
<td>What and how much is learned is influenced by the learner's motivation. Motivation to learn, in turn, is influenced by the individual's emotional states, beliefs, interests and goals, and habits of thinking.</td>
</tr>
<tr>
<td>Principle 8</td>
<td>Intrinsic motivation to learn</td>
<td>The learner's creativity, higher order thinking, and natural curiosity all contribute to motivation to learn. Intrinsic motivation is stimulated by tasks of optimal novelty and difficulty, relevant to personal interests, and providing for personal choice and control.</td>
</tr>
<tr>
<td>Principle 9</td>
<td>Effects of motivation on effort</td>
<td>Acquisition of complex knowledge and skills requires extended learner effort and guided practice. Without learners' motivation to learn, the willingness to exert this effort is unlikely without coercion.</td>
</tr>
<tr>
<td>Principle 10</td>
<td>Developmental influence on learning</td>
<td>As individuals develop, they encounter different opportunities and experience different constraints for learning. Learning is most effective when differential development within and across physical, intellectual, emotional, and social domains is taken into account.</td>
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<tr>
<td>Principle 11</td>
<td>Social influences on learning</td>
<td>Learning is influenced by social interactions, interpersonal relations, and communication with others.</td>
</tr>
<tr>
<td>Principle 12</td>
<td>Individual differences in learning</td>
<td>Learners have different strategies, approaches, and capabilities for learning that are a function of prior experience and heredity.</td>
</tr>
<tr>
<td>Principle 13</td>
<td>Learning and diversity</td>
<td>Learning is most effective when differences in learners' linguistic, cultural, and social backgrounds are taken into account.</td>
</tr>
</tbody>
</table>
Both aspects of this definition—the focus on individual learners and the focus on learning through the research based best practices of promoting motivation, learning, and achievement for all learners—reflect the same ideals that were found in the literature on content area reading and instruction.

McCombs, Lauer, and Peralez (1997) used the LCPs to develop a K-20 tool for self assessment and reflection that identifies the areas of teacher beliefs and/or practices that could be changed to maximize student motivation and achievement. The Learner-Centered Battery (LCB) consists of four self-assessment surveys: Teacher Beliefs and Assumptions, Teacher Perceptions of Classroom Practices, Student Perceptions of Classroom Practices, and School Practices Survey. Taken in its entirety, McCombs et al (1997) propose the purpose of the LCB is to address the need for teachers to examine the consistency of their basic beliefs and assumptions about learners, learning, and teaching with the current knowledge base in education and psychology.

Multiple studies have been conducted on the Learner-Centered Battery (LCB) to determine the validity of the survey tool (McCombs et al, 1997). The researchers

| Principle 14 | Standards and assessment | Setting appropriately high and challenging standards and assessing the learner and learning progress— including diagnostic, process, and outcome assessment—are integral parts of the learning process. |

| Individual differences factors |

| Principle 14 | Standards and assessment | Setting appropriately high and challenging standards and assessing the learner and learning progress—including diagnostic, process, and outcome assessment—are integral parts of the learning process. |
conducted validation studies with nearly 10,000 students and over 900 teachers at the middle and high school levels. They found that teachers’ learner-centered beliefs positively predicted their perceptions of providing positive relationships, honoring student voice, encouraging high-order thinking, and adapting to students’ individual differences. Also, teachers’ nonlearner-centered beliefs about learners negatively predicted all four practice factors (p. 39).

Since the focus of the current study was to examine the relationship between secondary content area teachers’ orientation toward students as learners and their attitudes toward teaching reading, the first section—the Teacher Beliefs section—of the LCB was used in this study.

The Teacher Beliefs section of the LCB includes three factors with a total of 35 statements to which teachers respond on a four point Likert scale from strongly disagree, somewhat disagree, somewhat agree, to strongly agree. The three factors include: (1) 14 items reflecting learner-centered beliefs about learners, learning and teaching, such as “I believe that just listening to students in a caring way helps them solve their own problems;” (2) nine items reflecting non-learner centered beliefs about learners, such as “There are some students whose personal lives are so dysfunctional that they simply do not have the capability to learn;” and (3) 12 items reflecting non-learner centered beliefs about learning and teaching, such as “I can’t allow myself to make mistakes with my students.” Teachers were asked to respond to the statements, yielding information regarding their perceptions of their own beliefs. The data reflected how teachers perceive
their orientation toward students as learners. This data was then correlated to the teachers’ attitudes toward content area reading instruction.

Summary

A review of the literature suggests that little quantitative research has been conducted on content area teachers’ attitudes toward content area reading instruction since the turn of the century. No attempt has been made to quantify secondary content area teachers’ attitudes toward teaching reading in Michigan since the advent of the increased expectations and accountability measures of the No Child Left Behind legislation, on a national level, and the high school reform movement in the form of the MMC and MME on the state level. In addition, research has not been conducted on the relationship between the content area teachers’ orientation toward teaching, learning, and learners and their attitudes toward content area reading instruction despite multiple studies, both quantitative and qualitative in nature, that have indicated learner-centered teaching increases student achievement.

There has been limited qualitative research, in the form of surveys, journals, and case studies that have allowed for individual teacher’s voices to be heard. As a response to themes of student centeredness and the context that have arisen from those voices, this quantitative study combined both the identification of the content area teacher’s attitudes toward content area reading instruction as measured by the Otto-Smith Inventory and their degree of learner centeredness as measured by the Learner-Centered Battery. This study attempted to address the gaps presented in the review of the literature.
CHAPTER III

METHODOLOGY

Research Design and Overview

Earlier studies on the topic of content area reading instruction have been conducted through both post-positivist and constructivist paradigms. In their discussion of methodologies appropriate for this topic, Alvermann and Moore (1991) noted that experimental research had convincingly demonstrated that explicit strategy instruction was effective in controlled settings, but they questioned the ecological validity of much of this work. They called for more qualitative studies to help explain which factors might be critical to success in specific, authentic contexts. They stated, “to put it plainly, quantitative research can suggest ‘what works,’ but qualitative research can give us insights into why, how, and with whom it works” (p. 14).

During the review of the literature, it was noted that the non-experimental quantitative studies of the 1960s, 70s, and 80s that served to describe secondary content area teachers’ attitudes toward teaching reading and measured the relationships between those attitudes and certain predictor variables were followed by a trend to listen to what the voices of secondary content area teachers were saying about content area reading instruction through qualitative methods and to utilize experimental studies for further research of effective strategy instruction. The voices that have emerged from the qualitative exemplary teacher studies sang of a learner-centeredness (Moje, 1996; Sturtevant & Linek, 2003), and the experimental studies have shown that a learner
centered paradigm has increased student achievement (Alfassi, 2004; Langer, 2001; McCombs et al, 1997; Rosenshine & Meister, 1994).

Since the advent of the No Child Left Behind legislation, with its focus on expectations and accountability in the form of reading based standardized tests, and the new Michigan high school reform movement in the form of the Michigan Merit Curriculum and Michigan Merit Exams, there has been little or no effort to determine where Michigan’s secondary content area teachers’ attitudes toward their students as learners or toward content area reading and instruction lie. Since it focused on determining “the one true reality” of how Michigan secondary content area teachers reported their attitudes toward content area reading instruction and their orientation toward learners, learning, and teaching, this study followed a post-positivist paradigm (Gay & Airasian, 2003). This study followed in line with the earlier non-experimental quantitative studies that attempted to describe and measure the relationships between teacher attitudes and selected predictor variables; however, it also included the findings from the qualitative studies that focused on learner-centered attitudes.

In this non-experimental study, a simple descriptive approach to survey research was employed in order to describe the characteristics of a sample at a single point in time (Creswell, 2003; Gay & Airasian, 2003). A survey design was employed to identify both the direction and strength of teacher attitudes toward content area reading instruction and their orientation toward learners. Such designs allow for a quantitative description of attitudes or opinions of a population by studying a sample of that population (Creswell, 2003; Gay & Airasian, 2003). Once the description was established, the findings were generalized from the sample to a population.
The study was correlational as well, as it was designed to identify the relationships between the teachers’ attitudes and selected predictor variables, as well as those attitudes toward content area reading instruction and the teachers’ orientation toward learners, learning, and teaching. In a basic correlational design, two or more scores are obtained for each member of the sample, and then the paired scores are correlated (Gay & Airasian, 2003). The teachers in this study had predictor variables along with attitude scores for content area reading instruction and belief scores for orientation toward learners, learning, and teaching.

The research questions were as follows:

**Research Questions**

1. Tested separately, to what extent do content area responsibility, amount and type of training in content area reading instruction, or degree level predict content area teachers’ attitudes toward content area reading instruction?

2. To what extent does secondary content area teachers’ orientation toward their students as learners predict their attitudes toward content area reading instruction?

A description of the sample, instrumentation, data collection, and data analysis of the study are included in this chapter.

**Sample**

Michigan public high school teachers working in Class A schools containing grades nine through 12 and whose primary teaching responsibility was English,
mathematics, social studies, or science were surveyed in order to investigate their attitudes toward content area reading instruction, their orientation toward students as learners, and the relationship between those attitudes, orientations, and specified predictor variables. At the time of this study, the researcher did not have access to a list of all content area teachers who teach in Class A high schools in Michigan; therefore, random sampling of the population was not possible (Gay & Airasian, 2003). Instead, one stage cluster sampling was employed to first identify the sample for the proposed study and then gain access from the appropriate administrators. Gay and Airasian (2003) cite the main advantage for one stage cluster sampling in its efficiency; however, they caution that fewer sampling points make it less likely to have a representative sample.

In this study, a cluster consisted of all of the content area teachers who taught at one high school. Eligible clusters were identified via a website by enrollment as of the 2006-2007 school year (http://schoolmatters.com). It was believed high schools with 1000 or more students were large enough to have teachers dedicated to teaching in one content area (department). Smaller schools may have used dually certified teachers who were required to teach more than one subject area. All of the Class A high schools that included grades nine through 12 and that included email addresses for the school based administrator were contacted via email and invited to participate in the study. The administrators then forwarded the email containing the link to the study to their staffs. The sample for this study consisted of all content area teachers who taught in the identified clusters and who responded to the survey.
Western Michigan University's Human Subjects Institutional Review Board (HSIRB) approved all procedures, protocol, and methodology before any phase of the research took place.

Instrumentation

The instrumentation used in this study was a three part survey developed by the researcher after a search of the literature. Gay and Airasian (2003) advocate that structured items, or those that consist of a statement with a list of alternative responses from which the respondents selects, is ideal for facilitating responses, data analysis, and objective and efficient scoring. The survey tool developed for this study consisted of three sections, two of which had structured items which were responded to on a Likert scale. The survey also included a demographic section that required teachers to self-report predictor variables of content area responsibility, amount and type of preservice training, amount and type of inservice training, and degree level.

Gay and Airasian (2003) also caution against confusing and ambiguous test items, difficult vocabulary, difficult and complex sentence structures, and inconsistent and subjective scoring methods in survey research. Mertens (2005) adds the importance of clarity, brevity, and the avoidance of bias, leading questions, and multiple ideas in one item to the list of appropriate research questions. Since both of the Likert scaled sections have been used in multiple studies reported in the literature, it was ascertained that the items used have been piloted and vetted for appropriateness. Regardless of the previous studies; however, the instrument developed for this study was piloted for face validity.
The second section of the instrument included the Otto-Smith Inventory (1969). As reported earlier in an earlier chapter, the Otto-Smith Inventory was developed to identify the strength and direction of secondary content area teachers’ attitudes toward teaching reading. The instrument was designed to yield data regarding teachers’ perceptions of their personal role in teaching reading in the content areas, the role of the reading specialist at the secondary level; their personal preparation and ability to teach reading; and the actual task of teaching reading relative to its being an enjoyable or distasteful one.

The Otto-Smith Inventory consists of 14 statements, seven of which are worded positively and seven are worded negatively, designed to elicit teacher attitudes toward content area reading instruction through self-reporting. Teachers can choose one of five levels of agreement with the items on the survey—*strongly agree, agree, undecided, disagree, and strongly disagree*—as they read each of the 14 statements. Scores of 5, 4, 3, 2, and 1 will be assigned to the positively worded items (items 2, 3, 4, 9, 11, 13, and 14), and scores of 1, 2, 3, 4, and 5 will be assigned to the negatively worded items (items 1, 5, 6, 7, 8, 10, and 12). Total scores for each respondent can range from 14 to 70, with any score above 42 reflecting a generally positive attitude toward teaching content area reading and any score below 42 indicating a generally negative attitude toward content area reading.

Hargrove (1973) cites reported Hoyt reliability estimates from the three earlier studies employing the Otto-Smith Inventory as .848, .84, and .87, respectively (p. 65). Although the instrument is over 25 years old, reliability and validity has been established.
through multiple studies. The language is not dated, and the questions remain current to both the field of content area reading instruction and teacher attitudes.

As stated in Chapter 2, recent studies in the field of content area reading instruction and content literacy have been qualitative. A search of internet databases as well as an examination of studies that have been conducted on teacher attitudes and content area reading instruction produced few instruments, none of which were developed more recently than 1977. A second attitudinal survey was developed by Vaughan (1977) and used in several studies reported in the literature but was rejected for this study on the basis that its attitude scale revealed five ranges of attitudes from low attitudes, below average attitudes, average attitudes, above average attitudes, to positive attitudes with no clear explanation of what each range described. It was not clear if an average attitude was a positive or negative one. The Otto-Smith Inventory, on the other hand, yielded an attitude score with a clear delineation between positive and negative attitudes.

