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**THE DEVELOPMENT OF SELF-EFFICACY
IN THE TEACHING OF READING**

A Dissertation

Presented to

The Faculty of the School of Education

The College of William and Mary in Virginia

In Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

By

Peggy B. McMaster

April 6, 2005

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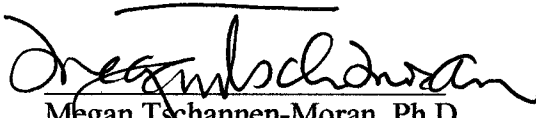
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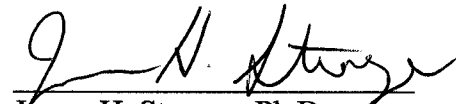
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THE DEVELOPMENT OF SELF-EFFICACY
IN THE TEACHING OF READING

By Peggy B. McMaster

Approved April 2005


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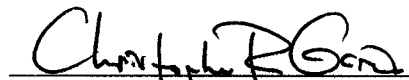

Christopher R. Gareis, Ed.D.

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THE DEVELOPMENT OF SELF-EFFICACY IN THE TEACHING OF READING

Abstract

Licensed primary teachers ($N = 93$) in nine schools completed surveys of their self-efficacy beliefs, level of implementation, and the value they placed on the strategies before and after participating in four levels of inservice training in the Tucker Signing Strategies for Reading. The independent variable was the structure of the training teachers received, and the dependent variables were teacher sense of efficacy in general, teacher sense of efficacy for reading, implementation of the reading strategies, and the value of the reading strategies taught. Components of the training for the use of Tucker Signing Strategies for Reading were structured into four treatment groups aligned with three of the four sources of self-efficacy development identified by Bandura (1997). Findings indicated that implementation of the Tucker Signing Strategies for Reading increased as inservice training increased in intensity. The most powerful training format was mastery experience, which was distinguished from the other training formats by the addition of follow-up coaching. Inservice training format made a significant contribution to the change in teacher sense of efficacy for reading. Initial teacher sense of efficacy in general and initial teacher sense of efficacy for reading were not factors in predicting the level of implementation of the reading strategies. Final teacher sense of efficacy for reading made a significant contribution to explaining variance in implementation. The strength of the effect of the follow-up coaching workshop model on implementation overpowered the other tested variables. Statistical significance of the change in sense of efficacy for reading was lost when compared with the impact of the follow-up coaching model. Value covaried almost perfectly with implementation for this sample. Unexpected decreases occurred in the change in efficacy scores across treatment groups;

a surprising number of participants rated their sense of efficacy lower on the final survey than on the first. Dips in self-efficacy beliefs with exposure to a potentially powerful new teaching strategy underscore the importance of the final treatment component, follow-up coaching, to bolstering teachers' motivation to overcome the anxiety of trying something new.

CHAPTER 1

The Problem

An impressive demonstration of a simple reading strategy showed that the strategy worked. Why did some teachers implement the strategy in their classroom while others did not? What are the teacher attitudes that influence the willingness to take the risk of trying a new skill? Why do some teachers persist until a new skill is perfected? In short, what are the elements of professional development that result in successful implementation of a new skill? The answers to these questions are complex and may be linked to the concept of teacher sense of efficacy and the way it is formed.

Introduction

Teachers' self-efficacy beliefs have been repeatedly associated with teaching behaviors and student outcomes (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998), and have been characterized as the major mediators teachers' for behavior (Henson, 2001). The idea that belief in our abilities powerfully affects our behavior, motivation and, ultimately, our success or failure has been developed and refined by Bandura (1997) as an element of social cognitive theory. In the present paper, the concept of self-efficacy is examined as it relates to a teacher's belief in his or her ability to teach a student to read. The theoretical concept of teacher self-efficacy is summarized as background information and a conceptual model for the development of self-efficacy is described; selected related research outcomes are presented; and a contextual model for the development of self-efficacy in the teaching of reading is proposed. The contextual model is applied to a study of the development of efficacy for teaching reading.

Theoretical Rationale

The theoretical foundation of this study is the motivational construct, self-efficacy, which stems from social cognitive theory (Bandura, 1997). Social cognitive theory rejects a dualistic view of the self as agent or object, in favor of the view that it is one and the same person who does the strategic thinking about how to manage the environment and later evaluates the adequacy of his or her knowledge, thinking skills, capabilities, and actions. One is just as much an agent when one is reflecting on one's experiences, as when one is executing courses of action. "In social cognitive theory, the self is not split into object and agent; rather, in self-reflection and self-influence, individuals are simultaneously agent and object" (p. 5). Social cognitive theory proposes that the control that one places on one's actions is a function of an individual's experiences, behavior and personal factors (Bandura, 1997).

Social cognitive theory is a multifaceted theory; although perceived self-efficacy is not the sole determinant of action, it plays a pivotal role in social cognitive theory. Self-efficacy beliefs influence thought patterns and emotions that enable actions which are directed toward goals and in which people exercise some control over events that affect their lives (Bandura, 1997). Perceived self-efficacy is a future oriented belief about the level of competence a person expects he or she will display in a given situation. Teacher self-efficacy results when perceived self-efficacy is applied to the context of teaching. Teacher self-efficacy is formed through the cognitive processing of information gained from previous experiences and is influenced by the level of physiological arousal experienced during those experiences (1997). Teachers' perceptions of the teaching task and of their personal capabilities form a motivational construct designated "teachers'

sense of efficacy” (Tschannen-Moran, et al. 1998). Teachers’ sense of efficacy influences their current performance that, in turn, becomes a new source of efficacy information. The cyclical nature of behavior influencing sense of efficacy, and therefore new behaviors, forms the basis of this study of change in sense of efficacy.

Statement of the Problem

Joyce and Showers (1988) argued that a strong staff development system benefits students directly and that “student learning benefits are so great that the failure to create a strong staff development system is a tragic dereliction” (p. 27). Fullan (1993) supported their claim when he noted the growing body of evidence demonstrating that ongoing competence-building strategies can work. He asserted, “It is not enough to be exposed to new ideas. We have to know where new ideas fit, and we have to become skilled in them, not just like them” (p. 16). Fullan (2001) emphasized the collaborative aspect of professional development suggesting that information is only valuable in a “social context” through which people understand what the information might mean and why it matters (p. 78). Schmoker (2004) described strategic planning efforts as creating a crippling confusion, asserting that the “most productive thinking is continuous and simultaneous with action – that is, with teaching – as practitioners collaboratively implement, assess, and adjust instruction as it happens” (p. 427). Kouzes and Posner (1995) also emphasized the importance of not separating thinking from doing with the insistence that planning that separates strategy from operating does not work. Schmoker (2004) summarized with the assertion that “actual practice must adjust and respond to ground-level complexities that cannot be conceived in advance” (p. 427). Schmoker made a strong argument for the replacement of complex, long term plans with simpler

plans that focus on actual teaching lessons. He lamented the fact that “collaboration – our most effective tool for improving instruction – remains exceedingly, dismayingly rare” (p. 431) and urged educators on to action toward reaching a “tipping point, the moment when ... people’s actions and attitudes change dramatically. ... Such a tipping point – from reform to true collaboration – could represent the most productive shift in the history of educational practice” (p. 431).

Sparks presented the professional learning of teachers as the central factor in determining the quality of teaching (2002). He stressed that many professional learning opportunities are woefully inadequate to meet the demands of today’s classrooms where quality teaching will only occur in systems that support the sustained development of educators. Sparks was critical of professional development programs that pull teachers out of their school and their buildings because what they learn may or may not relate to the problems they have in their classrooms (2002). Educational change takes place when improved programs or methods are implemented or actually used in classrooms.

Certain workshop formats provided higher rates of transfer of information than others (Joyce & Showers, 1988; Stein & Wang, 1988). Stein and Wang’s study of implementation leads to the question, “What part does teacher sense of efficacy play in the degree of implementation of a new skill?” Poole and Okefor (1989) asserted that the level of implementation of changed programs largely depends on the characteristics and motivations of teachers. If teachers’ motivation is related to their sense of efficacy, which in turn is related to level of implementation of a new program, it becomes important to discover professional development formats that are related to an increase in teachers’ sense of efficacy. What is the relationship between teacher sense of efficacy

and program implementation, and what is the relationship between inservice training format and increases in teacher sense of efficacy?

Purpose of the Study

This research examined the relationship between teacher sense of efficacy and implementation of a new skill and teacher sense of efficacy and inservice training format. Teacher sense of efficacy was measured before and after each of four different workshop formats to reveal which of the four workshop formats was positively related to increased teacher sense of efficacy. The data collected also sheds light on the second variable of interest, program implementation, in relation to inservice training format and teacher sense of efficacy.

Research Questions

1. What is the relationship between initial teacher sense of efficacy and initial teacher sense of efficacy for reading?
2. Is there a significant difference in implementation of the Tucker Signing Strategies for Reading based on the type of inservice training model?
3. Is there a significant difference in teacher sense of efficacy based on type of inservice training model?
4. Is there a significant difference in teacher sense of efficacy for reading based on type of inservice training model?
5. What is the relative weight of teacher sense of efficacy, teacher sense of efficacy for reading, and inservice training model to implementation of a new reading strategy?

Significance of the Study

This research seeks to study a characteristic that has emerged as a significant factor in school effectiveness, teacher sense of efficacy. This study differs from other teacher sense of efficacy studies in that it explores teacher sense of efficacy in relation to four different levels of inservice training formats and in relation to program implementation. Because there is a correlation between teacher sense of efficacy and teacher behaviors, research that illuminates the relationship between inservice training format and changes in teacher sense of efficacy offers information that should prove helpful to educators in the area of professional development.

Definition of Terms

For the purpose of this study, the following definitions of terms apply.

Elementary School: schools with grade configurations of K-3, K-4, or K-5.

Teacher Sense of Efficacy: teacher sense of efficacy refers to “teachers’ belief or conviction that they can influence how well students learn, even those who may be difficult or unmotivated” (Guskey & Passaro, 1994, p. 4) as measured by the Teacher Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001).

Professional Development: professional development programs are a “systematic attempt to bring about change--change in the classroom practices of teachers, change in their beliefs and attitudes, and change in the learning outcomes of students” (Guskey, 1986, p. 5). Sparks emphasizes the need for professional development that alters the cultures and structures of the organization as well as the knowledge, attitudes, and practices of individuals (2002).

Implementation: implementation is the “extent to which teachers and students change their beliefs, behavior or use of resources” (Poole & Okefor, 1989, p. 146).

Six questions were added to the Teacher Sense of Efficacy Scale to measure implementation. SPSS will be used to perform a reliability check on the responses to these questions for accurate interpretation of the findings.

Reading Inservice Training (Treatment 1): the reading inservice training refers to a staff training session lead by a presenter within the time frame of no more than one day to include the dissemination of information about the strategy. The strategy is the Tucker Signing Strategies for Reading.

Reading Inservice Training with Demonstration (Treatment 2): The reading inservice training with demonstration includes the same Tucker Signing Strategies for Reading training as in Treatment 1 plus a demonstration of the strategies with students.

Reading Inservice Training with Practice (Treatment 3): The reading inservice training with practice includes the Tucker Signing Strategies for Reading training, the student demonstration, and an added component of guided practice during the one-day training.

Reading Inservice Training with Follow-Up Coaching (Treatment 4): The reading inservice training with follow-up coaching includes the Tucker Signing Strategies for Reading training, the student demonstration, practice component, and three additional follow-up coaching sessions. The coaching sessions include collaboration with teachers through small group review of

the strategy, one-to-one discussion of implementation of the strategy, and opportunity for assistance in the actual teaching environment. Ross (1992) describes three levels in the range of coaching behaviors, noting that the optimal level is seldom reached. The range of coaching used in this study matches most closely the lowest of the three levels because it is not supported by the school district. However, the in-classroom coaching opportunities would be characteristic of the highest level of coaching.

Limitations of the Study

This study was conducted in public elementary schools in the state of Virginia with teachers of grades K through 2 and resource teachers who work with K through 2 students. Inference to private schools or public elementary schools in other states should be made with caution. The method of obtaining a sample of teachers is best described as convenience sampling. Teachers were selected from schools that were accessible to the researcher and were assigned to treatment groups through cluster sampling on the basis of school membership. This method of assigning treatment could allow the sample to vary in ways that were not measured.

It should be noted that one person designed the study and delivered the training, serving as researcher and presenter for the study. The researcher had experience with the reading strategy, having selected it because of faith in its strength as a beginning reading strategy. Treatment descriptions were provided including time devoted to workshops, presenter behaviors, and school administrators' behaviors to illustrate care shown for consistency in delivery. The fact that the results varied from researcher's expectations suggests confidence in measures employed to control for potential researcher bias. It

should also be noted that implementation of the new strategy was measured by self-rating of items on a survey.

While attempts were made to select schools from rural and from city school districts, the actual schools selected depended on which school administrators agreed to participate. This study did not investigate the impact of other potentially relevant variables such as school size, student-to-teacher ratio, school environment, race of students, or tenure of building principal. Measurement of change in teacher sense of efficacy was limited to a three-month period.

Major Assumptions

This study is based on the following assumptions:

1. The teacher beliefs instrument used provided valid and reliable measures of teacher sense of efficacy.
2. All respondents responded honestly to all items in each instrument.
3. This sample of public elementary schools proves an adequate representation for statistical purposes.

CHAPTER 2

Literature Review

This literature review presents the characteristics and development of efficacy beliefs and their relationship to educational outcomes. It begins with a description of Social Cognitive Theory as background for the construct of self-efficacy and presents a brief history of the development of the construct. The review presents an integrated model of the development of self-efficacy and findings on the relationship of teacher sense of efficacy to teacher and student behaviors. Finally, a contextual model for the development of self-efficacy in the teaching of reading is presented.

Social Cognitive Theory

The theoretical foundation of self-efficacy is rooted in social cognitive theory that was developed in part by Bandura. Social cognitive theory assumes that people are capable of intentional pursuit of courses of action and that such action operates within a process of triadic reciprocal causation. Reciprocal causation is a multi-directional model suggesting that future behavior is a function of “environmental influences, our behavior, and internal personal factors such as cognitive, affective, and biological processes” (Henson, 2001, p. 3). These three influences determine what we come to believe about ourselves and the choices we make. We are not products of our environment or our biology but of the “dynamic interplay between the external, the internal, and our current and past behavior” (p. 3). Bandura (1997) noted that doctrines that regard mind and body as separate entities do not provide much enlightenment on the nature of the mental state or on how mind and body effect each other. Central to Bandura’s framework was his concept of self-efficacy.

The Construct of Self-Efficacy

Bandura (1997) defined self-efficacy as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (p. 3).

Bandura used the word “agency” to refer to acts done intentionally, suggesting that the power to originate actions for given purposes is the key feature of personal agency. If people believe they have no power to produce results, they will not attempt to make things happen. Efficacy belief, therefore, is a major basis of action. People guide their lives by their beliefs of personal efficacy. Efficacy is presented as a social process or “generative capability in which cognitive, social, emotional, and behavioral subskills” (p. 36) are organized and orchestrated for various purposes. It is one thing to possess skills and another to be able to integrate them into one’s actions appropriately and effectively under difficult circumstances. Perceived self-efficacy is not concerned with the skills one has but with what one thinks one can do with what one has under a variety of circumstances. In general, teacher sense of efficacy is perceived as the belief that one can influence how well students learn, even those who may be considered difficult or unmotivated (Guskey & Passaro, 1994).

Teachers’ Sense of Efficacy

General Teaching Efficacy and Personal Teaching Efficacy

The concept of teacher sense of efficacy was born in 1976 when researchers from the RAND organization added two items to an already extensive questionnaire as part of a study that examined the success of various reading programs and interventions (Tschannen-Moran, et al. 1998). In a second study RAND researchers found teacher

sense of efficacy to be a strong predictor of the continuation of projects after the end of funding.

