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High and low implementers of content literacy instruction: Portraits of teacher efficacy

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ABSTRACT

This study used a teacher efficacy framework to describe the perceptions of high and low implementers of content literacy instruction in the context of a year-long professional development program. Interviews from middle and high school content teachers illustrated efficacy differences between teachers who demonstrated high and low levels of content literacy implementation. High implementers exhibited higher levels of general, personal, and collective efficacy, whereas low implementers exhibited lower levels of efficacy for literacy teaching. Although both high and low implementers perceived content literacy positively, high implementers were characterized by persistence in overcoming barriers associated with content literacy implementation.

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1. Introduction

Recently, national assessments have highlighted students' lack of preparation for postsecondary education and declining reading performance (ACT, 2006; NAEP, 2005). In the wake of these reports, the topic of adolescent literacy has received a great deal of attention and federal funding has been directed at studying the most effective literacy practices for the nation's adolescents (Cassidy & Cassidy, 2007; *Striving Readers*, 2006). Research on adolescent literacy has illustrated the importance of integrating literacy instruction addressing students' literacy needs across the curriculum in middle and high school classrooms; however, attempts to systematically infuse literacy instruction into content area classes often fail (Alvermann, 2001; Bean, 2000; Biancoarosa & Snow, 2004; O'Brien, Stewart, & Moje, 1995). Typically, teachers are not well prepared to implement content literacy approaches and the practices associated with content

literacy instruction often run counter to the ingrained cultures and traditions of middle and secondary schools.

While pre-service and in-service teacher education largely has failed to produce teachers who readily integrate literacy into the content areas, some professional development programs have yielded success (Bean, 2000; Close, Hull, & Langer, 2005; Greenleaf, Schoenbach, Cziko, & Mueller, 2001; O'Brien et al., 1995). These programs have engaged teachers in extended professional development in a collaborative context and have encouraged teachers to examine their own reading processes in order to teach those processes more explicitly to their students. For content literacy approaches to be successful, teachers must develop a sense of efficacy for literacy teaching that enables them to transcend traditional structures in middle and high school classrooms. In developing programs that support teachers in changing their practices, it is important to understand teachers' successes and their struggles during the implementation process. Understanding these experiences will enable teacher educators to design and deliver in-service teacher education that is both internalized and applied by content area teachers. In this article, we present an interview

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study of teachers' perceptions about content literacy in the context of a professional development program designed to help teachers infuse literacy instruction into the content areas. Using a teacher efficacy framework, we examined teachers' sense of efficacy for literacy teaching over the course of a year-long project (Bandura, 1977, 1986, 1993). Specifically, we investigated characteristics of high and low implementers of content literacy instruction in order to better understand and support teachers' use of literacy practices in the content areas. Understanding the efficacy characteristics of teachers who are more and less successful in implementing content literacy instruction will focus teacher educators' efforts on overcoming teachers' intrinsic and extrinsic barriers to content literacy implementation. As such, this study was designed to answer the following research questions:

- (a) What are the efficacy characteristics of high and low implementers of content literacy instruction?
- (b) What are similarities and differences in the efficacy characteristics of high and low implementers?

Although it was set in the context of content literacy professional development, this study was not an evaluation of professional development, but instead was an examination of content literacy implementation as it relates to teacher efficacy.

Teacher efficacy is particularly relevant to content literacy implementation as efficacy is context specific and tends to be related to innovation implementation in general (Tschannen-Moran, Hoy, & Hoy, 1998). Though the construct of teacher efficacy has been widely studied, teacher efficacy for literacy teaching has received little attention (Tschannen-Moran & McMaster, 2006). Given the fact that middle and secondary content teachers value literacy teaching, but tend not to feel efficacious with literacy instructional practices, studies examining the relationships between literacy teaching and teacher efficacy are needed (Hall, 2005). Also, because most of the teacher efficacy research has involved correlational studies that do not examine the facets of teacher efficacy in depth and do not provide context-specific information about teacher efficacy, some teacher efficacy researchers have called for process-oriented and interpretive research on teacher efficacy (LaBone, 2004; Wheatley, 2005). In this study, we provided a qualitative examination of teachers' perceptions related to content literacy utilizing the voices of content teachers to illustrate efficacy issues that promote or inhibit content literacy implementation.

1.1. *Teacher efficacy framework*

Teacher efficacy refers to a teacher's belief that she or he can positively influence a student's learning despite perceived barriers, such as difficult home circumstances or low socio-economic status (Berman & McLaughlin, 1977). Based on the socio-cognitive theories presented by Bandura (1977, 1986), the concept of teacher efficacy has been linked to effective classroom practices and higher student achievement (Ashton & Webb, 1982; Gibson &

Dembo, 1984; Ross, 1992). Early work in the area of teacher efficacy yielded two dimensions of efficacy: general teacher efficacy and personal efficacy (Ashton & Webb, 1982). General teacher efficacy refers to one's belief that teachers, in general, can and should greatly influence student performance in spite of potential barriers while personal efficacy refers to a teacher's belief that she or he has the ability to have a strong influence on student learning.