A third instrument developed by Flanagan (1975) and modified by Kozey (1980) was considered but rejected due to both its length and its suggestive nature. The tool consists of a three part survey that utilizes a five point Likert-type scale. Each section of the survey contains 27 statements, for a total of 81 statements. Mertens (2005) cautions against long surveys and indicates that simple and short surveys will result in higher response rates than longer ones.

As a competency based instrument, the statements identify the best practice strategies for content area reading and, thus, could suggest how teachers should respond to the statements. All competency based tools identified in the literature were rejected on
the basis of the power of suggestion as well as the fact that this study involves the teachers' attitudes toward content area reading rather than their perceptions of the importance of the competencies.

The final section of the survey tool consisted of the first section of the Learner Centered Battery developed by McCombs et al (1997) as discussed in the previous chapter. As stated earlier, the LCB was originally designed as a self-assessment and reflection tool by McCombs et al for professional development of teachers. In its entirety, the LCB is used to measure student perceptions of teacher practices and beliefs against the teachers' perceptions of their own beliefs and practices, with the ultimate goal of shrinking the gap between what teachers believe about learners, teaching, and learning and what students believe teachers believe about learners, learning, and teaching. Studies conducted on the validity of the tool indicated student motivation and achievement is related to how students perceive teachers to view learners, learning, and teaching. Since this study focused on identifying the relationship between the teachers' beliefs about learners, learning, and teaching and their attitudes toward content area reading instruction, only the Teacher Beliefs section was used to determine whether the teachers surveyed were learner centered or non learner centered as defined by the LCPs and the LCB.

The Teacher Beliefs section of the LCB includes three factors with a total of 35 statements to which teachers respond on a four point Likert scale from strongly disagree, somewhat disagree, somewhat agree, to strongly agree. The three factors include: (1) 14 items reflecting learner-centered beliefs about learners, learning and teaching, such as “I believe that just listening to students in a caring way helps them solve their own
problems;” (2) nine items reflecting non-learner centered beliefs about learners, such as “There are some students whose personal lives are so dysfunctional that they simply do not have the capability to learn;” and (3) 12 items reflecting non-learner centered beliefs about learning and teaching, such as “I can’t allow myself to make mistakes with my students.” Teachers were asked to respond to the statements, yielding information regarding their perceptions of their own beliefs. Scores of 4, 3, 2, and 1 were assigned to the answers strongly disagree, somewhat disagree, somewhat agree, and strongly agree, respectively.

Using the four point scale, each teacher’s average scores was determined for each factor. McCombs et al (1997) designate scores of higher than or equal to 3.2 for the learner-centered beliefs factor and lower than 2.4 for the non-learner centered beliefs about learners factor and the non-learner centered beliefs about learning and teaching factor as the “Most Preferred Scores.” They indicate that the “most preferred score patterns are based on the scores of the 25 validation sample teachers with the highest proportion of students high in both achievement and motivation. For the validation sample, data were collected from 112 middle school teachers and 2476 middle school students, 155 high school teachers and 3136 high school students from six states” (p. 63).

The data collected reflected how teachers perceive their orientation toward students as learners. This data was then correlated to the teachers’ attitudes toward content area reading instruction.

In summary, a three part survey tool was developed and used in this study (see Appendix A). There was a researcher designed demographic section, the Otto Smith Inventory used in its entirety, and the Teacher Beliefs section of the Learner Centered
Battery. An appropriate cover letter, consent form/statement, and directions also accompanied the instrument.

Data Collection Methods

A web-based survey design was chosen for this study based on the purpose of the survey, the data to be collected, cost factors, and the size and characteristic of the sample (Mertens, 2005). It was assumed that with the importance placed on technology use in schools, public school teachers had access to internet on a regular basis. Public schools in Michigan were likely to have some form of high-speed internet access; therefore, line speed to access a web-based survey should not have been an issue. Gay and Airasian (2003) cite several advantages of email or web-based survey data collection methods including quick results, confidentiality for respondents, easily scored, and standardized items and procedures.

Care was taken in choosing the web-based survey provider. Mertens (2005) cites a meta-analysis of survey literature that shows three important factors to increasing response rates in internet-based surveys. First, email contact should be made before the survey is sent. Second, the survey should be relatively plain, simple, and short. This should increase response rate by creating a survey that is fast and easy to download. Finally, there should be multiple follow up contacts with the non-responding members of the sample (Mertens, 2005, p. 196). Mertens’ guidelines were taken into account when a web-based survey provider was chosen.

The SchoolMatters website was used to identify the clusters for study. Once identified, building principals in each cluster were contacted via email to gain permission
for and elicit participation in the study. Principals were asked to encourage their teachers’ participation in the study either by forwarding the email containing the survey link along with a request for participation in the study to the teachers or by accessing the survey link during a faculty meeting that would be held in a school computer lab. Using Survey Monkey, a web-based survey company, a version of the survey tool described in the previous section was developed that contained a tool for demographic data, the 14 statements of the Otto-Smith Inventory, and the 35 statements regarding learner centered and non learner centered beliefs. Along with the cover letter for the study, a letter for consent for participation in the study, and a respondent data sheet that contained information regarding the predictor variables. Although anonymity cannot be guaranteed in an email survey (Gay & Airasian, 2003), confidentiality was assured. Care was taken in the selection of the web-based survey company so that the appropriate number and types of contact were made with the subjects.

A pilot of the teachers in one middle school was conducted for this study. After conducting a pilot study to assess the face validity of the on-line instrument, the survey instrument was sent electronically via email to the principals of Michigan public high schools (grades 9-12) with student enrollments of 1000+. Principals then chose whether to forward it on to their content area teachers. Teachers choosing to participate in the survey completed it on their computers. When the active data collection period had elapsed, the data was transferred via the web-based survey into an SPSS file.
Data Analysis

This study investigated the attitudes of content area teachers toward teaching reading and selected factors that may relate to those attitudes. Through the use of a survey, the direction and strength of the teachers' attitudes was determined, and the relationship between those attitudes and three predictor variables—content area responsibility, level of training in reading instruction, and degree level—was investigated. The teachers' orientation toward students as learners and the relationship between those beliefs and their attitudes toward teaching reading was also examined.

Since the electronic version of the survey were entered directly into the data base, there was limited handling of the data. Once entered into the SPSS program, both descriptive and inferential statistics were gleaned from the data. As indicated previously, further research must be done in order to determine sample size. Data analysis for each research question involved setting effect size and power in reference to the sample size. The study was designed to obtain the largest $n$ within reason so that the smallest effect size and largest power could be obtained.

Descriptive statistics were employed to define the sample in terms of demographic variables—content area responsibility, level of training in content area reading instruction, and degree level—direction and strength of attitude toward content area reading instruction, and orientation toward students as learners.

Otto-Smith Attitude Inventory

Data was analyzed to determine the total attitude score for each respondent who completed the survey. Since each item on the survey had a range of one to five points, the
total attitude score could range from 14 to 70, with a high score reflecting a more positive attitude than a low score. Scores below 42 indicated negative attitudes toward content area reading instruction, and scores above 42 indicated positive attitudes. Descriptive statistics produced a mean, standard deviation, and the range for all respondents. The descriptive statistics were reported and presented in a table.

Research Question 1: Tested separately, to what extent do content area responsibility, amount and type of training in content area reading instruction, or degree level predict content area teachers’ attitudes toward content area reading instruction?

The research question involved the investigation of the relationship between secondary content area teachers’ attitudes toward content area reading instruction and (a) their content area responsibilities, (b) amount and type of training in content area reading instruction, and (c) degree level.

(a) What is the relationship between content area teachers’ attitudes toward content area reading instruction and their content area responsibilities?

Descriptive statistics were computed in order to determine group means for teachers in each of the four content areas—English, math, social studies, and science. With the four independent variables of content area responsibility and the one continuous dependent variable of teacher attitudes, an analysis of variance (ANOVA) was calculated in order to compare differences between the group means. Post hoc testing was performed, and F ratios were reported as statistically significant at p< .05.

(b) What is the relationship between content area teachers’ attitudes toward content area reading instruction and the amount and type of training they have had in content area reading instruction?
The amount and type of training in content area reading instruction was grouped into three mutually exclusive categories. Descriptive statistics were calculated to determine group means for each of the three levels of training. With three independent variables of amount/type of training in content area reading instruction and the one continuous dependent variable of teacher attitudes, an analysis of variance (ANOVA) was calculated in order to compare differences between the group means. Post hoc testing was performed, and F ratios were reported as statistically significant at p< .05.

*(c) What is the relationship between content area teachers’ attitudes toward content area reading instruction and their degree level?*

Teachers’ degree levels were grouped into four mutually exclusive categories: Bachelor’s degree, Master’s degree, Ed Specialist degree, and Ph.D./E.DD. Descriptive statistics were calculated to determine group means for each of the four certification levels. With four independent variables of degree level and the one continuous dependent variable of teacher attitudes, a four-way analysis of variance (ANOVA) was calculated in order to compare differences between the group means. Post hoc testing was performed, and F ratios were reported as statistically significant at p< .05.

*Learner-Centered Battery*

The second research question necessitated examining the surveyed teachers' orientation toward learners by measuring their beliefs about learners, learning, and teaching. The survey instrument revealed data regarding three factors: learner-centered beliefs about learners, learning, and teaching, non-learner centered beliefs about learners, and non-learner centered beliefs about learning and teaching. McCombs et al (1997) have
identified preferred scores as $=3.2$ for the learner-centered beliefs and $<2.4$ for both of the non-learner centered belief factors. For the purposes of this study, the two non-learner factors were collapsed into one category—non-learner centered beliefs about learners, learning, and teaching.

Descriptive statistics were calculated to determine the measures of central tendency for each of the two independent variables—learner-centered beliefs and non-learner centered beliefs—and presented in a table. Since there were two sets of scores for each respondent, a $t$ test for correlated samples was used to determine if a significant difference existed between the variables. A two tailed test was used since there is no significant rationale for a directional hypothesis (Munro, 2005). In accordance with Munro (2005), if the significance for the Levene's test for equality of variances exceeded .05, the equaled variance results were reported; if the significance level was less than .05, the unequal variance results were reported.

*Research Question 2*: To what extent does the secondary content area teachers' orientation toward their students as learners predict their attitudes toward content area reading instruction?

With two continuous independent variables of learner-centered and non-learner centered beliefs and the continuous dependent variable of "teacher attitude toward content area reading instruction," a multiple regression analysis was performed to identify what, if any, relationship existed between the variables (Mertens, 2005).
Summary

In this study, a descriptive approach to survey research was used to quantify secondary content area teachers’ attitudes toward teaching reading in their classrooms and to identify the nature of the relationship between those attitudes and certain predictor variables. A three part survey was developed and administered to randomly selected clusters of public high schools in Michigan with enrollments of 1000+ students via a web-based survey. Cluster participation was elicited through personal email contact with the building principal, who then choose to forward an email containing the link to the content area teachers in his/her building or to have a faculty meeting in a computer lab and encourage the teachers to access the survey at the same time. Once the data was collected, it was transferred into SPSS for analysis. Both descriptive and inferential statistics were applied to the data in order to answer the research questions.
CHAPTER IV

RESULTS

This chapter addresses the question: To what extent do the variables of content area responsibility, amount and type of training in content area reading instruction, degree level, or orientation toward their students as learners predict content area teachers’ attitudes toward content area reading instruction? The chapter is divided into two main sections. In the first section, the sample is described using the demographic information gathered with the instrument. The results of the Otto-Smith inventory are used to identify the direction and strength of the teachers’ attitudes toward content area reading instruction. The teachers’ orientation toward students as learners will also be described using the results of the Learner Centered Battery section of the instrument. The second section of the chapter will identify the relationship between the dependent variables of content area responsibility, degree level, amount and type of training in content area reading instruction, and the teachers’ attitudes toward content area reading instruction and the teachers’ orientation toward students as learners.

Sample

Demographics

A total of 191 secondary teachers in Michigan’s Class A high schools responded to the survey. A majority of the respondents (61%) identified the geographic region of their school as being from the southeast. The southwest region had the second highest response rate at 24% followed by the Upper Peninsula at 11%. 

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Upper lower Michigan had the lowest response rate at less than 1% of the respondents identifying that region as the location of their schools. Respondents ranged in age from 23-64 years old with an average age of 43. The teaching experience of the respondents ranged from one to forty years of teaching. The mean years of teaching experience was 14 and the mode was 4 years. Sixty-nine point eight of the respondents were female. Those surveyed indicated that their school’s student enrollment ranged from 65-3000 students, with an enrollment average of 1401 and a mode of 1200. The average and median class size reported on the survey was 28, with a range from 15-39. The mode for class size was 30.

Content Area Responsibility

The variables of interest in this research were content area responsibility, the highest degree level attained by the teacher, the amount/type of training the teacher had in reading instruction, the orientation the teachers had toward their students as learners, and the teachers’ attitudes toward teaching reading (content area reading instruction).

Table 2 reflects the content area responsibility identified by the respondents.

Table 2. Content Area Responsibility

<table>
<thead>
<tr>
<th>Content Area</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>31</td>
</tr>
<tr>
<td>Science</td>
<td>38</td>
</tr>
<tr>
<td>Social Studies</td>
<td>21</td>
</tr>
<tr>
<td>English</td>
<td>55</td>
</tr>
<tr>
<td>Other</td>
<td>45</td>
</tr>
<tr>
<td>Total</td>
<td>190</td>
</tr>
</tbody>
</table>

Of the four content areas identified in this study, English teachers responded the most (28%) followed by science (20%), math (16%), and social studies (11%).
**Highest Degree Held**

As illustrated in Table 3, 70% of the respondents held Masters' Degrees followed by 25% who held Bachelors' Degrees. Credits beyond a Bachelors' degree ranged from zero to 100 and averaged 16.

