Do teacher attitudes impact literacy strategy implementation in content area classrooms?

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ABSTRACT

The purpose of this study was to identify beliefs about content area literacy commonly held by teachers and to evaluate whether or not these collective professional convictions and suppositions affect disciplinary instructors' implementation of content area reading strategies in their classrooms. A mixed methodology was applied to gather both qualitative and quantitative data from a study sample of 39 middle and high school core and elective disciplinary teachers. A validated assessment scale was administered to identify professional beliefs held by study participants about reading instruction in content area classrooms. Individual interviews were also conducted to examine participants' professional practices related to implementation of reading strategy instruction in content area classrooms. The results of the study found that, in large numbers, secondary teachers do harbor attitudes, in five broad categories, toward content area reading instruction that are unfavorable and that implementation of strategies in their classrooms, lesson plans and curricula are negatively impacted by the paradigms held.

Keywords: content, reading, strategies, literacy, secondary

INTRODUCTION

Recently, a leading American political figure commented that deferring reform is the same as defending the status quo. In generalizing this concept to the state of adolescent literacy in the United States and the dramatic impact it has on the educational progress of the nation's children, is could be wondered if the content area teachers who remain resistant to implementing evidence-based literacy strategy instruction into their curriculums have considered exactly what it is they are defending.

In short, they are not preserving their content; they are guarding professional habits that have contributed to more than eight million adolescents who are unable to read at grade level (NCES, 2005). They are not preserving instructional time; rather, they are endorsing the fact that 94% of American children about to graduate from high school cannot independently read and gain information from specialized text (a.k.a. content area textbooks) (NCES, 2006). They are not shielding their students from limitations of their professional preparation and knowledge of reading strategies; instead, they are helping 25 percent of their students take longer than four years to complete high school (NCES, 2005). They certainly are not holding themselves accountable for meeting the duties of a content area teacher; more precisely, they are ignoring decades of validated research that proves that integrating literacy instruction into content area classes improves academic outcomes for adolescent learners (Cantrell, Burns & Callaway, 2009).

The reality is that the research on content area reading strategies is extensive and validated. The results are inarguable: explicit instruction of literacy strategies in content area classrooms works. In fact, it is the most effective means of improving student comprehension across the curriculum. Despite the evidence, schools are still facing a burgeoning literacy crisis—the crucible of American education.

Purpose of the Study

The purpose of this study was to identify beliefs about content area literacy commonly held by teachers and to evaluate whether or not these collective professional convictions and suppositions affect disciplinary instructors' implementation of content area reading strategies in their classrooms. The study focused on modes of postulation, how frequently content area teachers espouse ideas related to each broad attitudinal perspective and whether or not those content area teachers implement content area literacy strategies in their primary instructional practices.

The data collected ascertained how frequently content area teachers subscribed to identified opinions and judgments about literacy instruction, which types of attitudes about content area reading instruction were most strongly relied upon by those teachers, professional practices regularly utilized within content area classrooms and whether or not any correlation could be established. The research demonstrated that the attitudes a content area teacher subscribes to about literacy instruction in the classroom forecasts the probability that he or she implements content area reading strategies into course design and instructional practices.

LITERATURE REVIEW

Introduction

In the literature review, the researchers surveyed and studied existing and emerging investigations and analysis salient to the impact of teacher attitudes on the utilization of literacy strategies in content area classrooms. A historical timeline for the recognition of content area literacy and the influence of teachers' professional posture on strategy implementation is traced. The literature review also engendered an explanation of the prevailing need for and provision of literacy strategies in content area classrooms.

Examination of Precedent Content Area Literacy Strategy Research and Implementation

According to Biancarosa & Snow (2004), content area literacy is not a new concept; rather, much is known about adolescent literacy (p.21). Researchers know the problems facing struggling adolescent readers and have identified interventions and approaches to address their needs (Biancarosa & Snow, 2004, p. 21). Wilson, Grisham and Smetana reviewed research on content area literacy and concluded that "for years there have been calls for an increased emphasis on content literacy" (2009, p. 708).

Vicky Spencer and her research partners assert that "research has revealed that when explicit, teacher-directed strategy instruction is used students make significant gains in their reading skills" (2008, p. 1). Ness notes that reading comprehension instruction can improve students' retention and understanding of the domain-specific information in secondary content-area classrooms (2008, p. 81). Cantrell, Burns and Callaway suggest that "for decades, researchers and teacher educators have extolled the value of integrating literacy instruction into content area classes for the purposes of improving both literacy and content area learning for adolescents" (2009, p. 76). Park and Osborne reference numerous studies that showed "instruction using content area reading strategies is the most effective means of increasing student comprehension and developing skilled readers" (2006, p. 39). Hall notes that many inquiries have found that students of all ability levels can improve their comprehension of content area texts when they are provided with reading instruction in the content areas (2005).

