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Burrell, David Lee, Ed.D.

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RELATIONSHIPS AMONG TEACHERS' EFFICACY,
TEACHERS' LOCUS OF CONTROL,
AND STUDENT ACHIEVEMENT

A Dissertation
Presented to
the Faculty of the Department of
Educational Leadership and Policy Analysis
East Tennessee State University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
David L. Burrell

May 1994

APPROVAL


This is to certify that the Graduate Committee of

DAVID L. BURRELL

met on the

4th day of April, 1994.

The committee read and examined his dissertation, supervised his defense of it in an oral examination, and decided to recommend that his study be submitted to the Graduate Council and the Associate Vice-President for Research and Dean, School of Graduate Studies, in partial fulfillment of the requirements for the degree Doctor of Education in Educational Leadership and Policy Analysis.



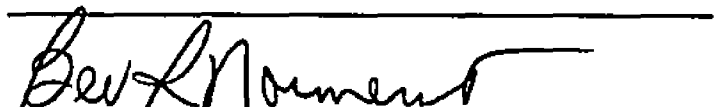
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Signed on behalf of
the Graduate Council



Associate Vice-President for Research
and Dean, School of Graduate Studies

ABSTRACT

RELATIONSHIPS AMONG TEACHERS' EFFICACY, TEACHERS' LOCUS OF CONTROL AND STUDENT ACHIEVEMENT

by

David L. Burrell

The purpose of this study was to determine if teacher effectiveness, as measured by value added gain scores on student achievement, was related to the teacher personality characteristics of efficacy and locus of control. The value-added mean gain scores for each teacher were correlated with teachers' scores on the Rand Corporation Efficacy Scale and the Rose and Medway Teacher Locus of Control Scale. A multiple regression analysis was used to determine if these teacher characteristics along with selected demographic variables could be used as good predictors of achievement gain. The population consisted of 132 middle school teachers across five subject areas in one county in Northeast Tennessee.

No correlation was found between either teacher efficacy or locus of control and mean gain scores. A statistically significant relationship was revealed between gender and teacher efficacy with females indicating higher scores than males. Pairwise correlational analysis also revealed that mathematics gain scores were significantly correlated with age, college major, experience, and certification.

Multiple regression analysis was used to determine the extent to which the demographic variables and the personality variables were related to student achievement. The percent of variance in mathematics scores attributed to teacher age and major indicated that these two variables were good predictors of value-added gains. Neither the demographic nor the study variables entered into the regression formula for the other academic subjects studied.

**EAST TENNESSEE STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD**

PROJECT TITLE: Relationships Among Teachers' Efficacy Belief
Patterns, Teachers' Locus of Control and Student
Achievement.

PRINCIPAL INVESTIGATOR: David L. Burrell

The Institutional Review Board has reviewed the above-titled
project on December 14, 1993 with respect to the rights and
safety of human subjects, including matters of informed consent
and protection of subject confidentiality, and finds the project
acceptable to the Board.



Anthony J. DeLucia
Chairman, IRB

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Many people contributed toward the completion of this research study.

This researcher thanks the faculty members at East Tennessee State University who served on the advisory committee Dr. Charles Burkett, Dr. Russell West, Dr. Donn Gresso, and Dr. Kenneth Mijeski. Foremost among these Dr. Charles Burkett for his guidance as Chairman and Dr. Russell West for his statistical advice.

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CHAPTER 1

Introduction

Researchers have found few consistent relationships between the personality characteristics of teachers and the learning of students. Teachers' sense of efficacy, that is, "their belief in their ability to have a positive effect on student learning" (Ashton, 1985, p.141) and locus of control, a belief that a certain behavior will lead to a certain outcome (Findley & Cooper, 1983) are exceptions.

Locus of control and efficacy are two closely related constructs (Lefcourt, 1981). Bandura (1977) defines locus of control as an outcome expectancy, a person's estimate that a given behavior will lead to certain outcome and efficacy expectation, as the conviction that one can successfully execute the behavior required to produce the outcome.

Teacher efficacy and locus of control have been shown to relate significantly to educational variables such as student achievement (Brophy, 1979), teacher's adoption of innovation (Guskey, 1988), and teacher's classroom management strategies (Ashton & Webb, 1986). The review of related research in this study will focus on establishing a link between these personality constructs and pupil performance.

