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TEACHER EFFICACY AND STUDENT ACHIEVEMENT
QUANTITATIVE RESEARCH STUDY

By
Norma Jean Weatherly

A Thesis

Submitted in partial fulfillment of the requirements of the
Masters of Arts Degree
Of
The Graduate School
At
Rowan University
April 18, 2002

Approved by _____
Professor

Date Approved April 15, 2002

ABSTRACT

Norma Jean Weatherly

Teacher Efficacy and Student Achievement
Quantitative Research Study 2002
Dr. Gerald S. Lysik
Educational Leadership

The purpose of this study was to determine the effect of high teacher self-efficacy, both teaching and personal, upon student achievement. First, the 7th grade academic math teachers at the XYZ Middle School were asked to complete the 30-item Teacher Efficacy Scale (Gibson 1983), in order to obtain both a teacher with high efficacy (teacher-A), and a teacher with low efficacy (teacher-B). Second, ten pairs of students (ten from both teacher-A and teacher-B) of equal caliber/academic ability (based upon their Stanford 9 math score, and average in math, for 6th grade) were chosen from the two academic math classes. Third, the ten pairs of students' post-math average (math grades for the first two marking periods of 7th grade), were analyzed and compared with their pre-math average (6th grade Stanford 9 math score and 6th grade math average) in order to measure the performance difference between the two averages, and determine the relationship between teacher efficacy and student achievement. In conclusion, the results of this study failed to provide substantial support for the hypothesis (that teachers' sense of efficacy is in fact related to student achievement). Overall, the ten pairs of students' post-math averages decreased. Therefore, the intern looked at both the limitations of the study and the multitude of variables that lend to both the assessment of teacher efficacy, and student achievement in order to provide an explanation for the unexpected results of this study.

MINI-ABSTRACT

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Acknowledgments

In writing this book I obtained valuable learning experiences in regard to communication, collaboration, and educational leadership skills. More importantly, I gained valuable insight on resolving complex problems. Specifically, this study offered additional insight on the important issue of “teacher efficacy and student achievement”.

First, I would like to thank my two children (my biggest motivators), Joseph Andrew Weatherly, and Lisa Dawn Weatherly and my partner Charles Loges, for their love, patience, and support during my endeavor to reach this pinnacle in my educational career.

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Chapter 1

Introduction

The primary focus of this study was to determine the effect of high teacher self-efficacy, both teaching and personal, upon student achievement. Teacher efficacy is one of the most important factors that affect student achievement. First, a brief overview describing the constituents/variables and procedures involved in conducting this study is provided. Second, the importance of this study is addressed. Third, teacher efficacy both high and low is defined. Fourth, the multiple variables that affect teacher efficacy are discussed.

The Intern employed a research design that was quantitative. First, the 7th Grade math teachers at the XYZ Middle School were asked to complete the 30-item Teacher Efficacy Scale (Gibson, 1983), in order to obtain both a teacher with high teacher efficacy (teacher-A), and a teacher with low teacher efficacy (teacher-B). Second, ten pairs of students (ten from teacher-A and ten from teacher-B) of equal caliber/academic ability (based upon Stanford 9 score in math, and average grade in math, for 6th grade) were chosen from the two equal academic level math classes. Third, and finally, the ten pairs of students' average math grade for the first two marking periods of 7th Grade, were measured and analyzed in order to determine the relationship between teacher efficacy and student achievement.

Student growth and achievement is a major concern of all educators. Teacher self-efficacy, known as one of the most important factors that affect student achievement was addressed in this study.

More importantly, previous research studies have proven that teacher self-efficacy, both teaching and personal is directly related to student achievement. The results of this study will hopefully provide additional support/documentation toward previous research findings that show a positive correlation between Teacher Efficacy and Student Achievement. Also, additional insight on teacher efficacy (an important issue that needs to be continually addressed) is provided. Most importantly, all those concerned with student achievement (i.e., teachers, administrators, and parents etc.) were interested in learning more about the relationship between “teacher efficacy”, and student achievement.

Educators are constantly looking for ways to improve upon the variables that they have control over in regard to improving student achievement. Educators need to gain a better understanding of personal teaching efficacy and its major influence on student achievement, in order to provide staff development that leads to a greater sense of personal efficacy among teachers. Therefore, teacher efficacy is an area that educational institutions can foster. According to Ashton (1984), teachers who have a high sense of efficacy feel that their work with students is important and meaningful; they feel that they are responsible for their students’ success and have a positive impact on student learning. Whereas, teachers with a low sense of efficacy feel frustrated and discouraged about teaching, and place the responsibility for learning on their students. Emphasis was placed upon the most pertinent teacher efficacy research studies and how they pertained to this overall research study objective.

Most importantly, several research studies that provided findings/conclusions supporting the positive relationship between teacher efficacy and student achievement were expounded upon.

However, teacher efficacy is influenced by a multitude of variables. Various research studies have been conducted in regard to the multitude of variables that lend to the assessment of teacher efficacy. One important variable that affects teacher efficacy according to Ashton & Webb (1986) is the teacher's own beliefs about his/her personal ability to influence their students' performance. Another variable that affects teacher efficacy is the teacher's generalized expectancies for internal-external control over student success and failures in the classroom. Third and most importantly, is the extent to which a teacher can in general motivate students to achieve. These three variables greatly affect teacher efficacy and were emphasized in several of the scholarly research studies that provided documented support toward this research study objective.

Two other important variables that affect teaching efficacy are the teacher's level of teaching experience, and the teacher's classroom behavior. According to Benz, Bradley, Alderman, & Flowers (1992) pre-service teachers tend to bring preconceptions about motivation and socialization of students to bear on problems, thus having an unrealistically high sense of efficacy; whereas, experienced teachers tend to have a more realistic view about the environmental factors that influence student achievement, thus having a lower sense of efficacy.

According to Rosenshine (1979) research on teacher use of time and direct instruction may provide some possible linkage between teacher efficacy and student learning. Also, differences exist in teacher feedback patterns between high and low efficacy teachers.

Due to the limitations within this study and the multitude of variables that affect teacher efficacy, the central focus of this research study objective was based upon the following two variables: 1)obtaining both a teacher with high and low efficacy using the following teacher efficacy measurement instrument {Teacher Efficacy Scale (Gibson, 1983)}; and 2)selecting ten pairs of students (ten from teacher-A and ten from teacher-B) with equal academic caliber, and the analysis of the ten pairs of students' average math grade for the first two marking periods of 7th grade; in order to determine the relationship between teacher efficacy and student achievement.

Chapter 2

Literature Review

This chapter expounds upon the most pertinent scholarly research studies that provided documentation and support for the research object of this study. The results of these studies indicate that there is an apparent correlation between teaching efficacy and student achievement. The relevance of these studies and how they pertain to the intern's research objective is provided. First, the study of Ashton & Webb (1986) on self-efficacy, centered upon Bandura's (1977) two-dimensional construct is noted. Second, an overview of the first educational research studies on teacher efficacy conducted by the Rand Corporation is provided. Third, the results of a study that expounded upon the conceptualization of teacher belief patterns by Greenwood, Olejnik, & Parkay (1990), are described. Fourth, is a note on the Rose & Medway (1981) study, involving the Teacher Locus of Control Scale-TLC. Fifth, a study that assessed Prospective Teachers' Sense of Efficacy and Beliefs About Control (Woolfolk, & Hoy, 1990) is provided. Sixth, a study that examined the personal teaching efficacy of six groups of educators and their various levels of teaching experience (Benz, Bradley, Alderman, & Flowers, 1992) is presented. Seventh, another significant study which addressed the validity of the various instruments used to measure teachers' efficacy (A Construct Validation, Gibson & Dembo 1984) is presented. Finally, the most pertinent studies (Making a Difference: Teachers' Sense of Efficacy and Student Achievement, and Teachers' Sense of Efficacy: The Multidimensional Construct (Ashton & Webb 1986) that support the research objective of this study is expounded upon.