RAND Item 1, “When it comes right down to it, a teacher really can’t do much because most of a student’s motivation and performance depends on his or her home environment,” (Tschannen-Moran, et al. 1998, p. 204) has been associated with general teaching efficacy. RAND Item 2, “If I really try hard, I can get through to even the most difficult or unmotivated students,” (1998, p. 204) has been associated with personal teaching efficacy.

Some theoretical discussions of teacher sense of efficacy built on the two factors introduced by the RAND study. According to Gibson and Dembo (1984), personal self-efficacy beliefs reflected teachers’ evaluation of their own ability to bring about positive student change, and outcome expectancy essentially reflected the degree to which teachers believed the environment could be controlled, that is, “the extent to which students can be taught given such factors as family background, IQ, and school condition” (p. 570). In a study conducted by Gibson and Dembo applying Bandura’s theory to the construct of teacher sense of efficacy, two substantial factors emerged. Factor One appeared to represent “a teacher’s sense of personal teaching efficacy, or belief that one has the skills and abilities to bring about student learning” (p. 573) with all the items included in that factor reflecting the teacher’s sense of personal responsibility for student learning or behavior. Factor Two included items that pertained to the limits imposed on any teacher’s ability to affect change by external factors such as the home environment, family background, and parental influences. The second factor reflected a more general relationship between teaching and learning which they felt resembled

Bandura's outcome expectancy dimension. Thus, Gibson and Dembo felt they had confirmed a concept of teacher sense of efficacy that was the product of combining items relating to personal teaching efficacy with items associated with general teaching efficacy, but Bandura (1997) has argued against that interpretation.

External and Internal Factors

Despite Gibson and Dembo's insistence in the existence of two separate concepts, personal teaching efficacy and general teaching efficacy, close inspection of items from Gibson and Dembo's study revealed an anomaly (Guskey & Passaro, 1994). The items forming personal teaching efficacy used the word "I" and were all positive and internal while the items forming general teaching efficacy used the word "we" and were all negative and external. Thus, it was unclear from the data whether the two factors were most accurately described by personal and general teaching efficacy as, for example, Gibson and Dembo stated, or whether some other distinction such as internal and external would have been more accurate (1994). Teachers who exhibit a belief that reinforcement of their teaching efforts is external to them, or lies outside their control, feel that the influence of the environment overwhelms a teacher's ability to have an impact on a student's learning; whereas teachers who evidence a belief that reinforcement of teaching activities lies within the teacher's control, or is internal, express confidence in their ability to teach difficult or unmotivated students (Tschannen-Moran, et al. 1998). This discovery of the differences in referent, sign, and locus led to a study by Guskey and Passaro in which some of the items of the teacher sense of efficacy scale were reworded to balance the personal-teaching and positive-negative orientations. The altered instrument netted results that supported the idea that teacher sense of efficacy is a

multidimensional construct, as the analysis confirmed two relatively independent efficacy dimensions. However, there was no evidence to indicate that the distinction between the two dimensions was related to personal efficacy versus teaching efficacy. The teachers surveyed did not distinguish between their personal ability to affect students and the potential influence of teachers in general. Results indicated the difference to be an internal versus external distinction. The terms “my” and “teachers” were not the source of the distinctions; the distinctions related to the influence they and all teachers have or do not have on the learning of students. According to Guskey and Passaro:

The internal factor appears to represent perceptions of personal influence, power, and impact in teaching and learning situations ... The external factor, on the other hand, relates to perceptions of the influence, power, and impact of elements that lie outside the classroom and, hence, may be beyond the direct control of individual teachers. (p. 639)

Emphasis on personal efficacy versus teaching efficacy distinctions masked this internal versus external distinction and confounded the interpretation of results. Guskey and Passaro (1994) stated that “although Bandura’s (1986) ideas about outcome and efficacy expectations may be helpful in interpreting causal attributions in many contexts, their [Gibson and Dembo’s] direct extension to defining the dimensions of teacher sense of efficacy appears inaccurate” (p. 640). In speaking of the internal and external factors they acknowledged “this does not necessarily mean that teacher efficacy is this alone” (p. 640).

Teacher Sense of Efficacy and Personal Responsibility

Guskey (1998) described the construct of teacher sense of efficacy as being further clouded by other constructs such as attempts to draw a distinction between teacher sense of efficacy and teachers' perceptions of personal responsibility for student learning. He suggested that the major difference was in tense of the items used in the measure; that is, efficacy refers to projected potency while responsibility is an attribution reference that is directed toward the past. Guskey suggested that the importance of this difference has yet to be determined and described teacher sense of efficacy as a "psychometrician's nightmare" (p. 3). He described the concept as a "conceptually appealing variable that is predictive of or highly related to a multitude of other critically important variables" (p. 3). Guskey reflected on possible explanations for the fact that, beginning with the earliest studies, teacher sense of efficacy was interpreted to have two dimensions. He noted that factor analyses of scales were pretty well described by a two-factor model even though those factors did not explain more than about a third of the variance. He also commented that the nature of the items included in teacher efficacy measurement scales limited assessment to only two dimensions" (p. 4). Thus, the two RAND items and related studies directed attention to the two dimensions, but that interpretation should be viewed as a part of the history of the development of the construct, not as a consensus regarding the construct. In moving beyond the discussion of two dimensions of teacher sense of efficacy, Guskey pointed to other factors that he described as "equally powerful and important" (p. 3). He directed attention to teacher beliefs as they relate to a specific context with related goals. For example, the concept takes on meaning as it is applied to

a particular teaching situation, such as the teaching of beginning reading to first grade students with the goal that students be able to read material at grade level.

The attractiveness of the concept of teacher sense of efficacy lies in its relatedness to variables associated with school improvement and student learning. For the purposes of this study, teacher sense of efficacy relates to the belief of the teacher that he or she can make a difference to student learning. Emphasis is on the development of teacher sense of efficacy as it affects the teacher personally and as it relates to the teaching task. Some connections will be made between teacher sense of efficacy and student learning, and the context will be defined more specifically as the area of reading instruction.

Integrated Model of Self-Efficacy

Tschannen-Moran, et al. (1998) proposed a model of teacher sense of efficacy that weaves together the idea of teacher sense of efficacy as the extent to which teachers believe that they can control the environment with the concept of teacher sense of efficacy as a cognitive process in which people construct beliefs about their capacity to perform at a given level of attainment. Illustrated in Figure 2.1, it is selected as a conceptual model for this study because it emphasizes the importance of both the teachers' perceptions of the requirements of the teaching task and the teachers' beliefs about their own ability to perform the task. Teachers do not feel equally efficacious for all teaching situations but feel "efficacious for teaching particular subjects to certain students in specific settings" (p. 227). Bandura identified four sources of self-efficacy: Verbal persuasion, vicarious experiences, mastery experiences, and physiological states. The four sources of efficacy information are integrated with the two added components, consideration of the teaching task and its context and assessment of one's strengths and

weaknesses in relation to the requirements of the task at hand through cognitive processing (1998). Cognitive processing determines what the teacher attends to, what is remembered and how the teacher thinks about each of the experiences (Bandura, 1997). Discussion of the model begins with the four sources of efficacy.

Sources of Efficacy

As noted earlier, Bandura (1997) postulated four sources of self-efficacy information: verbal persuasion, vicarious experience, mastery experiences, and physiological states. The differential impact of each of these sources depends on cognitive processing, that is what is attended to, what is remembered, and how the teacher thinks about each of the experiences (Tschannen-Moran, et al. 1998).

Verbal Persuasion. Verbal persuasion serves as a means of strengthening people's beliefs that they possess the capabilities to achieve what they seek. Verbal persuasion might be in the form of information obtained through a workshop, media presentation, or college class or might be of a more personal nature such as specific feedback or encouragement (Tschannen-Moran, et al. 1998). "It is easier to sustain a sense of efficacy, especially in times of difficulty, if significant others express faith in one's capabilities than if they convey doubts" (Bandura, 1997, p. 101). Verbal persuasion can bolster self-change if the positive appraisal is within realistic bounds even though it may be limited in its power to create enduring increases in perceived efficacy. Persuasive boosts in perceived efficacy can lead people to try harder to succeed and lead to self-affirming beliefs that promote the development of skills that subsequently lead to a stable sense of personal efficacy.

Vicarious Experience. Modeling serves as another effective tool for influencing efficacy appraisals in the form of vicarious experiences mediated through modeled attainments. Watching others teach provides impressions of the teaching process and contributes information that helps teachers decide efficacy questions, such as who can learn, how much, who is responsible, and how much teachers can make a difference (Tschannen-Moran, et al. 1998). When a teacher watches what is perceived to be a successful teaching experience, that teacher sees the teaching task as manageable (1998). Likewise, when the teaching experience appears to fail, despite strong efforts, the teacher sees the teaching task as unmanageable. As most activities lack absolute measures of adequacy, people must appraise their capabilities in relation to the attainments of others (Bandura, 1997). Seeing or visualizing people similar to oneself perform successfully typically raises efficacy beliefs. The greater the assumed similarity between the teacher and the modeler the more persuasive the belief that one possess the capabilities to master comparable activities. Even those who are highly self-assured will raise their efficacy beliefs if models show them better ways of doing things. Modeling influences do more than provide a social standard for appraisal of capabilities; people actively seek proficient models who possess the competencies to which they aspire. “By their behavior and expressed ways of thinking, competent models transmit knowledge and teach observers effective skills and strategies for managing environmental demands” (p. 88).

Mastery Experiences. “Enactive mastery experiences are the most influential source of efficacy information because they provide the most authentic evidence of whether one can master whatever it takes to succeed” (Bandura, 1997, p. 80). Successes build a robust belief in one’s personal efficacy when success is achieved on difficult tasks

with little assistance or when success is achieved early in learning with few setbacks. Efficacy is not enhanced when it is achieved through extensive external assistance, late in learning, or on a task perceived as easy or unimportant. Failures, especially if they occur before efficacy is set or cannot be attributed to a lack of effort or external events, diminish it. When people observe their own successful attainments achieved under specially arranged workshop conditions through self-modeling, their personal efficacy beliefs are strengthened. This self-modeling can be a powerful experience but, because it does not take place in the real setting, it may not be duplicated in the classroom. Enactive mastery experiences produce stronger and more generalized efficacy beliefs than do the other sources of efficacy influence. A study of the impact of inservice found that it was use of inservice knowledge, not exposure to it, that contributed to changes in teacher sense of efficacy (Ross, 1994). Only in a situation of actual teaching can a teacher experience a true test of his or her capabilities in relation to the task, and only in the real setting can a teacher feel the emotions associated with the task (Tschannen-Moran, et al. 1998). Mastery experiences work with the psychological arousal associated with those experiences to become the most powerful source of efficacy development.

In studies that were conducted to test the hypothesis that performance accomplishments directly influence career-related efficacy beliefs, it was shown that self-efficacy judgments were sensitive to successes and failures (Hackett, 1995). Success on tasks involving skills relevant to occupational pursuits enhanced self-efficacy while task failure weakened self-efficacy. Correlational methods were used to test the role of the four major sources of efficacy in the cultivation of self-efficacy. Performance accomplishments were found to account for more of the variance in self-efficacy than the

other sources of efficacy. Hackett suggested caution regarding these results as they may be influenced by the passage of time; individuals are more likely to remember their successes or failures than comments made by others or experiences they observed. However, the thought processes that occur over time are part of the cognitive processing that naturally occurs in the formation of sense of efficacy.

The development of self-knowledge is not just an audit of one's performances, but a cognitive construction. Notions about themselves or the world around them form a context through which people approach a task. Efficacy beliefs are thus both products and constructors of experiences (Bandura, 1997). For example, a teacher who perceives a learning activity to have been successfully conducted is likely to feel a high sense of efficacy and therefore to expect similar success when carrying out a similar learning activity. The fact that the teacher conducted the learning experience rather than observed it promotes the experience to one of increased self-knowledge with accompanying emotional reactions.

Physiological and Affective States. When judging their capabilities, people rely partly on information conveyed by physiological and emotional states especially when involved in physical accomplishments, health functioning, and coping with stressors (Bandura, 1997). Arousal, such as increased heart and respiratory rate, increased perspiration, or trembling hands can be read positively or negatively. "Moderate levels of arousal can improve performance by focusing attention and energy on the task" (p. 229), but high levels of arousal might interfere with the best use of one's skills and capabilities (Tschannen-Moran, et al. 1998). If the person is so involved in the task that

the physiological state is not noticed, there may be little impact on the sense of personal efficacy.

The Little Engine That Could notwithstanding, “the multiple benefits of a strong sense of personal efficacy do not arise simply from the incantation of capability” (Bandura, 1997, p. 115). Simply saying that one can do something does not mean that one truly believes one can accomplish the task. A complex process of self-persuasion takes place during the construction of a sense of personal efficacy. “Efficacy beliefs are the product of cognitive processing of diverse sources of efficacy information conveyed enactively, vicariously, socially, and physiologically” (p. 115).

Cognitive Processing

“Efficacy beliefs affect thought patterns that can enhance or undermine performance” (Bandura, p. 116). “Most courses of action are initially shaped in thought” (p. 116) and the resulting cognitive constructions serve as guides for action in the development of proficiencies. Thought allows people to predict the likely outcomes of different courses of action and to “create the means of exercising control over those that affect their lives” (p. 117). Sometimes the activities involve inferential judgments about how actions affect outcomes. Cognitive processing is required for the problem solving that involves many complexities, ambiguities and uncertainties. In determining predictive rules, people must draw on preexisting knowledge to construct options, integrate predictive factors and remember which factors they have tested and how well they have worked. “It requires a strong sense of efficacy to remain fully task oriented in the face of causal ambiguities, pressing situational demands, and judgment failures that can have important social and personal repercussions” (p. 117).

As important as self-efficacy beliefs can be, “conceptions of ability should not be viewed as monolithic traits that govern the whole of life” (Bandura, 1997, p. 119). A person might view ability quite differently in various situations. For example, a teacher might perceive of himself as a good high school physics teacher but feel inept at teaching kindergartners to read. Preexisting conceptions of one’s ability are not fixed but are changeable through social influence. “By being cognitively represented in the present, conceived future states are converted into current motivators and regulators of behavior ... Forethought is translated into incentives and courses of action through the aid of self-regulatory mechanisms” (p. 122). Reflecting on the causes of one’s performances in a judgmental way produces motivational effect. A person influences himself through personal challenge and evaluative reaction and provides for himself a cognitive mechanism of motivation and self-directedness. This form of anticipatory self-regulation allows for behavior to be motivated and directed by goals rather than being “pulled by an unrealized future state” (p. 128). The self-efficacy mechanism plays a role in the self-regulation of affective states as well. For example, efficacy beliefs “create attentional biases and influence whether life events are construed, cognitively represented, and retrieved in ways that are benign or emotionally perturbing” (p. 137). As a teacher’s comfort level with teaching a particular subject increases, the teacher attends to information such as observer feedback as helpful information when planning future lessons. A teacher who has low-efficacy may be distracted by negative expectations and not inclined to use feedback in a constructive manner. Efficacy beliefs can support effective courses of action that change the environment and alter its “emotive potential”

(p. 137). Thus, through efficacy activated cognitive processing people create beneficial environments and exercise control over them.

Although all four sources of information have a part to play in the formation of efficacy beliefs, it is the cognitive processing that determines how the sources will be interpreted (Tschannen-Moran, et al. 1998). The converging of the four sources and cognitive processing influences the two components that were added to Bandura's work in the integrated model, the analysis of the teaching task and the assessment of personal teaching competence. These two components then interact and shape teacher sense of efficacy. In the integrated model "the judgment a teacher makes about his or her capabilities and deficits is self-perception of teaching competence, while the judgment concerning the resources and constraints in a particular teaching context is the analysis of the teaching task" (p. 231). "In making judgments of self-efficacy, teachers weigh their self-perceptions of personal teaching competence *in light of* the assumed requirements of the anticipated teaching task" (p. 231). How these two factors are weighed is influenced by the teacher's view of what constitutes good teaching and by the views of significant others in the teaching environment. "The collective efficacy in a particular teaching context influences assessments about both task and personal competence. In a sense, collective efficacy guides cognitive processing by influencing the interpretation of experiences--that is, by causing individuals to attend to factors that might have been overlooked or to weigh the importance of factors differently" (p. 231).