A paradigm for improving education can be developed around the concept of teacher efficacy (Ashton, 1984). Ashton maintained that no other teacher characteristic has demonstrated such a consistent relationship to student achievement. Teacher efficacy has been identified as a variable accounting for individual differences in teaching effectiveness (Gibson & Dembo, 1984). Teachers who believe that they, and teachers in general, can motivate students to achieve experience less stress and exhibit a more internal locus of control than do teachers who believe that neither they nor other teachers can affect student performance (Greenwood, Olejnik, & Parkay, 1990).

Furthermore, recent studies show that prospective teachers with high teaching efficacy are more humanistic in their pupil control ideology than those with low teaching efficacy (Woolfolk & Hoy, 1990). Teachers with a sense of high teaching efficacy also believe that they have the ability to make a difference in student achievement (Woolfolk, Rosoff, & Hoy, 1991).

If gains in student achievement scores can be assumed to represent one measure of teaching effectiveness, then showing a relationship with the personality constructs of efficacy and locus of control is important for improving education. A teacher education program could be developed with a primary aim toward teacher efficacy and this would

help develop teachers who possess the motivation essential for effective teaching (Ashton, 1984).

The Problem

It seems that a teacher's sense of efficacy and locus of control are related to student learning behaviors; however, the extent of the relationship between these characteristics and achievement score gains based on the Tennessee Comprehensive Assessment Program (TCAP) is not known.

Purpose

The extent to which teachers believe that they have the ability to affect student performance is one of the most crucial elements in improving the learning process. The purpose of this study is to investigate the relationship between a teacher's locus of control (individual's expectancies that events are contingent on their own behavior), efficacy (feeling that one can execute the behavior required to produce the outcome) and students' achievement score gains over time on TCAP test.

Significance

The task of identifying effective teaching is one of the most important elements in improving education (Townsend, 1992). The public has demanded more accountability from its teachers. State governments, like that in Tennessee, have responded by adopting a statewide

system of teacher evaluation which uses achievement test scores to measure the "value-added" gains for each student as part of a teacher's evaluation.

The findings of this research study may be useful to the Tennessee State Department of Education in an effort to find commonalities among those teachers who rank high in value added assessment. The identification of those teacher behaviors which impact the most on student learning should be of much value in finding and retaining the best people to improve education.

The Question

Do teachers with an internal locus of control have a higher sense of efficacy about student learning and are these teacher characteristics related to higher achievement scores on TCAP?

Research Questions

The following questions provide additional focus for this study:

1. What relationships exist between a teacher's sense of efficacy and student achievement?
2. What relationships exist between a teacher's locus of control and student achievement?
3. What relationships exist between a teacher's sense of efficacy and teacher's locus of control?

4. What relationships exist between a teacher's sense of efficacy, teacher's locus of control, and the demographic variables of gender, age, race, years teaching experience, type of certification, college major, Career Ladder status, and student achievement.

5. How well can teacher locus of control and teacher efficacy predict student achievement, while controlling for gender, age, experience, certification, and major?

Research Hypotheses

Following are the research hypotheses which were tested in this study.

H₀1: There will be a significant positive relationship between teacher efficacy, as measured by the Rand Corporation Scale, and student achievement, as measured by gains in the middle school core curriculum scores on the TCAP test.

H₀2: There will be a significant positive relationship between locus of control score, as measured by the TLC Scale, and student achievement, as measured by mean gains on the TCAP test in the middle school core curriculum subjects.

H₀3: There will be a significant positive relationship between teacher efficacy, as measured by the Rand Corporation Scale, and locus of control, as measured by the Teacher Locus of Control (TLC) Scale.

H₀4: There will be a significant relationship between teacher gender and the degree of teaching efficacy, as measured by the Rand Scale.

H₀5: There will be a significant relationship between teacher gender and locus of control, as measured by the TLC Inventory.

H₀6: There will be a significant relationship between teacher's age and scores on degree of efficacy, as measured by the Rand Scale.

H₀7: There will be a significant relationship between teacher's age and locus of control, as measured by the TLC Scale.

H₀8: There will be a significant relationship between teacher's years of experience and teaching efficacy, as measured by the Rand Scale.

H₀9: There will be a significant relationship between teacher's years of experience and locus of control, as measured by the TLC Scale.

H₀10: There is a significant relationship between teacher race and degree of teaching efficacy.