<table>
<thead>
<tr>
<th>Degree</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor's</td>
<td>47</td>
</tr>
<tr>
<td>Masters'</td>
<td>133</td>
</tr>
<tr>
<td>Ed Specialist</td>
<td>6</td>
</tr>
<tr>
<td>Ed.D./Ph.D.</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>190</strong></td>
</tr>
</tbody>
</table>

**Amount and Type of Education/Training in Teaching Reading in the Content Areas**

The amount and type of training in content area reading instruction was collected in three different sections on the instrument. First, information was collected on the number of credits the teachers had in content area reading instruction during their teacher education program (preservice hours). One hundred and seventy respondents answered this question and a wide range of responses were gleaned from the data. Teachers indicated a range from zero credits to 50 credits. The mean for this response was 6.21 credits with SD = 11.637. The mode of the data set was 0, with 45% of the respondents indicating they had no credits in content area reading instruction in their teacher training programs.

A second question on the instrument required teachers to identify the number of credits they had earned in content area reading instruction post-bachelors'. Again, there was a broad range of responses, from zero to 120, with a mean of 4.25, SD = 7.28.
time, the mode was 3 credits (52 respondents), and 125 of the respondents indicated they had 6 credits or less in content area reading instruction post-bachelors’.

The final question in this section focused on the number of inservice hours in content area reading instruction a teacher had. Examples such as school/district/RESA/conferences, etc. were given as prompts. This question garnered the largest range of responses of the three that focused on identifying the amount/type of training in content area reading instruction (0-200). The mode for this response, as with the first, was zero—27% indicated they had no inservice training in content area reading instruction. The mean was 12.87 hours (SD = 24.022).

*Attitudes toward Content Area Reading Instruction*

Content area teachers’ attitudes toward teaching reading in their classrooms were measured using the Otto-Smith Inventory. The Inventory consisted of 14 statements, seven of which were worded positively and seven negatively, to which teachers responded on a five-point Likert scale that included *strongly agree, agree, undecided, disagree,* and *strongly agree.* The total score a teacher could earn on the Otto-Smith inventory ranges from 14, which would indicate the most negative attitude toward teaching content area reading in the classroom to 70, which would indicate the most positive attitude. Scores of 42 and lower indicated a generally negative attitude toward teaching content area reading skills, and scores of 43 and above indicate a generally positive attitude. The higher the score, the more positive the attitude; the lower the score, the more negative the attitude.
Data were analyzed to determine the total attitude score for each respondent who completed the survey. Since each item on the survey has a range of one to five points, the total attitude score could range from 14 to 70, with a high score reflecting a more positive attitude than a low score. Scores below 42 indicated negative attitudes toward content area reading instruction, and scores above 42 indicated positive attitudes. Descriptive statistics produced a mean, standard deviation, and the range for all respondents. The descriptive statistics are reported and presented in a table.

In the current study, the teachers surveyed were found to have generally positive attitudes toward teaching reading in the content areas. The mean for all respondents was 47.71, SD 8. The scores ranged from a low of 21 to a high of 65. Table 4 illustrates the response to each of the 14 statements that make up the Otto-Smith Inventory. Full statements for each can be found in Appendix A.

Table 4. Otto-Smith Inventory Results

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>67</td>
<td>88</td>
<td>13</td>
<td>21</td>
<td>2</td>
<td>4.03</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>47</td>
<td>37</td>
<td>88</td>
<td>17</td>
<td>2.63</td>
</tr>
<tr>
<td>3</td>
<td>50</td>
<td>101</td>
<td>11</td>
<td>20</td>
<td>8</td>
<td>3.87</td>
</tr>
<tr>
<td>4</td>
<td>35</td>
<td>85</td>
<td>23</td>
<td>36</td>
<td>12</td>
<td>3.5</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>45</td>
<td>29</td>
<td>71</td>
<td>37</td>
<td>2.54</td>
</tr>
<tr>
<td>6</td>
<td>30</td>
<td>95</td>
<td>21</td>
<td>36</td>
<td>9</td>
<td>3.53</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>77</td>
<td>34</td>
<td>60</td>
<td>7</td>
<td>3.12</td>
</tr>
<tr>
<td>8</td>
<td>17</td>
<td>124</td>
<td>20</td>
<td>28</td>
<td>2</td>
<td>3.66</td>
</tr>
<tr>
<td>9</td>
<td>53</td>
<td>89</td>
<td>20</td>
<td>23</td>
<td>5</td>
<td>3.85</td>
</tr>
<tr>
<td>10</td>
<td>49</td>
<td>111</td>
<td>18</td>
<td>9</td>
<td>2</td>
<td>4.04</td>
</tr>
<tr>
<td>11</td>
<td>46</td>
<td>87</td>
<td>28</td>
<td>21</td>
<td>8</td>
<td>3.75</td>
</tr>
<tr>
<td>12</td>
<td>9</td>
<td>70</td>
<td>36</td>
<td>66</td>
<td>10</td>
<td>3.01</td>
</tr>
<tr>
<td>13</td>
<td>23</td>
<td>91</td>
<td>35</td>
<td>36</td>
<td>6</td>
<td>3.47</td>
</tr>
<tr>
<td>14</td>
<td>10</td>
<td>57</td>
<td>45</td>
<td>62</td>
<td>16</td>
<td>2.91</td>
</tr>
</tbody>
</table>
It may be of interest to note that almost a quarter of the respondents (23.6%) had generally negative scores of 42 or less. In fact, the strongest responses on the Inventory were to questions that would indicate a negative attitude toward teaching reading in the content areas.

Table 5. Strong Responses to Negative Questions

<table>
<thead>
<tr>
<th>Statement:</th>
<th>Mean</th>
<th>Number of negative respondents (does not include undecided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In the secondary school, the teaching of reading should be the responsibility of reading teachers only.</td>
<td>4.03</td>
<td>155/190</td>
</tr>
<tr>
<td>6. Only remedial reading should be necessary in the secondary school and that should be done by remedial reading classes.</td>
<td>3.53</td>
<td>125/190</td>
</tr>
<tr>
<td>10. Teaching reading takes all the fun out of teaching at the secondary level</td>
<td>4.04</td>
<td>160/190</td>
</tr>
<tr>
<td>14. Content area teachers in the secondary school are probably more competent to teach the reading skills needed for their subjects than special reading teachers.</td>
<td>2.91</td>
<td>78/190</td>
</tr>
</tbody>
</table>

Teachers in this study also believed that although they do not need special university courses in methods of teaching reading (55% disagreed/strongly disagreed with the statement), they do need special materials (141 agree/strongly agree). There was also a tendency for the respondents to report that they believed teaching reading is a technical process that secondary school teachers generally know nothing about ($\bar{t} = 3.12$) and that special reading teachers are more competent to teach reading skills for their subjects than content area teachers ($\bar{t} = 2.91$). Responses to statements 3, 4, 5, 9, 11, and 13 would
indicate a positive attitude toward teaching reading. Table 6 illustrates these positive responses.

Table 6. Statements Indicating Positive Attitudes toward Teaching Reading in the Content Areas

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>Number of positive respondents (does not include undecided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. The teaching of reading skills can be incorporated into content area courses without interfering with the major objectives of those courses.</td>
<td>3.87</td>
<td>151/190 79% agree/strongly agree</td>
</tr>
<tr>
<td>4. Any secondary school teacher who assigns reading should teach his or her students how to read what is assigned.</td>
<td>3.5</td>
<td>120/190 63% agree/strongly agree</td>
</tr>
<tr>
<td>5. With rare exceptions, students should know what there is to know about reading before they are permitted to leave the elementary school.</td>
<td>2.54</td>
<td>108/190 57% disagree v. 27% (n=52) agree</td>
</tr>
<tr>
<td>9. Teaching reading is a necessary and legitimate part of teaching any content course in the secondary school.</td>
<td>3.85</td>
<td>142/190 75% agree/strongly agree</td>
</tr>
<tr>
<td>11. Every secondary school teacher should be a teacher or reading.</td>
<td>3.75</td>
<td>133/190 70% agree/strongly agree</td>
</tr>
<tr>
<td>13. Integrating the teaching of reading can be as exciting for teacher as teaching content only.</td>
<td>3.47</td>
<td>114/190 60% agree/strongly agree v. 22% (n=42) disagree</td>
</tr>
</tbody>
</table>

Orientation toward Students as Learners

The research question necessitated examining the surveyed teachers' orientation toward learners by measuring their beliefs about learners, learning, and teaching. The survey instrument revealed data regarding three factors: learner-centered beliefs about
learners, learning, and teaching, non-learner centered beliefs about learners, and non-
learner centered beliefs about learning and teaching. McCombs et al (1997) have
identified preferred scores as =3.2 for the learner-centered beliefs and <2.4 for both of the
non-learner centered belief factors. For the purposes of this study, the two non-learner
factors will be collapsed into one category—non-learner centered beliefs about learners,
learning, and teaching—and the preferred score remained =2.4.

Descriptive statistics were calculated to determine the measures of central
tendency for each of the two independent variables—learner-centered beliefs and non-
learner centered beliefs—and are presented in Table 7 and 8, respectively. The final
column in each table indicates whether the mean falls within the “preferred score” range
identified by McCombs et al.

Overall, the mean score for all respondents on the learner centered beliefs
statements was 3.02. The score was lower than the =3.2 score that McCombs et al
identified as preferred. A total of five out of the 14 statements had means that fell within
McCombs’ preferred score range. Respondents indicated they believe that teachers need
to address students’ social, emotional, and physical needs (10.) and be relaxed and
comfortable with themselves (25.) for students to learn. They also indicated the beliefs
that students have more respect for instructors that they see as real people (1.), learn more
in classes in which the instructor encourages them to express their own personal beliefs
and feelings (2.), and are more motivated to learn when teachers get to know them at a
personal level (22.). Whereas a high score on the learner centered questions is
preferred, a lower score is preferred for the statements that indicate non learner centered
beliefs about teaching and learning. McCombs et al designate a score =2.4 as preferred for statements that indicate non-learner centered beliefs about teaching and learning.

Table 7. Learner-Centered Belief Statements and Means

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>SD</th>
<th>Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students have more respect for instructors they see and can relate to as real people, not just as teachers.</td>
<td>3.37</td>
<td>0.914</td>
<td>X</td>
</tr>
<tr>
<td>4. Students achieve more in classes in which instructor encourages them to express their personal beliefs and feelings.</td>
<td>3.19</td>
<td>0.695</td>
<td>X</td>
</tr>
<tr>
<td>7. In order to maximize learning, I need to help students feel comfortable in discussing their feelings and beliefs.</td>
<td>2.92</td>
<td>0.734</td>
<td></td>
</tr>
<tr>
<td>10. Addressing students’ social, emotional, and physical needs is just as important to learning as meeting their intellectual needs.</td>
<td>3.43</td>
<td>0.685</td>
<td>X</td>
</tr>
<tr>
<td>13. Taking the time to create caring relationships with my students is the most important element for student achievement.</td>
<td>3</td>
<td>0.783</td>
<td></td>
</tr>
<tr>
<td>16. Helping students understand how their beliefs about themselves influence learning is as important as working on their academic skills.</td>
<td>3.05</td>
<td>0.711</td>
<td></td>
</tr>
<tr>
<td>19. I can help students who are uninterested in learning get in touch with their natural motivation to learn.</td>
<td>3.03</td>
<td>0.65</td>
<td></td>
</tr>
<tr>
<td>22. Students will be more motivated to learn if teachers get to know them at a personally.</td>
<td>3.25</td>
<td>0.71</td>
<td>X</td>
</tr>
<tr>
<td>Statement</td>
<td>Mean</td>
<td>SD</td>
<td>Preferred Score</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>------</td>
<td>-------</td>
<td>------------------</td>
</tr>
<tr>
<td>26. Being willing to share who I am as a person with my students facilitates learning more than being an authority figure.</td>
<td>2.32</td>
<td>0.899</td>
<td>3.2</td>
</tr>
<tr>
<td>30. My acceptance of myself as a person is more central to my classroom effectiveness than the comprehensiveness of my teaching skills.</td>
<td>2.53</td>
<td>0.766</td>
<td></td>
</tr>
<tr>
<td>32. Accepting students where they are—no matter what their behavior and academic performance—makes them more receptive to learning.</td>
<td>2.99</td>
<td>0.747</td>
<td></td>
</tr>
<tr>
<td>34. Seeing things from the students’ point of view is the key to their good performance in school.</td>
<td>2.88</td>
<td>0.632</td>
<td></td>
</tr>
<tr>
<td>35. I believe that just listening to students in a caring way helps them solve their problems.</td>
<td>2.99</td>
<td>0.714</td>
<td></td>
</tr>
</tbody>
</table>