Analysis of the Teaching Task and Its Context

When teachers make judgments about efficacy, they must anticipate the teaching situation and assess the requirements for success in that situation. Teachers consider such

things as the students' current level of achievement and attitudes, available materials and resources, which instructional strategies would be appropriate, and anything else that might influence the teaching task (Tschannen-Moran, et al. 1998). Attitudes of other teachers and administrators and such things as the level of trust in the school are examples of contextual factors that might influence analysis of the teaching task.

Experienced teachers have the advantage of being able to include previous practices in their analysis. Analysis of the teaching task includes some consideration of the general teaching efficacy factor described by Gibson and Dembo, but general teaching efficacy reflects a partial analysis of the teaching task as it focuses only on the external constraints that might be impediments to teaching. One question a teacher might ask in forming task analysis is, What outcomes do I seek and what actions will be required to accomplish this particular task? "Other factors, such as what resources are available and what constraints exist, may be involved, but the analysis of the teaching task requires a consideration of means-ends relationships specific to this teaching situation" (p. 232).

Assessment of Personal Teaching Competence

The integrated model separates personal teaching competence from teaching efficacy presenting self-perception of teaching competence as part of, but not the whole of, teacher sense of efficacy (Tschannen-Moran, et al. 1998). Self-perception of teaching competence is an assessment of current functioning and contributes to a judgment of teacher sense of efficacy which is a prediction of future capability. This relates to Guskey's distinction of responsibility being a past assessment and efficacy beliefs being future oriented. The individual's comparative judgment of whether his or her current abilities and strategies are adequate for the particular teaching task determines the

teacher's sense of efficacy. Because teachers can feel efficacious in one context and quite inefficacious in another, the level of perceived competence to meet the demands of a particular teaching task will influence functioning in that context.

Teacher Sense of efficacy

In the integrated model teacher sense of efficacy is defined as “the teacher’s belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context” (Tschannen-Moran et al. p. 233). The uniqueness and value of this model lies in its making explicit the judgment of personal competence in light of an analysis of the task and situation. It clarifies that both self-perception of teaching competence and beliefs about the task requirements within a particular teaching situation contribute to the formation of teacher sense of efficacy and thus to the consequences of those efficacy beliefs. By conceptualizing teacher sense of efficacy as a confluence of these two factors, both competence and contingency are considered as contributors to the construct of teacher sense of efficacy. Because this model calls attention to a full examination of these two components, it highlights the situational and developmental nature of teaching task analysis and will prove helpful in application.

The Cyclical Nature of Efficacy Beliefs

The Tschannen-Moran, et al. (1998) Model presents teacher sense of efficacy as a dynamic construct that is cyclical in its nature. The proficiency of a performance creates a new mastery experience that refers back to the sources of efficacy experience and interjects new information. A teaching performance that was accomplished with a level of effort and persistence influenced by the teacher’s sense of efficacy becomes the past

and a source of new efficacy beliefs. Over time, the process stabilizes into a “relatively enduring set of efficacy beliefs” (p. 234). Ross (1994) reported that there is consistent evidence of substantial change in teacher sense of efficacy during the preservice period which he describes as a period of learning to teach that is marked by major changes in teacher sense of efficacy. When he, Cousins, and Maynes (1995) measured teacher sense of efficacy on three occasions during a cooperative learning inservice program, the teacher sense of efficacy scores were highly stable.

Correlates of Teachers' Efficacy Beliefs

“Efficacy beliefs operate as an important contributor to academic development through teachers' beliefs in their personal efficacy to motivate and promote learning in their students” (Bandura, 1995, p. 17). In a synthesis of research on efficacy beliefs, Shahid and Thompson (2001) noted several trends in studies with large positive effect sizes. Predictor constructs of student engagement and student achievement were both strongly correlated with teacher sense of efficacy, as were teacher success and instructional factors such as shared decision making and being part of a coaching network. Instructional strategies such as use of centers, cooperative learning, and implementation of instructional change including integration of the curriculum, were also strongly related to high teacher sense of efficacy. In the present literature review the effect of teacher sense of efficacy on teacher behaviors and student achievement will be discussed. As in the studies reviewed by Shahid and Thompson, the relationship between teacher sense of efficacy and teacher behavior is shown through correlational studies.

Teacher Behavior

In a study of the qualities of effective teachers, reflective practice is cited as an element of professionalism (Stronge, 2002). “Thoughtful reflection translates into enhanced teacher sense of efficacy. And a teacher’s sense of efficacy has an impact on how she approaches instructional content and students” (p. 21). Reflecting on new experiences assists teachers in having additional positive experiences. “When teachers are confident, they communicate the belief of their own efficacy to students ... Belief in one’s efficacy and maintaining high expectations for students are common among teachers who reflect” (p. 21).

In a study by Gibson and Dembo (1984) a significant difference was found between groups on teacher criticism following a student’s incorrect response. Teacher persistence was defined as “the ratio of feedback interactions to student failures in which a teacher either repeated the question, provided a clue, or asked a new question” (p. 577). Lack of persistence analysis resulted in a significant difference with the high-efficacy teachers “more effective in leading students to correct responses through their questioning” (p. 577) and low-efficacy teachers going on to other students or to another question before the student arrived at a correct response. Gibson and Dembo stated that “trends revealed in the present study suggest that more general expectations such as those inherent within the construct of teacher sense of efficacy may influence feedback behavior and teacher persistence” (p. 578) and summarized that “teacher efficacy may influence certain patterns of classroom behavior known to yield achievement gains” (p. 579) such as constructive feedback and persistence.

Professional Development and Change

That teacher sense of efficacy impacts teacher response to professional development is evidenced in the research of Scribner (1999) who found that the level of personal teaching efficacy influences how and in what ways individual teachers experience professional development. High teacher sense of efficacy teachers were “opportunistic in their approach to professional learning and they sought knowledge through their involvement in activities that often were not overtly professional development opportunities” (p. 220) while low teacher sense of efficacy teachers were unable or unwilling to engage in the reforms because of a “perceived disconnection between the purposes of the efforts and their own needs as professionals” (p. 221). Scribner asserted,

This study suggests that the way teachers experience professional development is more complex than mere disinterest, passivity, or even abhorrence for professional development. Teachers in this study experienced professional development differently depending, in part, on their individual characteristics and attitudes toward professional learning and their profession that do, indeed, appear to act as filters. (p. 229)

One of those filters is personal teaching efficacy which Scribner describes as a useful construct that helps in the understanding of how teachers experience professional development.

Presenting a model that describes the process of teacher change, Guskey (1986) hypothesized that the majority of programs fail because they do not take into account what motivates teachers to engage in professional development and the process by which

change in teachers typically takes place. In a study designed to explore the relationship between selected teacher perceptions known to be shared by highly effective teachers and teacher attitudes toward the implementation of new instructional practices, he found that teachers who expressed a high level of personal efficacy appeared to be the most receptive to the implementation of new instructional practices (1988).

McKinney, Sexton, and Meyerson (1999) attempted to validate an efficacy based change model with teachers using whole language in professional development sessions. The model followed the change process through three stages: initiation, implementation, and refinement. In the process of moving through the stages of implementation participants expressed different concerns that were related to the efficacy process and influenced by attributions. Participants with lower efficacy beliefs had more concerns characteristic of those in an early stage of change. Participants with higher efficacy turned their attention to how whole language might impact their students, themselves, and their school, and how they might work to refine teaching practices and relationships to better fit within their contexts, concerns typical of later stages of change. McKinney, et al. noted, "Our data strongly support the important role that self-efficacy plays in the change process" (p. 483). Participants with the highest efficacy tended to view the innovation as important and possible. The results of the study suggest that, in addition to possessing the knowledge base and skill to implement whole language, it may also be necessary that teachers possess the self-efficacy beliefs that they can use those skills and knowledge.

Through questionnaires and follow-up interviews, Timperley and Phillips (2003) ascertained changes in expectations and the teachers' feelings of self-efficacy. The study

suggested a complex interplay of new knowledge, changes in children's achievement and teachers' feelings of self-efficacy, leading Timperley and Phillips to state that staff development needs to address simultaneously the teachers' beliefs and the improvement in their practices. Timperley and Phillips asserted that the interpretation of new information is filtered through existing beliefs and that "the change process is likely to be an iterative rather than a sequential one, where changes in beliefs, actions or outcomes are both shaped by, and built on, each other" (p. 630).

Student Achievement

It appears that teacher sense of efficacy is connected with student achievement in a subtle, indirect way that may be manifested over time. A study by Midgley, Feldlaufer, and Eccles (1989) found a "consistent relationship between teachers' beliefs about their personal efficacy and students' beliefs about their performance and potential in mathematics and the difficulty of the subject matter" (p. 13). "Generally, the beliefs of students who had low-efficacy teachers became more negative as the school years progressed, whereas the beliefs of students who had high-efficacy teachers became more positive or showed less negative change from the beginning to the end of the school years" (p. 13). Midgley et al. described teacher sense of efficacy as "a somewhat subtle belief that is manifested in ways that are not immediately apparent to students" (p. 13-14). Among the groups of students studied, the students who had high efficacy teachers in the first year and low efficacy teachers in the second year suffered the most, receiving the lowest scores in expectancies and perceived performance and the highest scores in task difficulty. It was more damaging for a student to have high efficacy teachers followed by low efficacy teachers than to have low efficacy teachers both years. Student

attitudes remained positive for high achieving students regardless of the efficacy of the teacher, according to Midgley et al., leading them to speculate that student achievement is an important moderator of the impact of teachers' sense of efficacy. High achieving students may not be affected by the efficacy of their teachers because they know that their performance will still be adequate. The connection between teacher sense of efficacy and student achievement is weak, therefore, for high achieving students and stronger for low achieving students.

Ross (1995) described the association of teacher sense of efficacy with cognitive achievement as based exclusively on correlational data acknowledging that an unexamined third variable or simple coincidence might provide the cause of the empirical relationship. Ross stated that arguments can be made for a causal link between teacher sense of efficacy and student achievement and arguments can also be made for the reverse correlation, that is, student success increases teacher's perceptions of their effectiveness. He gave two arguments for the causal link between teacher sense of efficacy and student achievement, that high efficacy teachers set high standards for themselves and that high efficacy teachers set high standards for students. He suggested a third argument that, at least to some unknown degree, the relationship between teacher sense of efficacy and student outcomes is reciprocal; that is, increases in one lead to increases in the other. This explanation is compatible with Bandura's reciprocal causation. Student achievement is consistently linked to teacher sense of efficacy in subtle, indirect ways that pertain mostly to teacher attitudes and behaviors and are linked to student behaviors that are presumed to lead to increased student learning.

Teacher sense of efficacy has been described as a concept that stems from social cognitive theory and Bandura's theory of self-efficacy. The concept of teacher sense of efficacy was sprouted by two items on the RAND questionnaire and nurtured by several researchers. Gibson and Dembo were surprised to find two factors which they interpreted to be two elements of social cognitive theory: self-efficacy beliefs, and outcome expectancy. However, researchers such as Guskey and Passaro and Bandura himself disagreed with this interpretation. Tschannen-Moran and Woolfolk Hoy redirected attention to the concept as a sense of teacher sense of efficacy specific to a particular context. Tschannen-Moran, et al. proposed a model of the development of teacher sense of efficacy that integrates Bandura's theory with perceptions of the teaching task and its context and assessment of personal competency. Research has shown that teacher sense of efficacy is positively related to teacher behaviors such as persistence, positive response to staff development, and receptiveness to new instructional practices. The present study applies the integrated model of development of teacher sense of efficacy to the development of teacher beliefs in the context of reading instruction.

Teacher Sense of Efficacy Beliefs in the Context of Reading Instruction

The skill of reading has become essential to success in our society. The National Research Council (1998) reported, "Current difficulties in reading largely originate from rising demands for literacy, not from declining absolute levels of literacy. In a technological society, the demands for higher literacy are ever increasing, creating more grievous consequences for those who fall short" (p. 1). Teacher sense of efficacy has been defined as both context and subject-matter specific and, as has been mentioned, a teacher may feel very competent in one area of study and less able in another. A

meaningful study of teacher sense of efficacy, therefore, requires a definition that specifies context and subject. The contextual model of self-efficacy described here and illustrated in Figure 2 is an application of the conceptual model to development of the skill of teaching reading.

The sources of efficacy and the cognitive processes that integrate them are discussed here as they relate to skill development in teaching reading. The particular goal is that of improving teacher sense of efficacy in teaching reading. The sources of efficacy identified in the conceptual model of self-efficacy can inform the process of developing efficacy in reading instruction, and interactions between the various sources of efficacy information can serve to strengthen each other. Cognitive processing mediates the dynamic relationship between sources of efficacy and changes in the two components, analysis of the teaching task and its context and assessment of personal teaching competence. When applying the conceptual model to the development of a skill, the issue of implementation surfaces. The cyclical nature of the developmental process depends on implementation of the skill to establish a new level of performance that can then become a new source of efficacy.

Implementation of the skill is influenced in part by perceived value of the new skill. If the teacher does not see the new skill as helpful to the particular learning goal, the teacher is not as likely to expend the effort to learn or use the skill. The value placed on the new skill by the teacher and the perceived personal competency control implementation of the new skill. An explanation of the contextual model begins with a discussion of the inservice training that provides the sources of efficacy information for the study.

Tucker Signing Strategies for Reading

Careful attention was given to selection of the inservice training which provides the sources of efficacy for this study. The researcher has previous experience with a simple, beginning reading strategy that matches hand gestures and phonetic sounds (Tucker, 2001) and is showing striking results with struggling readers (McMaster, 2003). The Tucker Signing Strategies for Reading was created by a college professor, Bethanie Tucker, in response to questions from student teachers regarding assistance to beginning readers. Tucker and others have used the cueing strategy with children and adults for the last decade, and, in 2001, Tucker published a manual describing and illustrating the hand gestures and corresponding phonemes. Cole and Majd (2003) conducted an experimental study in which analysis of data collected from 197 students showed that students who received the Tucker Signing Strategies for Reading instruction scored significantly higher on reading lists than the control group of students who did not receive instruction with the Tucker strategies. The strategies address a specific area of beginning reading, that of matching letters to sounds and decoding words. This narrow focus fits well with Schmoker's (2004) advice that educators should create conditions for "short-term wins in specific instructional areas" (p. 427).

Tucker developed the concept of matching hand gestures with phonetic sounds over a number of years as an outgrowth of experiences such as studying American Sign Language and observing young readers struggle with the reading process (2003). In her search for ways to monitor more precisely how the minds of children work, Tucker may have created a window into the child's thinking because, as the child makes a hand gesture for a letter or letters, the teacher can track the child's progress through the hand.

The connection between the hand gesture and the child's development can be better understood through consideration of the body of research surrounding hand gestures and learning.