H₀11: There will be a significant relationship between teacher's race and locus of control, as measured by the TLC Scale.

H₀12: There will be a significant relationship between college degree obtained and teaching efficacy.

H₀13: There will be a significant relationship between college degree and locus of control, as measured by the TLC Scale.

H₀14: There will be a significant relationship between teacher's certification and efficacy, as measured by the Rand Scale.

H₀15: There will be a significant relationship between type of teacher certification and teaching efficacy, as measured by the Rand Scale.

H₀16: There will be a significant relationship between teacher efficacy, locus of control, and student achievement when gender, age, experience, certification, and major are controlled for a predictor variables.

Limitations

There are certain limitations which are inherent in a study of this nature. The teacher as the unit of study for this research has many characteristics which cannot be included and, therefore, many behaviors which might also affect student learning.

The measurement of student learning by "value-added" assessment is limited in that it only encompasses one dimension of student learning. Other aspects of learning such as performance skills of application are not considered.

Furthermore, although the assumption that the students' learning in a particular subject is a direct result of that

teacher's effects, it is realized that other contributors, such as home and other teachers on a team, may help add value to scores for a subject.

Finally, this study is limited to one county in East Tennessee. Since the data will be collected from the same county in which the researcher works, this too could be a limitation.

Definitions

The terms used in this study are defined below. The first four terms relate to the independent variables of locus of control and efficacy. The last two terms relate to the dependent variable.

Internal Teacher Locus of Control

Internal teacher locus of control refers to the degree to which teachers attribute the cause of student behavioral outcomes (e.g., academic performance) to forces within the teachers' control (i.e., teaching skills and techniques). It will be operationally defined by the respondent's score on the Teacher Locus of Control Scale (TLC) (Rose & Medway, 1981).

External Teacher Locus of Control

External teacher locus of control refers to the degree to which teachers attribute the cause of student behavioral outcomes (e.g., academic performance) to forces beyond the teachers' control (i.e., student ability or motivation). It

will be operationally defined by the respondent's score on the Teacher Locus Of Control Scale (TLC) (Rose & Medway, 1981).

Teaching Efficacy

Teaching efficacy refers to the teacher's expectations about the consequences of teaching. It will be operationally defined by the respondent's score on the Rand Efficacy Scale (Armor et al., 1976; Berman et al., 1977).

Personal Teaching Efficacy

Personal teaching efficacy refers to the teacher's judgements of his or her personal ability to execute particular courses of action. It will be operationally defined by the respondent's score on the Rand Efficacy Scale (Armor et al., 1976; Berman et al., 1977).

Academic Achievement

In this study academic achievement was operationally shown by students' mean gain scores on the Tennessee Comprehensive Assessment Program (TCAP) achievement test.

Value-added Assessment

Value-added assessment refers to a statistical procedure for measuring the effect of different factors on student achievement.

Organization of the Study

This first chapter was devoted to establishing the basis and the need for this study and other similar research. In Chapter 2 the previous research and literature related to this topic has been reviewed, serving to further support the undertaking of this particular investigation. Chapter 3 has related the methodology and the procedures employed in setting up and executing this investigation. Chapter 4 has detailed the research findings, including a presentation of the findings in relation to other information gathered. A summary, conclusions, and recommendations for further study have been presented in Chapter 5.

CHAPTER 2

Review of Related Literature

Effective schools research has yielded clear evidence that there is a strong connection between high achieving schools and the high expectations that staff members hold for individual students and the school as a whole. . . . The reform movement has decreed institutional expectations of students, but it has not directly dealt with the expectations that each individual teacher has for her or his students. (Greene, 1990, pp. 43, 44)

This review of literature was designed to show the historical perspective of teacher effectiveness research, process/product research, and teacher expectation research. This literature review will show how teacher efficacy and locus of control have emerged as crucial factors for improving student achievement, one measure of teacher effectiveness.

Teacher Effectiveness

During the period from roughly the beginning the 20th century to the 1930s there was an increase in interest in teacher effectiveness. There was the development of numerous approaches to the appraisal of teaching and the creation of many types of evaluation instruments (Good & Mulryan, 1990). The earliest research on teacher effectiveness used students' observations to identify effective teacher traits. Several such studies appeared between 1896 and 1955; Kratz's (1896) study, Characteristics

of the Best Teacher as Recognized by Children, was pioneering work in this area.