Contemporary Demand for Content Area Literacy Strategy Implementation

In 2002, The Alliance for Excellent Education reported that "about six million middle and high school students read below grade level" (Wise, 2009, p. 369). According to Wise, the same report also indicated that a large group of learners read with limited fluency, often testing at a sixth- or seventh-grade reading level when they enter high school (2009, p. 369). These students are starting high school reading three to four grade levels below expectations. According to *Reading Next* (2004), researchers concluded that learners "lack the strategies to help them comprehend what they read" (Biancarosa & Snow, p. 8). Spencer and associates remarked that "in 2005, the National Assessment of Educational Progress (NAEP) found that only 29% of eighth grade boys and 34% of eighth grade girls read at or above the proficient

level" (2008, p. 1). This means the vast majority of eighth grade learners are not able to deal analytically with challenging subject matter in a grade-appropriate manner.

Wilson and her partners asserts, to help students meet literacy challenges in the 21st century, "it will take the concerted efforts of teachers across the content areas to support their students in understanding, critiquing, and designing a variety of texts" (2009, p. 156). To date, though, according to Wise, "a whopping 69% of 8th graders and 65% of 12th graders read below proficient as measured by the National Assessment of Educational Progress" (2009, p. 373). Ness reports that "these struggling readers do not read on grade level and encounter significant challenges with comprehension, the process in which readers extract and construct meaning through interaction and involvement with written language (2008, p. 80). Over the past 30 years, adolescent literacy rates have remained virtually stagnant.

Teacher Attitudes and Beliefs about Content Literacy

According to an article in *The Reading Teacher*, "decades of research on the connection between teachers' theoretical beliefs and their practices yield a common theme: all teachers bring to the classroom some level of beliefs that influence their critical decision making" (Squires & Bliss, 2004, p. 756). Freedman and Carver, after reviewing many studies, suggest "it is now widely accepted that teachers' personally held beliefs and values help to guide their teaching practices" (2007, p. 656). Hall also indicates that the decisions that content area teachers make about what to teach and how to teach it may be largely influenced by their beliefs (2005, p. 404). Hall elaborates, "Despite the types and amounts of knowledge that teachers may hold, it is their beliefs that are more likely to dictate their actions in the classroom" (2005, p. 405). Regardless of their pre-service exposure and preparation and in service training, teachers' beliefs inform their professional attitudes and conduct in their classrooms.

According to Nourie and Lenski, "the attitude of classroom teachers toward content area literacy can be one of the most important factors in reading achievement and reading practice of secondary students" (1998, p. 372). Carol Santa, a literacy specialist, suggests that of the four overlapping ideas or principles that presently ground her vision as to what is essential to improving adolescent literacy, classroom communities and relationships is number one on her list (2006, p. 467). Notably, two other ideas from her list directly relate to the classroom teacher as well: internalizing principles and philosophy of learning, and professional expertise (2006, p.467). Clearly, Santa believes that teachers who demonstrate an explicit understanding of literacy can impart that insight to his or her students and, thereby, directly affect their academic success. The research indicates that, whether educators are comfortable or not, willing or not, cognizant or not, they and their attitudes directly correlate with adolescent literacy in the classroom.

Resistance to Content Area Literacy

In an article in the *Journal of Adolescent and Adult* Literacy, Lesley remarks that "despite years of research on the subject, resistance toward implementing content area literacy in secondary classrooms persists" (2004, p. 320). According to Cantrell, Burns and Callaway, middle and high teachers' resistance to implementing content literacy approaches stems from a number of factors, including middle- and high-school traditions and cultures, teacher beliefs about the roles and responsibilities of content area teachers and content teachers' lack of

confidence in their own preparation as literacy teachers (2009, p. 77). Caine and Caine (1998) refer to these deeply entrenched beliefs, assumptions and images that guide teachers' thinking about schooling and actions in the classroom as mental models. These are often not conscious and are very difficult to change, even when teachers receive evidence to the contrary (Caine & Caine, 1998, p. 4). Simply put, teachers' beliefs about content literacy often operate as barriers to implementation.

Disconnect Between Content Literacy and Secondary Curricula and Pedagogy

One of the reasons classroom teachers point to for not implementing content area reading strategies in their curriculums is that the idea of addressing reading challenges just does not fit in a secondary classroom where content is king. Wilson, Grisham and Smetana indicate that content area teachers often "do not see a connection between literacy skills and content information, as these skills appear to be inconsistent with the traditional goals of the secondary curriculum" (2009, p. 708). As such, many content area teachers struggle to buy into the teaching of reading strategies.