Studies examining the relationship between hand gestures and learning established the use of gesture as a cognitive structure. For example, blind adults and children gestured even when speaking to persons they knew were blind (Iverson & Goldin-Meadow, 1998) and teachers gestured when instructing students in mathematical equivalence without knowing that they were participating in a study of hand gestures (Goldin-Meadow, Kim & Singer, 1999). Gesture and speech discordance were also shown to play a role in cognition. Church and Goldin-Meadow (1986) showed that the relationship between gesture and speech indicated transitional knowledge and a child's readiness to make use of instructions, and Goldin-Meadow, et al. (1999) found that speech and gesture sometimes convey different meanings. Focusing on the presence of speech and gesture mismatches, some studies found that children are less likely to pick up on a strategy when different information is conveyed in speech and gesture (Goldin-Meadow, et al. 1999). Gesture aided the child's comprehension of speech when it reinforced the information conveyed in speech and hindered the child's comprehension of speech when it differed from the information conveyed in speech (1999). It was also found that children who produced mismatches benefited from instruction more than children who produced no mismatches (Goldin-Meadow, Alibali, & Church, 1993). A connection between memory and gesture appeared in two studies. Alibali and DiRusso (1999) found that active gesturing helped children coordinate the processes of counting, leading to speculation about the role of gesturing to working memory resources. Then,

Goldin-Meadow, Nausbaum, Kelly and Wagner (2001), in a study where children and adults were asked to remember a list of letters or words while explaining how they solved a math problem, found that gesturing was particularly beneficial when memory was taxed.

It is clear that hand gestures convey a meaning beyond an obvious communicative function and that the gestures assist students in making use of teacher instruction. Furthermore there is reason to believe that gesturing reduces cognitive load because memory that is freed due to the use of the hand gesture is available to assist in other cognitive tasks. The research establishing a connection between hand gestures and cognition may explain why the Tucker Signing Strategies are successful with learners who have not had success with other reading methods. Goldin-Meadow, et al. stated, "If gesture were to become recognized as an integral and inevitable part of conversation in a teaching situation, it could perhaps be harnessed, offering teachers an excellent vehicle for presenting to their students a second perspective on the task at hand" (1999, p.729). It may be that Tucker has, in fact, harnessed hand gesture in her reading strategy resulting in a mental model that enhances reading for some children and unlocks the key to decoding for others.

Sources of Efficacy

The Tucker Signing Strategies for Reading offer an exciting inservice training for inclusion in the contextual model for the development of self-efficacy in teaching reading because the strategy is simple in scope, short-term in implementation, and has shown some success with struggling readers. Schmoker advocated such training in noting Hatch's description of the unintended consequences of comprehensive reform, "I've seen

the upshot of this at close range: principals who must spend precious time assembling and then responding to the needs of committees and ‘governance structures’ – even ‘when we can’t teach our kids to read’” (p. 428). In an attempt to differentiate between the various sources of efficacy, this study separates the Tucker Signing Strategies for Reading training into different formats, or levels, while maintaining the integrity of the basic information provided by Tucker in her manual. While each of the sources of efficacy in the model is presented separately as it applies to this reading staff development experience, there is some overlap in application.

Verbal Persuasion. Typically, staff development programs are conducted as one-shot workshops and allow very little input from teachers (Stein & Wang, 1988). The one-shot workshop is most like verbal persuasion as a source of efficacy, and it would best be characterized as providing information and theory. The knowledge conveyed during a verbal persuasion experience contributes to increased understanding of such things as content, effective teaching skills, and classroom management. Specifically, a reading workshop might include development of prereading skills, early reading techniques, and phonics instruction. Verbal persuasion might come in the form of encouragement and might be needed to convince a teacher that he or she can be a successful participant in a reading mastery experience training and to provide encouragement during training. According to social cognitive theory verbal persuasion would not be expected to be as effective alone because verbal persuasion is not a powerful source of self-efficacy. In addition, increasing competence would not necessarily occur. However, verbal persuasion in partnership with other sources of efficacy would encourage teachers to expend effort and willingness toward achieving a realistic goal in an environment that

also strengthens skill in teaching reading. For the present study, verbal persuasion is provided in the Reading Inservice Training (Treatment 1).

Vicarious Experience. In a staff development session in reading a presenter identified as competent in the subject provides information and models strategies. Many times a vicarious experience couples modeling with other strategies. Some staff development models provide vicarious experiences through videos of the skill or strategy in action. If the vicarious experience is limited to watching the presenter, it would be minimally effective for increasing teaching skill (Joyce & Showers, 1988). However, as part of a comprehensive mastery experience it is valuable for the information and insight provided through listening to and watching a skilled teacher of reading and imagining oneself as such. In fact, a new teacher would likely not benefit from practice without previous experience observing a model or listening to a practitioner. The learner has the opportunity to appraise his or her own capabilities during a vicarious experience because the model provides a standard that helps the learner set goals for the personal teaching experience. In the present study, vicarious experience is present in the Reading Inservice Training with demonstration (Treatment 2).

Mastery Experiences. As in the conceptual model, mastery experiences offer the most powerful source of efficacy for the teaching of reading. Joyce and Showers (1988) studied the effect size of research on training outcomes. The transfer of training for information, theory, and demonstration showed effect sizes of .00 both separately and when they were combined. When practice feedback was added to information, theory, and demonstration, the effect size became .39. However, an effect size of 1.68 resulted when coaching was added to the other four. Additionally, Stein and Wang (1988)

suggested that a workshop that aims to support teachers' ongoing utilization of the knowledge base regarding effective practice needs to develop a delivery system characterized by continual monitoring. The coaching component for Joyce and Showers (1988) and the continual monitoring for Stein and Wang (1988) are examples of mastery experiences though they include other sources as well, i.e. coaching includes verbal persuasion. It might include short-term practice such as a self-modeling experience, or micro-teaching, which offers the opportunity for efficacy information in the form of specific feedback. For example, participants might be given an assignment using the task or skill in front of their peers in a small group. Members of the small group would then critique the participant's performance. A model for development of skill that includes such mastery experiences becomes a powerful influence on the development of self-efficacy in teaching reading. Mastery experience combines experience in the actual teaching environment with the other sources of efficacy. Self-knowledge is increased because the teacher receives performance feedback while conducting the actual teaching activity himself or herself. According to Guskey (1989), the provision of continued support and follow-up after initial training is essential. Teacher perceptions of the task and personal competency are products of the mastery experiences and constructors of future beliefs and expectations. Actual use of a new strategy also contributes to an understanding of the value of the skill. A strong staff development experience includes mastery experience; however, other sources of efficacy make significant contributions and enhance the effect of the mastery experience. In the present study, a light mastery experience is a component of the Reading Inservice Training with practice (Treatment 3),

and a stronger mastery experience is a component of the Reading Inservice Training with coaching (Treatment 4).

Physiological and Affective States. Just as the mastery experience of a comprehensive staff development program incorporates vicarious experience and verbal persuasion, it, by nature, utilizes the benefits of physiological and affective states. Knowledge, theory and demonstration offer the opportunity for arousal of interest and curiosity. Practice in the use of a new skill in the workshop setting and ultimately in a longer term feedback cycle arouses emotions such as fear, nervousness, and apprehension as well as feelings such as accomplishment and pride. Initial training experiences may cause nervous anticipation for a teacher, especially if the teacher is observed and the performance critiqued, but trying it out in the relatively safe workshop setting where encouragement and assistance are available can help reduce the fear of trying it with a room full of children. With encouragement through continued training and skill development, successfully implemented lessons create feelings of accomplishment and even exhilaration. As long as the negative emotions are not excessive to the point of debilitating performance (Bandura, 1997), they underscore the learning experience as memorable and important sources of self-knowledge and heighten beliefs in coping efficacy with corresponding improvements in performance.

Cognitive Processing

Through cognitive processing, teachers interpret the information that they receive through staff development activities and their subsequent experience with that information to frame and reframe the two components: analysis of the task of teaching reading and its context and assessment of their personal competence in teaching reading.

Knowledge of the reading process gained in staff development, encouragement from mentors, and practice feedback or coaching during monitored implementation of reading strategies create thought patterns that become the basis of problem solving. Teachers take risks, analyze the results, predict future consequences, and develop behaviors appropriate to the reading task. Timperley and Phillips (2003) found that conditions required to achieve change in two communities involved a complex interplay of new domain knowledge in the form of “redefining the reading task and how to teach it, unanticipated changes in the children’s achievement and teacher’s feelings of self-efficacy in believing they could make a difference” (p. 627).

Analysis of the Teaching Task and Its Context

Questions asked by the teacher in analyzing the teaching task and its context might include: What is success in the teaching of reading and what means or actions will be required to teach reading in this situation? As was mentioned earlier, other factors may be involved but a consideration of means-ends relationships specific to reading is required, i.e. what does it take to teach a student reading such that the student is successful on the required task to the required proficiency? What is likely to facilitate the success of this method in this setting? What is likely to interfere with the success of this method in this setting? Each teacher must answer these questions for his or her particular context as the criteria for success in one setting may not be the same as in another. Certain factors such as entry level of the student and the available resources will also vary. Through a strong staff development program to include follow up in the form of coaching such as that advocated by Joyce and Showers (1988) or monitoring as

advocated by Stein and Wang (1988), teachers will have the means to ascertain which behaviors will be required of them for success in teaching reading in their context.

Assessment of Personal Teaching Competency

Self-perception of reading competency is tapped by questions that assess perceptions of current functioning: Do I have the knowledge to assess current student performance and am I able to determine what to do to help a student move to the next level? In answering these questions the teacher makes a judgment of teacher sense of efficacy which is basically a prediction of the teacher's future capability, an estimate of whether his or her current abilities and strategies are adequate for the task of teaching reading. Information received during practice feedback and monitoring will be used by the teacher to change teacher behaviors and, as the process continues, to shape the level of perceived competence for teaching reading which will, in turn, influence the performance. A teacher who is aware of deficits in the teaching of reading and has a belief about how those deficits can be addressed has a resilient sense of teacher sense of efficacy for reading. As the Tschannen-Moran, et al. Model demonstrates, teachers weigh their self-perception of their personal competence in the teaching of reading in light of the assumed requirements of the task of teaching reading.

Teacher Sense of Efficacy for Reading Instruction

Through a strong staff development program teachers receive accurate information about the task of teaching reading in their context, view demonstrations of strategies, and receive specific feedback about their personal performance as teachers of reading. These efficacy experiences interact with self-perception of teaching competence and beliefs about the task requirements and the context to become major contributors to

the construct of teacher sense of efficacy for reading. The teacher sense of efficacy that results from the reading skill development process is a motivational construct defined specifically as the teacher's estimate of his or her ability to teach young students to read, even students who have been identified as struggling readers. In itself, this motivational construct predicts the willingness of teachers to try new skills and to persist in the teaching of reading. In combination with other constructs it can become even more powerful. The sense of efficacy that results from the cognitive processing of these efficacy experiences may become one of the components that determine the level of implementation of a new reading strategy.

Implementation of a New Reading Strategy

When efficacy was coupled with more task-relevant interactions among teachers, there was a statistically significant increase in implementation (Poole & Okefor, 1989). Smylie (1988) said that the most powerful influence on change in teacher practice was from personal teaching efficacy and, in their synthesis of pertinent research, Shahid and Thompson (2001) said that implementation of instructional changes as well as integration of the curriculum were strongly correlated to high teacher sense of efficacy.

Stein and Wang (1988) conducted a study with a focus on the "identification and description of factors related to teachers' commitment to acquire and consistently use the knowledge and skills which are necessary for the successful implementation and maintenance of school improvement programs" (p. 172). Stein and Wang (1988) stated that enhanced perceptions of self-efficacy on the part of the teacher contributed to the development of intrinsic interest and motivation to effectively implement and maintain the innovation. In order for increases in student success and teacher sense of efficacy to

follow as consequences in the contextual model for reading skill development, techniques learned in staff development must be utilized in classrooms. The results of the study supported the hypothesis that “successful program implementation by teachers was related to perceptions of self-efficacy and a high teacher-perceived value of the innovative program” (p. 183). There was a positive relationship between teacher success in program implementation and teacher perceptions of self-efficacy for implementing the innovative program (1988).

Stein and Wang (1988) suggest that individuals’ judgments of their personal capabilities mediate the relationship between knowledge and its use by affecting one’s motivation, effort expenditure, thought processes, and emotions. They identified two variables associated with successful implementation of innovative programs by teachers: teacher perceptions of self-efficacy for implementing the innovation and teacher perceived value of the innovative program. Thus, the sense of efficacy for teaching reading combines with assessment of value of the strategy. Stein and Wang stated that their findings suggested a “sequential pattern consisting of improvement in teachers’ actual expertise in program implementation, followed by increases in their perceptions of self-efficacy for implementing the program” (p. 181). Fullan (1993) supports this claim in saying that, regardless of teachers’ individual perceptions of self-efficacy for implementing change, successful change also requires a sense of confidence that the program can and will work.

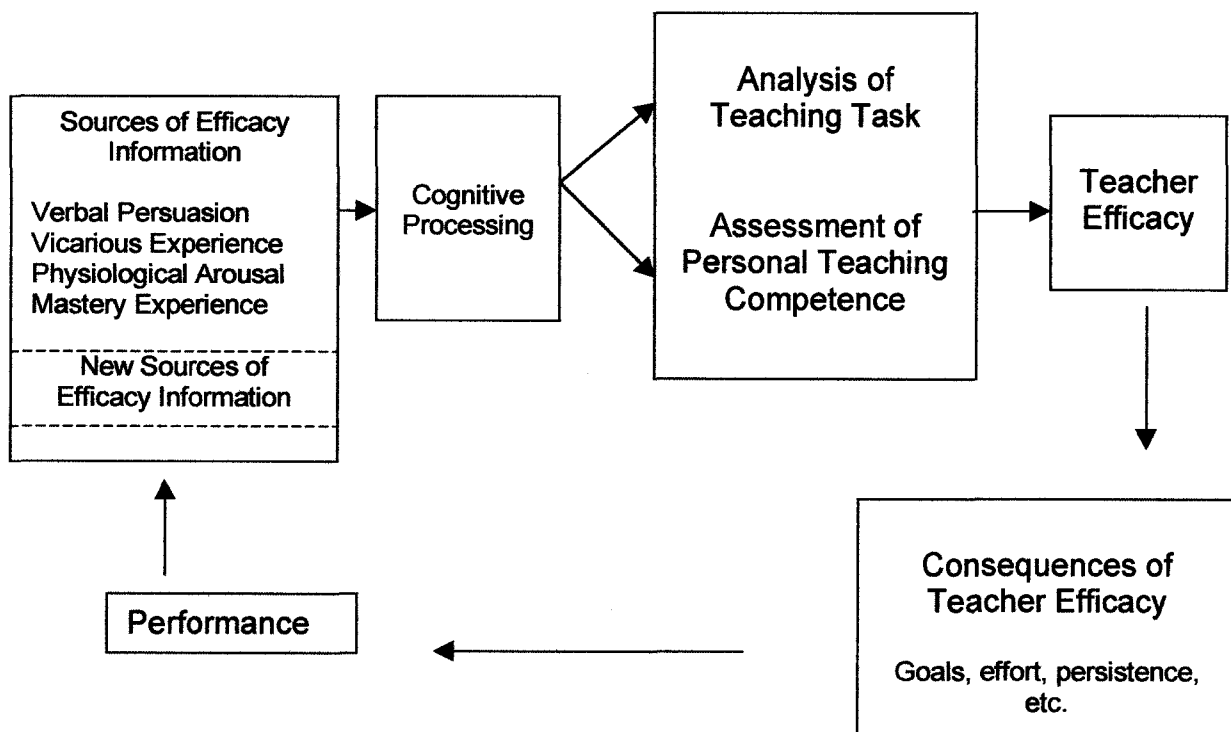
Value of an innovation was a key component for McKinney, et al. (1999) in their validation of an efficacy-based change model. In the early stage of change, efficacy was best predicted by the participants’ expectation that the innovation could be successful in

their context and by the value of the innovation to the participants. Later in the process, it was only the value of the innovation that significantly predicted self-efficacy. McKinney et al. concluded, "The value attributed to whole language apparently influenced persistence" (p. 484).