<p>| Mean for Learner Centered Beliefs Statements | 3.02 | Lower than preferred score |</p>
<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>SD</th>
<th>Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. There are some students whose personal lives are so dysfunctional that they simply do not have the capability to learn.</td>
<td>2.39</td>
<td>0.993</td>
<td>X</td>
</tr>
<tr>
<td>3. I can’t allow myself to make mistakes with my students.</td>
<td>1.47</td>
<td>0.686</td>
<td>X</td>
</tr>
<tr>
<td>5. Too many students expect to be coddled in school.</td>
<td>3.2</td>
<td>0.771</td>
<td></td>
</tr>
<tr>
<td>6. If students are not doing well, they need to go back to the basics and do more drill and skill development.</td>
<td>2.56</td>
<td>0.808</td>
<td></td>
</tr>
<tr>
<td>8. It’s impossible to work with students who refuse to learn.</td>
<td>2.48</td>
<td>0.93</td>
<td></td>
</tr>
<tr>
<td>9. No matter how badly an instructor feels he or she has a responsibility to not let students know about those feelings.</td>
<td>2.24</td>
<td>0.773</td>
<td>X</td>
</tr>
<tr>
<td>11. Even with feedback, some students just can’t figure out their mistakes.</td>
<td>2.77</td>
<td>0.772</td>
<td></td>
</tr>
<tr>
<td>12. My most important job as a teacher is to help students meet well-established standards of what it takes to succeed.</td>
<td>2.73</td>
<td>0.779</td>
<td></td>
</tr>
<tr>
<td>14. I can’t help feeling upset and inadequate when dealing with difficult students.</td>
<td>2.52</td>
<td>0.914</td>
<td></td>
</tr>
<tr>
<td>15. If I don’t provide direction for student questions, they won’t get the right answer.</td>
<td>2.29</td>
<td>0.775</td>
<td>X</td>
</tr>
<tr>
<td>17. It’s just too late to help some students.</td>
<td>1.7</td>
<td>0.783</td>
<td>X</td>
</tr>
</tbody>
</table>
Table 8—Continued

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>SD</th>
<th>Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Knowing my subject matter really well is the most important contribution I can make to student learning.</td>
<td>2.47</td>
<td>0.827</td>
<td></td>
</tr>
<tr>
<td>20. No matter what I do or how hard I try, there are some students that are unreachable.</td>
<td>2.55</td>
<td>0.892</td>
<td></td>
</tr>
<tr>
<td>21. Knowledge of the subject area is the most important part of being an effective teacher.</td>
<td>2.4</td>
<td>0.768</td>
<td>X</td>
</tr>
<tr>
<td>23. Innate ability is fairly fixed and some children just can’t learn as well as others.</td>
<td>2.52</td>
<td>0.787</td>
<td></td>
</tr>
<tr>
<td>24. One of the most important things I can teach students is how to follow rules and to do what is expected of them in the classroom.</td>
<td>2.62</td>
<td>0.807</td>
<td></td>
</tr>
<tr>
<td>26. Teachers shouldn’t be expected to work with students who consistently cause problems in class.</td>
<td>2.32</td>
<td>0.899</td>
<td>X</td>
</tr>
<tr>
<td>27. Good teachers always know more than their students.</td>
<td>2.18</td>
<td>0.835</td>
<td>X</td>
</tr>
<tr>
<td>29. I know best what students need to know and what’s important; students should take my word that something will be relevant to them.</td>
<td>2.22</td>
<td>0.744</td>
<td>X</td>
</tr>
<tr>
<td>31. For effective learning to occur, I need to be in control of the direction of learning.</td>
<td>2.65</td>
<td>0.751</td>
<td></td>
</tr>
<tr>
<td>33. I am responsible for what students learn and how they learn.</td>
<td>2.87</td>
<td>0.672</td>
<td></td>
</tr>
</tbody>
</table>

Mean for Non-Learner Centered Beliefs Statements: 2.44 *slightly higher than preferred score
The mean of responses on the non-learner centered beliefs statements was 2.44, which is slightly higher than the preferred score of =2.4. Responses to nine of the 21 statements did meet the criteria set by McCombs et al. Teachers in this study indicated the beliefs that it is alright to let students know when a teacher feels badly (\(i = 2.24\)), that teachers don’t always know more than their students (\(i = 2.18\)), and that students can find their way to the right answer without direction (\(\bar{x} = 2.29\)). The two statements that respondents seemed to feel most strongly about as indicated by the low scores they received were that they don’t believe that it is too late to help some students (\(i =1.70\)) and that it is ok to make mistakes with students (\(i =1.47\)).

Table 9. Learner-Centered Battery Responses

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Somewhat agree</th>
<th>Agree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16</td>
<td>9</td>
<td>54</td>
<td>112</td>
<td>3.37</td>
</tr>
<tr>
<td>2</td>
<td>48</td>
<td>44</td>
<td>76</td>
<td>23</td>
<td>2.39</td>
</tr>
<tr>
<td>3</td>
<td>121</td>
<td>53</td>
<td>15</td>
<td>2</td>
<td>1.47</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>25</td>
<td>98</td>
<td>66</td>
<td>3.19</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>23</td>
<td>88</td>
<td>73</td>
<td>3.2</td>
</tr>
<tr>
<td>6</td>
<td>24</td>
<td>50</td>
<td>101</td>
<td>14</td>
<td>2.56</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>35</td>
<td>111</td>
<td>36</td>
<td>2.92</td>
</tr>
<tr>
<td>8</td>
<td>30</td>
<td>67</td>
<td>65</td>
<td>28</td>
<td>2.48</td>
</tr>
<tr>
<td>9</td>
<td>28</td>
<td>99</td>
<td>51</td>
<td>11</td>
<td>2.24</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>12</td>
<td>75</td>
<td>99</td>
<td>3.43</td>
</tr>
<tr>
<td>11</td>
<td>15</td>
<td>38</td>
<td>113</td>
<td>25</td>
<td>2.77</td>
</tr>
<tr>
<td>12</td>
<td>15</td>
<td>48</td>
<td>101</td>
<td>27</td>
<td>2.73</td>
</tr>
<tr>
<td>13</td>
<td>6</td>
<td>40</td>
<td>92</td>
<td>52</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>33</td>
<td>47</td>
<td>87</td>
<td>22</td>
<td>2.52</td>
</tr>
<tr>
<td>15</td>
<td>26</td>
<td>93</td>
<td>60</td>
<td>11</td>
<td>2.29</td>
</tr>
<tr>
<td>16</td>
<td>5</td>
<td>28</td>
<td>109</td>
<td>48</td>
<td>3.05</td>
</tr>
<tr>
<td>17</td>
<td>93</td>
<td>66</td>
<td>29</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td>18</td>
<td>24</td>
<td>69</td>
<td>80</td>
<td>17</td>
<td>2.47</td>
</tr>
</tbody>
</table>
In the first section of this chapter, descriptive statistics were employed to define the sample in terms of demographic variables—content area responsibility, level of training in content area reading instruction, and degree level—direction and strength of attitude toward content area reading instruction, and orientation toward students as learners. The next section focuses on answering the research questions.

Research Question 1

Research Question 1: Tested separately, to what extent do content area responsibility, amount and type of training in content area reading instruction, or degree level predict content area teachers’ attitudes toward content area reading instruction?
The research question involved the investigation of the relationship between secondary content area teachers' attitudes toward content area reading instruction and (a) their content area responsibilities, (b) amount and type of training in content area reading instruction, and (c) degree level.

(a) What is the relationship between content area teachers' attitudes toward content area reading instruction and their content area responsibilities?

Descriptive statistics were computed in order to determine group means for teachers in each of the four content areas—English, math, social studies, and science as illustrated in Table 10.

Table 10. Content Area Responsibility Group Means for the Otto-Smith Inventory

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Math</td>
<td>31</td>
<td>44.71</td>
<td>8.088</td>
<td>1.435</td>
<td>41.74</td>
</tr>
<tr>
<td>Science</td>
<td>38</td>
<td>45.21</td>
<td>7.591</td>
<td>1.231</td>
<td>42.72</td>
</tr>
<tr>
<td>Social Studies</td>
<td>21</td>
<td>47.57</td>
<td>9.615</td>
<td>2.098</td>
<td>43.19</td>
</tr>
<tr>
<td>English</td>
<td>55</td>
<td>50.96</td>
<td>6.809</td>
<td>.918</td>
<td>49.12</td>
</tr>
<tr>
<td>Other</td>
<td>45</td>
<td>48.24</td>
<td>7.529</td>
<td>1.122</td>
<td>45.98</td>
</tr>
<tr>
<td>Total</td>
<td>190</td>
<td>47.77</td>
<td>7.986</td>
<td>.579</td>
<td>46.63</td>
</tr>
</tbody>
</table>

With the four categorical independent variables of content area responsibility and the one continuous dependent variable of teacher attitudes, an analysis of variance (ANOVA) was calculated in order to compare differences between the group means. The assumption of homogeneity of variance was met, since Levene's Test had a significance level greater than .05 ($p = .414$). The results of the ANOVA are illustrated in Table 11.
Table 11. ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1111.184</td>
<td>4</td>
<td>277.796</td>
<td>4.697</td>
<td>.001</td>
</tr>
<tr>
<td>Within Groups</td>
<td>10942.084</td>
<td>185</td>
<td>59.146</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12053.268</td>
<td>189</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Since the overall analysis of comparison of group means was found to be significant (p = .001), Scheffe post hoc testing was performed to compare the group mean scores of the four levels of content area responsibility on the Otto-Smith Inventory. Table 12 illustrates the multiple comparisons.

Table 12. Multiple Comparisons of Group Means on the Otto-Smith Inventory

<table>
<thead>
<tr>
<th>(I) Content</th>
<th>(J) Content</th>
<th>(I-J) Mean Difference</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>Science</td>
<td>-.051</td>
<td>1.861</td>
<td>.999</td>
<td>-6.29</td>
</tr>
<tr>
<td></td>
<td>SS</td>
<td>-2.2862</td>
<td>2.174</td>
<td>.784</td>
<td>-9.63</td>
</tr>
<tr>
<td></td>
<td>English</td>
<td>-6.254</td>
<td>1.727</td>
<td>.013</td>
<td>-11.63</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>-3.535</td>
<td>1.795</td>
<td>.429</td>
<td>-9.12</td>
</tr>
<tr>
<td>Science</td>
<td>Math</td>
<td>.051</td>
<td>1.861</td>
<td>.999</td>
<td>-5.29</td>
</tr>
<tr>
<td></td>
<td>SS</td>
<td>-2.361</td>
<td>2.091</td>
<td>.865</td>
<td>-8.87</td>
</tr>
<tr>
<td></td>
<td>English</td>
<td>-5.753</td>
<td>1.622</td>
<td>.016</td>
<td>-10.80</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>-3.034</td>
<td>1.694</td>
<td>.526</td>
<td>-8.31</td>
</tr>
<tr>
<td>SS</td>
<td>Math</td>
<td>2.862</td>
<td>2.174</td>
<td>.784</td>
<td>-3.90</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>2.361</td>
<td>2.091</td>
<td>.865</td>
<td>-4.15</td>
</tr>
<tr>
<td></td>
<td>English</td>
<td>-3.392</td>
<td>1.973</td>
<td>.566</td>
<td>-9.53</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>-0.673</td>
<td>2.032</td>
<td>.999</td>
<td>-7.00</td>
</tr>
<tr>
<td>English</td>
<td>Math</td>
<td>6.254*</td>
<td>1.727</td>
<td>.013</td>
<td>.88</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>5.753*</td>
<td>1.622</td>
<td>.016</td>
<td>.71</td>
</tr>
<tr>
<td></td>
<td>SS</td>
<td>3.392</td>
<td>1.973</td>
<td>.566</td>
<td>-2.75</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2.719</td>
<td>1.546</td>
<td>.544</td>
<td>-2.09</td>
</tr>
<tr>
<td>Other</td>
<td>Math</td>
<td>3.535</td>
<td>1.795</td>
<td>.426</td>
<td>-2.05</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>3.034</td>
<td>1.694</td>
<td>.526</td>
<td>-2.24</td>
</tr>
<tr>
<td></td>
<td>SS</td>
<td>.673</td>
<td>2.032</td>
<td>.999</td>
<td>-5.65</td>
</tr>
<tr>
<td></td>
<td>English</td>
<td>-2.719</td>
<td>1.546</td>
<td>.544</td>
<td>-7.53</td>
</tr>
</tbody>
</table>

The data indicated that two different pairings of teacher groups differed significantly on their responses to the Otto-Smith Inventory. English teachers (\(r = 50.96\),
SD = 6.089) and math teachers (V = 44.71, SD = 8.088) differ significantly on their attitudes toward content area reading instruction as determined by their responses to the Otto-Smith Inventory (mean difference = 6.254, p = .013). English teachers also differed significantly when compared to science teachers (mean difference = 5.753, p = .016). In both cases, teachers of English who responded to the survey had significantly higher scores on the Otto-Smith Inventory than both math and science teachers. The data did not reveal significant differences between the group means of the other pairings.

(b) What is the relationship between content area teachers' attitudes toward content area reading instruction and the amount and type of training they have had in content area reading instruction?

The amount and type of training in content area reading instruction were grouped into three mutually exclusive categories—the number of credits that a teacher had earned (post-bachelors), the number of hours of training a teacher had while employed through the district, school, RESA, etc. (inservice), and the number of credits a teacher had taken during their teacher education program (preservice). Descriptive statistics were calculated to determine group means for each of the three levels of training. Table 13 illustrates the descriptive statistics for the three types of training in content area reading instruction.