Studies that identified traits of effective teachers as determined by experts, including administrators and professors, began in 1915 with a study by Anderson (1917). An approach to the study of teacher effectiveness that was similar in many ways to teacher trait studies was what Beecher (1949) called the negative approach. These studies sought to determine the reason why teachers failed and produced lists of perceived teacher weaknesses (Good & Mulryan, 1990).

In the early part of the 20th century rating scales became popular. The first rating scale appeared around 1915 (Elliott, 1915), and by 1930 several hundred such devices were available (Medley, 1972; Morsh & Wilder, 1954). The earliest ratings of teachers were done mainly by administrators; however, pupil ratings and teacher self-ratings were in use by the late 1930s. After the mid-1950s the emphasis returned to administrative evaluation of teachers.

A major step in teacher-effectiveness research occurred with the formation of the Committee on Child Development of the National Research Council in 1920. This organization developed the first observational research instrument. The pursuit of greater objectivity in these instruments, however frequently resulted in the collection of relatively

meaningless data. Improvement in observational instruments did not occur for at least another 25 years (Medley, 1972).

The Ohio Teaching Record (1941) was a major step forward in the study of teacher effectiveness. This was the first instrument which encouraged a cooperative approach in which teacher and supervisor worked together to improve teaching. Another cooperative approach to teacher supervision was done by Troyer and Pace (1945) for the American Council of Education. Baxter (1941) focused on pupil-teacher interaction as a basis for estimating teacher effectiveness. This was an area which had been neglected in past studies (Good & Mulryan, 1990).

By the mid-1950s there was a growing amount of teacher effectiveness literature. This research, however, was generally poorly regarded. Medley and Mitzel (1963) argued that much work on teacher effectiveness should be disregarded because it lacked objective measures. They stated that teacher ratings had produced little certified knowledge about what should be rated and how rating could best be accomplished (Good & Mulryan, 1990).

Historically, teacher evaluation consisted of subjective judgments of teachers' skills. Keeney found in 1958 through a study of existing practices in merit rating that teacher effectiveness was usually measured by evaluations of personal characteristics, social relations,

work habits, instructional skills, non-instructional school services, professional qualifications, and pupil results.

Most approaches to measuring teacher effectiveness fit into three general categories (Soar, Medley, & Coker, 1972). The first, presage measures, were those that described teachers before they entered the classroom. Examples were such things as IQ, NTE scores, degree status, graduate courses, and years of experience. The second approach used process measures, or what actually happened in the classroom, including classroom organization and interactions between teacher and pupil. The third major approach used product measures, or measures of change that occurred in students as a result of spending time in the classroom. The most common was academic achievement, but attitude measures were also used.

Such predictors as NTE scores have not been shown consistently to relate to any criterion of teacher effectiveness. There are, no doubt, poor teachers who could achieve the minimum score.

The usual product measures, academic achievement scores, likewise, are not adequate despite their intuitive appeal. Standardized tests measure a limited range of objectives, and they tend to inhibit curriculum innovation (Craig, 1993).

Progressive systems used process measures which showed the most promise for the future (Buttram & Wilson, 1987).

Process measures can be valid if the raters are well trained, the ratings are of very specific behaviors, and these behaviors are known empirically to be related to student outcomes.

Process/Product Research

Process/product researchers have studied the relationship between teacher behaviors (process) and student achievement (product) for many years in the hope of determining what teacher behaviors would lead to increased student achievement (Peterson, 1979). The validation process involved at least three stages: (a) the description of selected teaching/instructional activities; (b) the correlation of this description with some measure of pupil growth; and (c) experimental studies testing the derived variables from correlational studies to determine if they were causative agents of pupil change (Borich & Fenton, 1977; Smith, Peterson, Micceri, 1987).

The first study of teacher effectiveness that appeared in the literature was Katz's characteristics of the best teachers as recognized by children, which appeared in the third volume of Pedagogical Seminary in 1896 (Tomlinson, 1955). In 1905 Merriam made another attempt to apply objective measurement to the problem of evaluating teaching. He took a sample of 1,185 normal school principals to estimate the relationship of teaching effectiveness to teacher proficiency. The relationship between the criterion

and the specific variables was found to be low (Tomlinson, 1955).