In the presence of a strong training program, the cyclical nature of the contextual model of self-efficacy in the development of reading skill indicates a mutual positive effect on teacher sense of efficacy in reading and student success. It was predicted, therefore, that teachers who participated in reading professional development with coaching or monitoring would develop a higher self-efficacy for teaching reading than teachers who participate in an inservice training without coaching or modeling.

This literature review traced the construct of teacher sense of efficacy from its beginning in social cognitive theory to a sense of efficacy for teaching a particular subject in a specific context. A model of development of teacher sense of efficacy that integrated Bandura's sources of efficacy with consideration of teaching task and personal competence was presented. Research was presented showing that teacher behaviors such as persistence, positive response to professional development, and receptiveness to new instructional strategies were related to teacher sense of efficacy. Finally, a model for the development of sense of efficacy for teaching beginning reading was presented as the contextual format for the design of the present study.

**Figure 2.1 Tschannen-Moran, Woolfolk Hoy, and Hoy (1998)
Model for the Development of Efficacy**



CHAPTER 3

Methodology

The purpose of this quantitative study was to determine if there would be an increase in sense of efficacy and program implementation after any of four levels of inservice training format. It was predicted that there would be a positive relationship between sense of efficacy and increased staff training, in particular, training that includes modeling and follow-up coaching. In other words, teacher sense of efficacy would increase with professional development that included follow-up. In addition, there would be an increase in implementation of the strategy with increased staff training.

Research Questions

1. What is the relationship between initial teacher sense of efficacy and initial teacher sense of efficacy for reading?
2. Is there a significant difference in implementation of the Tucker Signing Strategies for Reading based on the type of inservice training model?
3. Is there a significant difference in teacher sense of efficacy based on type of inservice training model?
4. Is there a significant difference in teacher sense of efficacy for reading based on type of inservice training model?
5. What is the relative weight of teacher sense of efficacy, teacher sense of efficacy for reading, and inservice training model to implementation of a new reading strategy?

Sample Selection

The convenience sample was comprised of kindergarten through second grade teachers and resource teachers from nine schools within five different school districts in

the Commonwealth of Virginia. The offer was extended to principals to include any additional persons in the training sessions to be exposed to the strategies, and it was understood that the additional persons would not be considered part of the study. Paraprofessionals, itinerate teachers and an occasional third – fifth grade teacher attended the workshops. Through cluster sampling, school groups were randomly selected for treatment groups with analysis of individual teachers.

Schools ranged from low to high socioeconomically with one school in the highest quartile, three in the second and third quartiles, and two in the lowest quartile of the state as identified by free/reduced lunch criteria. There was also a spread across rural, suburban, and urban schools with four rural schools, four suburban schools, and one urban school. The sample was 97% female and 85% white. Nonwhite participants were spread evenly across treatment groups.

Schools were assigned to workshop treatment groups by randomization selection on a stratified basis. For example, the four schools that were available in the spring were randomly assigned to the four treatment groups, and the five that became available in the fall were likewise randomly assigned to each of the four treatment groups with the exception that two schools were placed in Treatment Group 1 to balance small numbers from the spring. Use of cluster sampling was the only feasible way to obtain groups for different levels of inservice training, because opportunities for administering treatment were only available by school. Surveys were administered prior to treatment and following treatment.

The unit of analysis was the individual teacher. A total of 152 teachers and 24 paraprofessionals participated in the reading workshops. Of the 152 licensed personnel,

17 participants attended the workshops without participating in the study. Data for those 17 licensed personnel and the paraprofessionals were not included in the sample. Thus, there were 124 participants in the study with a total of 98 participants completing initial and final surveys. Survey item #20, "To what extent do you use the Tucker Reading Strategies?" was included on the initial survey to identify participants who were using the Tucker Signing Strategies prior to treatment. On the 1-9 scale, a choice of "7" with an anchor of "Quite A Bit" was used as the criteria for removing participants, and five respondents were removed on that basis. Sample sizes within the four treatment groups ranged from 20 to 28. The survey return rate for the 124 surveys was 79%.

Design

This quantitative study is a quasi-experimental design. The sense of efficacy of four groups of teachers was compared using a survey of teacher's self-efficacy beliefs. All participating teachers were administered the Teacher Sense of Efficacy Survey prior to the initial workshop. Using cluster sampling, the nine schools were then placed into one of four groups for treatment purposes. All schools received a workshop entitled the Tucker Signing Strategies for Reading. Treatment Group One schools received only the reading workshop. Group Two schools received the reading workshop with a demonstration of the reading strategy using local students. Group Three schools received the Tucker Reading Strategies for Reading workshop that included demonstration and a practice session as part of the one-day workshop. Group Four schools included the reading workshop with demonstration and practice session plus three coaching sessions. All teachers were administered the Teacher Sense of Efficacy Survey at the completion of the final training sessions.

Instrumentation

This study sought to detect changes in teacher sense of efficacy from prior to and following a variety of workshop formats. The Teacher Beliefs Survey included the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) as well as items that assess teacher sense of efficacy for the teaching of reading.

Development of the Instrument

The first 12 items on the Teacher Beliefs Survey are the Teacher Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Woolfolk Hoy (2001). The TSES was developed in a seminar on *self-efficacy in teaching and learning* in the College of Education at The Ohio State University by the two researchers and eight graduate students. The group used a measure based on Bandura's scale with an expanded list of teacher capabilities. The process produced over 100 items, which were pooled and discussed and from which 52 items were selected. Three studies were conducted by the two researchers (2001). In the first study, the 52-item scale was tested on a sample of 224 preservice and inservice teachers, refined and reduced to 32 items which were selected for further testing. Another group of inservice and preservice teachers participated in the second study which reduced the 32-item scale further to 18 items made up of three subscales. The three factors, accounting for 51% of the variance, were efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management. In the third study, the instrument was further refined, first in a class at the Ohio State University and then through a sample of 410 participants from three universities, two elementary, one middle and one high school. A long form consisting of 24 items and a short form consisting of 12 items were identified; the short

form comprises the items used in this study. Reliability for the 12-item scale was 0.90 and results of the analyses indicated that the instrument could be considered reasonably valid and reliable.

Teacher Sense of Efficacy Scale

Teachers' efficacy beliefs were measured using the short form of the Teacher Sense of Efficacy Scale (previously called the *Ohio State Teacher Efficacy Scale*, Tschannen-Moran and Woolfolk Hoy, 2001). Teachers were asked to rate items on a nine-point scale with anchors at 1- None at all, 3 – Very Little, 5 – Some Degree, 7 – Quite a Bit, and 9 – A Great Deal. The scale included three 4-item subscales: *Efficacy for Instructional Strategies*, *Efficacy for Classroom Management*, and *Efficacy for Student Engagement*. The following are examples of each subscale:

Efficacy for Instructional Strategies

- How well can you implement alternative strategies in your classroom?

Efficacy for Classroom Management

- How much can you do to calm a student who is disruptive or noisy?

Efficacy for Student Engagement

- How much can you do to get students to believe they can do well in school work?

Teacher Sense of Efficacy for Reading (TSER) Development

Eight items were included to determine teachers' sense of their efficacy for the teaching of reading. Examples of the reading items follow:

- To what extent can you help your students monitor their own use of reading strategies?

- To what extent can you teach the sound/letter relationship to your students?
- How much can you do to meet the needs of struggling readers?

Implementation

One item was designed to determine the level of implementation of the Tucker Signing Strategies for Reading on the survey given prior to training. This item was used to identify participants who are already using the Tucker strategy. Since the intent was to study teacher participation in training with a new strategy, teachers who responded with a 7 or higher were removed from the statistical analysis. Five additional implementation items were included on the final survey to be administered following the training period. They were used to determine the relationship between teacher sense of efficacy and implementation of the strategy presented in staff training. Examples of the implementation items follow:

- To what extent do you use the Tucker Reading Strategies? (both surveys)
- To what extent do you use the Tucker hand cues to help your students figure out unknown words when they are reading?
- To what extent do you use the Tucker hand cues to meet the needs of struggling readers?

Value

Five items were included on the final survey to determine the value placed on the Tucker Reading strategies by the participants. Examples of the value items follow:

- To what extent do the Tucker hand cues help you model effective reading strategies?

- To what extent do the Tucker hand cues help you teach the sound/letter relationship to your students?

Treatment

Treatment 1: Reading Inservice Training Workshop, N = 28

The *Tucker Signing Strategies for Reading* (2001) was selected because initial use of it showed good results in increasing reading performance (Cole & Majd, 2003) and because it involves a skill that lends itself to the use of practice feedback (McMaster, 2003). A workshop training on the Tucker Signing Strategies for Reading provided the tested sources of efficacy. The level one inservice format, the standard workshop, served as a verbal persuasion experience and was provided for all four groups. Verbal persuasion provided instruction and knowledge of the skill and included encouragement by the workshop presenter. The presenter reassured participants during the workshop to minimize negative emotional states. All participants were given a copy of the manual, *Tucker Signing Strategies for Reading* (2001), and each school was given a black line master for printing student take home books and a copy of a video tape demonstrating the hand cues.

Three schools made up the sample of 28 for the Treatment One group. One spring school of 5 returns was combined with 2 fall schools of 6 and 17. In the spring, the 2 hour workshop was presented twice, once from 9:30 AM – 11:30 AM and again from 1:00 PM – 3:00 PM so that a team of substitutes could release the participants. The school principal did not attend the workshops. The Assistant Superintendent introduced the researcher to both groups. In the fall schools, two workshops were presented, both in the afternoon from 1:00 PM – 3:00 PM on a teacher workday. One began with the

deputy superintendent speaking to the group for a few minutes. She complimented them for doing well on their SOL assessments even though she knew they were disappointed because they were not fully accredited. The school principal attended the workshop and participated fully saying that she planned to use the strategy the next day with a particular student. The other fall workshop began with an introduction from the principal who did not attend the workshop.

Treatment One consisted of the researcher presenting a short introduction of the history of the Tucker signing cues and the purpose and then presenting each of the cues, modeling the cue while the participants made the cue. All 44 hand cues were presented along with illustrations and suggested activities in the manual, and any questions were addressed. The very limited modeling and practice were needed to preserve the integrity of the workshop by offering a valid representation of the information.

Treatment 2: Reading Inservice Training Workshop with Demonstration, N = 21

The second level of the inservice training included the same standard Tucker Signing Strategies for Reading workshop as the first level with the addition of a demonstration of the strategy with local students. The approximately 20 minute demonstration moved this workshop format to one that provided vicarious experiences as the participants watched the presenter teach the students to use the hand cues to decode new words. The presenter again reassured participants during the workshop to minimize negative emotions. However, at this level and at the previous level, the risks taken by the participants were minimal and emotional state was not thought to be a significant factor. All participants were given the same materials as in Treatment 1.

Two schools comprised the Treatment 2 sample, a spring school of 16 and a fall school of 5. In the spring, the workshop was presented twice, once from 9:00 AM – 11:30 AM and again from 1:00 PM – 3:30 PM so that a team of substitutes could release the participants. The school principal introduced the researcher to both groups of participants and then divided her time between the workshop and other duties. In the fall, the workshop was held after the school day from 3:30 PM – 6:30 PM with a 30 minute dinner break at 5:00 PM. The principal was out of the building and the assistant principal was busy with a discipline situation when the researcher arrived. The researcher introduced herself to the participants and the assistant principal arrived 30 minutes into the presentation.

At the beginning of the Treatment 2 workshop while participants completed the initial survey, the presenter met with the students for a few minutes to determine the current level of performance of the students. The students were taught approximately eight hand cues which they successfully used to decode new words and were then returned to their classrooms or daycare facility. Because these were local students in their home schools, there was some variance in the results of the on-the-spot demonstrations. However, in all demonstration sessions, participants had the opportunity to see growth in the students' ability to decode new words. Attempts were made to bring consistency to the demonstration experience during a discussion of the student responses. The debriefing process typically lasted 10 minutes resulting in a total time of 30 minutes for the student demonstration. Typical participant comments acknowledged that teaching strategies used previously with the observed student had not worked. Many teachers made comments such as, "You convinced me" or "I'm amazed," after the student

demonstration. The workshop then consisted of the same material as Treatment 1. The modeling provided by the researcher was distinct from the limited modeling in Treatment 1 because it allowed the participants to view the strategy in use rather than simply to view the hand cue.

Treatment 3: Reading Inservice Training Workshop with Practice, N = 20

The third level of the inservice training included a practice session in addition to the informational material and the student demonstration. The presenter provided feedback and encouragement during the practice session as the risk was greater than at the first two levels. The practice component moved the level of the training into the area of mastery experience though not as strong a mastery experience as the next level. Participants were given the same materials as in Treatment 1 and 2.

Two schools comprised the Treatment 3 sample, one school of 8 in the spring and a school of 12 in the fall. In the spring, at the request of the assistant superintendent for instruction of the school district, Treatment 3 was presented to teachers from two schools at the same time from 9:30 AM to 2:30 PM with a 1 hour lunch break. It was possible to grant this request because Treatment 3 is the same as the initial workshop in Treatment 4. One of the school principals introduced the researcher. Both of the principals attended the workshop intermittently. In the fall, one workshop was held for all the participants at the close of the school day, from 3:00 PM to 7:30 PM with a 30 minute dinner break. The school principal arranged for a teacher to introduce the presenter and did not attend the workshop.

The workshops began with a student demonstration in the same manner as in Treatment 2 and continued with information about the hand cues as in both Treatment 1

and 2. The added component of the workshop was a 1.5 hour practice session during which participants worked in groups at their tables and planned lessons that they could use with their students the next day. They were encouraged to group by grade level and the researcher circulated the room to assist in adapting the use of the hand cues to the appropriate developmental level. The participants then practiced teaching their lesson to other participants, providing a review of the hand cues for participants as they taught their practice lessons.

Treatment 4: Reading Inservice Training Workshop with Coaching, N = 24

The fourth level of the inservice training included coaching sessions provided by the researcher in addition to the informational material, student demonstration, and practice sessions. Coaching took place at a separate time following the Tucker Reading Workshops and included three components: (1) Thirty minute small group review of hand gestures by grade level with presenter; (2) fifteen minute one-to-one instruction and dialogue with presenter; and (3) thirty minute coaching session in the teacher's classroom. The coaching sessions were the only workshops that provided solid mastery or enactive experience. Reassurance was offered by the coach to assist participants in coping with emotional arousal that might interfere with the learning opportunity. Thus, the increased challenge and risk had the potential to produce a state of arousal and satisfaction that could enhance the learning experience.

Two schools comprised the Treatment 4 sample, a school of 16 in the spring and 8 in the fall. The initial spring workshop was held with the Treatment 3 group as described previously. At the fall Treatment 4 initial workshop, the principal introduced the presenter and attended the workshop intermittently. The same format was followed in the

spring and in the fall. The coaching component of Treatment 4 was presented over the course of three separate days.

On the first day of the coaching period, the researcher met with K, 1 and 2 teachers in grade level groups of approximately 5 for 30 minutes each. During the grade level meetings the teachers discussed their use of the strategies. There was an average of one person in each group professing to use the strategies. Some said they were planning to use them but had not; some said they had used them once or twice. Some teachers stated that they had not used the strategies and did not feel they knew them well enough to do so. Another reason for not using the hand cues was that there was “so much to do.” Some teachers describing their job as overwhelming. In all groups, the researcher reviewed the hand cues and addressed questions about them. During the meetings a schedule was put on the board and teachers signed up for a time to work with the researcher individually or in the classroom. The researcher intentionally allowed flexibility in teacher choices, i.e. some teachers asked that the researcher model use of the hand cues with students, individual, group or whole class, and some teachers volunteered to use the hand cues in front of the researcher for feedback. By shaping the coaching experience to the teacher’s comfort and developmental levels, the researcher hoped to make it a positive experience and control for negative physiological arousal.