The theoretical framework for teacher efficacy centers on the two-dimensional construct of Bandura's (1977) self-efficacy concept (Ashton & Webb, 1986). The two components are: 1) outcome expectancy - the belief that certain behaviors can lead to specific outcomes in a generalized sense; and 2) efficacy expectations – individuals' beliefs about their own competence to bring about the outcome. Bandura's self-efficacy concept is reflected in the following studies.

The first educational research studies on teacher efficacy were introduced by two Rand Corporation evaluation studies (Armor, Conry-Osequera, Cox, Kin, McDonnel, Pascal, Pauly, and Zellman, 1976; Berman, McLaughlin, Bass, Pauly, and Zellman, (1977) that reported a significant relationship between teacher efficacy and student achievement. Two five-choice Likert scale items ranging from strongly agree to strongly disagree with neither agree nor disagree mid-points were used to measure teachers' sense of efficacy:

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.
2. If I really try hard, I can get through to even the most difficult or unmotivated students. (Berman et al., 1977, pp. 159-160).

Expounding upon the stated conceptualization, at least four different combinations of the two items are possible: a) teachers in general cannot motivate students and I am no exception to this rule; b) teachers in general can motivate students but I personally cannot; c) teachers in general can motivate students and I am no exception to this rule; and d) teachers in general cannot motivate students but I personally can if I try hard (Greenwood, Olejnik, & Parkay, 1990).

This study assessed the relationship between the above four teacher efficacy belief patterns and teachers' feelings of stress, locus of control, gender, race/ethnic origin, education, age, grade level, and teaching experience. The results demonstrated that females who teach elementary grades believe that they are more likely able to motivate students to achieve, therefore, experience less stress, and obtain a greater internal locus of control than do teachers who lack the belief in being able to affect student performance.

Another study important to mention is the Measurement of Teachers' Beliefs in Their Control over Student Outcome (Rose, & Medway, 1981). In this study a 28-item forced choice scale (Teacher Locus of Control Scale-TLC) was developed to measure teachers' generalized expectancies for internal-external control over student success and failure in the classroom.

Validation studies proved the TLC to be internally consistent and produce higher correlation with classroom teaching behaviors (i.e., their willingness to adopt innovative techniques from in-service training) than Rotter's I.E. scale (a more generalized measure of control beliefs).

The following study called Prospective Teachers' Sense of Efficacy and Beliefs About Control (Woolfolk, & Hoy, 1990) addressed the following two independent dimensions: 1)teaching efficacy (TE); and 2)personal efficacy (PE), and the clarification of the concept of efficacy itself. A sample group of 182 prospective teachers were studied in order to compare efficacy to their beliefs about control and motivation. Both teaching efficacy (TE) and personal efficacy (PE) showed a correlation with beaucratic orientation, however in opposing directions.

In examining one of the various aspects of teaching efficacy the following study Personal Teaching Efficacy: Developmental Relationships in Education (Benz, Bradley, Alderman, & Flowers, 1992) compared the personal teaching efficacy of six groups of educators with the various levels of teaching experience. Basically, they used the Personal Teaching Scale (Ashton, Olejnik, Crocker & McAuliffe, 1982) to determine the personal teaching efficacy scores of the three levels (entry, middle, and student teachers) of preservice teachers to that of experienced teachers. The respondents were asked to indicate "how effective you think you would be now in handling each situation" on a 7-point scale ranging from extremely ineffective (1) to extremely effective (7). (See Appendix-A, 15 efficacy vignettes developed by Ashton et al. (1982).

Under the area of motivation, classroom teachers displayed a lower sense of efficacy than the preservice teachers. Clark (1988) discussed the “implicit theories” of teaching that those entering training for the profession bring with them. Their theories are limited in their value to student learning and are often erroneous. It was suggested in this study that the Personal Teaching Efficacy Scale used here warrants further development, especially since the measure of reliability were unclear in other studies. The findings in this study indicated that preservice teachers appeared to bring preconceptions about motivation and socialization of students that were incorrect and contributed to them having an unrealistically high sense of efficacy. This study touched upon the apparent differences that exist between preservice teachers and experienced teachers regarding personal teaching efficacy beliefs. Since the use of different measures has created problems in interpreting and comparing the results of various teacher efficacy studies another significant study was generated to address this issue: Teacher Efficacy: A Construct Validation (Gibson, & Dembo, 1984). In this study another important instrument was developed to measure teacher efficacy. However, this instrument provides construct validation support for the variable, and examines the relationship between teacher efficacy and observable teacher behaviors. A 30-item Teacher Efficacy Scale (See Appendix-B, Teacher Efficacy Scale) provided a multitrait-multimethod analysis of three teacher traits (teacher efficacy, verbal ability, and flexibility). Also, classroom behaviors were observed and data relating to academic focus and teacher feedback behaviors were recorded and measured.

The results indicated the difference between high-and-low-efficacy teachers in time spent in whole class versus small group instruction, teacher use of criticism, and teacher lack of persistence in failure situations. The general conclusion was that teacher efficacy is multidimensional, and consists of at least two dimensions that correspond to Bandura's two component model of self-efficacy. More importantly, the classroom observation data indicates that teacher efficacy may in fact encourage certain patterns of classroom behavior that promotes student achievement.

Another important study that supported this objective was *Fostering Personal Teaching Efficacy Through Staff Development and Classroom Activities* (Fritz, J. J., Miller-Heyl, J., Kreutzer, J. C., & MacPhee, D., 1995). A treatment group of 130 teachers were chosen to participate in the DARE to be you (DTBY) training program. Whereas, 111 teachers from similar demographic school districts were chosen as the comparison or control group. Most of the teachers in both groups taught at the elementary level. Most importantly, both groups were comprised of school districts that represented a cross section of urban, suburban, rural, and rural isolated communities (thus, providing external validity by obtaining generalizability).

A general Teacher Efficacy Scale which has two 8-item scales was used to measure the belief that external factors constrain any teacher's ability to be a change agent, and a personal teaching efficacy score that measures the belief in one's personal ability to bring about changes in student learning and behavior.

Both Likert-type responses that range from strongly disagree (1) to strongly agree (6), and Bandura's two-factor theoretical model of self-efficacy were used to provide factorial validity.

The internal consistencies for the two scales were .78 and .75. There was a moderator variable (teacher investment in the curriculum) that had an affect on personal teaching efficacy. Assessment of the effects of the in-service teacher training on self-esteem was provided using the Self-Perceptions of the teacher Role (SPTR) that contained 22-items that assess four types of self-perceptions. DBTY experimental group documented the exact DBTY activities they conducted with their students throughout the school year. Three tests were administered (i.e., pretest, post test, and a 9-month follow-up) to note changes in self-efficacy and self-perceptions that proceed training and the use of DTBY curriculum. However, assessment of the comparison teachers was only conducted at the pretest and 9-month follow-up. During the pretest all of the teachers were given the demographic and professional experience questionnaire, Teacher Efficacy Scale, and the SPTR. One year later both groups to include the students in the intervention and comparison classrooms were given follow-up assessments. Only 76% of the DTBY and 67% of the comparison group teachers completed the follow-up battery.

Although, the comparison group held a higher percentage of master's degrees and belonged to more professional organizations than did the experimental group, they did not subscribe to higher levels of self-efficacy and perceptions of competence.

Furthermore, the comparison group more often endorsed the belief that teacher effectiveness is constrained by external forces. Those teachers who participated in the DTBY gained or maintained the most positive attitudes about teaching. The DTBY training helped teachers to feel a sense of increased personal competence, and a continued investment and reinforcement for their role as teachers.

Results indicated a significant correlation between higher teacher curriculum involvement and a broader sense of personal teaching efficacy. Most importantly, teachers with a greater sense of efficacy are more willing to expend greater efforts to assist students in learning and encourage students to achieve a higher level of academic success.