Bandura (1977, 1986) identified teacher efficacy as a type of self-efficacy in that teachers are strongly affected by their beliefs about their potential to affect student learning, and those beliefs relate directly to their efforts and persistence with students. According to Bandura, the most important influences on efficacy beliefs are mastery experiences, or past performances with a particular task. This notion is supported in literacy teaching efficacy research, as teachers who experienced success with literacy teaching had more positive perceptions about their influence on students' learning (Tschannen-Moran & McMaster, 2006).

More recently, Bandura (1997) extended his notions about teacher efficacy to emphasize the importance of the shared efficacy of teachers in a school—a school's collective efficacy. Collective efficacy, defined as the shared perception of a school's faculty members about their combined abilities to affect student performance, has been associated with school-level student achievement (Goddard, Hoy, & Hoy, 2000). In theory, faculties with high collective efficacy are more likely to set challenging goals, exert high levels of organizational effort, and persist with students to achieve at higher levels. Groups with low levels of collective efficacy, on the other hand, are less likely to put forth effort, more likely to give up, and less likely to positively impact student performance.

In the early days of teacher efficacy research, the Rand Corporation used its study of teacher change to pinpoint teacher efficacy as the most important variable in change implementation (Berman & McLaughlin, 1977). In this study, researchers found that teachers who believed that they could positively impact student achievement, despite perceived barriers of students' home circumstances or low motivation, were more effective in implementing change. Since that time, other researchers have confirmed the essential nature of teacher efficacy in educational change, though only a few studies have investigated the extent to which teacher efficacy is related to a teacher's willingness or abilities to change their teaching practices through the implementation of new teaching strategies (Ghaith & Yaghi, 1997; Guskey, 1988; Stein & Wang, 1988).

An important aspect of teacher efficacy is the extent to which it is domain and context specific. While teachers might feel highly efficacious with one content area or with one group of students, they might simultaneously exhibit low efficacy with a different content area or student group (Tschannen-Moran et al., 1998). The context-specific nature of teacher efficacy is especially relevant to teachers' beliefs about content literacy approaches. Whereas content area teachers might exhibit high levels of personal efficacy in their field of expertise, they might

not believe they have sufficient knowledge, abilities, or preparation for integrating literacy instruction into their content area or for addressing students' general literacy needs. In literacy, research with elementary teachers has demonstrated that teacher efficacy is related to positive teacher practices in literacy teaching, but little research has examined middle and high school teachers' efficacy for literacy teaching (Graham, Harris, Fink, & MacArthur, 2001; Tschannen-Moran & McMaster, 2006). Such content-specific efficacy research is necessary since teachers' outcome expectations for the teaching practices with which they already feel capable are often quite different from the outcome expectations for new teaching methods with which teachers believe they have little or no skill (Wheatley, 2005).

1.2. *Teacher efficacy and content literacy*

In middle and secondary schools, content literacy approaches have been recommended to teachers for years (Anders & Levine, 1990; Bean, 2000; O'Brien et al., 1995). Content literacy involves integrating literacy strategies into content area instruction in ways that engage students in understanding and using texts more effectively. Content literacy approaches often place teachers in the role of facilitators who help students use literacy skills and strategies to learn content. However, this role related to literacy teaching can be disconcerting to teachers who may experience conflicting senses of responsibility for and efficacy with literacy teaching, and teachers' discomfort with content literacy practices often leads to resistance (Alvermann & Moore, 1991; O'Brien et al., 1995). Teachers often are uncomfortable with the shifting of control from teachers to students that characterizes content literacy instruction. Further, perceptions of content teachers' roles focused on content delivery and coverage can impede teachers' willingness to abandon traditional pedagogical methods. Nevertheless, recent research has indicated that content area teachers want to learn to address their students' literacy needs, but perceive that they do not possess the skills necessary to help their students read and utilize their content area texts effectively (Greenleaf et al., 2001; Hall, 2005). This diminished efficacy for literacy teaching often inhibits infusion of literacy into content area instruction.

Although middle and high school teachers' content literacy implementation is circumvented by many barriers, professional development efforts have positively affected the attitudes of teachers with regard to supporting content literacy instruction (Anders & Levine, 1990; Greenleaf & Schoenbach, 2004). Studies of content literacy professional development have found positive effects on teachers' efficacy with literacy when professional development included extensive follow-up meetings and consultations about practices (Cantrell, Burns, & Callaway, *in press*; Dupius, Askov, & Lee, 1979; Wedman & Robinson, 1988). These studies suggest that professional development designed to provide teachers with concrete and specific training, augmented with follow-up meetings and expert modeling and feedback, can greatly influence

middle and high school teachers' attitudes, knowledge, and abilities to comfortably implement content literacy instructional strategies in their classrooms.

In this study, we examined the perceptions of middle and high school teachers who participated in a content literacy professional development program that endeavored to help content teachers integrate literacy into their content area instruction. To better understand the specific factors that supported and inhibited content literacy instruction, we investigated the perceptions of teachers who were more and less successful in implementing content literacy practices. Given the barriers associated with content literacy implementation (O'Brien et al., 1995) it is important to investigate the factors that might influence teachers' successes with content literacy, including their beliefs about their students, their roles as content teachers, and their responses to content literacy professional development.

2. Method

2.1. *Research design*

This interview study was designed to describe the perceptions and experiences of content area teachers participating in a content literacy professional development program (Seidman, 2006). Using a teacher efficacy framework, we used interviews to capture teachers' voices as they expressed their successes and challenges in affecting students' literacy development within the context of content area instruction (Bandura, 1977, 1986). We further sought to describe the perceptions of teachers who exhibited varying levels of content literacy implementation to illustrate particular issues that facilitate or inhibit content literacy implementation.