According to Cantrell, Burns and Callaway, middle and secondary schools are characterized by "distinct subject area divisions and content area subcultures that value different forms of knowledge and pedagogy" (2009, p. 77). As a result, suggest Cantrell and her associates, shifting from teacher-centered to student-centered styles can be disconcerting and can cause teachers to resist adopting new techniques (2009). Santa acknowledges, too, that incorporating an adolescent literacy perspective into classrooms "challenges teachers to make a philosophical shift in what it means to teach"—not an easy task (2006, p. 474).

According to Conley, Kerner and Reynolds, teachers frequently demonstrate limited understandings of the ways in which literacy can be content-specific (2005, p. 28). For instance, according to Cantrell, Burns and Callaway, in their study, respondents who taught mathematics often indicated that literacy strategies were irrelevant to their subject area, and either did not know how to implement the strategies or only did so in highly selective ways (2009, p. 84). Park and Osborne report similar findings: "Teachers failed to realize the relevance of reading to their discipline and rejected the notion that they are teachers of reading" (2006, p. 39).

Time Constraints

In addition to a perceived awkward correspondence to the curriculum, content area teachers frequently reference limited teaching time as a reason for avoiding the use of literacy strategies. Cantrell and her research partners indicate that pressures to teach subject area content as efficiently as possible may impede teachers' willingness to abandon traditional pedagogical methods (2009). They further suggest that "these pressures often lead content teachers to perceive that helping students read more effectively is not their responsibility" (2009, p. 78). Parris and Block report that a major challenge for teachers of underachieving adolescents was simply finding the time to deliberately teach literacy competencies (2007). According to Park and Osborne (2006), classroom teachers feel that reading instruction infringes on content area time.

Ness indicates that "when teachers feel instructional time is best spent delivering content, literacy integration takes a back seat" (2007, p. 230). Her findings further suggest that content area teachers see literacy integration and providing support for reading comprehension as just

one more time-consuming burden, not as an effective way to improve student understanding and retention of content (2007). Ness continues, noting that in multiple studies secondary teachers explain their lack of explicit strategy instruction by citing time shortages (2008). Finally, Ness reports that teachers felt that content coverage would be sacrificed by providing time to help struggling students with reading support (2008). In her study of a collaborative professional development work group focused on content area literacy, Thibodeau noted that of the participating instructors, "many of them were concerned about the time the literacy strategy instruction might take away from content instruction, at least initially as they introduced new strategies to their students" (2008, p. 59).

Lack of Confidence in Knowledge and Preparation

Content area teachers also report that they are not adequately trained to incorporate reading strategies and literacy skill training into their instructional approaches. While The Education Trust report (2004) emphasized that "more emphasis should be given to increasing teacher effectiveness" in the area of literacy instruction, vast numbers of content area teachers report feeling unprepared to incorporate literacy strategies into their classrooms and curricula. According to Chehayl, teachers without an English/language arts background find it challenging to incorporate reading in their content areas, since many were not trained in literacy instruction during their pre-service preparation (2008, p. 26). Cantrell, Burns and Callaway mention that recent research has suggested that educators perceive a "heavy responsibility for teaching literacy within their content, but that they may not believe they are well-equipped to meet the literacy needs of their students" (2009, p. 78). Simply, content area teachers might exhibit high levels of confidence or efficacy in their field of expertise, but they often do not believe they have sufficient knowledge, abilities or preparation for integrating literacy instruction into their content area or for addressing students' general literacy needs.

Park and Osborne explain that teachers feel inadequate to handle reading problems in their classrooms (2006). In an article in the *International Journal of Special Education*, Vicky Spencer and her associates explain that content area classroom teachers have expressed that they are "uncomfortable planning instruction to foster reading development" (2008, p. 1). Hall found that content area teachers would like to teach reading but do not know how (2005). Additionally, Hall references five other studies which indicate that "pre- and in service teachers might believe that they are not qualified to teach reading to their students" (2005, p. 406).

Roles and Responsibilities of Content Area Teachers

Another teacher-held belief that impacts utilization of literacy strategies is linked to perceived functions and duties of content area teachers. According to Spencer and her research partners, secondary teachers "perceive literacy to be a relatively low priority and/or the responsibility of English teachers" (2008, p. 1). Heller and Greenleaf suggest that at the secondary level, "the responsibility for teaching reading and writing often seems to belong to no one in particular. Rather, teachers have traditionally been defined as specialists in the academic content areas, where content is understood to be an entirely different matter from skills" (2007, p. 15). According to Alger, "secondary teachers hold the view that their focus should be on transmitting the content, and that learning to read should already have taken place in the elementary school (2007, p. 621). Park and Osborne note that "secondary teachers expect

students to have the reading abilities necessary to read in the content areas, and they perceive their primary function to be the preparation of students in their subject area" (2006, p. 41). In her study on teacher attitudes, Hall found that teachers held the belief that "content area teachers either cannot or should not teach reading" (2005, p. 406). Additionally, Hall's findings reveal that content area teachers also believed that teaching reading is the responsibility of others (2005). Lesley and Matthews concur and indicate that for many practicing and pre-service teachers, the term content area literacy raises questions about the relevance and applicability of literacy in subject area learning (2009). This attitudinal barrier is supported by Alger who explains that while the notion of literacy as a school-wide issue (as opposed to an English teacher's problem) has emerged in some U.S. school districts, "there is still reluctance on the part of content area teachers to commit to including literacy as a goal or objective of their courses" (2007, p. 620).