Table 13. Preservice, Inservice, and Post-Bachelors Frequencies

<table>
<thead>
<tr>
<th>Type of Training</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Range</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preservice</td>
<td>6.21</td>
<td>11.637</td>
<td>0-120</td>
<td>3 (52)</td>
</tr>
<tr>
<td>Inservice</td>
<td>12.87</td>
<td>24.02</td>
<td>0-200</td>
<td>0 (43)</td>
</tr>
<tr>
<td>Post-bachelors</td>
<td>4.25</td>
<td>7.23</td>
<td>0-50</td>
<td>0 (76)</td>
</tr>
</tbody>
</table>

92
With three continuous independent variables of amount/type of training in content area reading instruction and the one continuous dependent variable of teacher attitudes, a Pearson Product Moment Correlation correlation was performed on the data to determine if a relationship existed between the number/type of training in content area reading instruction and teachers' attitudes toward content area reading instruction as determined by their responses on the Otto-Smith Inventory. The results are reflected in Table 14.

**Table 14. Correlations for Preservice, Inservice, and Post-Bachelors Training in Content Area Reading Instruction and Scores on the Otto-Smith Inventory**

<table>
<thead>
<tr>
<th>OSI Total</th>
<th>Preservice</th>
<th>Inservice</th>
<th>Post-bachelors</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSI Total</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.028</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.720</td>
<td>.018</td>
</tr>
<tr>
<td>N</td>
<td>191</td>
<td>170</td>
<td>159</td>
</tr>
</tbody>
</table>

The data indicated a positive relationship between the number of hours of training a teacher has while working as a teacher (inservice) and the attitude toward teaching content area reading as determined by the Otto-Smith Inventory ($r = .188, p = .018$). The number of credits that a teacher has earned post-bachelors in the area of content area reading instruction also seems to be related to the teacher’s attitude toward content area reading instruction ($r = .159, p = .039$). The data did not indicate a relationship between the number of credits in content area reading that a teacher had taken during their teacher education program and her/his attitude toward teaching content area reading as determined by their responses to the Otto-Smith Inventory.

**(c) What is the relationship between content area teachers’ attitudes toward content area reading instruction and their degree level?**

The teachers’ degree levels were grouped into four mutually exclusive categories: Bachelor’s degree, Master’s degree, Ed Specialist degree, and Ph.D./E.DD. Descriptive
statistics were calculated to determine group means for each of the four certification levels and are shown in the table below.

Table 15. Degree Level Frequencies

<table>
<thead>
<tr>
<th>Degree</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>BS</td>
<td>47</td>
<td>47</td>
<td>8.635</td>
<td>1.260</td>
<td>44.46</td>
</tr>
<tr>
<td>MS</td>
<td>133</td>
<td>48</td>
<td>7.909</td>
<td>.686</td>
<td>46.74</td>
</tr>
<tr>
<td>EDS</td>
<td>6</td>
<td>45.83</td>
<td>7.333</td>
<td>2.994</td>
<td>38.14</td>
</tr>
<tr>
<td>Ph.D</td>
<td>4</td>
<td>49</td>
<td>2.944</td>
<td>1.472</td>
<td>44.32</td>
</tr>
<tr>
<td>Total</td>
<td>190</td>
<td>47.77</td>
<td>7.986</td>
<td>.579</td>
<td>46.63</td>
</tr>
</tbody>
</table>

With four categorical independent variables of degree level and the one continuous dependent variable of teacher attitudes, an analysis of variance (ANOVA) was calculated in order to compare differences between the group means. Levene’s test of homogeneity of variances was met (p = .350) and homogeneity of variance was assumed.

The results of the ANOVA are illustrated in Table 16.

Table 16. ANOVA for Degree Level and Teacher Attitude

<table>
<thead>
<tr>
<th></th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>70.706</td>
<td>3</td>
<td>23.569</td>
<td>.366</td>
<td>.778</td>
</tr>
<tr>
<td>Within Groups</td>
<td>11982.563</td>
<td>186</td>
<td>64.422</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12053.268</td>
<td>189</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Since the overall analysis of comparison of group means was found to be significant (p = .778), Scheffe post hoc testing was performed to compare the group mean scores of the four degree levels on the Otto-Smith Inventory. Table 17 illustrates the multiple comparisons.
Table 17. Multiple Comparisons of Group Means per Degree Level on the Otto-Smith Inventory using Scheffe Post-Hoc Test

<table>
<thead>
<tr>
<th>Degree</th>
<th>(I-J) Mean Difference</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS</td>
<td>-1.089</td>
<td>1.362</td>
<td>.885</td>
<td>-4.94</td>
<td>2.74</td>
<td></td>
</tr>
<tr>
<td>EDS</td>
<td>1.167</td>
<td>3.480</td>
<td>.990</td>
<td>-8.65</td>
<td>10.98</td>
<td></td>
</tr>
<tr>
<td>Ph.D</td>
<td>-2.000</td>
<td>4.180</td>
<td>.973</td>
<td>-13.79</td>
<td>9.79</td>
<td></td>
</tr>
<tr>
<td>MS</td>
<td>1.098</td>
<td>1.362</td>
<td>.885</td>
<td>-2.74</td>
<td>4.94</td>
<td></td>
</tr>
<tr>
<td>EDS</td>
<td>2.264</td>
<td>3.350</td>
<td>.928</td>
<td>-7.19</td>
<td>11.72</td>
<td></td>
</tr>
<tr>
<td>Ph.D</td>
<td>-.902</td>
<td>4.073</td>
<td>.997</td>
<td>-12.39</td>
<td>10.59</td>
<td></td>
</tr>
<tr>
<td>EDS</td>
<td>-1.167</td>
<td>3.480</td>
<td>.990</td>
<td>-10.98</td>
<td>8.65</td>
<td></td>
</tr>
<tr>
<td>MS</td>
<td>-2.264</td>
<td>3.350</td>
<td>.928</td>
<td>-11.72</td>
<td>7.19</td>
<td></td>
</tr>
<tr>
<td>Ph.D</td>
<td>-3.3167</td>
<td>5.181</td>
<td>.946</td>
<td>-17.78</td>
<td>11.45</td>
<td></td>
</tr>
<tr>
<td>Ph.D</td>
<td>2.00</td>
<td>4.180</td>
<td>.973</td>
<td>-9.79</td>
<td>13.79</td>
<td></td>
</tr>
<tr>
<td>BS</td>
<td>3.902</td>
<td>4.073</td>
<td>.997</td>
<td>-10.59</td>
<td>12.39</td>
<td></td>
</tr>
<tr>
<td>Ph.D</td>
<td>3.167</td>
<td>5.181</td>
<td>.946</td>
<td>-11.45</td>
<td>17.78</td>
<td></td>
</tr>
</tbody>
</table>

According to the data, none of the pairings held significant differences between their group means. Degree level does not seem to relate to attitude toward content area reading instruction; however, there was a considerable difference between the number of respondents at each degree level. Whereas EDS and Ph.D had \( n \) of six and four, respectively, BS had an \( n \) of 47 and MS an \( n \) of 133.

Research Question 2

To what extent does the secondary content area teachers’ orientation toward their students as learners predict their attitudes toward content area reading instruction?

In this study, respondents’ orientation toward their students was determined using questions one through 35 of McCombs et al’s Learner Centered Battery. The survey contained items that measured the teachers’ responses to statements that were considered to reflect learner centered beliefs and others that reflected non-learner centered beliefs about teaching, learning, and learners. Through the survey tool, information was gathered
on all three of the areas identified by McCombs et al—learner centered beliefs, non learner centered beliefs about learners, and non learner centered beliefs about learning and teaching. For the purposes of this study, the non learner centered beliefs about learners and the non learner centered beliefs about teaching and learning were collapsed into one "non-learner centered beliefs" category. With two continuous independent variables of learner-centered beliefs and non-learner centered beliefs and the continuous dependent variable of "teacher attitude toward content area reading instruction," a Pearson correlation was performed to identify the relationship between variables. Table 18 illustrates the correlations.

Table 18. Pearson Correlations for Learner-Centered Beliefs and Non-Learner-Centered Beliefs and Attitudes toward Content Area Reading Instruction

<table>
<thead>
<tr>
<th>Attitude toward Content Area Reading Instruction (Otto-Smith Inventory)</th>
<th>Learner Centered</th>
<th>Non-learner Centered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.326**</td>
<td>-.312**</td>
</tr>
<tr>
<td>Sig. (2 tailed)</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>182</td>
<td>180</td>
</tr>
</tbody>
</table>

Per the data, there was a positive relationship \((r = .326, p = .000)\) between the extent of a respondent's learner-centered beliefs and his/her attitude toward teaching content area reading as measured by the Otto-Smith Inventory. Although significance was set at .05 for this study, the correlation was actually significant at the .01 level as well. The more learner-centered a teacher, the more positive her attitude toward content area reading instruction.

The data also showed a negative relationship between non-learner centered beliefs and the respondent's score on the Otto-Smith Inventory \((r = -.312, p = .000)\). According
to this data, the stronger a teacher’s non-learner centered beliefs, the more negative her attitude toward content area reading instruction.

Summary

In this study, a descriptive approach to survey research was used to quantify secondary content area teachers’ attitudes toward teaching reading in their classrooms and to identify the nature of the relationship between those attitudes and certain predictor variables. A three part survey was developed and administered to teachers of English, math, social studies, and science in public high schools in Michigan with enrollments of 1000+ students via a web-based survey. Cluster participation was elicited through personal email contact with the building principal, who then chose to forward an email containing the link to the content area teachers in his/her building or to have a faculty meeting in a computer lab and encourage the teachers to access the survey at the same time. Once the data was collected, it was transferred into SPSS for analysis. Both descriptive and inferential statistics were applied to the data in order to describe the sample and then address the research questions.

The first research question investigated the extent to which content area responsibility, the amount and type of training in content area reading instruction, or degree level was shown to influence content area teachers’ attitudes toward content area teaching instruction. Responses to the 14 statement Otto-Smith Inventory were tallied to generate means for teachers’ attitudes toward content area reading instruction. ANOVA tests were run on content area responsibility and degree level to determine the extent to which these factors influenced content area teachers’ attitudes toward content area
reading instruction. Although the group means for all four areas of content area responsibility—English, math, science, and social studies—reflected generally positive attitudes toward content area reading instruction, English teachers’ attitudes were significantly more positive ($\bar{X} = 50.96, \text{SD} = 6.809$) than either math teachers ($\bar{X} = 44.71, \text{SD} = 8.088$) or science teachers ($\bar{X} = 45.21, \text{SD} = 7.591$). There was not a significant difference between English and social studies teachers’ attitudes or between math and science, science and social studies, or math and social studies teachers’ attitudes. Highest degree level attained (BS, MS, EDS, Ph.D) was not found to influence content area reading teachers’ attitudes toward content area reading instruction although the sample size for two of the degrees were very small ($n = 4$ and $n = 6$).

The portion of the research question that involved examining the relationship between amount and type of training in content area reading instruction was addressed with the use of Pearson Product Moment Correlation. Both credits taken post-bachelors in content area reading instruction and inservice hours of training in content area reading instruction correlated positively with teachers’ attitudes toward content area reading instruction. The number of credits a teacher had in content area reading instruction during her teacher education program did not.

Pearson Product Moment Correlation was also applied to the teachers’ scores on the learner centered battery and their scores on the Otto-Smith Inventory. A positive relationship existed in the data between the teachers’ learner centeredness and their attitudes toward content area reading instruction ($r = .326, p = .000$), and a negative relationship was found between the teachers’ non-learner centered beliefs about learning, teaching, and learners and their scores on the Otto-Smith Inventory ($r = -.312, p = .000$).
The final chapter will discuss the findings of this study, place it in the context of previous studies, and identify possibilities for future research.
CHAPTER V

DISCUSSION

Restatement of the Problem

According to NCLB, the single greatest determining factor of whether a school or district is successful and meets AYP is whether students can accurately read and comprehend questions on a standardized test and then read, comprehend, and correctly identify the answer to that question (Conley & Hinchman, 2004; Blintz, 1997). Literature over the past half century has pointed to the need for, and effectiveness of, scaffolded, direct instruction in reading skills in the secondary content area classroom (ACT, 2005; Alfassi, 2004; Biancarosa & Snow, 2004; Billmeyer & Barton, 2002; Conley & Hinchman, 2004; Greenleaf, Schoenbach, Cziko, & Mueller, 2001; Langer, 2001; Pressley, 1998). More recently, researchers have indicated a need for teachers in the content areas to tailor their instructional practices to the needs of the students in their classrooms (McCombs & Whistler, 1997; Moje, 1996; Sturtevant & Linek, 2003). Studies have related learner-centeredness to increased student achievement (Alfassi, 2004; Langer, 2001; McCombs & Whistler, 1997). Research also exists that secondary content area teachers are not strategically teaching the skills necessary for students to read, comprehend, and learn through the texts used nor do reading courses exist in America’s high schools (ACT, 2006; NAEP, 2005). Statistics abound regarding the ineffectiveness of our secondary literacy programs on our nation’s teens (ACT, 2006; Biancarosa & Snow, 2004; NAEP, 2005).
Restatement of the Purpose

This non-experimental, quantitative study identified secondary content area teachers' attitudes toward teaching reading in their classrooms and determined if a relationship existed between those attitudes and the predictor variables of content area responsibility, highest degree attained, and the amount/type of training in content area reading instruction. A second research question attempted to examine the relationship between the learner-centeredness of the teachers and their attitudes toward teaching reading in their content area. Data were collected using an online survey through a one stage cluster sampling of content area teachers who worked in public high schools (grades nine through 12) in Michigan (n = 191). The data were downloaded into SPSS and analyses were completed on the variables. This chapter includes a discussion of the findings, implications for teacher training, and recommendations for further study.