In this study, we used data from two interviews of 16 teachers. Data were transcribed, categorized, and transformed into descriptions of the content literacy experience as well as underlying efficacy beliefs that might have influenced the teachers' implementation of content literacy practices. The purpose of these descriptions is to enable the reader to better understand what content teachers faced as they considered the ways in which literacy could be integrated into their content areas.

2.2. *Context of the study*

The teachers who participated in this study were selected from 78 teachers from six schools and three districts in a southeastern state who participated in the Content Literacy Project (CLP), a year-long professional development program designed to help teachers infuse literacy strategies into the content areas. Participating schools were recruited for the CLP by the professional development provider based on administrators' expressed interest in literacy professional development, and all sixth- and ninth-grade teachers in each school were required by their administrators to participate in the project. The primary components of CLP were a 5-day summer institute and monthly on-site coaching visits by

trainers, during which content literacy techniques were shared, modeled, and demonstrated.

The content of the professional development centered on integrating literacy into content area environments, instruction, and assessment. The focus for the professional development was inspired by an apprenticeship approach to content literacy instruction and the teachers used a core text outlining this approach (Schoenbach, Greenleaf, Cziko, & Hurwitz, 1999). The professional development curriculum was designed to provide teachers with a set of techniques to help students engage meaningfully with challenging academic texts and to enhance students' strategic behaviors. A major professional development objective was for teachers to learn to engage students in before, during, and after reading activities with content area texts to enhance their comprehension during academic reading. As such, teachers were introduced to a range of content literacy techniques designed to help students learn from texts. Examples included (a) vocabulary activities, (b) before, during, and after reading activities designed to engage students in global analyses of text, comprehension monitoring, and reading support, (c) writing activities designed to engage students in interacting with text, and (d) discussion strategies designed to engage students in reflective evaluation of text. In this vein, program trainers modeled a variety of teaching strategies including but not limited to the use of Interactive Word Walls, a modification of a popular word learning instructional strategy (Cunningham, Cunningham, & Arthur, 1981); Frayer Models, a vocabulary development strategy (Frayer, Frederick, & Klausmeier, 1969); Double Entry Journals, a writing to learn strategy (Barone, Mallette, & Xu, 2005); Anticipation Guides, a comprehension strategy (Readence, Bean, & Baldwin, 1995); and Choral Reading, a fluency strategy (Rasinski, 1998). The modeling of each strategy provided teachers with opportunities to assume the roles their students would be expected to play in classrooms. Participants also worked in school-based discipline-specific groups and as members of interdisciplinary teams from their home schools to conceptualize and develop plans for implementing the content literacy techniques in their classroom, disciplinary, and school contexts.

Initial training during the summer was supplemented over the following year through on-site coaching visits by CLP trainers. During these monthly coaching visits, coaches observed and modeled lessons, conferred with teachers about student work, met with teams of teachers to discuss successes and barriers, and provided feedback on content literacy implementation. In between coaching visits, trainers communicated with participants via emails related to problem solving and suggested resources.

The CLP trainers worked for a private, non-profit professional development provider with 15 years' experience in elementary and secondary professional development. The content of the professional development's summer institute and follow-up meetings was delivered by a team of presenters led by a former middle school teacher with a master's degree in literacy and 20 years' experience in teacher training. Each on-site coaching session was conducted by a member of this training team,

each with teaching experience and expertise in content literacy.

As researchers, our role was to conduct an evaluation of the effectiveness of the CLP, though this study does not focus on the effectiveness of the CLP, per se. We were not involved in the development or delivery of the CLP and were unaffiliated with the CLP trainers. Our research team consisted of a project manager, three former middle and high school teachers, and two doctoral students. Members of this team served as field researchers who conducted the observations from which participants were selected and conducted the interviews used in this study.

2.3. Participants

The data for this study were provided by 16 teachers (11 females and 5 males) who taught core content classes for grades six and nine and who were judged to be implementing content literacy practices at either very high or very low levels. Because we wanted to study teachers whose implementation patterns differed, maximum variation sampling was used to select teachers based on their implementation level of the content literacy strategies (Patton, 1987). To select the teachers, field researchers conducted two observations in the professional development participants' classrooms, once in fall and once in spring. Using an observation protocol, they rated teachers' implementation of content literacy strategies in three domains: environment, instruction, and assessment (see Appendix A for indicators of implementation). The field researchers were trained to use the protocols during a day-long training where they watched videotapes of content instruction and engaged in discussions about the presence or absence of content literacy instruction. During that training, the field researchers rated instruction using the observation protocols and achieved an inter-observer agreement of .80. To confirm the field researchers' ratings, professional development coaches, who had visited each class once, independently used a rating scale to rate each teachers' level of implementation on a scale from one to five with a rating of "1" representing no implementation and "5" representing high implementation.