In concluding this literature review, presented is the most important study that directly relates to and provides support for the research objective of this study (Teacher Efficacy and Student Achievement). Not only did Patricia Ashton write *Teacher Efficacy: A Motivational Paradigm for Effective Teacher Education* (1984), but she and Rodman B. Webb (1986) wrote *Making a Difference: Teachers' Sense of Efficacy and Student Achievement*. In which they conducted a study that consisted of a multidisciplinary approach that would clarify the nature of the efficacy construct. (See Appendix-C, *Teachers' Sense of Efficacy: The Multidimensional Construct*). According to Ashton & Webb (1986) teachers with a high sense of teaching efficacy believe all their students are capable of learning.

Whereas, teachers with a low sense of efficacy have come to believe that some students cannot or will not learn in school and that there is nothing any teacher can do to alter this unhappy reality. (See Appendix-D, Comparison of Universal and Personal Sense of Efficacy). Below are the two phases of the middle school efficacy study:

- 1) a questionnaire study designed to compare the efficacy attitudes of teachers in the two school settings; and 2) a micro ethnography that investigated the classrooms of two teachers in each of the two schools. Phase two was designed to explore the relationship between school organization and such variables as teachers' efficacy attitudes, collegial relationships, experience of stress, and teaching styles. (Ashton, & Webb 1986 pp.93)

The findings of this study indicate that school organization, leadership and ethos contribute to the establishment and maintenance of teachers' sense of efficacy. Furthermore, Ashton & Webb's findings support the hypothesis that teachers' sense of efficacy is in fact related to student achievement. (See Appendix-E, A Mediation Model of the Relationship Between Teachers' Sense of Efficacy and Student Achievement).

Although various research studies have been conducted in regard to the multitude of variables that lend to the assessment of teacher efficacy, more research is needed in order to develop a valid multidimensional teacher efficacy measurement instrument. In order to draw valid conclusions about any teacher efficacy study one must understand both how teaching efficacy is defined and how teacher efficacy is measured.

Chapter 3
Design and Methodology

This chapter provides a description of the research design and methodology used to conduct this study. First, a general description of the research design is provided. Second, a description of the research instrument used in the study is presented. Third, the sample and sampling technique used in the study is defined. Fourth, the data collection approach is discussed. Fifth, and finally, a description of the data analysis plan is provided.

The research design that the intern employed was quantitative. It was non-experimental and ex post facto research. This enabled the intern to make valid interpretations through comparisons and analysis of the data/statistics. Statistical precision was used to test the hypothesis. The overall scheme of the research design was to provide both internal and external validity. Data bias was reduced by purposefully assigning both the teachers and students in this study. First, all 7th grade math teachers were asked to complete the 30-item Teacher Efficacy Scale (Gibson, 1983). After the analysis and interpretation of the teachers' responses, a teacher with high teacher efficacy (teacher-A), and a teacher with low teacher efficacy (teacher-B), were chosen in order to conduct the second phase of the research study. Second, ten-pairs of 7th grade math students were selected (based upon their equal caliber/academic ability, determined from their Stanford 9, and average 6th grade math scores), from both the high (teacher-A), and low (teacher-B) efficacy teachers' 7th grade math classes. Most importantly, confounding variables were eliminated (i.e., each teacher followed the same course of study – each taught from the same text, and used the same course materials).

Also, the intern exercised control over the extraneous variables (i.e., students were selected based upon their equal academic ability according to their Stanford 9, and average grade in math for 6th grade). At the end of the first and second marking periods the ten-pairs of 7th grade math students' performance (average grade for the first-half of the year) was measured in order to determine the relationship between teacher efficacy and student achievement.

The research instrument used in this study was a 30-item Teacher Efficacy Scale (Gibson, 1983). This instrument was chosen based upon the following important factors. It is a previously tested scholarly questionnaire survey. Therefore, there was no need for a pilot test to be conducted. The questionnaire survey consists of 30 selected-response/forced choice questions, in Likert format, that range from strongly disagree (1) to strongly agree (6). It originally had 53 sample items that were based upon teacher interviews and an analysis of the literature that reported characteristics of teachers identified by previous researchers as having a sense of efficacy. Most importantly, the preliminary data analysis of this instrument involved principal factor analysis therefore; items with poor variability were eliminated (Gibson & Brown, 1982). Factor 1 represents a teacher's sense of personal teaching efficacy, or belief that one has the skills and abilities to bring about student learning (Gibson & Dembo, 1984). (Berman & McLaughlin, 1977; Armor et al., 1976), "If I really try hard, I can get through to even the most difficult or unmotivated students."

Factor 2 represents a teacher's sense of teaching efficacy, or belief that any teacher's ability to bring about change is significantly limited by factors external to the teacher, such as home environment, family background, and parental influences (Gibson & Dembo, 1984). (Berman & McLaughlin, 1977; Armor et al., 1976), "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."

The following purposeful samples were selected to carry out the research for this study. The first phase of the study involved the 7th grade math teachers, at the XYZ Middle School. All 7th grade math teachers were asked to participate by completing the Teacher Efficacy Scale Survey (Gibson, 1983). The questionnaire survey consists of 30 selected-response, and forced-choice questions. After all responses were analyzed, two teachers were chosen, based upon their teacher efficacy scores (i.e., one low and one high). The second phase of the study involved the systematic sampling of ten-pairs of 7th grade academic math students. Ten equally caliber/academic ability paired groups of students (one pair from the selected high efficacy math teacher and one pair from the selected low efficacy math teacher) were chosen (based upon both their performance on the Stanford 9 score in math, and the average grade in math, for 6th grade).

The data collection approach consisted of three phases. The first phase involved the analysis of the Teacher Efficacy Scale (Gibson, 1983) Questionnaire results. Based upon the questionnaire results, two 7th grade math teachers were chosen (one with high teacher efficacy and one with low teacher efficacy) to participate in this study.

Second, ten-pairs of 7th grade academic math students were selected (one pair from the high efficacy math teacher and one pair from the low efficacy math teacher). The math students were chosen based upon their equal academic caliber. To determine their equal academic caliber in math, the following two criteria were assessed; their performance on the Stanford 9, in math, and their average grade in math, for 6th grade. Third, at the end of the second marking period, the students' math grades for both the first and second marking periods were analyzed. Finally, the students' average in math for the first two marking periods was cross analyzed with their initial two math scores (i.e., Stanford 9, and average math grade for 6th grade), in order to determine the relationship that exists between teacher efficacy and student achievement.

Finally, provided is a description of the data analysis plan that the intern employed in conducting this study. The assessment of the 7th grade academic math teachers' level of teaching efficacy was determined through the statistical analysis of the data obtained from the teachers' responses to the Teaching Efficacy Scale Questionnaire (Gibson, 1983). Each of the response choices on the questionnaire survey was assigned a numerical value in order to increase the accuracy of the statistical tabulation.

At the end of the second marking period the ten-pairs of 7th grade academic math students' performance scores (average math grade for the first and second marking periods of 7th grade) were collected, analyzed, and measured with their initial performance scores (Stanford 9, and average math grade for 6th grade), in order to determine the relationship between teacher efficacy and student achievement.

Chapter 4

Presentation of the Research Findings

This chapter presents the data analysis of the research findings in order to determine the effect of high teacher self-efficacy, both teaching and personal, upon student achievement. First, the assessment of the 7th grade academic math teachers' level of teaching efficacy is presented. Second, the statistical analysis of the ten-pairs of 7th grade academic math students' pre and post performance scores/math averages are presented and discussed. Finally, the following two major questions are answered: 1) what information was found? and 2) what did it mean?