The presenter returned on two additional days to meet with each teacher for the second and third coaching sessions as arranged. The second coaching session was a casual contact between presenter and teacher lasting from 5 to 15 minutes during which the presenter clarified the role she would play during the classroom visit and answered questions about use of the hand cue strategy. Attempts were made to maintain

consistency while making adjustment to accommodate individual teacher needs. Where teachers demonstrated signs of anxiety or expressed apologies for not using the cues, the presenter expressed empathy and encouragement.

During the third coaching session 30 minutes was spent in each K-2 classroom working with students in front of the teacher or observing the teacher use the hand cues with the students. In many classes the students were excited about showing the researcher how they used the cues. In the two schools, the researcher saw the hand cues used for beginning reading instruction as well as for spelling and writing lessons. Anecdotal comments about the strategies were positive. Teachers said the hand cues helped with reversals. The researcher was diligent in conducting the coaching sessions in the same manner in both settings.

Coaching sessions were mastery experiences distinguished from the other treatments by the follow-up site visits as described. Verbal persuasion was present in the coaching sessions as well through clarification of hand cue information and encouragement from the presenter and other teachers. Vicarious experience was reintroduced when presenter modeled the strategy in the classrooms. Inherent in mastery experience is the inclusion of the other sources of efficacy development.

Data Collection

Attempts were made to collect data from teachers who were representative of the teaching population to as great an extent as was feasible within limitations set by conditions in the actual teaching environment. School districts were selected for participation on the basis of their willingness to include all primary teachers in the school building rather than offering the workshop to volunteers after hours in a central office

location. This allowed a more realistic professional development experience, as well as some limitations, as the research basis. Where school districts had guidelines in place concerning external research projects, these procedures were followed.

Two themes ran through the descriptions of the workshops: The intentional addition components of the workshops resulted in increases in the length of time spent in workshops as the intensity increased, and the behavior of the school principal varied as a factor of the placement of the treatment in the real educational environment. These themes are summarized in Table 3.1

Table 3.1

Time and principal behavior by treatment group and school

	Time Hours	Principal Behavior During Workshop	
Treatment 1	2	2 schools	Did not attend
		1 school	Participated fully
Treatment 2	2.5	2 schools	Did not attend
Treatment 3	4	1 school	Did not attend
		1 school	Attended intermittently
Treatment 4	5.25	2 schools	Attended intermittently

The study design consisted of workshop formats that added components at each level of intensity and, therefore, logically required more time for successive workshops. In fact, it is inherent in the structure of follow-up coaching that more time would be devoted to

professional development. However, the addition of 1.5 hours to the workshop for follow-up coaching is a modest time commitment for teacher support. As with the amount of time devoted to the workshop, principal behavior was not a tested variable. It can be noted, nevertheless, that one principal participated fully in the workshop (Treatment 1). The random variation in principal behavior may have raised implementation and efficacy scores for that group, but data analysis indicated that the behavior of the principal was not a significant mediator of implementation or efficacy once follow-up coaching was added to the analysis.

Procedures

Informal requests to collect data and conduct workshops in the elementary schools in their districts were made to school districts through mutual acquaintances. Formal application was made in seven school districts where initial communication indicated a possible agreement for participation. One school was removed from consideration because school district guidelines did not match study parameters. Another school district did not respond to the formal application. Thus, the study was conducted in five school districts in the Commonwealth of Virginia. Once permission was granted to collect data and conduct workshops, principals were contacted to set dates for the workshops. At the beginning of each workshop, the researcher explained the purpose of the study, assured confidentiality, and asked teachers to complete the survey honestly.

Workshops were conducted as described previously, and school principals or assistant superintendents were consulted regarding administration of the final surveys. Researcher worked with school system contacts to select the most acceptable method for administering final surveys. In one school the researcher administered the final survey at

a faculty meeting at the principal's request. In another school, surveys were delivered to the school and administered by school personnel. In the remaining schools, final surveys were mailed to the school contact. Surveys were administered approximately one month following workshops. Surveys did not include the name of the participant. However, participants were asked to give the last four digits of their social security number so that initial responses could be connected with final responses by individual.

Data Analysis

Teacher sense of efficacy surveys were analyzed using the Statistical Package for the Social Sciences (SPSS). Prior to running the statistical analyses, a reliability check was run on survey items. For the first research question, correlations were calculated with Pearson r as the statistical analysis to determine the relationship between initial teacher sense of efficacy and initial teacher sense of efficacy for reading. GLM (general linear model) ANCOVA was used for the second research question to determine the effect of level of inservice training on implementation of the new strategy and to adjust for differences in characteristics of training groups. For research questions three and four, GLM ANCOVA was used to determine the contributions made by type of inservice training model on variance in teacher sense of efficacy and teacher sense of efficacy for reading. GLM ANCOVA was also used for research question five to determine the relative weight of teacher sense of efficacy, teacher sense of efficacy for reading, and workshop training model to implementation of the Tucker Signing Strategies for Reading. Initial teacher sense of efficacy, initial teacher sense of efficacy for reading, final teacher sense of efficacy, and final teacher sense of efficacy for reading were

covariables. Training was the independent variable, and implementation was the dependent variable. Figure 3.1 shows the research questions, data sources and analyses.

Generalizability

Although the sample was not a random sample, it did include rural and city schools from all socioeconomic quartiles as identified by free/reduced lunch criteria for the state with gender and years of experience believed to be characteristic of kindergarten through second grade teachers in Virginia Public Schools. The results of this study may be generalized with caution to other public rural and city elementary schools in the Commonwealth of Virginia. It should be acknowledged that the study design utilized cluster sampling with random assignment to treatment group by school because workshops were held in the home schools in order to have a realistic setting. The individual teacher was the unit of study. It should also be noted that data were collected through self-reporting instruments.

Ethical Safeguards

The research proposal was submitted to the Human Subjects Institutional Review Board at The College of William and Mary for authorization to conduct research. Executive summaries of the research results will be provided to schools participating in the study for dissemination to the staff of the schools. Principals were given the choice of having their schools participate in the study and teachers were given the option not to participate.

Figure 3.1

Research Question	Data Sources	Analysis
1. What is the relationship between initial teacher sense of efficacy and initial teacher sense of efficacy for reading?	Initial TSE _{T1} (1-12) Initial TSER _{T1} (13-19)	Correlation Pearson r_{TSET1} , TSERT1
2. Is there a significant difference in implementation of the Tucker Signing Strategies for Reading based on the type of inservice training model?	IMPL (20-25) Group (ABCD)	GLM ANCOVA TSE _{T1} as covariate
3. Is there a significant difference in teacher sense of efficacy based on type of inservice training model?	Change in TSE (1 – 12) Group (ABCD)	GLM ANCOVA
4. Is there a significant difference in teacher sense of efficacy for reading based on type of inservice training model?	Change in TSER (13-19) Group (ABCD)	GLM ANCOVA Years/exp as covariate
5. What is the relative weight of teacher sense of efficacy, teacher sense of efficacy for reading, and inservice training model to implementation of a new reading strategy?	Pretest TSE _{T1} (1-12) Pretest TSER _{T1} (13-19) Posttest TSE _{T2} (1-12) Posttest TSER _{T2} (13-19) Group (ABCD) IMPL (20-25)	GLM ANCOVA TSE _{T1} , TSER _{T1} , TSE _{T2} , TSER _{T2} , Group to IMPL

CHAPTER 4

Licensed primary teachers ($N = 93$) in nine schools completed surveys of their self-efficacy beliefs, level of implementation, and the value they placed on the strategies before and after participating in four levels of inservice training in the Tucker Signing Strategies for Reading. The independent variable was the structure of the training teachers received, and the dependent variables were teacher sense of efficacy in general, teacher sense of efficacy for reading, implementation of the reading strategies, and the value of the reading strategies taught.

Preliminary Analyses

The six groups of survey items on the instrument used for data collection in the present sample were tested for internal consistency. Descriptive statistics were computed for each treatment group and for the full sample. Correlational analysis was used to illuminate the relationships between the variables of interest in the study. GLM (general linear model) ANCOVA was used to test the main and interaction effects of the covariates on the dependent variable.

Reliability of Survey Items

Teachers self-efficacy beliefs were measured with two instruments. One was the Teacher Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) which, when it was developed, was found to be internally consistent in two samples of 224 and 410 participants (2001). The teacher sense of efficacy for reading items maintained the same structure, but were adapted to focus on self-efficacy beliefs for reading instruction. This instrument had limited previous use. It was important to test the reliability of the self- efficacy measures, as well as the implementation items, and the items used to assess

the perceived value of the reading strategies for the current sample. The results of the reliability analyses are reported in Table 4.1

Table 4.1

Reliability

	N of items	N of cases	Alpha
Initial teacher sense of efficacy	12	91	.90
Initial teacher sense of efficacy for reading	7	91	.91
Teacher sense of efficacy after treatment	12	91	.90
Teacher sense of efficacy for reading after treatment	7	92	.88
Implementation	6	92	.99
Value	5	74	.99

The reliability alphas of the new items are compatible with the 12 items from the Teacher Sense of Efficacy survey; together the reliability alphas indicate that the instruments can be considered reasonably reliable for the sample in the present study.

Descriptive Statistics

Table 4.2 displays descriptive statistics for the overall sample and for each treatment group for the initial and final teacher sense of efficacy scores, as well as the change scores. Descriptive statistics for implementation and value are also displayed. Responses to the items on the survey instrument were on a 1 – 9 scale. The mean scores for initial teacher sense of efficacy (TSE) and initial teacher sense of efficacy for reading (TSER) range from 6.9 to 7.19 and 6.96 to 7.20 respectively. These ranges are similar to those found by Tschannen-Moran & Woolfolk Hoy (2001). Teacher sense of efficacy

Table 4.2

Descriptive statistics, within groups and overall

	Treatment 1			Treatment 2			Treatment 3			Treatment 4			Overall		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Initial TSE	28	7.19	1.00	21	6.91	.68	20	7.00	.98	24	6.98	.86	93	7.03	.89
Initial TSER	28	7.17	1.07	21	7.20	1.03	20	7.08	1.20	24	6.96	.99	93	7.10	1.06
Final TSE	28	7.52	.84	21	7.24	.65	20	7.27	1.04	24	7.69	.78	93	7.45	.84
Final TSER	28	7.78	.77	21	7.22	.90	20	7.11	1.17	24	7.99	.81	93	7.56	.96
Change in TSE	28	.34	.64	21	.33	.61	20	.27	.84	24	.71	.64	93	.42	.69
Change in TSER	28	.61	.75	21	.02	.96	20	.04	1.10	21	1.04	.87	93	.46	.99
Implementation Value	28	3.45	1.82	21	2.71	1.99	20	3.73	2.43	24	6.78	1.67	93	4.20	2.49
	28	3.37	1.81	5	3.60	2.62	19	3.65	2.35	24	7.08	1.66	76	4.62	2.56

scores may tend to be toward the upper range of the response scale because teachers who stay in the field generally view themselves as capable teachers. The mean scores for final teacher sense of efficacy and final teacher sense of efficacy for reading range from 7.24 to 7.69 and 7.11 to 7.99 respectively. The variance in efficacy scores does not appear to be large. Except for sense of efficacy for teaching reading in treatment 4, the change in efficacy score is under 1.0 with the overall change scores under .50. Mean implementation scores range from 2.71 to 6.78 indicating a substantial increase in implementation. With a range of 2.35 to 7.08, mean value scores are closely aligned with mean implementation scores.

Because experienced teachers were found to have self-efficacy ratings considered highly stable (Ross, 1995) and self-efficacy beliefs for preservice teachers were more flexible (Ross, 1994) and because the study design did not allow for assignment of treatment with random stratification by years of experience, descriptive statistics by years of experience were compiled.

Table 4.3

Descriptive statistics, years of experience

	Total	Less than 7		7 – 14		15 – 21		22 – 28		Over 28	
	N	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Treatment 1	28	12	42.9	8	28.6	3	10.7	3	10.7	2	7.1
Treatment 2	21	7	33.3	5	23.8	5	23.8	4	19	0	0
Treatment 3	25	4	20	7	35	6	30	1	5	2	10
Treatment 4	24	6	25	4	16.7	6	25	2	8.3	6	25

There is some weighting of inexperienced teachers in the first and second treatment groups. By and large, years of experience are evenly distributed in treatment groups 3 and 4. Nevertheless, years of experience were treated as a covariate with implementation and treatment in the statistical analysis of research question 4.

Correlation Interactions

Table 4.4 presents correlational analyses to illustrate relationships between variables of interest. The four sense of efficacy variables were positively related to each other with correlation coefficients ranging from .42 to .74. The presence of four closely related variables raises an issue of multicollinearity. When two or more variables are highly correlated, they all convey basically the same information and result in loss of statistical power as redundant covariates are added to the model. The general linear model (GLM) ANCOVA was used for statistical analysis when testing main and interaction effects, as that approach adjusts for interactions of the covariates with the factors.

Implementation and value have a near perfect correlation of .94, thus conveying similar information. Of the two, implementation was the variable of primary interest as participants need to achieve some level of implementation before making a judgment of the value of the Tucker Signing Strategies for Reading. As value plays a prominent role in sustaining implementation of the strategies, the strong correlation suggests an excellent fit between the goal of the study and the selected treatment. The Tucker workshop was chosen as the treatment because it was believed to produce powerful results. If the participants had not found that the strategy worked with their students, they would have stopped using it and indicated low value scores.

Table 4.4

Correlations between variables

	Initial TSE	Initial TSER	Final TSE	Final TSER	Value	Change TSE	Change TSER
Implementation	.04	-.05	.15	.24*	.94**	.13	.28**
Initial TSE		.74**	.68**	.42**	.04	-.45**	-.38**
Initial TSER			.57**	.52**	-.06	-.26*	-.56**
Final TSE				.66**	.11	.34**	.04
Final TSER					.21	.26*	.42**
Value						.08	.26*
Diff TSE							.53**
Diff TSER							

* P<.05

** P<.01

Question 1

1. What is the relationship between initial teacher sense of efficacy and initial teacher sense of efficacy for reading?

Pearson correlation was used for this analysis. A significant positive correlation was found between initial teacher sense of efficacy and initial teacher sense of efficacy for reading, $r(93) = .74, p < .01$. This is a fairly strong correlation in social science research, but it is not surprising because primary grade teachers who consider themselves capable teachers in general are also likely to consider themselves skillful at teaching reading. The significant correlation between the teacher sense of efficacy scale and the teacher sense of efficacy for reading scale gives credibility to the reading scale. The GLM ANCOVA approach was selected for the remaining research questions to adjust for the concern of multicollinearity raised by the strong correlation between these items.

Question 2

2. Is there a significant difference in implementation of the Tucker Signing Strategies for Reading based on the type of inservice training model?

Table 4.5

Descriptive statistics, implementation

	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Treatment 1	3.43	.38	2.69	4.12
Treatment 2	2.73	.43	1.87	3.58
Treatment 3	3.73	.44	2.85	4.61
Treatment 4	6.80	.40	5.99	7.60

Table 4.6

Univariate analysis of variance of implementation

	SS	Df	MS	F	Partial Eta Squared
Initial efficacy	1.72	1	1.72	.442	.01
Treatment	228.02	3	76.01	19.51*	.40
Error	342.92	88			
Total	2214.47	93			

R squared = .40 (Adjusted R Squared = .37)

*P<.01

Using GLM ANCOVA for analysis and initial sense of efficacy as covariates, there was a significant difference in implementation of the Tucker Signing Strategies for Reading and training, $F(3, 92) = 19.51, p < .01$. The R square of .40 suggests that 40 percent of the variance in implementation can be attributed to the treatment.

Table 4.7

Significance of implementation by treatment group

	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Treatment 1		.56	.97	.00*
Treatment 2			.35	.00*
Treatment 3				.00*
Treatment 4				

*p<.05

Tukey HSD identified Treatment 4, Information, Demo, Practice and Coaching, as the only training level that varied significantly from each of the other three groups. Clearly, follow-up coaching distinguished Treatment 4 from the other treatment models.