To minimize school effects, we selected an equal number of teachers at high, moderate, and low levels of implementation. Scores on the fall evaluator observations and fall coaches' ratings were converted into z scores and teachers were ranked according to implementation level. Cut-off scores for each level of implementation were established, and teachers with scores at high, moderate, and low levels at each school were selected to participate in interviews. The original intent was to select six teachers from each school for teacher interviews, two at each level of implementation; however, exceptions occurred at three schools. At one small school where only four regular classroom teachers participated, all four teachers were selected to be interviewed (two low, one moderate, and one high implementer). A second school had only one low implementer, so only five teachers were selected at that school (two high, two moderate, and one low). At a third

school, two teachers shared the same score (moderate implementers), so both were selected. After the teachers were selected, three teachers declined to participate (all low implementers), leaving 28 teachers to interview. In the fall, nine of the teachers interviewed were high implementers, 11 were moderate implementers, and eight were low implementers. For this study, we compared only the interview responses of the high and low implementers.

After the spring observations were conducted, the spring protocol scores were examined to determine if any of the high and low implementers had exhibited different implementation patterns from fall to spring. One high implementer received a low implementation score in the spring and was removed from the data set, resulting in the full analysis of eight high implementers and eight low implementers. These 16 teachers exhibited consistent implementation patterns in both the fall and spring observations. The respondents who implemented content literacy practices at high levels included one reading teacher, two science teachers, four English/language arts teachers, and one mathematics teacher. The respondents who implemented content literacy practices at low levels included two social studies teachers, two science teachers, and four mathematics teachers. Though reading and English/language arts teachers focus on literacy as a function of their content area, we were interested in examining the extent to which the reading and English/language arts teachers taught their students to use the content literacy strategies to improve reading in academic texts. Therefore, we included these teachers in the study.

2.4. Data collection

Data for this study were collected at two points during the professional development project: once in December, after teachers had engaged in summer training and had participated in three to four coaching visits, and once during April, toward the end of the project. The respondents participated in semi-structured interviews for 30–45 min and were asked a series of questions designed to elicit responses about their general, personal, and collective efficacy for literacy teaching. The first set of questions was developed to ascertain teachers' general efficacy for literacy, or their perceptions related to teachers' influence on learning, in general. Specifically, we asked the following questions:

- (a) What factors are most important in determining students' success in literacy?
- (b) What role can content area teachers' play in helping students acquire and practice literacy skills?

The second set of questions was developed to ascertain teachers' personal efficacy for literacy teaching and related to teachers' own beliefs and experiences. These included the following questions:

- (a) How do you help students become more literate in [your subject area]?

- (b) How well equipped do you feel to deal with students' literacy difficulties?
- (c) When you want to learn new strategies or find an assessment for literacy in your classroom, what do you do?
- (d) What barriers did you encounter as you tried to use the new content literacy strategies in your classes?

The third group of questions was developed to ascertain teachers' collective efficacy for literacy teaching and related to teachers' perceptions about the teachers and students in their schools:

- (a) What factors do you believe contribute to the achievement patterns of the students in your school?
- (b) How has participation in the CLP affected the faculty's ability to address these contributing factors?

Several steps were taken to ensure the validity and reliability of the data. In April, the same respondents were interviewed with a similar interview protocol, but were encouraged to examine their responses from December and to elaborate on if and how they had changed their perceptions over the course of the semester. This served as a form of member checking and enabled the participants to clarify responses they had provided in the earlier interview. Each of the interviews was conducted in the teachers' own classrooms by the field researchers, and all interviews were tape-recorded and transcribed prior to coding, categorization, and data analysis.

2.5. Data analysis

To analyze the interview data, we used a multi-phase process, which included developing a provisional list of codes drawn from our conceptual framework and a list of interview questions, as well as developing codes through analytic induction (Miles & Huberman, 1994). The data analysis process proceeded through three phases. The first phase involved establishing a provisional "start list," and using induction to develop three-level codes to apply to the data as a whole. The second phase involved organizing the data by theme and implementation level and using counts to establish frequency. The third phase involved examining the themes and frequency counts by implementation level to develop a portrait of teachers at high and low implementation levels.

To begin the data analysis process, we developed a preliminary set of first-level codes based on our theoretical framework and the content of the interview. Then we read each transcript independently and took notes about themes that seemed present in the data. Based on these notes, we developed a list of second-level codes that more clearly identified specific ideas related to the first-level codes. For example, under the first-level code "individual efficacy," we created codes for student home experiences (S-HOME), student skills (S-SKILL), student preparation (S-PREP), student attitude (S-ATT), quality teaching (T-QUALITY), teacher attitude (T-ATT), and teacher expectations (T-EXPECT). We refined our code list and developed

third-level codes where appropriate (see Table 1 for a list of all themes). We coded three randomly sampled transcripts from the data pool to establish inter-coder agreement. Each transcript was divided into utterances as defined as a sentence or group of sentences expressing one idea or perception. After consulting to align our coding of the first transcript, we used the other two transcripts to establish 83% agreement; after additional consultation, which included further induction of new codes, we established 100% agreement. Then, we proceeded with the coding of all remaining transcripts. Upon completion of this initial phase, we once more reviewed the data to collapse overlapping codes as patterns emerged. In cases where individual codes appeared to overlap, we conferred until we reached consensus regarding whether or not to collapse codes or to maintain a particular code's integrity. For example, T-ATT and T-EXPECT were collapsed, and S-SKILL and S-PREP were collapsed. It is important to note that we did not know the respondents' implementation levels during the initial coding process and that the same code set was utilized for both high and low implementers.