The first phase of this study's data analysis involved the assessment of the 7th grade academic math teachers' level of teaching efficacy. The 7th grade academic math teachers' Teacher Efficacy Scale Survey (Gibson, 1983) responses were analyzed, in order to determine both a teacher with high teacher efficacy, and a teacher with low teacher efficacy. The Teacher Efficacy Scale Survey consists of 30 selected-response, and forced-choice questions. Each selected-response and forced-choice item was assigned a numerical value ranging from 1-6 (1=Strongly Disagree, to 6=Strongly Agree) using a Likert Scale. (See Appendix-B, Teacher Efficacy Scale developed by Gibson (1983). Two 7th grade academic math teachers were chosen, out of a total of three participants, based upon their teacher efficacy scores (i.e., one with the lowest and one with the highest score). The teacher with the highest score was assigned as Teacher-A (the high efficacy academic math teacher), and the teacher with the lowest score was assigned as Teacher-B (the low efficacy academic math teacher). Table-1 depicts the High and Low Teachers' Efficacy Scale Scores.

**Table 1:
High and Low Teachers' Efficacy Scale Scores**

Teacher Efficacy Scale Questions (1-15)	Teacher-A Likert Scale Score	Teacher-B Likert Scale Score	Teacher Efficacy Scale Questions (16-30)	Teacher-A Likert Scale Score	Teacher-B Likert Scale Score
1.	5	2	16.	4	4
2.	5	4	17.	4	2
3.	4	1	18.	2	2
4.	2	2	19.	4	4
5.	5	4	20.	5	6
6.	5	3	21.	4	4
7.	3	1	22.	6	5
8.	6	4	23.	5	2
9.	2	3	24.	6	2
10.	4	2	25.	6	4
11.	5	3	26.	1	2
12.	5	5	27.	4	2
13.	3	4	28.	6	3
14.	4	3	29.	4	3
15.	6	3	30.	3	5
Sub-Total Efficacy Scale Score	64	44	Sub-Total Efficacy Scale Score	64	50
n/a	n/a	n/a	Total Teacher Efficacy Scale Score	128	94

The high efficacy teacher's total score was 128, compared to the low efficacy teacher's score of 94. Therefore, there was a 34 point difference between the high and low efficacy teachers' scores.

The second phase of this study's data analysis involved the selection of ten-pairs of academic math students (one pair from Teacher-A, the high efficacy academic math teacher, and one pair from Teacher-B, the low efficacy academic math teacher). However, before the ten-pairs of academic math students were chosen, one academic math class from each teacher was selected in order to control the extraneous variable of time. Choosing an academic math class that was taught during a similar time frame from each teacher controlled this important variable. Therefore, Teacher-A's third period academic math class, and Teacher-B's second period academic math class was selected. The ten-pairs of students were then chosen from these two selected academic math classes based upon the following two important criteria (6th grade Stanford-9 score, and 6th grade math average). Data bias was reduced by purposefully assigning both the teachers and the students in the study. Table-2 depicts the ten-pairs of selected academic math students' pre-performance scores (Stanford-9, and 6th grade math average) used in determining their selection and participation within this study.

**Table 2:
Ten-Pairs of Students'
Stanford-9 and 6th Grade Math Average Scores
And Average of Combined Scores**

Students of High Efficacy Teacher-A	Stanford-9 Score Spring 2001	6th Grade Math Avg.	Average of STF-9 and 6th Grade Math Avg.	Students of Low Efficacy Teacher-B	Stanford-9 Score Spring 2001	6th Grade Math Avg.	Average of STF-9 and 6th Grade Math Avg.
Student 1	86%	85%	86%	Student 1	78%	85%	82%
Student 2	90%	85%	88%	Student 2	76%	80%	78%
Student 3	97%	80%	89%	Student 3	80%	75%	78%
Student 4	80%	85%	83%	Student 4	85%	90%	88%
Student 5	92%	85%	89%	Student 5	86%	95%	91%
Student 6	81%	95%	88%	Student 6	86%	85%	86%
Student 7	85%	95%	90%	Student 7	88%	80%	84%
Student 8	76%	85%	81%	Student 8	83%	90%	87%
Student 9	76%	85%	81%	Student 9	95%	95%	95%
Student 10	78%	90%	84%	Student 10	81%	90%	86%

The third phase of this study's data analysis involved the collection and analysis of the ten-pairs of academic math students' first and second marking period math grades. Table-3 depicts the ten-pairs of selected academic math students' performance scores for marking periods' 1 and 2, and math average for both marking periods 1 and 2.

**Table 3:
Ten-Pairs of Academic Math Students'
Marking Periods 1 and 2 Grades
And Average for Both Marking Periods 1 and 2**

Students of High Efficacy Teacher-A	Marking Period 1 Math Grade	Marking Period 2 Math Grade	Average Math Grade for Mk Pd 1 and 2	Students of Low Efficacy Teacher-B	Marking Period 1 Math Grade	Marking Period 2 Math Grade	Average Math Grade for Mk Pd 1 and 2
Student 1	73%	87%	80%	Student 1	82%	78%	80%
Student 2	81%	84%	83%	Student 2	73%	65%	69%
Student 3	87%	86%	87%	Student 3	67%	68%	68%
Student 4	67%	67%	67%	Student 4	76%	67%	72%
Student 5	68%	84%	76%	Student 5	85%	79%	82%
Student 6	82%	87%	85%	Student 6	83%	79%	81%
Student 7	90%	90%	90%	Student 7	87%	77%	82%
Student 8	67%	68%	68%	Student 8	81%	65%	73%
Student 9	75%	66%	71%	Student 9	83%	77%	80%
Student 10	86%	85%	86%	Student 10	77%	85%	81%

After collecting, and analyzing the students' performance scores at the end of the second marking period. The intern compared the ten-pairs of academic math students' post-math averages (first and second marking periods academic math grades) with their pre-math averages (6th grade Stanford 9 math scores and 6th grade math averages), in order to measure the performance difference between the two.

After analyzing the results the intern determined that there was an overall decrease between the post and pre-math averages of the ten-pairs of academic math students. However, the ten math students from the high efficacy teacher's academic math class had less of an overall decrease between their post and pre-math performance averages compared to the ten math students from the low efficacy teacher's academic math class. There was a total decrease of 87 points between the post and pre-math performance averages of the ten students in the low efficacy teacher's academic math class. Whereas, there was only a total decrease of 64 points between the post and pre-math performance averages of the ten students in the high efficacy teacher's academic math class. Therefore, the low efficacy teacher's math students post performance math averages decreased 23 points more than the high efficacy teacher's math students post performance math averages. (See Appendix-F, High and Low Efficacy Students' Analyzed Math Scores).

In conclusion, the results of this study failed to provide substantial support for the hypothesis (that teachers' sense of efficacy is in fact related to student achievement). Therefore, the intern had to look at the multitude of variables that lend to both the assessment of teacher efficacy, and student achievement for an explanation.

First, the delimitations and limitations of the study will be assessed in order to determine their impact on the results. Many factors/variables influence teacher efficacy (i.e., teacher's belief in his/her ability to influence student performance, teachers' expectancies, competency and experience, school climate/culture, and social-economic status of the community etc.). Furthermore, are the many factors/variables that contribute to student performance (i.e., student academic ability, social –economic status, home environment, class size, and teaching style etc.). Finally, by analyzing the multi-dimensional variables that influence both teacher efficacy and student achievement the intern will be able to provide an explanation that substantially warrants the results of this study. Therefore, the multitude of variables that immensely influence both teacher efficacy and student achievement will be expounded upon in Chapter 5, in order to offer an explanation for the results of this study.

Chapter 5

Conclusions, Implications and Further Study

This chapter describes the study's major conclusions and their corresponding implications. First, the limitations and delimitations of this study are expounded upon in order to address their impact on the results. Second, the multiple variables that lend to the assessment of teacher efficacy and student achievement are emphasized. Third, through the analysis of the multidimensional variables that influence both teacher efficacy and student achievement the intern will provide an explanation that substantially warrants the results of this study. Fourth, the conclusions and implications of the study on the intern's leadership development and organizational change are discussed. Finally, the need for further studies regarding "Teacher Efficacy and Student Achievement" is addressed.