Discussion of the Findings Related to the Literature

Teacher Attitudes toward Content Area Reading Instruction

Major governmental organizations, reporting agencies, and researchers are reporting that our secondary school students are not reading or performing at acceptable levels on reading assessments. The NAEP (2005) reported that only 35% of tested seniors scored at or above proficient levels on their most recent reading assessments. ACT (2006) mirrored those statistics when they found that only slightly more than half of the students tested (juniors and seniors) are ready for college level or even work place reading. Biancarosa & Snow (2004) contend that high drop out rates (almost 7,000 students every
day) are due to a lack of literacy skills to keep pace with the high school curriculum. Clearly, the research shows a lack of literacy skills in our upper secondary school students.

The National College Board also reports that, per the scores on the eighth grade EXPLORE and tenth grade PLAN assessments, our younger secondary school students are “on track” with their reading as they enter the high schools. Data from their 2005-2006 National Curriculum Study (ACT 2005) was interpreted as “the instruction of reading skills diminish in high school, suggesting the reading skills students have acquired are not being expanded or enriched in high school” (retrieved from act.org/news/releases/2007/04-09-07.html on July 24, 2007). O’Brien, Stewart & Moje (1995) proposed that content area teachers have resisted embedding literacy instruction into their curricula because of deeply embedded values, beliefs, and practices. This study attempted to quantify the values, beliefs, and attitudes of Michigan’s Class A public school content area teachers relative to their role in literacy development. First, it identified the secondary content area teachers’ attitudes toward teaching reading and then explored the extent to which their beliefs about teaching, learning, and learners correlated to those attitudes.

Results from the Otto-Smith Inventory indicated that the respondents in this study had generally positive attitudes regarding content area reading instruction (x = 47.71, SD = 8). These results were similar to the quantitative research on attitudes toward content are reading instruction of the last century. Using the same tool for quantifying teacher attitudes toward content area reading instruction, Otto (1968) identified a mean of 45.3; Smith, Hansen, and Otto (1970) found a mean of 46.07; and Hargrove (1973) reported
that 51% of teachers surveyed responded with a score of 42 or below. After almost a half century of measuring teacher attitudes toward content area reading instruction with the same instrument, there is little difference between the attitudes of teachers surveyed almost a half century ago and those surveyed in this decade. Not only have the scores stayed relatively static, but for almost a half century, content area teachers’ attitudes toward content area reading instruction have hovered just above or dipped just below the cut off for positive attitudes. With scores ranging from a low of 21 to a high of 65, it is interesting to note that almost a quarter of the respondents (23.6%) in this study had generally negative scores of 42 or less. Overall, secondary content area teachers’ self reported attitudes toward teaching content area reading in the three states in which the Otto-Smith Inventory has been used (Michigan, Wisconsin, and Georgia) have stayed constant despite an increased focus on education as seen in states’ incorporation of required content area reading classes in teacher education programs and recertification programs.

Negative Responses

Four of the fourteen statements garnered fairly strong negative responses. The strongest response by teachers on the Otto-Smith Inventory was to the statement “In the secondary school, the teaching of reading should be the responsibility of the reading teachers only” (x = 4.03). One hundred and fifty-five of the 190 teachers (82%) responding to this survey agreed/strongly agreed with this statement. Both Otto (1968) and Smith, Hansen, and Otto (1970) reported trends in the data that indicated those surveyed believed that teaching reading was not their concern or responsibility as well.
Other strong responses to negative statements in this study included: (a) only remedial reading should be necessary in the secondary school and that should be done by remedial reading classes ($x = 3.53$; 66% agree/strongly agree); (b) teaching reading takes all the fun out of teaching at the secondary level ($x = 4.04$; 84% agree/strongly agree); and (c) content area teachers in the secondary school are probably more competent to teach the reading skills needed for their subjects than special reading teachers ($x = 2.91$; 40% disagree/strongly disagree).

From the statements above, the lower "generally positive" mean score of 47.71 for respondents in this study, and the fact that almost one third of the respondents did score means less than 42, it could be interpreted that the content area teachers' attitudes toward teaching reading are mediocre at best.

*Positive Responses*

Strong responses to positive statements were also garnered on the Inventory:

- Seventy-nine percent of the respondents agreed/strongly agreed that the teaching of reading skills can be incorporated into content are courses without interfering with the major objectives of those courses.

- Seventy-five percent agreed/strongly agreed that teaching reading is a necessary and legitimate part of teaching any content course in the secondary school.

- Seventy percent agreed/strongly agreed that every secondary school teacher should be a teacher of reading.

- Sixty-three percent agreed/strongly agreed that any secondary teacher who assigns reading should teach his or her students how to read what is assigned.
• Sixty percent agreed/strongly agreed that integrating the teaching of reading can be as exciting for the teacher as teaching content only.

Ambiguous attitudes. A dichotomy regarding their beliefs toward content area reading instruction emerged from the respondents in this study. The respondents strongly purported that content area reading instruction can be incorporated into the content areas without interfering with major objectives of the courses; that any secondary school teacher who assigns reading should teach his/her students how to read what is assigned; that teaching reading is a necessary and legitimate part of teaching any content course in the high school; and that every secondary school teacher should be a teacher of reading. These beliefs would seem to belie a strong sense of responsibility of the secondary teachers who responded to the survey to teaching reading in their content area. By contrast, the respondents in this survey also strongly believed that it was someone else’s responsibility to teach reading, whether that be special reading teachers or remedial reading classes. They also questioned their competency to teach reading.

While the content area teachers in this study indicated that it is important, necessary, and legitimate for every secondary school teacher to be a teacher of reading, they persist in contending that teaching reading is someone else’s responsibility. One possible explanation for this contradiction may be the teachers knew reading was essential in their content areas but either did not know what content area reading looked like in their field or did not know how to strategically teach it—hence their lower responses on the competency statement. Findings from earlier quantitative and qualitative research would support this assertion (Flanagan, 1975; Kitely, 1980; Kozey, 1980; O’Brien & Stewart, 1990; Vigil & Dick, 1987). For example, Sturtevant (1994) found
that student teachers who had expressed positive attitudes toward content area reading instruction before they started their classroom experiences later believed that their students were not reading when, in fact, the students were solving written problems and making and reading graphs.

Other studies that explored content area teachers’ beliefs about teaching reading found that the teachers did not feel qualified to teach reading, that they were not trained or hired to teach reading, and they did not have the experience or formal education to select alternative or supplemental texts when classroom texts were above the reading levels of the students in their classrooms (Blintz, 1997; O’Brien & Stewart, 1990). Donahue (2000) found that half of the teachers in his study of new science teachers believed that only English majors know how to read and write. These teachers indicated that they had gone into science, in part, to avoid reading and writing. In his qualitative study, Blintz (1997) found that teachers believed that students are the problem; it is someone else’s responsibility to teach students to read; they felt “betrayal, frustration, and confusion” at having to teach what they were not trained or hired to teach—reading; and they did not have the training to choose more appropriately leveled content area reading materials for their students. These findings mirrored earlier quantitative studies that found math and science teachers to have significantly lower attitudes and perceived competence in teaching reading (Flanagan, 1975; Hargrove, 19723; Kozey 1980; O’Connor, 1986). The findings in the aforementioned studies support the finding of this study that only 35% of the respondents felt as though content area teachers are probably more competent to teach the reading skills needed for their subjects rather than special reading teachers. The feelings of inadequacy and frustration of not feeling competent in
the area of content reading instruction has been identified in the literature for the past 25 years.

A second dichotomy existed in the responses to the idea of a teacher’s enjoyment of teaching reading. Respondents agreed/strongly agreed that teaching reading takes all the fun out of teaching at the secondary level, yet also agreed/strongly agreed that integrating the teaching of reading in the content areas can be as exciting for the teacher as teaching content only. Again, it would seem as though a lack of education or understanding of content area reading strategies and skills and how to teach them may be at the root of this contradiction. If a teacher does not know how to help a struggling student and believes that someone else should be fixing the problem, they may never realize that the strategic instruction of reading in the content area may be the very thing that helps form the connection for that student to the content area.

Sturtevant (1996) and Kitely (1980) found that student behaviors determined the instructional practices that teachers employed in ways that were negative and reactionary. The more problematic the class, the more traditional and teacher-centered the instruction. Contrast that picture to the one painted by Moje (1996) where an exemplary science teacher was able to foster positive attitudes toward science and increase student achievement by using relationships in the classroom to contextualize and shape the literacy practices used there. The teacher had knowledge of—and experience with—a variety of instructional and learning strategies centered around improving reading in her content area, and students flourished. In his meta-analysis of research on adolescent literacy, Phelps (2005) found that students achieve maximum learning when scaffolded, strategic instruction of reading strategies is used. Perhaps more importantly, though, he
revealed that this scaffolded instruction “appears to work best in classrooms where teachers encourage active, thoughtful participation by student in the discussion of ideas and where students feel that their voices are welcome and important” (p. 26). From the research, it is possible to identify the barriers content area teachers say interfere with their abilities to teach content reading in their classrooms and yet see how the strategic teaching of reading in the content areas, through activities such as embedding strategic instruction within the curriculum, activating prior knowledge, reciprocal teaching, and discussion groups, could actually remove some of those barriers.

Content Area Responsibility and Teacher Attitudes

Quantitative research conducted on content area teachers’ attitudes toward teaching reading in their classrooms in the last century indicated that the self-reported attitudes toward content area reading instruction of secondary math and science teachers have been the most negative (Flanagan, 1975; Kozy, 1980; O’Connor, 1986; Vigil & Dick, 1987). The one exception to this phenomenon was a study conducted by Hargrove (1973) in which she found that science teachers reported the most positive attitudes toward teaching reading in the content area classrooms. One explanation that Hargrove proposed for this anomaly was the advent of Sputnik and the ensuing increased focus on—and funding for—in-service training for science teachers in the secondary schools in her study area.

The negative attitudes of math and science teachers toward teaching reading found by earlier quantitative researchers continues into the 21st century and is illustrated in the findings of this study as well. Once again, the data from this study show math and
science teachers had the most negative attitudes toward teaching content area reading. The 38 science teachers who responded to the survey had a mean of 45.21, SD = 7.59, and the math teachers (n = 31) had a mean of 44.71, SD = 8.088. Possible scores on the Otto-Smith Inventory ranged from 14 to 70 and a score of 42 was identified by the researchers as being the cut off between negative and positive attitudes toward teaching content area reading. The science and math teachers in this study had means that were just above the cut off and in the lower “positive” range. Although the means for these two groups of teachers would be considered “positive,” they differed significantly from English teachers (x = 50.96).

The findings from this study also support the findings from several of the qualitative studies that investigated the experiences of science and math teachers. Donahue (2000) found that half of the new science teachers in his study of pre-service teachers went into science to avoid reading and writing. Sturtevant (1996) studied five nontraditional math student teachers who reported positive attitudes toward teaching content area literacy strategies at the onset of their student teaching experience. However, when faced with the reality of the classroom, these students made their instructional choices involving content area literacy instruction based on the behaviors of the students in the classroom and did not utilize the strategies they knew to be best practice in content area literacy instruction.

The findings of Sturtevant’s (1996) study seem to be discordant with the Moje’s (1996) study of an effective secondary school science teacher. She used a purposive selection technique to identify a science teacher known for effectiveness by students, peers, administrators, and parents. During this year long study, student achievement was
measured in terms of students’ generally positive attitudes about science and their confidence in their abilities to learn science. Moje found that relationships established in the classroom contextualized and shaped the literacy practices used. Rather than using student attitudes as a barrier to learning, the teacher worked through those attitudes by finding content area reading strategies that increased student learning. She believed that helping students become successful readers in the content area built their self esteem and increased their learning, and the data showed that to be true.

Several quantitative studies of this century illustrate the same positive results from the systematic teaching of content area reading strategies. Greenleaf, et al (2001), Alfassi (2004), and Langer (2001) all showed that the strategic instruction of reading strategies increased student achievement in secondary schools.

Despite the influence of the space race in the 1960’s, the findings of this study of Michigan content area teachers show very little sustained impact among math and science teachers, in particular, relative to their comfort with and acceptance of the responsibility for incorporating reading instruction into their content instruction. This finding, along with similar findings from contemporary studies across the U.S., suggests that math and science teachers in America’s high schools remain unlikely to emphasize classroom strategies that are designed and chosen for the specific reading needs of the specific students in the classroom.

In an article published in Education Weekly (September 2007), Cavanagh delved farther into the historic event of Sputnik as causing secondary science education to change its focus to teaching with “greater emphasis on classroom strategies that were written with the needs of the classroom teachers, rather than academic scholars in mind”
This paradigm shift, which began in secondary science and math classes with Sputnik, does not appear to have taken hold in a sustainable way. This suggests a renewed effort to assist math and science teachers in becoming more confident and competent in teaching content area reading strategies with the needs of the individual students at the forefront. Cavanagh (2007) cautions that you can no longer “use a single stunt to get kids motivated. You have to have something more personal” (13-14). One application of Cavanagh’s argument would be for content area teachers to make learning more personally attainable by supporting students at their instructional reading level with strategies that address students reading deficits.

Level and Type of Training and Teacher Attitudes

Data from the current study was collected on three different areas of type/level of teacher training:

- preservice—credits taken during the teacher education program (bachelors);
- post-bachelors—credits taken in the area of content area reading instruction after attaining their teaching degree; and
- inservice—the hours of training a teacher had while working as a teacher whether from school, district, or RESA level.