The second phase of data analysis involved calculating counts for each code in order to aid in identifying patterns and themes in the data. A spreadsheet was created for each code that listed each teacher and the number of times she or he provided utterances for each code during both the fall and spring interviews. The number of teachers at high and low implementation levels who provided utterances related to each theme were then calculated to discern whether patterns were clearly evident. These tabulations of each theme enabled us to document its distribution across teacher interviews and helped us avoid misperception of patterns caused by any high-frequency occurrence of a particular code in a limited number of teacher interviews.

During the third phase of data analysis, all utterances assigned a particular code were extracted from the transcripts, listed according to interviewee identification numbers, and organized into data tables by implementation level and coding category. These tables enabled the systematic review of all utterances related to specific codes and categories in order to deduce patterns and themes within and across the data. Finally, utterances within each theme were examined by implementation level to enable us to discern patterns within these subgroups.

3. Findings

This section presents the themes that emerged from the teacher interviews related to teachers' efficacy with literacy teaching. It presents a comparison of high and low implementers' efficacy for literacy teaching in the context of content literacy professional development. An effects matrix identifying all coded themes is presented in Table 1 along with the numbers of teachers whose responses were characterized by the themes (Miles & Huberman, 1994). When the interview data were analyzed by group, high and low implementers were characterized by both

similarities and differences in general, personal, and collective efficacy for literacy teaching. These groups were distinguished by their perceptions related to teachers' influence on student literacy achievement, their own abilities to address students' literacy needs, and their roles and responsibilities as content teachers related to literacy instruction.

3.1. General efficacy: influence and responsibility

The data revealed similarities among high and low implementers' responses to questions about teachers' role and influence and their general efficacy for literacy teaching. Both high and low implementers indicated that students' home and family situations were significant influences on students' literacy development and learning, with all eight high implementers and six low implementers mentioning the importance of home and family. Teachers pointed to advantages for students whose parents hold high expectations for their children and who are highly literate themselves and expressed concerns about students with perceived limited parental support for learning and literacy. In addition to home and family circumstances, both groups identified that student motivation and attitudes were critical influences on student learning. High and low implementers also were similar in regard to their perceptions that content teachers indeed do have some responsibility to address students' literacy needs. All of the high implementers and all but two low implementers (mathematics teachers) identified ways in which content area teachers should or could integrate literacy into instruction, and most of these ways involved teaching specific literacy strategies and skills or incorporating literacy activities into instruction.

High implementers: Although there were similarities in the responses of high and low implementers in terms of general efficacy, a closer examination of the teachers' responses revealed important differences, with high implementers exhibiting a higher sense of general efficacy than low implementers. When high implementers were asked about the most important influences on students' literacy learning, a salient theme emerged from their responses: the belief in the responsibility and potential of teachers to influence student learning no matter the difficulties posed by students' home and family experiences. Though all of the high implementers talked about advantages or disadvantages for students based on their home or family experiences, they all qualified their statements about the influence of home experiences by indicating that difficult home and family experiences could be overcome. In fact, most high implementers strongly expressed their beliefs about the potential of teachers to address students' needs and to overcome any barriers inherent in students' background experiences. A science teacher illustrated this belief about students' potential to learn:

When a student is from a home that doesn't have any kind of reading materials whatsoever at the house and mom and dad are really just nonreaders themselves, it's going to be harder to reach that kid. But, I still think

that kid can develop the skills needed to be a successful reader, like specialized vocabulary.

Similarly, while six of the high implementers expressed the importance of student attitude and motivation toward learning and identified problems that occurred when students were unmotivated, four of those high implementers pointed to teachers as at least partly responsible for motivating students to learn and to read. An English teacher remarked, “I feel like student motivation is foremost, and I feel like as a teacher, one of the jobs that I have is to motivate students who come to me not motivated.”

Low implementers: In contrast, when discussing major influences on students’ literacy learning, low implementers focused heavily on limitations posed by students’ home and family experiences. While most high implementers focused their attention on teachers’ responsibility and potential to overcome these limitations, only one low implementer expressed similar perceptions. Most low implementers reflected the perception that teachers have little power to make a real difference in students’ literacy learning if parents are not readily involved and supportive. As a math teacher said, “We can only do so much when parents don’t.”

3.2. *Personal efficacy: perceived competence, response to CLP and barriers to implementation*

Although marked differences were evident in high and low efficacy teachers’ personal efficacy for literacy teaching, the groups exhibited some similarities in terms of their perceptions about their own influence on students’ learning. For instance, both high and low implementers expressed concern about their own preparation and abilities to address the literacy needs of students who do not read well. Six high implementers and five low implementers indicated they did not feel equipped to help students who were struggling with reading. One high implementer illustrated, “I don’t know how much I’m doing to help them. I don’t feel like I’m qualified, or I don’t know how to teach them to read if at this point they don’t know how”

Additional similarities between high and low implementers were evident in their responses directly related to their participation in the CLP. Nearly all of the respondents reported new learning as a result of the CLP and generally conveyed positive perceptions about the project. Teachers from both groups reported gaining new tools and strategies, either by naming specific literacy strategies or by discussing literacy strategies in general. However, while high implementers described their use of literacy strategies during the first interview, only one low implementer shared specific strategies that she had used in her content area at this point in the study. By spring, six of the low implementers were much more articulate about what they had learned in the CLP, and four discussed successes with particular strategies that had worked well in their content areas. Thus, it seems that low implementers required more time to internalize the content literacy strategies and to think about how literacy

might best be used to teach content. A low implementing science teacher illustrated this process:

You’ve got to take the strategies that people teach you, and you’ve got to work with them a little bit to make them fit you. It’s a matter of trying to implement the strategies that fit my teaching style best. There are three or four strategies that I use on a regular basis, and I’ve changed them a little bit to fit what I need my students to learn.