In conclusion, the results of this study failed to provide substantial support for the hypothesis (that teachers' sense of efficacy is in fact related to student achievement). Therefore, the intern had to look at both the limitations/delimitations of this study, and the multitude of variables that lend to both the assessment of teacher efficacy, and student achievement for an explanation.

In analyzing the limitations and delimitations of this study the intern determined that they had a profound impact on the research results. Since there were only two 7th grade math teachers, and ten pairs of 7th grade academic math students involved in the study, the results were significantly influenced by the limited sample sizes. More importantly, a new math textbook was used, in which the teachers had only a short time to familiarize themselves with.

Therefore, the math teachers had to both acclimate themselves to the new text and its supplemental materials, and implement the new procedures/steps necessary in presenting the new text materials to their students. Furthermore, there was only one technique used (Teacher Efficacy Scale Survey) to collect data on teacher efficacy. In addition, the study was conducted within a limited time frame (i.e., including only the first and second marking periods). Also, the dependent variables (student scores/grades), the criteria used to determine the participation of the ten pairs of academic math students within the study were limited. More importantly, one must consider the subjectivity involved (i.e., the ten pairs of selected academic math students had different 6th grade math teachers) in determining the ten pairs of academic math students' average in math for 6th grade. This sheds light on the extraneous variable (i.e., all students selected will be of equal academic caliber). Therefore, the question is raised as to whether or not all ten pairs of academic math students were of equal academic caliber, due to the subjectivity involved in determining their 6th grade math average. Each sixth grade teacher determined his or her students' 6th grade math average. Since each teacher had their own teaching style (various measures/sources used in the presentation of academic materials) and method(s) for determining their student's average, a certain degree of subjectivity/bias was involved. Therefore, by using the 6th grade math average as one of the criteria in determining the ten pairs of students' participation in the study allowed subjectivity/bias into the study. More importantly, bias was another factor that contributed the results of this study.

The multiple variables that lend to the assessment of teacher efficacy are now emphasized. Various research studies have been conducted in regard to the multitude of variables that lend to the assessment of teacher efficacy. As stated previously, and according to Ashton & Webb (1986), the following three important variables greatly affect teacher efficacy: 1) the teacher's own beliefs about his/her personal ability to influence their students' performance; 2) the teacher's generalized expectancies for internal-external control over student success and failures in the classroom; and 3) the extent to which a teacher can in general motivate students to achieve.

Two other important variables that affect teaching efficacy are the teacher's level of teaching experience, and the teacher's classroom behavior. According to Benz, Bradley, Alderman, & Flowers (1992) new teachers bring preconceptions about motivation and socialization of students to bear on problems, thus having an unrealistically high sense of teacher efficacy; whereas, experienced teachers tend to have a more realistic view about environmental factors that influence student achievement, thus having a lower sense of teacher efficacy. Furthermore, Ashton & Webb's (1986) findings indicate that school organization, leadership, and ethos contribute to the establishment and maintenance of teachers' sense of efficacy. In understanding the multitude of variables that affect teacher efficacy, the intern acknowledged the multi-facet dimensions involved in assessing teacher efficacy.

The multiple variables that lead to the assessment of student achievement are now expounded upon. Student achievement is also dependent upon a multitude of variables. Although, teacher efficacy is an important determinant that contributes to student success, the following variables are equally important and play a crucial role in determining student academic achievement: 1) Student academic ability; 2) Student academic background; 3) Student maturity level; 4) Home environment; 5) Parental education; 6) School environment; 7) Peer pressure; and 8) Student motivation. This list does not represent all of the variables that affect student achievement. However, the eight variables listed are the most important factors that influence students' academic success.

First, a student must have, to some degree, the academic ability to apply himself in order to be successful in his academics. Furthermore, he must have been exposed to and mastered to some degree the prerequisite knowledge (academic background) that is necessary to achieve success in his academics. Second, a student's maturity level greatly influences his academic success. Student maturity, one of the uncontrollable variables, had an impact upon the results of this study. The ten pairs of students selected as a part of this study were between the ages of 11 and 13 years old. Therefore, these students were entering adolescence, a time of great change and uncertainty/instability. Furthermore, was the transition that 7th graders had to make in transferring from 6th to 7th grade.

For example, in 6th grade, they only had three teachers, whereas in 7th grade, they have seven teachers. For many 7th graders, the transition is very difficult. Many 7th graders are not prepared for the increased academic requirements of 7th grade. They tend to lack both the discipline/maturity and the organizational skills necessary to achieve the greatest academic success in 7th grade. Therefore, in analyzing the two important factors mentioned above (student maturity and the transition from 6th to 7th grade) the intern acknowledged the multitude of uncontrollable variables attached to the 7th graders who were selected to participate in this study. Again, the intern is left with the understanding that these uncontrollable variables also contributed to the negative results of this study.

Furthermore, emphasis is placed upon the following uncontrollable variables that highly influence student academic success. Both the home and school environments greatly affect student academic success. Most importantly, is the home environment; and whether or not it offers stability and security? In order for a student to be most successful in his academics, he must have the love and educational support of his family. Educating children is a joint endeavor, involving both the parents and teachers. Education must be important in the home, since it is here were the students practice and re-emphasize the concepts taught in class. Furthermore, the parent(s) level of education can influence a child's academic success. For example, if a child's parents are uneducated, then it is difficult for them to provide the necessary educational support the child might need at home.

Also, the parent(s) attitude about education is equally important, because how they feel about education greatly influences how their child will view it.

Additionally, the school environment plays an important role in whether or not a student is able to achieve his greatest academic success. The school environment must be conducive to learning. Rules and procedures must be adhered to, and a certain degree of order must be exhibited throughout the school. For example, in a classroom where a teacher lacks control and unruly students are continuously disrupting the lesson, presents an environment that is not conducive to learning and students are unable to achieve their greatest academic success.

Finally, two of the most important variables (peer pressure, and student motivation) that influence student academic success during the adolescence years are discussed. Peer pressure during the adolescence years is enormous. Since this is a time of great uncertainty/instability and change for young people, they are heavily influenced by their peers. Therefore, the caliber of classmates/friends that a student associates with highly affects his academic success. For example, if a student tends to associate with classmates/friends that are disciplined and interested in obtaining academic success, then he will be positively influenced, and will most likely follow their lead. Whereas, if a student tends to associate with classmates/friends that are not disciplined and interested in obtaining academic success, then he will be negatively influenced, and will most likely follow their lead.

More importantly, a student's level of self-confidence/esteem, whether it is positive or negative, is the prime factor that determines to what degree peer pressure influences his academic success.

Another important variable that affects students' academic success is student motivation. For example, if a student is self-motivated and is genuinely interested in learning he will most likely achieve academic success, whereas, if a student lacks motivation and is not interested in learning, then he will most likely not achieve academic success. Teachers are always trying new techniques in order to increase their students' motivation. However, if a student is not self-motivated and/or interested to some degree in accomplishing the task, then there is not much a teacher can do to motivate him to complete the assignment. Students' attitude and motivation toward learning highly influence their academic success.

Finally, through the analysis of the multidimensional variables that influence both teacher efficacy and student achievement the intern acknowledged the multiple complexities involved in accurately/validly assessing both teacher efficacy and student achievement. The most important variables that lend to the assessment of teacher efficacy are: 1) the teacher's own beliefs about his/her personal ability to influence their students' performance; 2) the teacher's generalized expectancies for internal-external control over student success and failures in the classroom; 3) the extent to which a teacher can in general motivate students to achieve; 4) the teacher's level of teaching experience; and 5) the teacher's classroom behavior.