One of the most comprehensive early studies of teacher qualities was reported in 1922 by Knight. Using a sample of 153 teachers, mutual ratings were obtained from teachers, supervisor ratings, and pupil estimates of teacher ability. A combination of these ratings was used as a criterion of teacher efficiency. The final relationship of results would not be determined by one individual judge, since it was a combination of correlated ratings (Knight, 1922). The coefficient of correlation between the criterion and the variables were "professional test, .54; salary, .35; study while in service, .33; scholarship, .15; intelligence, .11; age, .08; experience, .04; and handwriting, .00" (Tomlinson, 1955, p. 67).

In the 1930s and 1940s, coinciding with the beginning of the child development movement, researchers began to take a more objective look at teaching effectiveness. Better instruments were constructed to aid them in describing classroom behavior. Anderson (1939) developed a 24-category instrument to be used during classroom observations to describe the effect of the teacher's dominative and integrative behaviors. Examples of dominative contacts of teachers were disapproval, blame, warnings, conditional promises, or threats. Recorded examples of teachers'

integrative contacts were showing approval, accepting differences, or extending invitation to activity.

In 1950 Bales constructed an instrument to describe small group interaction during observed class time. The observation instrument had 12 categories, and checks were made in the appropriate category to describe the observed behaviors. Barr (1953) points to the fruitless results of researchers who had been observing teachers to determine effectiveness when he remarked,

The simple fact of the matter is that, after 40 years of research on teacher effectiveness during which a vast number of studies have been carried out, one can point to few outcomes that a superintendent of schools can safely employ hiring a teacher or granting him tenure. (p. 657)

If anything, research had pointed out that teacher effectiveness was not the clearly defined quality that many believed. Research had indicated that teacher effectiveness was one of the most complex human phenomena that researchers had studied (American Association of School Administrators, 1961). In 1972 Soar et al. reported that as late as 1959 Medley and Mitzel reviewed all of the studies they could find in which the effectiveness of teachers had been rated by supervisors or administrators and could find no relationship between the ratings of efficiency and measures of student achievement growth.

The futility of attempting to apply classic research in evaluation of teacher performance became widely recognized by the 1960s (Hayman & Napier, 1975). The problem with the

classical product approach was that when a project failed or when the results were not as predicted, no one was quite certain why (p. 58).

Rosenshine reported in 1975 that there had been only a small number, perhaps no more than 75, correlational and experimental studies which had attempted to determine the relationship between classroom events and pupil outcomes. The following nine variables appeared to yield the most consistent results: (a) clarity, (b) variability, (c) enthusiasm, (d) task-oriented behavior, (e) criticism, (f) teacher indirectness, (g) student opportunity to learn criterion material, (h) use of structuring comments, and (i) multiple levels of questions.

Brophy and Evertson (1977) believed that process-product research in which the investigator observed classrooms and tried to relate measures of teaching to product measures of student outcomes appeared to be the most direct way to identify successful teaching behaviors. Brophy and Evertson planned the Texas Teacher Effectiveness Project explicitly to discover teacher characteristics associated with teachers' success in producing student learning gains on the Metropolitan Achievement Tests. This 2-year study identified several variables which correlated positively with student learning gains. They were:

1. Teacher behavior which maintained classroom control or management consistently correlated with student learning gain.

2. Teachers who were more successful in producing student learning gains tended to have high expectations and assumed personal responsibility for making sure that their students learned.

3. Data on punishment methods revealed that teachers who used milder and more informative types of punishment, such as keeping the child after school to discuss the incident, were more successful than teachers who were physically punitive.

4. More successful teachers called on students in a patterned approach rather than at random.

5. Teachers who maintained an appropriate level of difficulty were more successful.

6. A successful teacher tended to give the student the correct answer immediately.

7. In classes where students initiated questions, there was a positive correlation with student learning gains (Brophy & Evertson, 1977).

In 1979 Good and Grouws found that more effective teachers (a) taught the class basically as a whole, (b) presented information more clearly, (c) were task-oriented, (d) created relaxed learning environments, (e) had higher

achievement expectations, and (f) had fewer discipline problems.

The historical research into the effectiveness of teachers reflected many changes in the conception of the nature of that effectiveness (Medley, 1979). Originally, effectiveness was perceived as the consequence of certain personality traits or characteristics possessed by the teacher. Later, effectiveness was perceived not as much by personal traits as by the teaching methods used. After that, effectiveness was seen as dependent on the climate created by the teacher. In more recent years effectiveness has been viewed as mastery of a repertoire of competencies and the ability to use them appropriately. Tennessee's Career Ladder Program assesses teacher competencies in six major areas: planning, teaching strategies, classroom management, evaluation, leadership, and communication (Furtwengler, 1987).