Question 3

3. Does the type of inservice training model make an independent contribution to explaining the variance in teacher sense of efficacy?

Table 4.8

Change in teacher sense of efficacy

	SS	Df	MS	F	Partial Eta Squared
Treatment	2.88	3	.10	2.07	.07
Error	41.18	89	.46		
Total	60.22	93			

The GLM ANCOVA analysis revealed that type of inservice training model did not make an independent contribution to explaining variance in teacher sense of efficacy. Teacher sense of efficacy in general was not significantly impacted by treatment.

Question 4

4. Does the form of inservice training model make an independent contribution to explaining the variance in teacher sense of efficacy for reading?

Table 4.9

Descriptive statistics, variance in teacher sense of efficacy for reading

	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Treatment 1	.61	.17	.26	.95
Treatment 2	.02	.20	-.38	.42
Treatment 3	.04	.21	-.37	.44
Treatment 4	1.04	.19	.67	1.41

Table 4.10

Change in teacher sense of efficacy for reading

	SS	Df	MS	F	Partial Eta Squared
Years Experience	1.37	1	1.37		
Treatment	17.23	3	5.74	6.92*	.19
Error	73.09	88	.83		
Total	110.60	93			

* $p < .01$

R squared = .20 (Adjusted R Squared = .16)

With the GLM ANCOVA analysis using treatment and years of experience as covariates, the type of inservice training model was found to make an independent contribution to explaining the variance in teacher sense of efficacy for reading. The Tucker Signing Strategies for Reading workshop was targeted specifically to the skill of teaching beginning reading and apparently had a significant effect on teacher sense of efficacy for reading while not impacting sense of efficacy in general, although an R square of .20 is not a strong effect size. Table 4.9 shows that the means of the variance in teacher sense of efficacy for reading is larger for Treatment 1 than for Treatment 2 or 3. Treatment 4 variance is clearly larger than any of the other three.

Table 4.11

Significance of differences in variance in teacher sense of efficacy for reading

	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Treatment 1		.12	.15	.37
Treatment 2			1.00	.002*
Treatment 3				.003*
Treatment 4				

* $p < .05$

Tukey HSD identified significant differences between Treatment 4, Information, Demo, Practice and Coaching, and two of the other treatment models, Treatment 2, Information and Demo, and Treatment 3, Information, Demo and Practice but not between Treatment 4 and Treatment 1, Information only. This unexpected pattern of variance in teacher sense of efficacy for reading between treatment groups suggests that components of Treatment 2 and 3 affected some teachers' efficacy negatively while Treatment 1 and Treatment 4 did not have the same effect. This unexpected result is explored further in the Auxiliary Findings section and in Chapter 5.

Question 5

5. What is the relative weight of teacher sense of efficacy, teacher sense of efficacy for reading, and inservice training model to implementation of a new reading strategy?

Table 4.12

Descriptive statistics, relative weight of variables and training to implementation

	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Treatment 1	3.35	.39	2.59	4.11
Treatment 2	2.88	.45	1.97	3.78
Treatment 3	3.86	.46	2.94	4.78
Treatment 4	6.64	.43	5.78	7.51

Table 4.13

Relative weight of efficacy variables and inservice training model to implementation

	SS	Df	MS	F	Partial Eta Squared
Initial teacher sense of efficacy	3.64	1	3.64	.92	.01
Initial teacher sense of efficacy/reading	3.85	1	3.85	.97	.01
Final teacher sense of efficacy	.74	1	.74	.19	.00
Final teacher sense of efficacy /reading	4.88	1	4.88	1.23	.01
Treatment	174.73	3	58.25	14.71**	.34
Error	336.68	85			
Total	2214.47	93			

**p < .01

When all variables were entered in GLM ANCOVA with implementation, treatment was the only variable that significantly affected implementation. While the variance in teacher sense of efficacy for reading was significant when analyzed in a set with training, it was not powerful enough to show significance when considered with the full set of variables and implementation.

Auxiliary Findings

Close examination of Descriptive statistics in Table 4.2 reveals some unexpected decreases in the change in efficacy scores across treatment groups. A steady increase in sense of efficacy was expected from Treatment 1 through Treatment 4 because the components of each treatment were included in the next treatment, i.e. the information component of Treatment 1 was present in each of the other treatments; the added component, demonstration, in Treatment 2, was present in Treatments 3 and 4; and the added component, practice, in Treatment 3, was present in Treatment 4. The mean change in efficacy scores (TSE & TSER), however, was larger for Treatment 1 (.34 & .61) than for Treatment 2 (.33 & .02) or 3 (.27 & .04) for both sense of efficacy in general and sense of efficacy for reading, respectively. Not until Treatment 3 to Treatment 4 (.71 & 1.04), the most intense training, was there an increase. The pattern of decreases in efficacy in some treatment groups can be further illustrated by looking at the surprising number of participants who rated their sense of efficacy lower on the final survey than on the first. Table 4.14 illustrates these unexpected decreases in sense of efficacy responses.

Table 4.14

Number of participants showing decreases and increases in efficacy ratings

	Total	Decrease				Increase			
		Efficacy		Efficacy/reading		Efficacy		Efficacy/reading	
	N	%	N	%	N	%	N	%	
Treatment 1	28	8	29	4	14	19	68	23	75
Treatment 2	21	7	33	4	14	13	62	8	58
Treatment 3	20	8	40	11	55	10	50	9	45
Treatment 4	24	2	8	1	4	20	80	22	92

Note: Some participants showed no change.

The expectation was that few participants would show decreases. In the first 3 treatment groups, between 29 and 40 percent of participant responses reflected decreases in teacher sense of efficacy, and between 14 and 55 percent of participants reflected decreases in teacher sense of efficacy for reading. Treatment 4 responses reflected 8 and 4 percent decreases in teacher sense of efficacy and teacher sense of efficacy for reading respectively. This surprising drop in sense of efficacy indicates that the development of self-efficacy is more complex than expected, reflecting a dip in self-efficacy during the process of efficacy change as awareness of new knowledge and strategies increases but a level of expertise in use of the new knowledge and strategies has not been attained. New challenges illicit a reevaluation of efficacy and without being coupled with ongoing support are likely detrimental to building teaching competence (Tschannen-Moran, Hoy & Hoy, 1998).

CHAPTER 5

Findings

The present study explored the relationship between teacher sense of efficacy and implementation of the Tucker Signing Strategies for Reading, a powerful, but simple reading strategy. Components of the training for the use of Tucker Signing Strategies for Reading were structured into four treatment groups aligned with three of the four sources of self-efficacy development identified by Bandura (1997). Previous research has examined the development of teacher sense of efficacy (Gibson & Dembo, 1984, Guskey 1988); however, no studies were found that separated training components into treatment groups to test the strength of each source of efficacy. The study design placed the exploration of self-efficacy development within a professional development model that used a workshop training focused on short-term goals met through a set of context-specific workshops.

Analyses of participant responses to initial and final survey items revealed the following findings:

- Implementation of the Tucker Signing Strategies for Reading increased as inservice training increased in intensity. The most powerful training format was mastery experience, which was distinguished from the other training formats by the addition of follow-up coaching. The other three formats, verbal persuasion, vicarious experience, and limited mastery experience, while not powerful separately, were also present in the mastery experience format.
- Inservice training format made a significant contribution to the change in teacher sense of efficacy for reading. Through follow-up coaching sessions teachers

increased their use of the Tucker Signing Strategies for Reading and reflected an increase in their sense of efficacy for teaching reading.

- Initial teacher sense of efficacy in general and initial teacher sense of efficacy for reading were not factors in predicting the level of implementation of the reading strategies. Teachers were no more or less apt to implement a new strategy on the basis of their initial sense of efficacy.
- Final teacher sense of efficacy for reading made a significant contribution to explaining variance in implementation. Thus, teachers who reflected a higher teacher sense of efficacy for reading after training in the Tucker method could be predicted to also reflect higher rates of implementation, making the increased teacher sense of efficacy for reading both a product and a predictor of implementation.
- The strength of the effect of the follow-up coaching workshop model on implementation overpowered the other tested variables. Statistical significance of the change in sense of efficacy for reading was lost when compared with the impact of the follow-up coaching model.
- Value covaried almost perfectly with implementation for this sample. The high value placed on the Tucker Signing Strategies for Reading worked with follow-up coaching to strengthen implementation of the strategy. Teachers who valued the strategy were more likely to implement and teachers who implemented were more likely to value this new method.
- Dips in self-efficacy beliefs with exposure to a potentially powerful new teaching strategy underscore the importance of the final treatment component, follow-up

coaching, to bolstering teachers' motivation to overcome the anxiety of trying something new.

Findings of the present study reveal the complexity of the development of self-efficacy and support the need for short-term school improvement goals built around simple, but powerful, learning strategies and supported by follow-up coaching.

Theoretical Implications

The theoretical unpinning of the present study was the construct of self-efficacy. Three of the four sources of efficacy identified by Bandura (1997) formed the structure of the workshops in the treatment. The theoretical model for the processing of the sources of efficacy was the Integrated Model for the Development of Efficacy (Tschannen-Moran, et al. 1998) which presented teacher sense of efficacy as a product of cognitive processing of the interaction between analysis of teaching task and assessment of personal teaching competence. It was predicted that mastery experience in the form of coaching was the most powerful source of efficacy and that a strong increase in sense of efficacy would follow the mastery experience. Because willingness to try new strategies has been associated with sense of efficacy in previous research, implementation was identified as a variable of interest with the expectation of a correlation between initial sense of efficacy and implementation of the new strategy. Because the attitudinal variable, value of strategy, was associated with implementation, it also became a variable of interest. Results of the present study lend support to some parts of the theoretical basis of the study, that is the importance of mastery experience, and present a different view from other parts, that is the importance of initial self-efficacy.

Sources of Efficacy

Bandura (1997) developed the construct of self-efficacy as a component of social cognitive theory. He proposed four sources of self-efficacy beliefs: verbal persuasion, vicarious experience, mastery experience, and physiological arousal. The current study used three of the four sources of efficacy beliefs as the theoretical basis for four levels of inservice training. Verbal persuasion consisted of information about a reading strategy and comprised Treatment 1; vicarious experience was represented by modeling of the strategy and was combined with information about the reading strategy to become Treatment 2. A practice component was added to information and modeling to produce a session considered a limited mastery experience for Treatment 3; and follow-up coaching combined with the elements of the third session to form the most intense training model, Treatment 4.

Physiological arousal was not examined overtly. It may have been present to some degree in the first three treatment groups if teachers became excited about the possibilities for this new strategy presented or alternately if they became anxious that the methods they were using were not the most powerful strategies available and that they were potentially failing some of their struggling readers. It was more likely to have been present in the coaching format. Bandura's theory suggested that, because mastery experience is the most powerful source of efficacy, participants without that experience do not have as strong an opportunity to develop an increase in self-efficacy.

In the present study, a supported mastery experience in the form of follow-up coaching explained 40% of the variance in implementation as reported by participants indicating strong agreement with the confidence placed in mastery experience. However,

there was not a significant relationship between initial sense of efficacy and implementation, or between final sense of efficacy in general and implementation. Participant responses to items on the self-efficacy surveys showed a significant increase in sense of efficacy for reading. Thus, where the training was targeted to a specific teaching context, the sense of efficacy in that area increased following training.

Integrated Model for the Development of Efficacy

Tschannen-Moran, et al. (1998) conceptualized a model for the development of self-efficacy that added two components to Bandura's sources of efficacy, analysis of the teaching task and assessment of personal teaching competence. According to this model, participants in each of the treatment groups processed their workshop experiences while weighing these two components.

In the present study, Treatment 1 participants received information about a new strategy. Because they did not see its effectiveness with their own students, they may not have been personally affected by it and may not have changed their assumptions about the requirements of the teaching task or their personal competency.

Treatment 2 participants saw the strategy in use with their own students. Tschannen-Moran, et al. (1998) said that teachers weigh their self-perceptions in light of assumed requirements of the anticipated teaching task. Knowledge of a new, effective strategy for teaching struggling readers may have changed the "assumed requirements" of the teaching task. An example of this change in perception of teaching task was shown by participants' comments when a student they had taught made obvious improvement

during the short demonstration. It was typical for participants to introduce themselves as former teachers of one of the struggling readers and to acknowledge that the student had not learned to read while in their class.

Treatment 3 participants practiced using the new strategy during the workshop. This limited experience with the skill may not have been strong enough for them to perfect the skill but may instead have resulted in a change of their “assessment of personal competence” when they tried to implement the skill in their classrooms. These participants received a double shock to their self-efficacy as they reevaluated the requirements of the teaching task and their personal competency without continued support.

Treatment 4 participants received coaching support and developed the skill required for using the new strategy. Their self-efficacy recovered and improved significantly for the teaching of reading. This study appears to support the integrated model in which teaching task and personal competence join in influencing self-efficacy.

Teacher Sense of efficacy

The findings from this study suggest that the process of developing efficacy is complex. Where the sources of efficacy were verbal and vicarious experiences, and even limited mastery experience, more than a third of the participants showed a decrease in teacher sense of efficacy and teacher sense of efficacy for reading. This suggests a dip in self-efficacy development that is compatible with Guskey’s (1984) unexpected finding that positive change in instructional effectiveness was related to a more negative teaching self-concept. Wheatley (2002) presented the case that doubts about one’s efficacy are sometimes beneficial and that disequilibrium and uncertainty may come about from a

challenge to teachers' beliefs about their existing practices. Wheatley concluded that uncertainty or doubt appeared throughout literature as crucial for teacher reflection which might lead to new insights. Wheatley challenged Bandura's (1995) claim that it is difficult for a person to achieve while fighting self-doubt, stating instead that it is difficult for teachers to learn and improve without experiencing efficacy doubts. Wheatley suggested, "The best hypothesis may be that teacher sense of efficacy faith and teacher sense of efficacy doubt are both necessary ... to move along the complex and uncertain path towards reformed teaching" (p.14). Wheatley which factors might moderate the influence that teacher sense of efficacy doubts have on teachers. In the present study, follow-up coaching moderated the influence of teacher sense of efficacy doubts.

Tschannen-Moran, et al. (1998) presented self-efficacy development as a cyclical process in which sense of efficacy becomes both a product and a constructor of experiences. The finding of significance between final sense of efficacy for reading and training supports the concept of teacher sense of efficacy for reading as product of cognitive processing of requirement of the teaching task and assessment of personal competency. The finding of significance between final teacher sense of efficacy for reading and implementation suggests support for the idea of sense of efficacy as predictor, if not constructor, of performance, in this case implementation of the reading strategy. Thus, teacher sense of efficacy influences current performance that, in turn, becomes a new source of efficacy information. Because the increase in teacher sense of efficacy for reading was overpowered by the strong effect of follow-up coaching when tested with the full set of study variables, this study supports self-efficacy as a new source of efficacy with the continuing presence of mastery experience. In a sense, as teachers'

bolstered sense of efficacy supports their successful implementation of the new strategy, the implementation experience becomes a mastery experience that contributes to future self-efficacy assessments. This supports the cyclical nature of the Tschannen-Moran, et al. (1998) model.

Implementation

The correlation between training and implementation found in the present study supports the works of Joyce and Showers (1988) who said that vicarious experience limited to watching was minimally effective. Likewise, Stein and Wang (1988) emphasized the need for “continual monitoring of teachers’ implementation levels along with feedback to teachers regarding their implementation progress” (p.185). Guskey (1989) also advocated continued support while teachers attempt to implement new strategies, and Fullan (1993) insisted that exposure to new ideas was not enough without knowing where the idea fits in the current matrix of skills and becoming skilled with it. Sparks (2002) described workshops, university courses and professional institutes as wonderful sources of learning but expressed concern that too often they are the only kind of learning and that, without follow-up that extends into the school and classroom, there isn’t much of an effect on practice. In the present study, inservice training that included follow-up coaching, where participants were able to develop the skill and an understanding of its use, was correlated with increased implementation. The lack of correlation between implementation and the other training models underscores the importance of the follow-up experiences. As Tschannen-Moran, et al. (1998) noted, only in the real setting can a teacher experience a true test of his or her capabilities and feel the emotions associated with the task.