The most important variables that lead to the assessment of student academic achievement are: 1) Student academic ability; 2) Student academic background; 3) Student maturity level; 4) Home environment; 5) Parental education; 6) School environment; 7) Peer pressure; and 8) Student motivation. Most importantly, the multitude of variables listed; although not conclusive, constitute the most important factors that lead to both the assessment of teacher efficacy and student achievement. In conclusion, both the limitations (i.e., limited instrument used to measure teacher efficacy, and limited sample size) of this study, and the multiple extraneous variables that influence both teacher efficacy and student achievement contributed to the negatively results. Thus, the results of this study failed to support the hypothesis (that teachers' sense of efficacy is in fact related to student achievement). Nevertheless, there is a proven correlation between teacher efficacy and student achievement. This is evident in the valid numerous scholarly studies described previously. In brief, teacher efficacy is an important component that contributes to student academic achievement.

Finally, the implications of the study on the intern's leadership development and organizational change are discussed. In conducting this study the intern obtained valuable experience toward her interpersonal, organizational, and leadership skills. First, the intern improved her interpersonal skills by communicating with her participants throughout the study. The intern was able to obtain the interests and cooperation of the required participants (teachers) throughout the study.

Furthermore, the intern was able to organize the various stages/phases of the study and complete each in the required time frame. Although, the results of the study were disappointing, in that they did not support the hypothesis. The intern was actually able to turn the negative results into something positive, by obtaining a better understanding of the multitude of variables that actually affect both teacher efficacy and student academic achievement, especially at the middle school level. In fact, this is an important quality that a successful leader possesses (understanding the cause of a problem and/or unexpected results). Specifically, an observant leader gains valuable knowledge from disappointing/unexpected results. Basically, he/she is taught what not to do next time, and is able to develop a better plan in the future, by using his/her valuable learning experiences as a guide. Most importantly, a successful leader acts as a facilitator by empowering his staff to work collaboratively to complete the required tasks. Furthermore, an effective leader provides recognition to his/her staff on a regular basis in order to improve morale, and encourage teamwork.

In conclusion, the study did not warrant a change within the organization. This was mostly due to the limitations of the study. However, by conducting the study, the intern was able to shed light on an important issue (teacher efficacy and student achievement), thus, creating an interest among the teachers and administration toward this important issue.

Finally, in conclusion, teacher efficacy is an important factor that affects student achievement. Furthermore, teachers with a greater sense of efficacy are more willing to expend greater efforts to assist students in learning and encourage students to achieve a higher level of academic success. More importantly, previous research studies have proven that teacher self-efficacy, both teaching and personal is directly related to student achievement. Therefore, further research is needed in order to determine and measure validly the many faucets that contribute to both teacher efficacy and student achievement. Specifically, continued research is needed in order to develop an instrument that will validly measure the consortium of variables that determine teacher efficacy. Educators need to gain a better understanding of personal teaching efficacy and its major influence on student achievement, in order to provide staff development that leads to a greater sense of personal efficacy among teachers. Furthermore, in addition to teacher efficacy, one must also consider the multitude of additional variables that lend to the assessment of student achievement. Student growth and achievement is a major concern of all educators. Therefore, teacher efficacy is an important area that educational institutions need to focus their attention upon in the future.

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Appendix A

Personal Teaching Efficacy Scale Items

APPENDIX-A
Personal Teaching Efficacy Scale Items

	Each item was rated on the following scale:						
	1	2	3	4	5	6	7
1. One of your students misbehaves frequently in your class and is often disruptive and hostile. Today in class he began roughhousing with a friend in the back of the class. You tell him firmly to take his seat and quiet down. He turns away from you, says something in a belligerent tone that you cannot hear and swaggers to his seat. The class laughs and then looks to see what you are going to do. How effective would you be in responding to this student in a way that would win the respect of the class?	extremely ineffective			moderately effective			extremely effective
2. Maria, an educable mentally retarded student in your class, has been working diligently, but still performs below grade level in all subjects. At a conference, her mother says that she does not expect much of the girl because Maria is "dumb," just like herself. How effective would you be in talking to Maria's mother about her feelings and about the effect that parents' expectations can have on their child's school achievement?	1	2	3	4	5	6	7
3. Your county has mandated that all teachers must restructure their course requirements to ensure adequate development of students' basic skills by including those elements in each lesson plan. How effective would you be in incorporating achievement of basic skills objectives into your lesson plans?	1	2	3	4	5	6	7
4. Students in your school gang together in same-sex, same-race cliques. Your principal has requested that each teacher work to promote more positive interactions among the groups. How effective do you feel you would be in helping your students to develop more positive interactions?	1	2	3	4	5	6	7
5. Six low-achieving female students are not getting much from your class. Lately they have begun to "hang around together" and to advertise that they do not like you or your class. They have begun to fool around, disrupt your lessons, and occasionally "talk back." When you attempt to involve them in class work, they either make jokes or sit sullenly. How effective would you be in eliminating their disruptive behavior?	1	2	3	4	5	6	7
6. This year your principal has assigned you to teach a class of low-ability students in your subject matter area. The teacher who taught this class last year tells you that these are the slowest students that she has taught in her 20-year teaching career. How effective would you be in increasing the academic achievement of the students in this class?	1	2	3	4	5	6	7
7. You have a student that never hands in assignments on time, seldom gets to class before the bell rings, and inevitably forgets to bring books or pencils to class. He obviously has the ability to do above-average work, but you discussed this matter with his parents and they do not seem to understand the importance of school achievement. How effective would you be in motivating this student to get to work?	1	2	3	4	5	6	7
8. A new student has been assigned to your class. Her records indicate that she never does her homework and does not seem to care about her education. Her IQ score is 83, and her achievement scores have been below the 30 th percentile. How effective would you be in increasing her achievement test scores?	1	2	3	4	5	6	7
9. The student-teacher ratio in your class of compensatory education students is 20 to 1. You must plan your lessons to meet individual interests and abilities of the students. How effective would you be in designing activities to match the individual interests and abilities of the students in your class?	1	2	3	4	5	6	7
10. Because of repeated failure, one of your students confides to you that she has given up and will not attend school only until she can find a way to drop out. How effective would you be in persuading her that she can be successful in school?	1	2	3	4	5	6	7
11. A number of your students have been sleeping in class. They do poorly on in-class assignments and seldom turn in homework. You learn that they are taking drugs. How effective would you be in helping the students with their drug problem?	1	2	3	4	5	6	7

<p>(From Ashton et al., 1982)</p> <p>Personal Teaching Efficacy Scale Items, continued</p>	<p>Each item was rated on the following scale:</p> <p>1 2 3 4 5 6 7</p> <p>extremely moderately extremely</p> <p>ineffective effective effective</p>						
<p>12. A learning-disabled student has been mainstreamed into your classroom. He has been described by his previous teachers as being extremely hyperactive and having severe reading problems. How effective would you be in teaching this student?</p>	1	2	3	4	5	6	7
<p>13. A new teacher in your school has been reviewing cumulative records for her students and asks you to explain the difference between grade equivalent and percentile ranks for several of her students on the standardized achievement battery. How effective would you be in explaining the difference between those two types of scores?</p>	1	2	3	4	5	6	7
<p>14. You have been selected to work on a curriculum selection committee to choose textbooks and materials to be used in your county for the coming year. The materials chosen must fit a wide range of instructional needs for students of differing abilities. How effective would you be in doing this work?</p>	1	2	3	4	5	6	7
<p>15. Your school has adopted an instructional textbook in your area with excellent objectives and teaching materials, but almost nothing in the form of tests or exercises to monitor student progress. How effective do you feel you would be in developing a set of evaluation procedures to accompany the text for your grade level?</p>	1	2	3	4	5	6	7

Appendix B
Teacher Efficacy Scale
Research Instrument

APPENDIX-B
TEACHER EFFICACY SCALE
1983 Sherri Gibson, PH.D.

Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate numeral to the right of each statement.	Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
1. When a student does better than usual, many times it is because I exerted a little extra effort.	1	2	3	4	5	6
2. The hours in my class have little influence on students compared to the influence of their home environment.	1	2	3	4	5	6
3. If parents comment to me that their child behaves much better at school than he/she does at home, it would probably be because I have some specific techniques of managing his/her behavior, which they may lack.	1	2	3	4	5	6
4. The amount that a student can learn is primarily related to family background.	1	2	3	4	5	6
5. If a teacher has adequate skills and motivation, she/he can get through to the most difficult students.	1	2	3	4	5	6
6. If students aren't disciplined at home, they aren't likely to accept any discipline.	1	2	3	4	5	6
7. I have enough training to deal with almost any learning problem.	1	2	3	4	5	6
8. My teacher training program and/or experience has given me the necessary skills to be an effective teacher.	1	2	3	4	5	6
9. Many teachers are stymied in their attempts to help students by lack of support from the community.	1	2	3	4	5	6
10. Some students need to be placed in slower groups so they are not subjected to unrealistic expectations.	1	2	3	4	5	6
11. Individual differences among teachers account for the wide variations in student achievement.	1	2	3	4	5	6
12. When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.	1	2	3	4	5	6
13. If one of my new students cannot remain on task for a particular assignment, there is little that I could do to increase his/her attention until he/she is ready.	1	2	3	4	5	6
14. When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student.	1	2	3	4	5	6
15. When I really try, I can get through to most difficult students.	1	2	3	4	5	6

Sherri Gibson And Myron H. Dembo Teacher Efficacy Scale, continued	Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
16. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	1	2	3	4	5	6
17. Teachers are not a very powerful influence on student achievement when all factors are considered.	1	2	3	4	5	6
18. If students are particularly disruptive one day, I ask myself what I have been doing differently.	1	2	3	4	5	6
19. When the grades of my students improve it is usually because I found more effective teaching approaches.	1	2	3	4	5	6
20. If my principal suggested that I change some of my class curriculum, I would feel confident that I have the necessary skills to implement the unfamiliar curriculum.	1	2	3	4	5	6
21. If a student masters a new math concept quickly, this might be because I knew the necessary steps in teaching that concept.	1	2	3	4	5	6
22. Parent conferences can help a teacher judge how much to expect from a student by giving the teacher an idea of the parents' values toward education, discipline, etc.	1	2	3	4	5	6
23. If parents would do more with their children, I could do more.	1	2	3	4	5	6
24. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	1	2	3	4	5	6
25. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him quickly.	1	2	3	4	5	6
26. School rules and policies hinder my doing the job I was hired to do.	1	2	3	4	5	6
27. The influences of a student's home experiences can be overcome by good teaching.	1	2	3	4	5	6
28. When a child progresses after being placed in a slower group, it is usually because the teacher has had a chance to give him/her extra attention.	1	2	3	4	5	6
29. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	1	2	3	4	5	6
30. Even a teacher with good teaching abilities may not reach many students.	1	2	3	4	5	6