Lack of Clear Government Mandate and Funding

It is worth noting that in 2001, the first draft of what became the No Child Left Behind Act (NCLB) scarcely mentioned high school students. In fact, according to an article in the *Journal of Adolescent & Adult Literacy*, the term high school appeared just twice (Wise, 2009). In its final incarnation, NCLB created no programs and allocated no funds to support literacy interventions for older students. Wise suggests that the reason for this is two-fold: first, "federal legislators did not yet recognize the severity of the adolescent literacy challenge" and, second, NCLB was not "designed to address the educational needs of high schools or their students" (2009, p. 370).

METHODOLOGY

Typically held teacher attitudes and beliefs about content area literacy as well as delineation of a variety of factors that may contribute to middle and high school teachers' resistance to implementing content area reading strategies were the dual focuses of this study topic. These two objectives were evaluated during the administration of the validated instrument and the completion of the individual interviews.

Research Methodology

This study was a combination of action, correlational and causal-comparative research. The study was fundamentally action research in nature because the inquiry will be designed and implemented seeking to yield an acknowledged result. The study also took on a correlational research perspective because teacher attitudes were evaluated to discover the extent to which they predict professional practices related to content area literacy. Finally, the research was causal-comparative because resistance to content area literacy was viewed as the result of mental models, and the critical relationship between them was explicated via retrospective analysis.

Design Methodology

A mixed method study design was employed since both qualitative and quantitative data were collected. Quantitative forms of data were collected from scaled survey responses and

district graduation rates. *A Scale to Measure Attitudes toward Teaching Reading in Content Classrooms,* formulated by J.L. Vaughn, was used to measure study participants' attitudes about teaching reading in content area classrooms. Additionally, the school district's graduation rates were examined to determine if correlations can be drawn.

Qualitative data was collected from opinion-based, open-ended interview responses. Study participants' answers during in-depth individual interviews designed to record their professional opinions and practices as related to the study's topic were used to gauge the relationship between the two and complete triangulation of data.

Population and Sample

The geographic region where the study was conducted is rural, and the city in which the school district is located enjoys the highest per capita rate of physicians in the nation and has a population of 16,988. The primary employment of the residents includes a state university, a private medical school, agriculture or small business. Most residents in the community in which the study was undertaken are employed and of the middle or upper class.

The study took place in a rural school district which has received recognition from the state for distinction in performance the past eight consecutive years. Sample subjects were drawn from the faculty of the middle and high schools in this school district. Because this research targeted specific individuals and excluded others based on identified criteria, a non-probabilistic sampling procedure was employed to select the study participants. The available sample population was 51 participants and included only middle and high school content area teachers who did not teach reading, language arts, English or literature courses.

Instrumentation

A combination of evaluation tools was used to collect data for this study. The first was a researcher-developed qualitative interview. Research objectives were established, and then the researchers formulated interview questions to measure participants' opinions and practices in each objective area. Responses to the completed researcher-developed interviews provided qualitative data related to the study's topic. Another tool was a validated quantitative assessment; there was also a tool based in document review. Compilation of results on the validated assessment and statistical information gleaned from the document review provided quantitative data related to the research question. The data was compiled and reported in the form of percentages and reflected in visual graphs.

A Scale to Measure Attitudes toward Teaching Reading in Content Classroom, developed by J.L. Vaughn, was used to determine the participating teachers' general attitude toward teaching reading. The scale consists of fifteen attitude statements about teaching reading in the disciplines. Participants responded by answering on a seven-point scale: strongly agree, agree, tend to agree, neutral, tend to disagree, disagree and strongly disagree. This assessment was administered prior to completion of the qualitative interview. Completed surveys were collated and retained for analysis.

The researcher-developed, open-ended interview was administered to gather participants' opinions in five attitudinal areas: content literacy as related to secondary curricula and pedagogy, scheduling restrictions, diffidence due to limited familiarity and training, perceived functions and duties of content area teachers and insufficiency of an explicit government edict

and earmarked subsidy. By comparing this data with information collected on other evaluation tools, conclusions were drawn. This interview was necessary for the collection of data beneficial in determining the implications of teacher attitudes about and professional practices related to literacy strategies. The qualitative individual interviews were administered after completion of the *Scale to Measure Attitudes toward Teaching Reading in Content Classrooms*. Once the researcher received the completed quantitative survey from a participant, the qualitative interview was conducted. Completed interviews were collated and retained for analysis.