Although there was a wide range of responses in each of the three levels/types, it was interesting to note that the mode for responses in both preservice and inservice training was zero credits/hours and the mode for post-bachelors training was three credit hours. With 45% of respondents indicating that they had no preservice training in content area reading instruction and 27% reporting that they had no inservice training, minimal focus
has been placed on training in the area that the research points to as imperative for the future success of our secondary school students. Even as our government focuses on the importance of increasing secondary literacy skills (NCLB) and major research groups (ACT, 2006; NAEP, 2005) report the failure of our secondary students to read and perform well on standardized assessments, Michigan’s teachers are not reporting significant levels of training in the area of content area reading instruction.

Data from this study indicated that a focus on inservice and post bachelor’s training is the most successful way in which teachers’ attitudes about content area reading instruction may be positively affected. There was a significant, positive relationship between the reported amount of inservice training and credits taken post-bachelors and teachers’ attitudes toward teaching content area reading (r = .188, p = .018 and r = .159, p = .039, respectively). Smith, Hesse, & Otto (1970) proposed thirty years ago that the attitudes of teachers toward content area reading instruction were more positive in schools that had devoted more time to restructuring and presenting inservice experiences in reading instruction for content area teachers. Other studies have indicated that training that is the longest and closest to the classroom teacher has a greater impact on teacher beliefs and competences (Hall, 2005; Haque, 1976).

From earlier studies that linked increased student achievement to learner based decision making and focus (Alfassi, 2004; Applebee et al, 2003; Greanleaf et al, 2001; Langer, 2001; Mojie, 1996; Phelps, 2005; Rosenshine & Meister, 1994; Sturtevant & Linek, 2003), it may be reasoned that teachers must see the needs of the individual students—the people—in their classrooms before they can be open to learning about how to meet those needs. It may be that for younger and more inexperienced teachers
classroom management issues and concerns cause them to focus on managing student behavior rather than on determining students' learning needs and how to meet those needs. Earlier studies indicated that barriers such as lack of time, large numbers of students or preparations, large numbers of students with academic or personal problems, and negative student behaviors hindered teachers' use of literacy practices (Kitely, 1980; Sturtevant, 1994).

*Learner-Centered vs. Non-Learner-Centered Beliefs*

Sturtevant and Linek (2000) advocated that good teaching may be as much about building an environment conducive to learning and positive teacher attitudes toward students as it is using any particular curriculum or methodology. Moje (1996) found that to be true in the classroom of her exemplary secondary science teacher whose students used the literacy strategies taught, in part, because of the positive relationship they had with their teacher. Even secondary students themselves have indicated that the relationships in the classroom help to determine the success of the students (Lee, 1999).

Lee (1999) studied 40 low achieving, at risk secondary students to explore their lived experiences in school and gather their ideas on how to increase their success. These students first spoke to many of the instructional practices reflected in the literature on effective content area reading instruction: more group work; more enthusiasm from teachers in teaching class materials; more interesting, upbeat lectures and discussion; more communication, discussion, and freedom of expression; more culturally relevant material; greater student voice in deciding topics; and higher involvement of classroom materials that directly relate to real life. Many of these instructional practices can be seen
in content area reading techniques such as reciprocal teaching, response log writing and sharing, predicting, and activating prior knowledge. Phelps (2005) summed ten years of research on adolescent literacy as “scaffolded instruction appears to work best in classrooms where teachers encourage active, thoughtful participation by students in the discussion of ideas and where students feel that their voices are welcome and important” (p. 26). It seems as though both students and teachers see the need for student-based—or learner-centered—beliefs about teaching and learning.

A second area the at-risk students focused on was the importance of relationships in the classroom. In order for the instructional practices and techniques identified above to make their way into the classroom, the teacher must place students and their learning above teaching content. The students indicated that teachers needed to get to know students on an individual level—both inside the classroom and out; be more encouraging of all students, irrespective of their past with them; communicate their beliefs in students and their ability to learn; and provide more individualized attention and tutoring for students. The ideas and strategies garnered from the students match the findings from the exemplary teacher studies regarding the underpinnings of increased student achievement (Moje, 1996; Sturtevant & Linek, 2003). The more-learner centered a teacher, the higher the student achievement.

McCombs et al (1997) quantified those experiences and beliefs in their study of 10,000 students and over 900 teachers in middle- and high schools across the United States. They found that the teachers’ learner centered beliefs positively predicted their perceptions of providing positive relationships, honoring student voice, encouraging higher order thinking, and adapting to individual student differences. The researchers also
found that the teachers’ non-learner centered beliefs about learners negatively predicted all four areas.

Studies have indicated that student-based decision making combined with a learner-centered belief in teaching, learning, and learners can increase student achievement (Alfassi, 2004; Greanleaf et al, 2001; Langer, 2001; McCombs et al, 1997; Phelps, 2005; Thompson et al, 2004).

Teachers in this study had several responses that fell within McCombs et al (1997) preferred score range for learner-centeredness. They expressed several learner-centered beliefs about learning—that they need to address students’ social, emotional, and physical needs and be relaxed and comfortable with themselves in order for students to learn. The teachers also expressed positive beliefs about students. Their scores indicated they believe that students have more respect for instructors they see as real people; learn more in classes in which the teacher encourages them to express their own personal beliefs and feelings; and are more motivated to learn when teachers get to know them at a personal level.

As with the teacher attitude toward teaching reading in the content area, this instrument also identified a contradiction in teacher attitudes and beliefs about teaching, learning, and learners. Although many of their responses were learner-centered, the teachers scored lower than the preferred score of $= 3.2$ on three statements that seem to be in conflict with their learner-centered beliefs. The teachers responded that they do not feel that taking the time to create caring relationships with their students is the most important element for student achievement ($x = 3.0$), that accepting students where they are—no matter what their behavior and academic performance—makes them more
receptive to learning ($x = 2.99$), and that seeing things from the student's point of view is the key to their good performance at school ($x = 2.88$). These statements identified areas in which staff development could be focused in order to move the teachers toward a more learner-centered belief system.

The second research question for this study focused on identifying the extent to which teachers were learner or non learner centered and determining if those scores could predict the teachers’ attitudes toward content area reading instruction. Results from this study indicated that the more learner-centered a teacher, the more positive the attitude toward teaching content area reading strategies in the classroom. Pearson Product Moment Correlation on the data revealed a significant positive relationship between the teachers’ learner centeredness and their attitudes toward content area reading instruction ($r = .326, p = .000$). This correlation suggests that professional development that addresses both content area reading instruction and the broader issues of creating learning centered classrooms may be a meaningful response to assisting content area teachers in finding sustainable ways to address students’ reading instruction needs simultaneously with helping students master the content.

The studies of exemplary teachers illustrated similar findings in qualitative contexts as well. Moje (1996) found increased student efficacy and achievement in the classroom of one high school science teacher who was committed to building students’ self esteem by helping them become successful. Moje found that the relationships established in the classroom contextualized and shaped the literacy practices used there. The effective teacher used strategies and organizational practices that met the needs of the students in her classroom.
In their study of effective teachers, Sturtevant and Linek (2003) studied nine exemplary teachers and found that those teachers focused on building classrooms that were student centered and in which students were problem solvers, on students’ needs beyond the classroom, on the value of their own relationships with students, and on lifelong learning.

The more positive the content area teacher’s attitudes toward teaching reading in her classroom, the higher students achieve on standardized assessments (Alfassi, 2004; Greenleaf et al, 2001; Langer, 2001; Mojie, 1996). The findings of this study and those referenced above suggest that a key to moving secondary content area teachers toward stronger utilization of content embedded literacy strategies might be shifting their paradigm from teacher and content centered to learner and learning centered.

Implications for Teacher Training

The Importance of Learner Centeredness

It is one recommendation of this researcher for designers of school inservice programs and institutes offering graduate level credit for teachers wishing to renew their certification to focus on moving secondary school teachers in all content areas toward becoming more learner-centered. In the review of the literature, both qualitative and quantitative studies have pointed to the importance of learner-centered decision making. In her studies of exemplary teachers, McCombs (2000) advocates that when teachers and their practices function from an understanding of the knowledge base delineated in the Principles, they (a) include learners in decisions about how and what they learn and how that learning is assessed; (b)
value each learner's unique perspectives; (c) respect and accommodate individual differences in learners' backgrounds, interests, abilities, and experiences; and (d) treat learners as co-creators and partners in the teaching and learning process (p. 7).

Teacher training that integrates both learner centered beliefs about teaching and learning and scaffolded, direct instruction of the strategies and skills for content area reading could significantly increase student achievement and begin to fill the gaps in secondary literacy instruction noted in the research (ACT, 2007; Biancarosa & Snow, 2004; NAEP, 2005).

**Targeting Math and Science Teachers and Teaching**

Findings from studies highlighted in the review of the literature indicate the need for student-based decision making and a learner-centered belief in teaching, learning, and learners in increasing students achievement (Alfassi, 2004; Greenleaf et al, 2001; Langer, 2001; McCobs et al, 1997; Phelps, 2005; Thompson et al, 2004) The results of this study indicate that the more learner centered a teacher's beliefs, the more positive his attitude toward teaching reading in the classroom. Since there is a noted history of math and science teachers having more negative attitudes toward teaching content area reading strategies in their classrooms, it is recommended that planners of professional development at the school, district, RESA, and graduate levels design inservice training and post-bachelors’ education that focuses on moving these content area teachers toward a more learner-centered belief system.
The literature defining content area reading instruction and content area literacy over the past half century has noted that systematic, strategic instruction in reading in the content area increases student achievement on different measures, from increased student efficacy to improved scores on standardized assessments and significant increases in reading achievement (Alfassi, 2004; Greenleaf et al, 2001; Langer, 2001; Moje, 1996; Sturtevant & Linek, 2003). Despite these findings, the content area teachers surveyed in this study expressed a major contradiction in their beliefs about—and attitude toward—content area reading instruction. First, the teacher participants in this study expressed the belief that content area reading instruction is important, necessary, and legitimate and that every secondary school teacher should be a teacher of reading; however, they revealed a dichotomy in their thinking by indicating that it is someone else’s responsibility to teach reading. Second, the respondents in this study believed that teaching reading takes all the fun out of teaching at the secondary level, then contradicted themselves by affirming that integrating the teaching of reading in the content areas can be as exciting for the teacher as teaching content only. These contradictions or dichotomies beg the question “do secondary content area teachers know what the systematic and strategic teaching of reading looks like and how it would work in their classrooms?”

In their meta-analysis of the content area reading literature, Conley and Hinchman (2004) noted a lack of empirical research regarding how teachers are to learn best practices in secondary reading instruction or adapt those practices to different kinds of learners. Earlier researchers attempted to address the issue by supplying definitions of
content area reading instruction and suggesting and defining reading competencies that, hopefully, would create positive attitudes toward reading instruction (Flanagan, 1975; O’Connor, 1986).

Teachers in earlier studies identified many barriers to teaching reading in the content area. Blintz (1997) found that teachers perceived that their inability to teach reading strategies in the classroom was due to problems outside of themselves as teachers—they believed the problems were with the students, in someone else’s failure to teach reading, and with the materials with which they had to work. Sturtevant (1994) identified the perceived barriers as the lack of time, the large numbers of students and preparations, and the large number of students with academic or personal problems. Blintz summed up the teachers’ frustrations as those who know the least about reading are being asked to teach reading to students who need it the most.

It is the suggestion of this researcher that planners of inservice refocus their efforts to develop ongoing, sustained staff development in the area of content area reading instruction. According to the data in this study, the teacher’s attitude toward content area reading instruction is positively related to the amount of inservice or post-bachelor’s training the teacher has received. These findings would seem to fit with Alfassi’s (2004) findings that teachers who have received inservice training in the area of content area reading found that instruction consumed little class time and used content area materials. Teachers need to be trained in content area reading strategies and instruction with their own materials and texts and with an idea of who their students are and what their specific learning needs may be. If the trenches are where teachers teach, it
only makes sense that the trenches are where they are able to learn, experiment, and fit their strategic instruction of reading to the students who need it most.

Recommendations for Practice

Data verifies the need for key changes in practice and policy at the classroom, school, district/RESA, state, and national levels.

Classroom Level

Teachers must become more learner-centered in their beliefs and in the actual transference of their beliefs to practice. As noted in earlier studies as well as the results of this one, many classroom based educators believe in content area reading strategies and the best practice teaching techniques involved in them; however, they are not translating those beliefs to their practice because of what they consider to be the barriers of negative student behaviors and high academic needs. Many secondary teachers believe that students “won’t” read the materials assigned in class and do not understand that, in many cases, the students “can’t” read the materials that have been assigned. In these cases, the strategic teaching of reading strategies and skills—including activating students’ prior knowledge before they read, giving them a purpose for the reading, and assigning graphic organizers so that students can make sense of the material using different reasoning, logic, and visual representations of the material—can actually help students connect to the material, connect the material to their existing knowledge, and enable students to become successful in an environment where some have experienced little or no success with reading. The very techniques that teachers will not use because of the
perceived barriers of behavior and academic need are the ones that teachers must employ to address the behavior and the needs. Students must experience success to become successful. Students must learn to realize that they can learn, even in the secondary school and even when they have had little to no prior success in that environment.

As seen in the exemplary teacher studies discussed earlier, students achieve at higher levels when teachers form relationships with them, understand where they are coming from, and determine their strengths and specific learning needs. The exemplary content area teachers choose reading strategies and instructional techniques based on the students in their classrooms and that include the students in their own education. Secondary content area teachers must shift their focus from covering content to student learning if the NCLB mandates and accountability goals are to be met.