In addition to gaining new literacy tools and strategies, teachers in both groups identified other positive outcomes from their participation in the professional development, including shifts in thinking, improved decision making, and improved abilities to differentiate instruction based on students’ needs. High implementers in particular noted improved abilities to create a literate environment for students and reported an awareness of improved student performance as a result of content literacy implementation.

Although both high and low implementers reported high levels of learning from their content literacy professional development experience, they also reported encountering barriers in their attempts to implement content literacy strategies. All expressed discomfort about trying new techniques that were most often departures from traditional classroom management structures and instructional practices. For example, they identified anxiety related to relinquishing control to students and pointed to student resistance to practices they initially seemed to perceive as disconnected from their typical content learning.

High implementers: Though most of the respondents reported barriers as they tried to implement content literacy strategies, high implementers were characterized by a persistence that enabled them to work through the barriers and to achieve some amount of success with the strategies. For instance, though four high implementers identified fears about classroom control and management that arose with more student-centered content literacy practices, they exhibited persistence for continuing to work through resultant difficulties. An English teacher illustrated:

Sometimes in trying new things, particularly the dialogue strategies, you have to give up a little bit of control as the teacher, and it is sometimes a little bit scary when you’ve got a group that might be a little bit challenging. You have to do all of the prep work and then have to have the energy to keep it going and keep it organized without it becoming a free-for-all. That’s sometimes a limitation for me because I am very structured. I like all my ducks in a row and want the control. But I currently have the classes doing literature circles.

Similarly, seven high implementers reported experiencing initial discomfort or failure with content literacy strategies, but they continued in spite of those initial experiences. High implementers spoke about modifying

strategies to make them work better and about taking a figurative step back to clarify expectations for students.

High and low implementers also differed in the ways in which they persisted in finding resources for multiple strategies and approaches to meeting the needs of students. High implementers were unique in that they seemed aware of and reported using a variety of resources for locating new literacy strategies, including professional literature. All eight of the high implementers discussed connections to colleagues as important resources for new strategies, and all but two reported using the internet to find new strategies. Further, six of the high implementers reported turning to professional literature to find new strategies for literacy instruction.

Low implementers: In contrast, low implementers were not as successful in working through the barriers they encountered as they attempted to implement content literacy strategies. Their greatest concerns about content literacy infusion centered on time constraints that inhibited their use of content literacy. Four low implementers reported initial failure or discomfort with using the strategies, and unlike high implementers, these responses did not reflect that the teachers persisted after these initial attempts. Also, four low implementers expressed uncertainty about how to use content literacy strategies while covering curriculum content. Most of these teachers viewed the content literacy strategies as an “add on” to the curriculum, and one low implementer expressed particular concerns about meeting the demands of state assessment and accountability. A math teacher illustrated barriers frequently mentioned by low implementers:

I feel like I'm adding something to my curriculum, and I feel like I'm already rushed to get finished with a certain amount for testing. I feel like most math teachers are skeptical in this area because it is difficult for me with certain strategies it's suggested I try to use. I'm still struggling to make the strategies work and I'm having difficulty finding where the strategies go.

Other time-related concerns expressed by low implementers were a perceived lack of autonomy and additional time needed to prepare for content literacy instruction.

Additionally, low implementers' responses reflected a limited awareness or use of resources to support their implementation of content literacy and to assist with working through barriers to implementation. While low implementers reported relying on their colleagues as literacy resources, they generally did not report using print or electronic resources. Exceptions included one low implementer who reported using professional literature to learn more about literacy teaching and two low implementers who reported using the internet to learn more.

3.3. *Collective efficacy: school-level influences*

In this study, the themes that emerged related to collective efficacy were similar to those that emerged for general teacher efficacy, but the patterns within those themes differed somewhat for both high and low

implementers. While students' home and family situations were frequently mentioned as influences on students' literacy performance, only one high and one low implementer mentioned this as a significant school-level influence on achievement. However, it is interesting to note that just as with the general teaching efficacy findings, the high implementer who mentioned students' homes and families as influences pointed to teachers' powers to overcome these potential barriers while the low implementer was definitive about the influence of students' home and family circumstances. Also, few teachers (one high implementer and three low implementers) mentioned student motivation as a school-level influence, though this theme was strong in high implementers' perceptions about teachers' influence on students in general.

High implementers: As was the case with high implementers' general efficacy, high implementers attributed high teacher quality, attitude, and expectations to student literacy learning, even at the building level. Seven high implementers pointed to these influences on students in their school, and they were generally positive about their faculties. They pointed to good communication, teachers' abilities to recognize students' needs, good discipline, and a positive, supportive environment. Five of the high implementers focused on consistency and continuity in the curriculum and in use of strategies, a focus of the CLP. Another distinct theme emerged in the responses of four high implementers who exhibited lower levels of collective efficacy by discussing school-level problems that they perceived they could not control such as low student attendance and high rates of transience. A high implementer conveyed, “When you are dealing with kids that kind of come and go, it becomes difficult.”