The use of standardized national testing has been discussed as a means of improving education. Making teachers accountable means involving them in the assessment methods that measure what students know and can do. Only through this involvement of teachers will assessment be tied to instruction (Lieberman, 1991). American testing is primarily controlled by commercial publishers that produce norm-referenced, multiple-choice instruments which are

intended to rank students and not to improve learning (Darling-Hammond, 1991).

It has become increasingly apparent that to predict outcomes without understanding the causal factors is of little value and that only by studying the factors emanating from the process itself can behavioral alternatives be developed for facilitating the learning process (Hayman & Napier, 1975).

Teacher Expectations

"If men define situations as real, they are real in their consequences" (Merton, 1949, p. 441).

In 1968, Rosenthal and Jacobson conducted an experiment that captured national attention (cited in Cooper & Tom, 1984). Their experimental study, Pygmalion in the Classroom, showed that expectations teachers held for student performance influenced student achievement. Although students had been chosen at random, teachers were told that several students in their classes had shown a remarkable potential for academic growth. After 8 months, intelligence tests revealed that students in the primary grades for whom teachers held artificially high expectations showed greater gains in IQ than other students in their school.

Research which has been done since Pygmalion in the Classroom indicates that, although there are many factors which influence student performance, teacher expectations do

play a major role in how well and how much students learn. In a review of the expectations literature, Rosenthal and Rubin (1971) found 112 studies that tested the expectation effect. In those studies 40% produced reliable statistical differences indicating that teacher self-fulfilling prophecies existed (Cooper & Tom, 1984).

Between the Rosenthal and Jacobson study and 1986 there were 100 more studies conducted related to teacher expectations. The concept of self-fulfilling prophecy was especially relevant to minority students. If minority students felt that their teachers had low expectations of them, they were more likely to become passive rather than active participants in the educational process (McCormick & Noriega, 1986).

The self-fulfilling prophecy effect was first defined in a systematic way by Merton (1949) who argued that

The self-fulfilling prophecy is, in the beginning, a false definition of the situation evoking a new behavior which makes the originally false conception come "true." This specious validity of the self-fulfilling prophecy perpetuates a reign of error, for the prophet will cite the actual course of events as proof that he was right from the beginning. (p. 422)

The theoretical basis for the self-fulfilling prophecy was best understood by reference to the concept of self-expectancy, and the related concept of "self" (Staines, 1958).

"A learned structure, growing mainly from comments made by people and from inferences drawn by children out of their

experiences in home, school and other social groups" (Staines, 1958, p. 99).

Rosenthal and Jacobson (1968) refined Merton's definition to form the basis of their controversial study. They defined the self-fulfilling prophecy as "how one person's expectations for another person's behavior can quite unwittingly become a more accurate prediction simply for its having been made" (Rosenthal & Jacobson, 1968, p. 20).

The self-fulfilling prophecy was best understood by reference to the concept of self-expectancy, and the related concept of "self." It was a learned structure, growing mainly from comments made by other people and from inferences drawn by children out of their experiences in home, school and other social groups. The concept of self-expectancy related to the pupil's expectations of his own performance (Blease, 1983).

Teacher expectations were defined as inferences that teachers made about the achievement or future behavior of their students, based on what they knew about their students (Good, 1987). The effects of teacher expectations were student outcomes that occurred because of the actions teachers took in response to their own expectations (Cooper & Good, 1983).

Good (1987) listed several ways in which teachers formed their expectations of students:

1. Information given to teachers about student performance on tests
2. Students' performance of assignments as observed by teachers
3. Students' speech or language patterns
4. Gender of students
5. Race of students
6. Students' classroom behavior
7. Students' socioeconomic status
8. Students' physical appearance
9. Special education labels placed on students
10. Ethnicity of students
11. Group placement of students

The above list showed that teachers usually formed their expectations as a result of external information they obtained about their students. The teachers showed differences in how they treated their students based on this kind of information. (Good, 1987).

Rosenthal (1974) provided a convenient scheme for summarizing behaviors found to be associated with teacher expectations. The four factors were (a) socio-emotional climate, (b) verbal input, (c) verbal output, and (d) feedback. In this literature review the factors and their effects will be explained with some pertinent representative research.