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Appendix C

The Multidimensional Construct

APPENDIX-C

The Conceptual Framework and Design of the Study

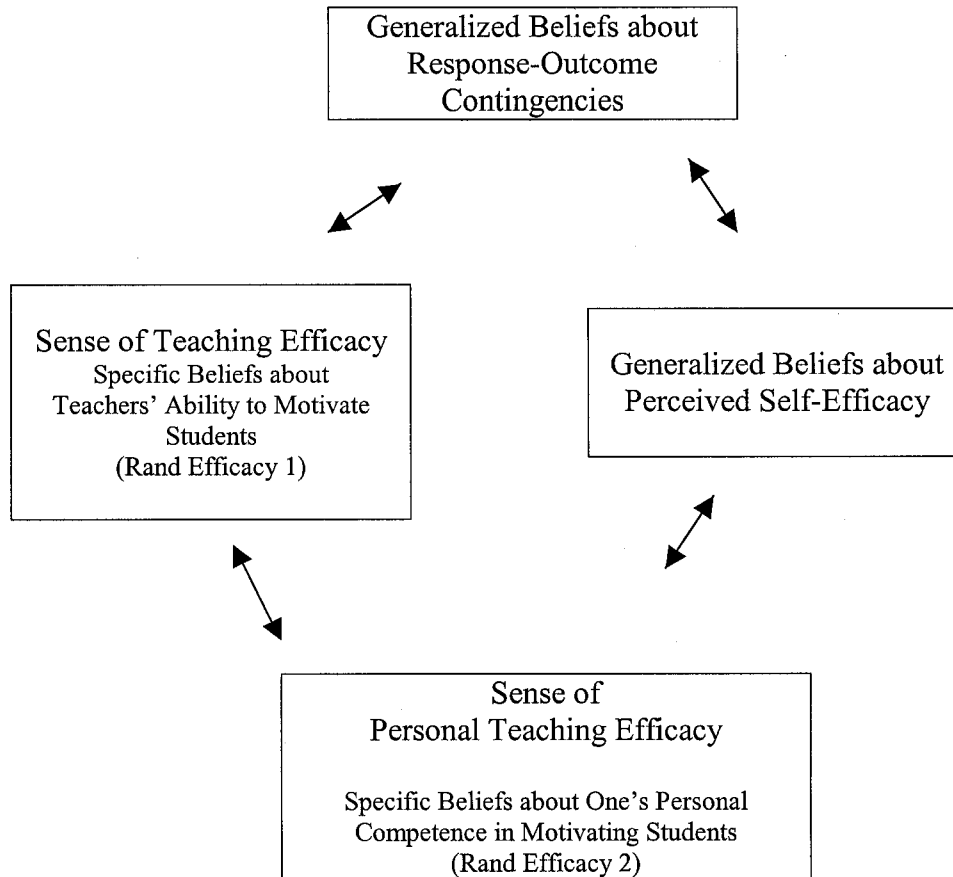


Figure 1.1 Teachers' Sense of Efficacy: The Multidimensional Construct

Appendix D

Comparison of Universal and Personal Sense of Inefficacy

APPENDIX-D

The Conceptual Framework and Design of the Study

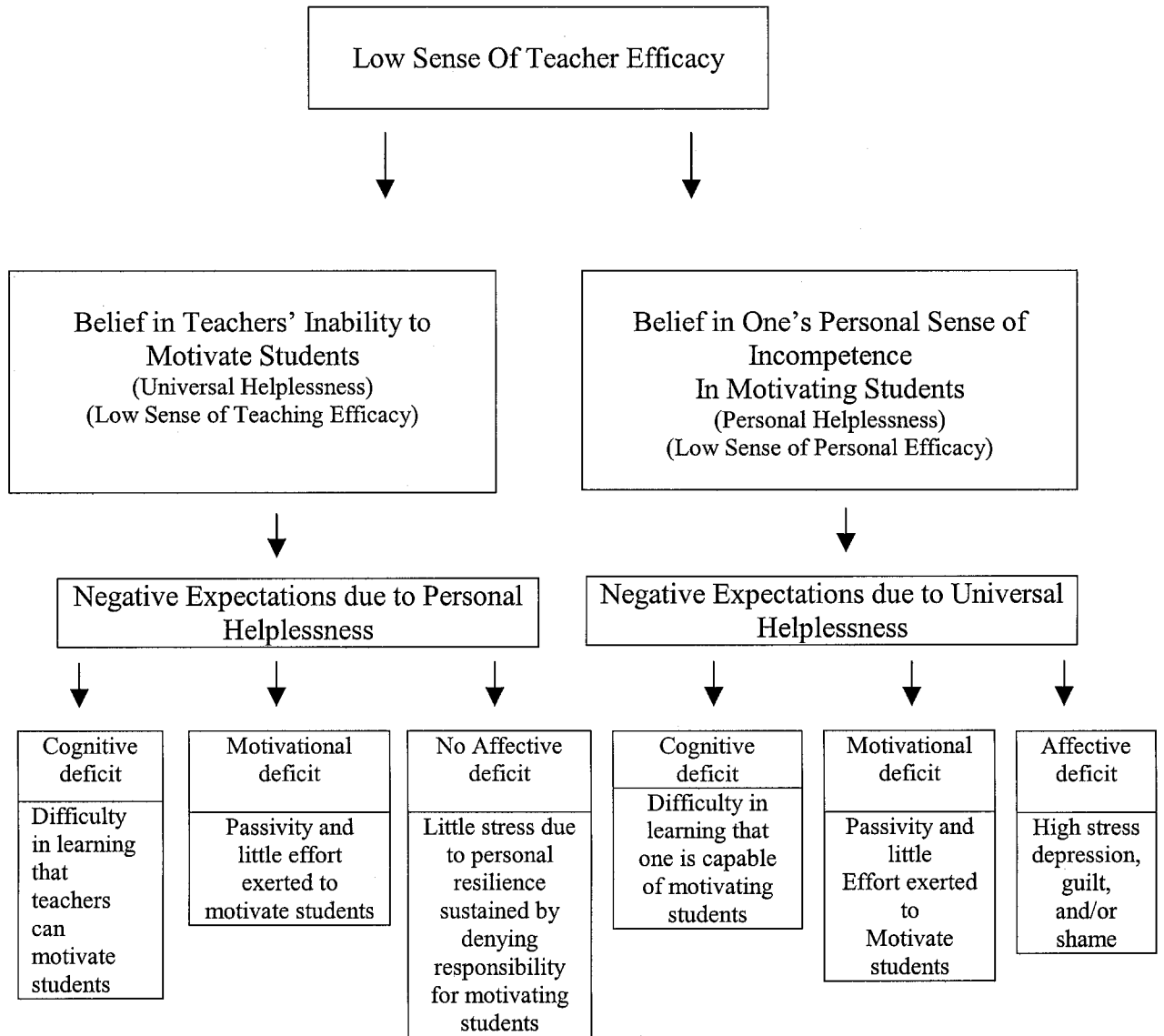


Figure 1.2 Comparison of Universal and Personal Sense of Inefficacy

Appendix E

A Mediational Model of the Relationship Between
Teachers' Sense of Efficacy and Student Achievement

APPENDIX-E

Teacher Motivation and Student Achievement

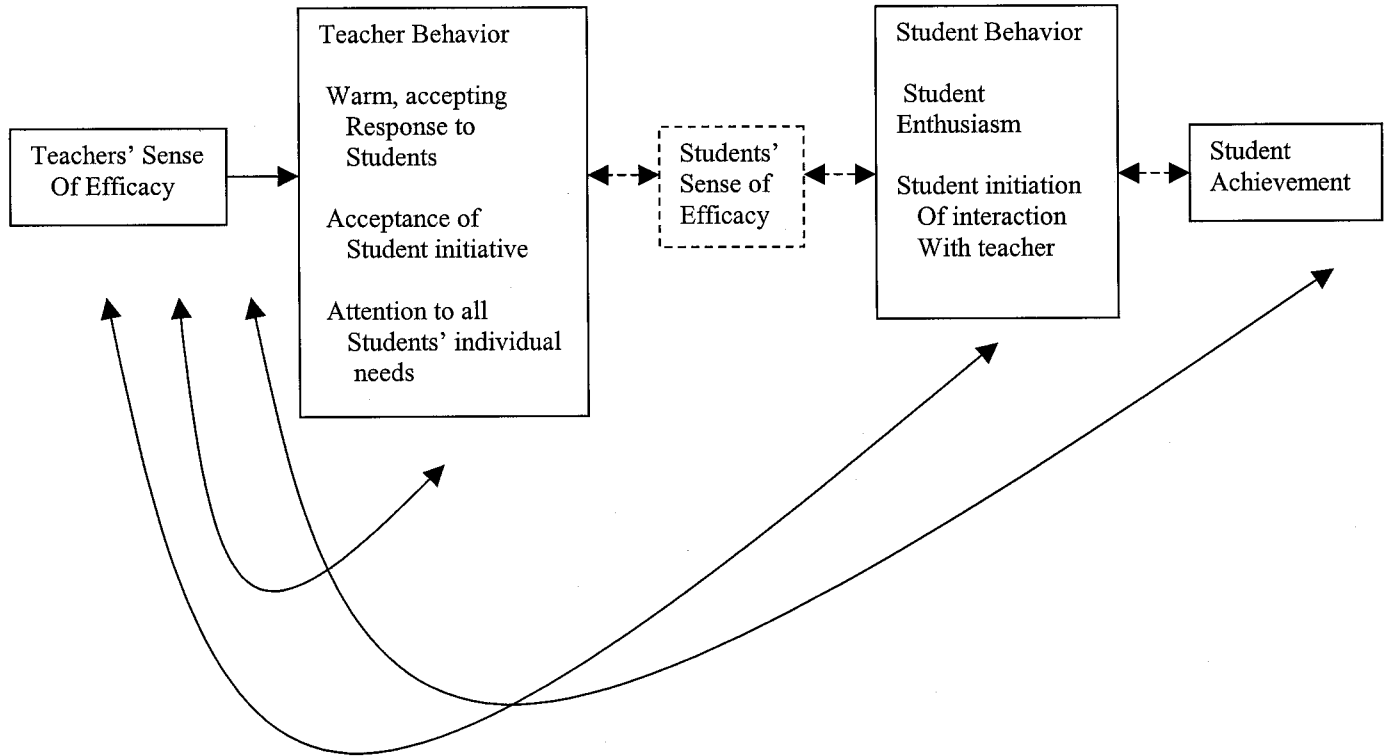


Figure 6.1 A Mediational Model of the Relationship between Teachers' Sense of Efficacy and Student Achievement

Appendix F

High and Low Teacher Efficacy

Students' Analyzed Math Scores

APPENDIX-F

High and Low Efficacy Students' Analyzed Scores

Students	6th GR STF-9	6th GR M-AVG	STF-9 & 6th GR M-AVG	MK PD 1 GR	MK PD 2 GR	MATH-GR AVG MK PD 1 & 2	Inc/Dec Pre/Post	Total Diff in Dec
Low Eff-T								
LET S1	78	85	82	82	78	80	-2	
LET S2	76	80	78	73	65	69	-9	
LET S3	80	75	78	67	68	68	-10	
LET S4	85	90	88	76	67	72	-16	
LET S5	86	95	91	85	79	82	-9	
LET S6	86	85	86	83	79	81	-5	
LET S7	88	80	84	87	77	82	-2	
LET S8	83	90	87	81	65	73	-14	
LET S9	95	95	95	83	77	80	-15	
LET S10	81	90	86	77	85	81	-5	-87

Students	6th GR STF-9	6th GR M-AVG	STF-9 & 6th GR M-AVG	MK PD 1 GR	MK PD 2 GR	MATH-GR AVG MK PD 1 & 2	Inc/Dec Pre/Post	Total Diff in Dec
High Eff-T								
HET S1	86	85	86	73	87	80	-6	
HET S2	90	85	88	81	84	83	-5	
HET S3	97	80	89	87	86	87	-2	
HET S4	80	85	83	67	67	67	-16	
HET S5	92	85	87	68	84	76	-11	
HET S6	81	95	88	82	87	85	-3	
HET S7	85	95	90	90	90	90	0	
HET S8	76	85	81	67	68	68	-13	
HET S9	76	85	81	75	66	71	-10	
HET S10	78	90	84	86	85	86	2	-64

Biographical Data

Name	Norma Jean Weatherly
High School	Clarksville High School Clarksville, TN
Undergraduate	Bachelor of Arts Business Management/Marketing Rutgers University Camden, NJ
Teacher Certification	Elementary Certification Alternate Route Rowan University Glassboro, NJ
Graduate	Masters of Arts School Administration Rowan University Glassboro, NJ
Present Occupation	Basic Skills Teacher Helen A. Fort Middle School Pemberton, NJ