School Level

If teachers are to become more learner-centered, then school and district level administrators have a responsibility to educate teachers as to the what, why, and how of learner centeredness. School administrators must understand that, like their students, classroom teachers need education, modeling, guided practice, independent practice, and feedback to learn new ways of thinking and being and for change to be real and lasting. On a personal level, administrators could ensure their written communication with families, community members, and even staff is at appropriate reading levels. They could include articles about learner-centered research, practices, and related student achievement in staff meetings and during staff development times. Accompanying the articles could be examples of reading strategies such as prompts to access the teachers’
prior knowledge, graphic organizers for the teachers to make sense of the materials, and several thoughts for discussion at the next staff meeting. Creating staff development opportunities such as action research projects in the area of learner centeredness and the strategic instruction of content area reading skills and strategies could also provide for a supportive, learning environment for teachers.

For learner-centeredness to take hold and grow there cannot be a pervasive atmosphere of fear. Administrators must foster an environment for teachers where success is an expectation and failure is an opportunity for learning, changing, and growing. Teachers must be encouraged to become more learner-centered in ways that are safe for those teachers. In an era of high stakes testing and accountability, learner-centeredness and the strategic instruction of reading at the secondary level is both necessary for optimum student achievement and a complete paradigm shift for secondary content area teachers. Teachers will need the support and understanding of their building and district level administrators as they undergo the transformation.

District/RESA Level

School districts and RESAs must provide for ongoing, embedded instruction and practice of learner-centered beliefs and teaching practices, including content area reading strategies. The district and RESAs set the priorities for teacher inservice and training in the high schools. It is recommended that the planners of inservice and professional development programs thoroughly investigate the learner-centered literature and begin a discussion at the state, regional, and local levels regarding how they can best support the needed paradigm shift at the classroom level.
Policy Level

Policy makers at the state level must, as Michigan’s Department of Education and the State Reading Association have, create a comprehensive definition of reading that illustrates the dynamic nature of reading as interaction of three distinct elements—the reader, the text, and the environment. It is through this dynamic interaction that meaning is constructed, new understanding and knowledge is connected to preexisting knowledge, and learning occurs. Policy makers must understand that reading is a process by which new ideas must connect to that which the reader already knows for learning to occur.

Perhaps more important than a state level definition and understanding of the complexity and importance of the reading process is for national and state level teacher organizations in the content areas—i.e., national and state level associations of math, science, social studies, and English—to understand reading is essential to learning in their content areas. As teachers of the content areas, their memberships must first understand the role that reading plays in its many different contexts in the classroom—from texts and articles to assignments, assessments, and online resources. Once policy makers realize that reading is fundamental to teaching and learning in the content area classrooms, they must search the literature for best practices in reading instruction for their content areas and formulate and support teacher education programs that teach the strategic use of reading strategies in each of their areas. Secondary teachers look to their professional organizations for current theory, best practices in instruction, and new directions in teaching in their fields. By creating a focus on reading strategies specific to their fields through articles in their publications, a dedicated space on their websites, and a call for presentations by exemplary teachers to present methods of the strategic teaching of
reading in their classrooms at workshops and conferences, professional organizations can positively impact student achievement as well as teacher efficacy.

Recommendations for Further Study

*Attitude, Orientation, and Achievement*

One recommendation for future research based on the findings of this study would be to examine the relationship between the teacher's attitude toward content area reading instruction, his level of learner-centeredness, and his students' academic achievement. The study by McCombs & Whisler (1997) revealed that learner centeredness and student centered beliefs about teaching, learning, and learners garnered higher student achievement. Since the current study points to the fact that the higher a teacher's learner centeredness, the more positive her attitude toward teaching reading, it would be helpful to study whether the correlation expands out to the more learner centered the teacher, the more positive the attitude toward content area reading instruction, and, ultimately, the higher the level of student achievement.

Whereas the literature is focused mainly on large scale, quantitative attitude and exemplary school studies or in-depth qualitative exemplary teacher studies, it is recommended that teachers and administrators work together to create action research projects at the classroom level to determine which strategies and methods of instruction positively impact learners in the secondary classroom. Action research can be conducted quickly and in authentic environments—with real-time students, real-time teachers, and in real-time environments. Action research could serve as a window to see what works, with whom, and why in ways that are authentic.
The history of content area reading instruction research seems to be one of cycles. In the mid- to late 20th century, quantitative research regarding teacher attitudes toward content area reading instruction flourished. Around the turn of the century, qualitative research on the subject began. The research flowed from perceived attitudes as quantified by surveys and instruments to lived experiences of teachers who were exemplary and teachers who perceived significant barriers to teaching reading in the content areas. The learner-centered literature indicates a strong positive relationship between the learner-centeredness of the teacher and the extent to which students achieve in the classroom. Although several studies have been conducted to explore students’ perspectives and lived experience in the secondary schools, it is recommended that university level researchers listen to the voices of secondary school students as they reveal how they learn best.

For the research cycle to move forward, it is recommended to marry the two disciplines of research to examine the relationship between a student’s perception of the teacher’s learner centeredness and the teacher’s self reported attitude toward content area reading instruction. Several studies exist that explore students’ experience in the classroom and the perspective from the sitting side of the desk.

A third recommendation based on the findings of this study would be to explore the relationship between a teachers’ attitude toward teaching content area reading and her actual practice of teaching reading in her classroom. It was noted earlier that a lack of empirical studies on the effectiveness of teacher training programs in the area of content
literacy exists. Since the NCLB funding for secondary reading programs is contingent on evidence of their effectiveness via empirical data, it would be in the interest of districts and RESAs to design data collection methods for pre- and post inservice knowledge and practice of content area reading instruction.

Replication

Finally, it is recommended that replications of this study be conducted with more generalized populations. With the caveat of student enrollments of 1000+, this study may have focused on schools that are mostly urban or suburban and that may have more resources such as a literacy coach or professional development on reading instruction. In a replicated study, it is also recommended that researchers collect data regarding the identification of undergraduate and graduate institutions and courses.

Conclusion

When a high school teacher is asked what she does for a living, the common answer seems to be “I teach math” or “I teach high school English.” The literature suggests that the answer needs to become “I ensure that my students learn math” or “I figure out how to teach high school students English.” A learner-centered belief system correlates positively with both a positive attitude toward teaching content area reading skills and strategies and increased student achievement. Training in strategic instruction may be necessary for the paradigm shift to take place from “teaching” to “ensuring learning.” Findings from this study indicate that the most effective level of training for the creation of a positive attitude toward content area reading instruction is at the
inservice or post-bachelors' level. It may be that, in order for teachers to view students as individuals with individual strengths and learning needs, the teachers must first be in the position to form relationships with those students in greater depth than an observation, student teaching, or perhaps even a beginning teaching experience. The question that arises from this research is not whether to strategically teach reading skills or to make instructional decisions based on student needs but whether a teacher will learn the skills and strategies to teach reading in the content area classroom and, then, put that learning into practice before or after they have made the decision to make their teaching learner-centered. In essence, teachers must know their students well enough to determine which strategies would best aid them in making sense out of the materials they are reading and then be able to draw upon a knowledge base of reading strategies to use. To address the dire situation of a significant number of students not ready for college level or work place reading and an alarmingly high national drop out rate, we need not argue about who is at fault or point out the real and significant barriers to student learning. Instead, we need to know our students, know our reading strategies, and focus on making education fit our students.
REFERENCES


Appendix A

Survey
Survey

Section 1: Background information: Please respond to all items to the best of your ability.

Content area responsibility

Amount/type of training in content area reading instruction

Degree level

Section 2: Content Area Reading and Instruction

Please indicate your level of agreement with each of the following 14 statements: 

*strongly agree, agree, undecided, disagree, and strongly disagree*

1. In the secondary school, the teaching of reading should be the responsibility of reading teachers only.

2. Secondary school teachers can teach reading effectively without special university courses in methods of teaching reading.

3. The teaching of reading skills can be incorporated into content area courses without interfering with the major objectives of those courses.

4. Any secondary school teacher who assigns reading should teach his or her students how to read what is assigned.

5. With rare exceptions, students should know what there is to know about reading before they are permitted to leave the elementary school.

6. Only remedial reading should be necessary in the secondary school and that should be done by remedial reading classes.

7. Teaching reading is a technical process that secondary school teachers generally know nothing about.
8. Secondary school teachers cannot teach reading without special material designed for that purpose.

9. Teaching reading is a necessary and legitimate part of teaching any content course in the secondary school.

10. Teaching reading takes all the fun out of teaching at the secondary level.

11. Every secondary school teacher should be a teacher of reading.

12. At the secondary school level, students want to learn content not how to read.

13. Integrating the teaching of reading with the teaching of specific content can be as exciting for the content area teacher as teaching content only.

14. Content area teachers in the secondary school are probably more competent to teach the reading skills needed for their subjects than special reading teachers.

Section 3: Beliefs about learners, learning, and teaching

Please read each of the following statements. Then decide the extent to which you agree or disagree. Go with your first judgment and do not spend much time mulling over any one statement. Please answer every question.

Responses: Strongly Disagree, Somewhat Disagree, Somewhat Agree, Strongly Agree

1. Students have more respect for instructors they see and can relate to as real people, not just as teachers.

2. There are some students whose personal lives are so dysfunctional that they simply do not have the capability to learn.
3. I can’t allow myself to make mistakes with my students.

4. Students achieve more in classes in which instructors encourage them to express their personal beliefs and feelings.

5. Too many students expect to be coddled in school.

6. If students are not doing well, they need to go back to the basics and do more drill and skill development.

7. In order to maximize learning I need to help students feel comfortable in discussing their feelings and beliefs.

8. It’s impossible to work with students who refuse to learn.

9. No matter how badly an instructor feels, he or she has a responsibility to not let students know about those feelings.

10. Addressing students’ social, emotional, and physical needs is just as important to learning as meeting their intellectual needs.

11. Even with feedback, some students just can’t figure out their mistakes.

12. My most important job as a teacher is to help students meet well-established standards of what it takes to succeed.

13. Taking the time to create caring relationships with my students is the most important element for student achievement.

14. I can’t help feeling upset and inadequate when dealing with difficult students.

15. If I don’t provide direction for student questions, they won’t get the right answer.

16. Helping students understand how their beliefs about themselves influence learning is as important as working on their academic skills.

17. It’s just too late to help some students.
18. Knowing my subject matter really well is the most important contribution I can
make to student learning.

19. I can help students who are uninterested in learning get in touch with their natural
motivation to learn.

20. No matter what I do or how hard I try, there are some students that are
unreachable.

21. Knowledge of the subject area is the most important part of being an effective
teacher.

22. Students will be more motivated to learn if teachers get to know them at a
personal level.

23. Innate ability is fairly fixed and some children just can’t learn as well as others.

24. One of the most important things I can teach students is how to follow rules and
to do what is expected of them in the classroom.

25. When teachers are relaxed and comfortable with themselves, they have access to a
natural wisdom for dealing with even the most difficult classroom situations.

26. Teachers shouldn’t be expected to work with students who consistently cause
problems in class.

27. Good teachers always know more than their students.

28. Being willing to share who I am as a person with my students facilitates learning
more than being an authority figure.

29. I know best what students need to know and what’s important: students should
take my word that something will be relevant to them.
30. My acceptance of myself as a person is more central to my classroom effectiveness than the comprehensiveness of my teaching skills.

31. For effective learning to occur, I need to be in control of the direction of learning.

32. Accepting students where they are—no matter what their behavior and academic performance—makes them more receptive to learning.

33. I am responsible for what students learn and how they learn.

34. Seeing things from the students’ point of view is the key to their good performance in school.

35. I believe that just listening to students in a caring way helps them solve their problems.
Appendix B

Invitation to Participate
Dear Fellow Educators,

My name is Sara Norton, and I am a middle school principal in the UP, a former high school English teacher, and a graduate student. I am requesting your help in my quest for my PhD! I am asking that you show your support for a fellow educator and either forward this email to your teachers of math, science, social studies, and English or take a few minutes of your next faculty meeting to access it in a computer lab. I would like to collect data on what Michigan's high school teachers believe to be true about teaching reading, specifically, and about learners, learning, and teaching, in general. The results of this study are anonymous. If you choose to participate by forwarding this email to your teachers, you may request a comprehensive summary of the survey results by emailing me at snorton@mapsnet.org.

To the Teachers:

In the days of high stakes testing in the form of the ACT, high school reform and its 3"R"s, and ever-changing curriculum, it is no wonder that teachers feel overwhelmed by all that they are asked to do. I realize how busy teachers are, especially at this time of year, but I do hope that you will try to find 10-15 minutes to complete a survey filled with interesting, thought-provoking statements about content area reading and learners, learning, and teaching to which you can respond. The survey is completely anonymous, and the results will help to build an understanding of how the secondary content area teachers in Michigan view content area reading. This is a great way to make a little time for personal reflection about what you do and why you do it. And...you would be helping a fellow educator out immensely! Please click on the link below to access this short survey. I can't tell you how much I would appreciate your participation in this study.

http://www.surveymonkey.com/s.aspx?sm=hYqzRMKLpW4RsCikbX2fl3w3d3d

If you have any questions, please call me at (906)226-1440 or email me at snorton@mapsnet.org or contact my dissertation chair, Dr. Patricia Reeves, at Western Michigan University (269)387-3527 or patricia.reeves@wmich.edu.

Happy Holidays!

Sara Norton, Western Michigan University
Appendix C

Human Subjects Institutional Review Board Letter
Date: December 10, 2007

To: Patricia Reeves, Principal Investigator
Sara Norton-Ejnik, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number: 07-12-10

This letter will serve as confirmation that your research project entitled “Teaching Reading in the Secondary Content Area Classroom” has been approved under the exempt category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: December 10, 2008