Existing documents were reviewed according to the study design. The school district's graduation rates were examined. This document review gathered data from the past five academic years. These data were cross-tabulated with the qualitative survey and quantitative interview findings to determine if correlations could be drawn. The researchers conducted the document review with the assistance of the high school principal. The data was provided via interpretation of data specific to graduation rates in the district's Annual Year Report.

FINDINGS

There was a 100% return rate of *A Scale to Measure Attitudes toward Teaching Reading in the Content Classroom* from the 39 teachers who elected to participate in the study. The rate of return for the individual interview was also 100%, across the 39 study participants. Again, though, because 51 teachers met the criteria as set by the study design, there is an implicit attrition rate of 28% overall. The participating study sample included 39 teachers from the middle and high schools, 13 males and 26 females. The middle school subgroup consisted of 14 (36% of study group) teachers. Twenty-five (64% of study group) high school teachers participated in the study. This totals 72% of the eligible target population in the school district in which the study was conducted.

Professional opinions regarding teaching literacy strategies in content area classrooms were measured utilizing individual item responses on *A Scale to Measure Attitudes toward Reading in Content Classrooms* and participants' responses to individual interview questions that target the outcome.

Research participants were required to respond to Item Five of the individual interview once during the study, following completion of the Vaughan scale. This item was presented in multiple choice format with the following options: English, Special Education, Elementary, Middle/Junior High School, High School, Any/All and Other (Please Specify). Teachers completing the individual interview had to select one choice from the available options. This interview question was included in the analysis because it assesses perceptions related to training in and familiarity with reading instruction. Just over half (51%) of the respondents indicated that elementary teachers are best prepared to teach reading strategies to students; almost a third (28%) of the participating teachers said English teachers are best prepared to provide reading strategy instruction; 15% felt that any or all educators were best prepared; 13% indicated that special educators were best prepared to teach reading strategies; five percent specified middle school teachers are best trained to provide reading strategy instruction and two percent denoted other and listed Title staff as best prepared to teach reading strategies to students.

Each teacher participating in the research responded to Item Eight during the individual interview which followed completion of Vaughan's validated assessment. The question was structured in yes/no format. Teachers had to select yes or no in response to this item on the individual interview. This interview item was included in the analysis because it helps determine

knowledge of content area literacy strategies. The analysis of this item revealed that almost three-quarters of the target sample population (72%) reported not being familiar with content area literacy strategies. Conversely, 28% of respondents indicated that they were accustomed to content area literacy strategies.

Following completion of *A Scale to Measure Attitudes toward Teaching Reading in Content Classrooms*, Item 11 was presented to each study participant during the individual interview. The question was structured in yes/no format. Participating teachers had to select yes or no in response to the question for this item on the individual interview. This interview item was included in the statistical summary because it addresses training in and awareness of reading strategy instruction. The majority (67%) of study participants indicated that they do not feel they are able to teach reading strategies to students in their disciplinary courses. Thirty-three percent of respondents reported that they did feel able to provide reading strategy instruction to students in their content area classrooms.

Item 14 was presented once on the individual interview, following completion of Vaughan's scale. The question was structured in yes/no format. Study participants were required to select either yes or no to respond to this item. This interview question was included in the analytical breakdown because responses revealed beliefs related to scheduling in content area classrooms. For this item, evaluation of responses showed that the majority of teachers participating in the research (74%) agreed that teaching reading strategies does reduce their instructional time. Twenty-six percent of the target sample population indicated that they do not agree that teaching reading strategies reduces their instructional time.

Research participants were required to respond to Item Six once during the study, following completion of the Vaughan scale. This item was presented in multiple choice format with the following options: English, Elementary, Special Education, Any/All, Title I and Other (please specify). Teachers completing the individual interview had to select one choice from the available options. This interview item was included in the analysis because it relates to perceived duties and functions of content area teachers. Fifteen percent of study participants indicated that they thought English teachers should be responsible for teaching reading strategies to students. Twenty-one percent felt that the duty belongs to elementary educators. Fifteen percent of respondents reported that special educators should be the ones providing reading strategy instruction. Nearly half of the study sample (46%) specified that any and/or all teachers should be teaching reading strategies; and three percent indicated that Title I staff were the ones who should be providing instruction in reading strategies.

Item 22 was presented once on the individual interview, following completion of *A Scale to Measure Attitudes toward Teaching Reading in Content Classrooms*. The question was presented in multiple choice format with four options: yes, no, for some children and other (please specify). Respondents were required to select one response for this item. This interview question was included in the statistical analysis because it assesses whether or not secondary teachers discern a governmental edict related to content area literacy. The results for this item indicated that nearly all of the research participants (92%) feel that the No Child Left Behind Act (NCLB) does not address literacy. A minority of respondents (8%) reported that they believe the No Child Left Behind Act does attend to literacy.