Low implementers: Low implementers, on the other hand, exhibited mixed collective efficacy in that three low implementers made positive remarks about teachers' quality, attitudes, and expectations in their schools, while three low implementers made negative remarks about these influences on school-level literacy achievement. In spite of this more negative pattern of collective efficacy among low implementers, two low implementers pointed to content literacy as a potential source of improvement for school-level achievement. A mathematics teacher shared:

The sixth grade is the only grade level that has done the literacy training, and if we all do it in all of our classrooms and the students become more familiar with it, I think that consistency is going to help [students' learning]. Hopefully, we will share with other grade levels and tell them how we think it has contributed to our students.

4. Discussion

The findings of this study suggest distinct differences in the literacy teaching efficacy of high and low implementers and lend support to the notion that teacher efficacy is related to attitudes about and implementation of educational innovations (Ross, 1994; Ross, McKeiver, &

Hogaboam-Gray, 1997; Stein & Wang, 1988; Tschannen-Moran & McMaster, 2006). In this study, the teachers who embraced content literacy and implemented literacy techniques at high levels tended to exhibit higher general, personal, and collective teacher efficacy. They believed that teachers had great influence on students' performance despite external difficulties, and they tended to feel efficacious with literacy teaching, using multiple resources for finding strategies to meet students' literacy needs.

Teachers' personal efficacy for literacy teaching and their beliefs about the ways in which literacy is relevant to their content area seemed strengthened over the course of the project. Consistent with research on teachers' beliefs about content literacy, the teachers in this study believed that literacy was important in their content area; however, many did not believe that they had the skills and expertise necessary to address students' literacy needs (Hall, 2005). This was true for low implementers with respect to literacy teaching, in general, and was true for high implementers with respect to meeting the needs of struggling readers. Even so, low implementers could better articulate the ways in which literacy was integral to their content teaching by spring, augmenting studies that support the power of strong literacy professional development for content teachers (Greenleaf et al., 2001). However, the finding that most of the respondents in this study still lacked the knowledge about reading strategies that would enable them to better serve their struggling students is significant, as making these strategies explicit to students is an essential component of effective content literacy instruction and should be a strong focus of content literacy teacher education (Biancoarosa & Snow, 2004; Greenleaf et al., 2001; Ogle, 2007).

This study also suggests that for content teachers to successfully integrate literacy into the content areas, issues of teacher efficacy need to be addressed. Teacher efficacy studies have shown that efficacy can be developed through extended professional development which engages teachers in meaningful activities that cause them to challenge their existing beliefs about teachers and students (Cantrell et al., *in press*; Tschannen-Moran & McMaster, 2006; Wedman & Robinson, 1988). The low implementers in this study appeared to have grown in their knowledge about and use of content literacy strategies, reflecting the potential of extended professional development to positively influence initially resistant teachers over time. This study suggests that teachers with lower efficacy might benefit from even more time to work through skepticism and other notions about the relevance of literacy and supports other research that indicates the importance of time for teachers to shift their beliefs (Cantrell et al., *in press*; Guskey, 1986).

This study illustrated the ways in which teachers' openness toward content literacy can change over time. Though the low implementers initially did not seem to embrace the literacy strategies and readily integrate them into their instruction, they exhibited a willingness to consider the relevance of literacy integration and seemed to want to learn more. It is important to note that the low implementers articulated progress in implementation

from their December to April interviews, thus reflecting a willingness to change their practices. This is consistent with research which indicates that in-service teachers generally want to do a better job integrating literacy into their content areas, but that they do not think they know how to do so effectively (Hall, 2005).

Further, all of the respondents encountered barriers as they attempted to use the content literacy strategies, though high implementers were characterized by a persistence that enabled them to work through difficulties and to experience success. This finding is consistent with teacher efficacy theories which say that teachers with higher efficacy are more likely to persist in developing student achievement, even in the face of barriers (Ashton & Webb, 1986; Gibson & Dembo, 1984; Guskey & Passaro, 1993). Research on teacher efficacy and implementation has documented a curvilinear relationship between teacher efficacy and change implementation wherein teachers frequently experience decreases in teaching efficacy (Ross, 1994; Ross et al., 1997; Stein & Wang, 1988; Tschannen-Moran & McMaster, 2006). However, as teachers develop new strategies to cope with difficulties and receive support during implementation, they begin to succeed with the new practices and experience renewed confidence. It is those mastery experiences that most strongly influence teachers' efficacy (Bandura, 1986).

Teachers' analysis of the teaching task and their beliefs about their own capacity to produce a positive outcome is central to teacher efficacy (Tschannen-Moran et al., 1998). It is important to note that the low implementers in this study often viewed the content literacy practices as an "add on" to an already full curriculum and that at times they had difficulty seeing how the literacy strategies were relevant to their disciplines. For teachers who perceive their primary responsibility is delivering content, and that higher student outcomes will result from maximum content coverage through lecture, this efficacy issue must be addressed in particular. This is especially true for teachers in disciplines such as mathematics, who traditionally are more resistant to using content literacy techniques (Muth, 1993).