Poole and Okeafor (1989) stated that the level of implementation depends on the characteristics and motivations of teachers. In the present study, variance in the level of implementation of the new strategy was explained by increases in the intensity of training, not by initial sense of efficacy, presenting a different view than Poole and Okeafor. Scribner's (1999) findings that the level of personal teacher sense of efficacy influences how individual teachers experience professional development are not supported by this study if one considers that no correlation was found between implementation and the initial sense of efficacy. There is, however, some consistency in findings for the relationship between final teacher sense of efficacy for reading and implementation where a significant relationship was revealed. The findings of the present study are compatible with the Stein and Wang (1988) findings that teachers who successfully implemented a new program exhibited gains in self-efficacy and teachers who were unsuccessful in implementation reflected a decline in self-efficacy beliefs.

Value

Value is an attributional variable. Participant responses to the value items on the surveys reflected the extent to which they found the Tucker signing cues helpful for teaching reading. Stein and Wang (1988) listed value as an important predictor of implementation of an innovation. Fullan (1993) supported this claim stating that successful change requires a sense of confidence that the program can and will work. McKinney, et al. (1999) concluded that value attributed to whole language influenced persistence. The strong correlation found in the present study between implementation and value of the reading strategy gives credibility to the teacher ratings of implementation levels because it is compatible with previous research. The present study

is in full support of the importance given to value of a strategy in predicting or sustaining implementation. As teachers developed skill with the Tucker Signing Strategies for Reading during coaching sessions, they were able to see its effectiveness, and therefore indicated that they both used and valued it.

Practical Implications

Schmoker (2004) urged educators to create conditions for “short-term wins in specific instructional areas” (p.427). The present study assessed a training model that attempted to do just that. The reading strategy was a short-term success for the teacher who learned to use it with struggling readers. The correlation between increased training and implementation of the reading strategy suggests that Schmoker pointed out an important dynamic in teacher change. Educators would do well to consider Schmoker’s suggestion and approach instructional improvements through short-term wins rather than through more complex and abstract school reform movements. With a short-term strategy as the goal, teachers can identify with the requirement of the task and assess their ability to be competent with it. With support, teachers can become proficient in use of the new strategy, strengthening their skill as a teacher and the effectiveness of the school as a whole. When the element of collaboration that Schmoker emphasizes is present in a workshop format such as follow-up coaching, implementation of the new strategy and a corresponding increase in self-efficacy bring about the “tipping point” (p. 431) that Schmoker describes as the moment when people’s actions and attitudes change dramatically.

Professional Development

Decreases in sense of efficacy in the first three training session formats in this study support the importance of follow-up coaching. Primary grade teachers view teaching reading as an important skill and come to view themselves as doing a good job in that area. When they had a student who did not learn to read they may not have felt personally responsible, consoling themselves with the belief that a few students simply can't be taught to read during the primary years. Information presented in a passive way in Treatment 1 did not challenge teachers' assumptions of the requirements of the job or their personal competency assessment. However, adding the demonstration in Treatment 2 allowed the participants to watch a strategy that obviously assisted a struggling reader. The experience challenged the teachers' assumptions about the job requirements by suggesting that there were potentially powerful strategies that they were not currently employing. The added component of practice in Treatment 3 allowed an opportunity for limited skill development that was not sustained for many participants without follow-up. This may have caused some teachers to adjust their evaluation of their own performance in teaching reading by creating uncertainty and doubt. The findings of this study support professional development formats that mediate the effect of the shock to participants' reassessment of requirements of the teaching task and their personal competency as they participate in skill development programs.

Sparks, (2002) advocated professional learning teams where teachers have a collective responsibility for achievement and meet regularly to learn, plan and support one another. He placed emphasis on professional development that is sustained through components such as teacher study groups, collaboratives, networks, mentoring,

internships, workshops, peer observation with feedback, teacher research groups, and demonstration lessons. Such workshop components have the potential to avoid failure experiences that lower self-efficacy judgments.

Table 4.10 of the present study illustrates support for the professional development approach advocated by Sparks. Only one participant decreased in teacher sense of efficacy for reading in the coaching group as opposed to a total of 24 in the other groups. In overall teacher sense of efficacy, 23 decreased in efficacy beliefs in the first three groups as opposed to 2 in the group with coaching. The assistance received during coaching helped bring skill levels in line with revised expectations of the job. If doubts reflected in decreases in teacher sense of efficacy beliefs are part of the growth pattern as teachers learn to implement a new skill, they should be viewed as natural and desirable reflections that form a readiness to benefit from a professional learning community such as that suggested by Sparks.

Tucker Signing Strategies for Reading

The Tucker Signing Strategies for Reading workshop was an excellent short-term strategy for use in the present study. Teachers who became skilled with it found it successful with beginning readers and rated it high in value. As predicted by Goldin-Meadow, et al. (1999), the harnessing of hand gesture offered teachers a vehicle for presenting a second perspective on the task of teaching reading. The Tucker Signing Strategies for Reading served as a mental model for the sound/letter relationship that supplied meaning for some students where meaning had not previously existed. The present study supports the training as an appropriate short-term goal and an effective teaching strategy.

Direction for Future Research

Is there a point at which a teacher is ready to benefit from instruction, a point when the self-efficacy has decreased because of a gap between new information about job requirements and reassessment of personal competence? What are the consequences of not providing support through follow-up coaching for effective skill development? Is there a link between lack of support during program implementation and teacher sense of efficacy or, for example, teacher retention? Change involves anxiety and uncertainty (Fullan, 1993). Teachers need assistance in confronting and resolving that anxiety and uncertainty (Guskey, 1988). Wheatley suggested a need for research that explored the effects of teacher sense of efficacy doubts on teacher development and reform in particular teaching contexts (2002). Future research that provided clarification of the issues surrounding the dip in self-efficacy during the change process might result in teachers receiving the assistance and support needed to increase their skill and stabilize their implementation of a new strategy.

The question arises: Which is more desirable – increase in teacher sense of efficacy or decrease in teacher sense of efficacy? Higher self-efficacy might not be good if it makes one resistant to change. Doubts about one's efficacy might actually provoke greater openness to new ideas. The expectation was that increases in teacher sense of efficacy was the goal, as the motivational construct is associated with willingness to try new things and persistence, both desirable qualities for teachers. However, if a decrease in teacher sense of efficacy is a part of the process of learning a new skill, then there are times when decrease is desirable. Issues surrounding this question might allow educators to make connections between professional development model and teacher quality, as

well as teacher retention. Professional development models that provide support through follow-up coaching might allow the decrease in self-efficacy to be a part of the process of improving instruction and retaining teachers. This would be a fruitful direction for future study.

The findings of the present study suggest that future research explore time spent in workshops and behavior of the school principal. These two themes surfaced in descriptions of the treatment. Within the confines of the existing data set, data analysis indicated that behavior of the principal did not create a threat to the validity of the findings. The research questions were analyzed without the school in which the principal participated fully in the workshop, and there was no change in the significance of the results. However, the design of the study did not allow data analysis with time as a covariate. The structure of the workshop formats in the present study allotted a modest increase in time for follow-up coaching. Nevertheless, the question arises as to whether the simple addition of time or the in-classroom assistance and collaboration were mediators in the strength of the treatment. More confidence could be placed in eliminating time as an interfering factor if future studies were designed to separate the influence of time from the other variables.

The purpose of the present study was to determine if there would be an increase in teacher sense of efficacy after any of four levels of reading workshops. It was predicted that there would be a positive relationship between teacher sense of efficacy and the training model that included follow-up coaching. Research of the issues surrounding the development of teacher sense of efficacy led to the inclusion of implementation and value of the reading strategy as additional variables of interest. Data analysis indicated that

workshop format was the mediator of sense of efficacy and that the workshop model that included follow-up coaching was a powerful predictor of level of implementation of the new reading strategy.

Appendix A

Initial Teacher Beliefs Survey Instrument

Teacher Beliefs		This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers.								
<i>Directions:</i> Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum. Your answers are confidential. Please respond to each of the questions by considering the combination of your <i>current</i> ability, resources, and opportunity to do each of the following in your present position.		None at all		Very Little		Some Degree		Quite A Bit		A Great Deal
1.	How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8	9
2.	How much can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8	9
3.	How much can you do to get students to believe they can do well in school work?	1	2	3	4	5	6	7	8	9
4.	How much can you do to help your students value learning?	1	2	3	4	5	6	7	8	9
5.	To what extent can you craft good questions for your students?	1	2	3	4	5	6	7	8	9
6.	How much can you do to get children to follow classroom rules?	1	2	3	4	5	6	7	8	9
7.	How much can you do to calm a student who is disruptive or noisy?	1	2	3	4	5	6	7	8	9
8.	How well can you establish a classroom management system with each group of students?	1	2	3	4	5	6	7	8	9
9.	To what extent can you use a variety of assessment strategies?	1	2	3	4	5	6	7	8	9
10.	To what extent can you provide an alternative explanation or example when students are confused?	1	2	3	4	5	6	7	8	9
11.	How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8	9
12.	How well can you implement a variety of teaching strategies in your classroom?	1	2	3	4	5	6	7	8	9
13.	To what extent can you model effective reading strategies?	1	2	3	4	5	6	7	8	9
14.	To what extent can you help your students figure out unknown words when they are reading?	1	2	3	4	5	6	7	8	9
15.	To what extent can you help your students monitor their own use of reading strategies?	1	2	3	4	5	6	7	8	9
16.	To what extent can you teach the sound/letter relationship to your students?	1	2	3	4	5	6	7	8	9
17.	To what extent can you use a variety of informal and formal reading assessment strategies?	1	2	3	4	5	6	7	8	9
18.	How much can you do to meet the needs of struggling readers?	1	2	3	4	5	6	7	8	9
19.	To what extent can you adjust reading strategies based in ongoing informal assessments of your students?	1	2	3	4	5	6	7	8	9
20.	To what extent do you use the Tucker Reading Strategies?	1	2	3	4	5	6	7	8	9
21.	To what extent do you use the Tucker hand cues to model effective reading strategies?	1	2	3	4	5	6	7	8	9
22.	To what extent do you use the Tucker hand cues to help your students figure out unknown words when they are reading?	1	2	3	4	5	6	7	8	9
23.	To what extent do you use the Tucker hand cues to teach the sound/letter relationship to your students?	1	2	3	4	5	6	7	8	9
24.	To what extent do you use the Tucker hand cues to meet the needs of struggling readers?	1	2	3	4	5	6	7	8	9
25.	To what extent do you adjust your reading strategies based on watching students use the Tucker hand cues?	1	2	3	4	5	6	7	8	9

21	What is your gender?	<input type="radio"/>	Male	22	What is your racial identity?	<input type="radio"/>	African American
		<input type="radio"/>	Female			<input type="radio"/>	White, Non-Hispanic
						<input type="radio"/>	Other

23	What is the context of your school?	<input type="radio"/>	Urban	24	What is the approximate proportion of students who receive free and reduced lunches at your school?	<input type="radio"/>	0-20%
		<input type="radio"/>	Suburban			<input type="radio"/>	21-40%
		<input type="radio"/>	Rural			<input type="radio"/>	41-60%
						<input type="radio"/>	61-80%
				<input type="radio"/>	81-100%		

25	What grade level(s) do you teach?		26	How many years have you taught?		27	Please give us the last four digits of your Social Security Number, so we connect your current answers with those later, and at the same time maintain your anonymity.							
		<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Final Teacher Beliefs Survey

Teacher Beliefs		This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Your answers are confidential.								
<p><i>Directions:</i> Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.</p> <p>Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.</p>		None at all		Very Little		Some Degree		Quite A Bit		A Great Deal
1.	How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8	9
2.	How much can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8	9
3.	How much can you do to get students to believe they can do well in school work?	1	2	3	4	5	6	7	8	9
4.	How much can you do to help your students value learning?	1	2	3	4	5	6	7	8	9
5.	To what extent can you craft good questions for your students?	1	2	3	4	5	6	7	8	9
6.	How much can you do to get children to follow classroom rules?	1	2	3	4	5	6	7	8	9
7.	How much can you do to calm a student who is disruptive or noisy?	1	2	3	4	5	6	7	8	9
8.	How well can you establish a classroom management system with each group of students?	1	2	3	4	5	6	7	8	9
9.	To what extent can you use a variety of assessment strategies?	1	2	3	4	5	6	7	8	9
10.	To what extent can you provide an alternative explanation or example when students are confused?	1	2	3	4	5	6	7	8	9
11.	How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8	9
12.	How well can you implement a variety of teaching strategies in your classroom?	1	2	3	4	5	6	7	8	9
13.	To what extent can you model effective reading strategies?	1	2	3	4	5	6	7	8	9
14.	To what extent can you help your students figure out unknown words when they are reading?	1	2	3	4	5	6	7	8	9
15.	To what extent can you help your students monitor their own use of reading strategies?	1	2	3	4	5	6	7	8	9
16.	To what extent can you teach the sound/letter relationship to your students?	1	2	3	4	5	6	7	8	9
17.	To what extent can you use a variety of informal and formal reading assessment strategies?	1	2	3	4	5	6	7	8	9
18.	How much can you do to meet the needs of struggling readers?	1	2	3	4	5	6	7	8	9
19.	To what extent can you adjust reading strategies based in ongoing informal assessments of your students?	1	2	3	4	5	6	7	8	9
20.	To what extent do you use the Tucker Reading Strategies?	1	2	3	4	5	6	7	8	9

Directions: Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum. Your answers are confidential.

Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.

	None at all	1	2	3	4	5	6	7	8	9
26. To what extent do the Tucker hand cues help you model effective reading strategies?	1	2	3	4	5	6	7	8	9	9
27. To what extent do the Tucker hand cues help your students figure out unknown words when they are reading?	1	2	3	4	5	6	7	8	9	9
28. To what extent do the Tucker hand cues help you teach the sound/letter relationship to your students?	1	2	3	4	5	6	7	8	9	9
29. To what extent do the Tucker hand cues help you to meet the needs of struggling readers?	1	2	3	4	5	6	7	8	9	9
30. To what extent do the Tucker hand cues help you adjust your reading strategies based on watching students use the cues?	1	2	3	4	5	6	7	8	9	9

31. What is your gender?	<input type="radio"/>	Male	32. What is your racial identity?	<input type="radio"/>	African American
	<input type="radio"/>	Female		<input type="radio"/>	White, Non-Hispanic
				<input type="radio"/>	Other

33. What is the context of your school?	<input type="radio"/>	Urban	34. What is the approximate proportion of students who receive free and reduced lunches at your school?	<input type="radio"/>	0-20%
	<input type="radio"/>	Suburban		<input type="radio"/>	21-40%
	<input type="radio"/>	Rural		<input type="radio"/>	41-60%
				<input type="radio"/>	61-80%
				<input type="radio"/>	81-100%

35. What grade level(s) do you teach?	<input type="checkbox"/>	<input type="checkbox"/>	36. How many years have you taught?	<input type="checkbox"/>	37. Please give us the last four digits of your Social Security Number, so we connect your current answers with those later, and at the same time maintain your anonymity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1			1		0	0	0	0
	2			2		1	1	1	1
	3			3		2	2	2	2
	4			4		3	3	3	3
	5			5		4	4	4	4
	6			6		5	5	5	5
	7			7		6	6	6	6
	8			8		7	7	7	7
	9			9		8	8	8	8
						9	9	9	9

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