Item 23 was presented once on the individual interview, following completion of Vaughan's validated assessment tool. The question was presented in multiple choice format with four options: yes, no, I don't know and other (please specify). Respondents were required to choose one response for this item. This item was included in the analysis because the question

helps determine if teachers believe the federal government is subsidizing literacy projects within the public school setting. The results for this item indicated that the majority of the study participants (54%) do not know whether or not the No Child Left Behind Act (NCLB) earmarks funds for literacy programming in public schools. A significant portion of respondents (41%) reported that they believe the No Child Left Behind Act does not fund literacy initiatives. In all, 95% of the teachers participating in the study do not hold a favorable opinion regarding the federal government's current financial support for programs aimed at literacy in public schools. Five percent of the study sample denoted that they believe the No Child Left Behind Act does allocate funding for literacy projects in the public school setting.

Professional practices related to literacy instruction in content area classrooms were targeted and measured utilizing the individual summative scores tabulated and corresponding range/attitude category indicated by the interpretation table associated with the tool for each participant on the *Scale to Measure Attitudes toward Teaching Reading in Content Classrooms* and items from the individual interview designed by the researcher that target the outcome. This standardized assessment was presented for individual completion without time limits to all study participants. The 15-item questionnaire lists attitudinal statements which participating teachers needed to rate on a 7-point Likert scale with a seven equaling Strongly Agree and a one equaling Strongly Disagree. Participants were required to complete this assessment once at the beginning of the study, prior to completing the individual interview.

On the *Scale to Measure Attitudes toward Teaching Reading in Content Classrooms*, cumulative interpretation of the summative scores revealed that 8% of respondents' ratings were consistent with a high (very positive) attitude toward content area reading instruction, and 15% of subjects rated themselves as having above average (positive) attitudes toward teaching reading in content area classrooms. By contrast, a combined total of 77% of respondents held attitudes in the average (neutral), below average (not positive) and low (negative) range. Of the 77% whose attitudes were ranked in the three lowest categories, 48% of the study subjects' summative scores indicated they had average (neutral) attitudes toward teaching reading in content area classrooms. Another 26% of participants' scores denoted that they harbored below average (not positive) opinions about reading strategy instruction in core and elective disciplines; and the final 3% of teachers' scores identified their attitudes toward teaching reading in the content areas as low (negative).

Item 12 was presented once on the individual interview, following completion of *A Scale to Measure Attitudes toward Teaching Reading in Content Classrooms*. The question was structured in multiple choice format with the following options: none, 5-10 minutes, 15-20 minutes, 25-30 minutes and other (please specify). Respondents were required to select one choice for this item. This interview item was included in the findings because it measures the professional habits related to teaching reading strategies in content area classrooms. The majority of study participants (67%) reported that they spend no time providing reading strategy instruction in a typical lesson in their content area classrooms. Twenty-five percent of respondents indicated that they allocated five to ten minutes (the lowest amount listed in the item responses) of lesson time for teaching reading strategies. Five percent of teachers participating in the study specified that they typically allow 15 to 20 minutes of time in a lesson to teach reading strategies. Finally, three percent of the study sample estimated that they spend 25 to 30 minutes during a lesson providing reading strategy instruction.

A document review was conducted and an administrative explanation was sought to evaluate the host school district's dropout rate. These data were not originally collected for the

purpose of this study but were utilized for the research project. The district records for graduation rates for the last five years (2005 through 2009) were requested. The data was provided from the district's Annual Performance Report by the high school principal. The high school principal also provided clarification on the formula utilized to calculate the district's rate of persistence to graduation. This document review was conducted because research indicates that one of the most common reasons students leave high school prior to graduation is that they do not have adequate literacy skills to successfully navigate the high school curriculum.

In 2005, the school district reported a graduation rate of 88.9%. The graduation rate in 2006 was 85.6%. 92.4% of students graduated in 2007. In 2008, the reported graduation rate was 91.2%. Finally, the 2009 graduation rate was reported at 88.7%. As the district typically reports enrollment of about 850 students in grades 9 through 12, the graduation rate for 2005 means 24 students dropped out. In 2006, 31 students dropped out. Seventeen students dropped out before graduation in 2007. In 2008, 19 students dropped out of high school; and in 2009, 24 students dropped out. In the past five years, then, 115 students left high school prior to graduating. These annual rates equate to a five-year average of 89.4%. These calculations were made as a persistence to graduation percentage, which means that the annually the district reports that approximately 2.5% of students drop out.

DISCUSSION

Summary of Findings and Conclusions

This study sought to specifically identify and broadly categorize mental models to which teachers subscribe. Professional opinions regarding teaching literacy strategies in content area classrooms were measured utilizing individual item responses on *A Scale to Measure Attitudes toward Reading in Content Classrooms* and participants' responses to individual interview questions that target the outcome.