Through this study, we endeavored to provide a window into the efficacy beliefs and perceptions of content area teachers, specifically as they related to content literacy instruction; however, our findings and discussion must be interpreted within the context of several limitations. Since the design of the study involved a relatively small number of teachers at each implementation level, the findings may not necessarily generalize to the larger population of middle and secondary content teachers or to high and low implementers of content literacy instruction. Though the study did find strong similarities within implementation groups and strong differences between groups, it is important to note that teachers' perceptions about literacy instruction vary widely and that teachers' acceptance and implementation of content literacy approaches is highly context specific. Another limitation relates to the fact that interview data are self-report data, and many factors, such as the interviewer, the setting, and the interview questions themselves, can influence participants' responses

(Seidman, 2006). We attempted to minimize threats to validity and reliability by training the interviewers, conducting the interviews in the teachers' own classrooms, assuring the participants that their responses would be kept confidential, and by encouraging the teachers to review their responses from the first interview to clarify their points and to ensure that the transcripts reflected their true perceptions. Future research on teachers' growth and development in content literacy instruction should include extended observations along with interviews to lend insight into both the implementation process and teachers' perceptions of efficacy.

5. Conclusion

With the current spotlight on adolescent literacy, attention must be turned to the ways to best support middle and secondary teachers' integration of literacy instructional practices within the content disciplines. Middle and secondary teachers, who historically have resisted content literacy implementation, tend to feel unequipped for addressing students' literacy needs. This inadequacy must be addressed for both high and low

implementers for either group to be highly efficacious teachers and to enable them to be completely successful with content literacy instruction. From a teacher efficacy perspective, the link between teacher efficacy and implementation of new instructional practices has been well established. This study substantiated that implementation of new content literacy practices is related to teachers' efficacy.

This relationship between efficacy and implementation points to the need to consider issues of efficacy when new pedagogical techniques such as content literacy are introduced to teachers and when implementation is expected. Teachers with lower senses of efficacy may be less receptive to change, and it may be more difficult for them to work through the barriers inherent to content literacy implementation. It is important to realize that the amount of support needed for success will vary among individual teachers based on their own efficacy and experiences. For teachers to successfully learn to implement content literacy instruction, they may need time to develop openness to change, as well as the time to acquire the necessary instructional skills for effectively delivering and integrating literacy instruction into their content areas.

Table 1
Teacher efficacy themes by numbers of teachers and implementation level

First-level themes	Second-level themes	Third-level themes	High implementers ^a	Low implementers ^a
General efficacy with literacy teaching	Home/parents/SES	Qualified	8	1
		Definitive	0	5
	Student attitudes/motivation	Teacher influence	4	0
		Teacher powerless	2	2
	Teacher quality/expectations/attitudes		6	2
	Role in literacy teaching	General skill/strategy teaching	7	5
Personal efficacy with literacy teaching	Efficacy with literacy difficulties	Incorporating literacy activities	5	6
		Equipped	7	3
		Unequipped	6	5
	Finding new strategies	Colleagues	8	6
		Professional literature	6	1
		Internet	6	2
	Content literacy project learning	New tools/strategies	8	7
		Shifts in thinking	8	6
		Improved decision making	3	4
		Improved differentiation	2	2
		Creating a literate environment	3	0
		Improved student performance	4	1
	Barriers to content literacy implementation	Time	3	5
		Control/management	5	2
		Initial discomfort/failure	7	4
Student resistance		3	2	
Collective efficacy for literacy teaching	Home/parents/SES	Qualified	1	0
		Definitive	0	1
	Student attitudes/motivation	Teacher influence	1	2
		Teacher powerless	0	1
	Attendance/transience		4	0
	Teacher quality/attitudes/expectations	Positive	7	3
		Negative	0	3
	Curricular consistency		5	2

^a Note: $N = 8$.

Appendix A. Indicators of classroom practice for Content Literacy Project¹

Environment: The classroom environment promotes the development of a literate learning culture for all students:

- Visuals promote vocabulary development, reading, writing, and conversation relevant to the discipline
- Students have access to diverse and appropriate texts relevant to the discipline
- Technology is used as a tool for instruction and learning in the content area
- Students engage in text-based collaborative learning around reading and writing
- Teacher models using literacy for a variety of purposes

Instruction: The instructional approach uses literacy to support content learning at the same time it promotes the development of ongoing literacy skills:

- Learning and demonstration of learning are approached through reading, writing, speaking/listening/observing
- Students engage in pre-, mid-, and post-reading experiences designed to set context for reading, support comprehension, and reflect on text
- Students make choices about the strategies they employ during reading, writing, and content conversation
- Students use instructional resources, strategies, and research tools to access ideas and information
- Students engage in intensive writing to learn and to demonstrate learning in the content area
- Teacher provides explicit instruction in the literacy strategies and process proficient readers use to learn in the content areas.

Assessment: Teacher provides responsive instruction that supports the learning needs of all students

- Students engage in self-reflection focused on processing learning experiences and self-assessing
- Teacher provides opportunities in different modalities for students to demonstrate their abilities
- Formal and/or informal assessment results guide instructional decisions.

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¹ Indicators were developed by the Collaborative for Teaching and Learning ©.

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