Evidence of mental models held associated with pedagogy and curricula was measured by use of both individual item responses on A *Scale to Measure Attitudes toward Reading in Content Classrooms* and responses to correlated items from the individual interview.

The perception that teaching reading strategies reduces instructional time was evaluated by use of responses from an item from Vaughan's scale and replies to an item from the individual interview. The findings were analyzed using a simple percentage equation. Forty-six percent of respondents indicated that they strongly agree that teaching reading strategies squanders instructional time. When teachers in the study sample were only given the choice to agree or disagree with the idea that teaching reading techniques in their classrooms was a misuse of their instructional time, nearly three-quarters (74%) said they agreed with the statement. According to these findings, the vast majority of middle and high school teachers in this study thought that limited teaching time provided cause for judging instruction of reading strategies as wasteful. These results are consistent with Park and Osborne's research which suggested that teachers feel that reading instruction infringes on content area time (2006). According to Ness (2008), secondary teachers frequently explain their lack of explicit strategy instruction by citing time shortages. Thibodeau's findings also suggest that content area teachers are concerned about the time literacy strategy instruction might take away from content instruction (2008). The results of this action research demonstrate that the secondary teachers who participated harbor

unconstructive mental models which compel them to believe that coverage of content material would be compromised if they implemented reading strategy instruction in their classrooms.

The belief that a lack of knowledge of or insufficient practice should prohibit implementation of reading strategy instruction in content area classrooms was evaluated by use of responses from three items on the individual interview. The findings were analyzed using a simple percentage equation. The data revealed that teachers held strong unfavorable attitudes regarding their training in and familiarity with content area reading instruction. For instance, nearly 80% of teachers contributing to the research project believed that either elementary educators or English teachers are best prepared to teach reading to students. Interestingly, because of the criteria set for sample population selection, no elementary English teachers were represented in the study sample. Further, a majority (72%) of participants claimed that they were not even familiar with content area literacy strategies. Finally, 67% of the middle and high school teachers who took part in this study reported that they did not feel capable of teaching reading strategies to students in their classrooms. According to others' research, a lack of confidence in knowledge and preparation is a common reason content area teachers point to for not incorporating reading strategies and literacy skill training into their instructional approaches. Chehayl suggested that teachers without an English/language arts background find it challenging to incorporate reading in their content areas (2008). Cantrell, Burns and Callaway supported Chehayl's findings, indicating that core and elective discipline teachers might not believe they are well-equipped to meet their students' literacy needs (2009). The results of this action research project also reveal that middle and high school teachers believe they lack knowledge and confidence in implementing specific reading strategies. Overall, the majority of teachers participating in this study harbor a mental model that presumes they do not believe they have sufficient knowledge, abilities or preparation for integrating literacy instruction into their content area classroom.

The supposition that secondary teachers are educating the nation's children and youth without explicit federal leadership and adequate subsidy for meaningful initiatives was evaluated by use of responses from two items from the individual interview. The findings were analyzed using a simple percentage equation. Results showed that 92% of the middle and high school teachers who participated in this action research believed that the No Child Left Behind Act (NCLB) does not address literacy. In addition, 54% of the target sample population reported that they did not know if the No Child Left Behind Act (NCLB) subsidizes literacy projects in public schools. Another 41% of respondents indicated that they do not think the No Child Left Behind Act (NCLB) funds literacy initiatives. In all, then, nearly all (95%) of the teachers in the study sample did not have a sense that investment is being made in literacy at the secondary level. While these statistics seem pessimistic, they do accurately reflect the current state of affairs regarding literacy mandates and subsidies from the federal government. In fact, the 2001 draft of what became the No Child Left Behind Act (NCLB) barely referred to secondary students at all. According to one researcher, the term high school appeared just twice in the act's initial manifestation (Wise, 2009). Worse still, in its final incarnation, NCLB did not create any programs or earmark any funds to support literacy initiatives for middle or high school students (Wise, 2009). Regrettably, deductions that can be drawn from the findings in this research indicate that secondary level teachers are aware that national leadership has failed to focus on adolescent literacy as a pressing issue. Additionally, secondary level teachers are accurate in their opinion that funds have not been allocated to systemically address the literacy needs of middle and high school students. The research found that middle and high school teachers do

subscribe to an unfavorable, albeit accurate, mental model regarding government edict and funding related to literacy in the public school setting. This mental model promotes beliefs that passively grant secondary educators permission to assume the same flaccid posture regarding content area literacy as the nation's leadership. It is not unreasonable for middle and high school teachers to discount the critical need for the implementation of literacy strategies in their classrooms when the matter is entirely overlooked by mechanisms and representatives of the federal bureaucracy.

This study also sought to discover whether or not identified mental models subscribed to by content area teachers affect their professional practices related to implementation of reading strategy instruction in their classrooms. The impact was measured by use of qualitative measurement procedures analyzing responses to two specific items from an individual interview. Findings were determined by statistical analysis of qualitative interview data. This section will highlight key findings demonstrating the impact of teachers' attitudes towards content area reading instruction on their professional implementation habits in their own classrooms in the following areas: time spent teaching reading strategies during a typical lesson and weekly frequency of reading strategy implementation.

The amount of daily instructional time participants reported dedicating to reading strategy instruction was determined by responses to the individual survey. The data were analyzed to produce findings using a simple percentage equation. The data revealed that 67% of teachers contributing to the study spent no time providing reading strategy instruction in a typical lesson in their content area classrooms. Additionally, one-fourth of respondents indicated that they devoted five to ten minutes of daily lesson time to teaching reading strategies. Because the district in which the study was conducted follows a traditional seven-period schedule, when ten minutes is assumed, this means less than 20% of available instructional time is committed to literacy strategies. Another five percent of teachers participating in the study specified that they typically allow 15 to 20 minutes of time in a lesson to teach reading strategies. Finally, three percent of the study sample estimated that they spend 25 to 30 minutes during a lesson providing reading strategy instruction. A review of the research revealed that content area teaches frequently reference limited teaching time as a reason for avoiding the use of literacy strategies. There are many reasons this is the case. For instance, Cantrell's findings indicate that pressures to teach subject area content as efficiently as possible may impede teachers' willingness to abandon traditional pedagogical methods (2009). Cantrell also suggests that content area teachers deem that helping students read more effectively is not their responsibility (2009). Additionally, Parris and Block report that a major challenge for teachers of underachieving students was simply finding the time to deliberately teach literacy competencies (2007).

Recommendations for Practice

The list below identifies how the results of this research can be directly put into practice.

1. Undergraduate and graduate education programs must develop, embed and require a significant content area reading strategy training component.
2. Undergraduate, graduate and continuing education programs must create instructional paradigms which teach that comprehension must be equal to content in core and elective disciplinary classrooms.
3. A national initiative must be undertaken to require content area reading strategy instruction across the curriculum at the secondary level.

4. Middle and high school teachers must be required and encouraged to utilize content area reading strategy instruction to improve student comprehension in their classrooms.
5. Content area reading strategy training must be a required element for recertification.
6. Secondary teachers should assume a professional posture that eliminates defensiveness in order to support literacy reform in middle and high schools.

Recommendations for Future Research

The list below identifies recommendations for future research. Future research could
1. Examine the impact of content area reading strategy instruction within all disciplinary classrooms.
2. Address beliefs administrators harbor related to content area reading instruction.
3. Address the impact of literacy strategy instruction on student grades in all content areas.
4. Examine the types of content area reading strategies teachers are employing when they do implement literacy instruction.
5. Address the impact of administrators' beliefs on implementation habits of faculty.
6. Address whether or not awareness of one's own assessed professional paradigms related to content area reading instruction affects professional practices in the classroom.
7. Examine how students perceive their educational experiences in classrooms where content area reading strategies are implemented.
8. Examine teacher perceptions of classroom performance of students receiving content area reading strategy instruction.
9. Evaluate the best method for improving unfavorable mental models held by education professionals.
10. Develop a profile of the type of teacher likely to implement content area reading strategies.
11. Study the processes involved in securing administrative support for implementing a literacy initiative at the district level.

Implications

The global benefit of the study is in determining whether or not the attitudes held by content area teachers have an impact on the implementation of literacy strategies in their classrooms. Advancement of knowledge in the area of correlation between the two and the identified attitudinal categories and associated assumptions and patterns are also of general advantage. This knowledge is of global benefit because these findings will give direction in how an individual teacher, department, building or district can develop and implement a response plan in an effort to counteract mental models that may be operational barriers to content area literacy instruction.

This information is important locally to school districts and the children they serve and nationally to begin addressing stagnating adolescent literacy rates and their impact on national education performance. In the United States, at this time, an effective parry to the impact of adolescent literacy on measures of educational outcomes is difficult to execute. The main reasons for the challenge in beginning to confront the impact of teacher attitudes on literacy instruction in their classrooms are systemic and civic: first, and simply, secondary teachers resist fitting reading strategies with their content instruction; and second, there is not a government

proposition that identifies adolescent literacy as an educational issue on the national agenda nor is there adequate funding to subsidize a meaningful initiative.

Teachers, administrators, school boards and elected officials who recognize the critical nature of adolescent literacy need the expertise and direction that this research provides. The data collected will give concerned education professionals, entities and policy makers statistical evidence for the impact of teacher attitudes on implementation of literacy strategies in content area classrooms.

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