First, teachers were found to create a warmer socio-emotional atmosphere for brighter students. Chaikin, Sigler, and Derlega in 1974 investigated this possibility by using videotaped tutorial sessions in order to study nonverbal behaviors. When teachers believed they were interacting with bright students they smiled and nodded their heads more often than teachers interacting with slow students (Chaikin, Sigler, & Derlega, 1974).

Leider (1987) studied classroom dynamics factors and their relation to student achievement by videotaping 10 grade 3 and 6 classes. She examined the differences in interaction patterns between teachers and high and low achieving and high and low expectation students. She found that teachers tended to interact most frequently with high achieving and high expectancy students, but consistently spent more time waiting for and interacting with low achieving and low expectation students (Leider, 1987).

Page (1971) found that high expectations led to more smiling in natural classrooms. He found that the largest performance difference appeared between the high-expectation group that received the most smiles and the low-expectation group that received the least smiles.

In a follow-up study on the four-factor theory of the variables mediating expectancy effects Harris and Rosenthal (1986) concluded that teacher warmth may not always lead to better student outcomes. Their findings suggested that task

orientation and warmth may not operate together but the relationship may be situational. Their multiple regression analysis using cognitive performance and academic self-concept as dependent variables showed that better student performance was more positively associated with such variables as task orientation and explanation (Harris & Rosenthal, 1986).

Beez (1970) supported Rosenthal's verbal input factor in a study which found that students labeled as slow may have received fewer opportunities to learn new material than students labeled bright. Also, when teachers introduced new material to their classes, this material tended to be discussed with brighter students (Cornbleth, Davis, & Button, 1974). Finally, slow students had less difficult material taught to them.

Rosenthal's third factor, verbal output, dealt with how often contacts took place and for how long. Classroom observations indicated that some teachers tended to stay with high-expectation students longer after they failed to give the right answer. There were more clue-giving and more rephrasing of questions when high-expectation students answered incorrectly than when low-expectation students answered incorrectly (Good & Brophy, 1977).

One of the best researched behaviors which related to performance expectations was the frequency of teacher-student contacts. Brophy and Good (1974) examined

20 studies that involved naturalistic observation of the frequency of teacher-student contacts. Most of these studies reported that teachers more often engaged in academic contacts with high-expectation than with low-expectation students. Good, Cooper, and Blakely (1980) found that teachers were more likely to call on high-expectation students in public and to have individual interactions with slower students.

Rosenthal's final factor, feedback, involved the teacher's use of academic praise and criticism. Cooper and Baron (1977) found a consistent pattern of results showing that teachers tended to praise high expectations students more, while lows are criticized more. Harris and Rosenthal (1986) found that praise was a significant contributor to their regression of variables relating to student performance. Therefore, high achieving students who received more praise were reinforced more and the cycle of achievement became stronger.

There seemed to be enough evidence to conclude that each of the four factors in Rosenthal's scheme was real. Certain teaching behaviors did affect student performance in very obvious ways. Students who were taught less difficult and novel material had less information.

Another very important point about teacher perceptions of students was the way in which they influenced class control. Control here was defined as the teacher's ability

to determine the exchange's content, timing, and duration. Teachers were willing to deal with highs at any time because control was not an issue, but they tried to confine interactions with lows to situations where they felt most in control (Cooper, Burger, & Seymore, 1979).

It was widely accepted that teachers had expectations for their pupils along two dimensions: (a) behavior; and (b) achievement and academic ability (Arganbright, 1983). Teachers developed these expectations through previously acquired information and through classroom encounters.

Teachers often developed these prejudices about ability levels before having met the student. They may have known the student's older siblings, they may have reviewed their student records, or they may have gotten information passed on in the teachers' lounge. Factors such as social class have been known to be determinants in teacher expectations (Leigh, 1977).

One of the most critical interacting relationships in the school is between teacher and student. Brookover and Lezotte (1979) interviewed school personnel and reported that those in less effective schools tended to feel less responsible for the learning of their students than did those in more effective schools.

The topic of teacher expectations has not been clearly defined in previous research. At least three kinds of teacher expectations have been described. These included

teachers' expectations about their students' ability to do as well or better than most other students, their own ability to teach, and their ability to influence what happened in their classrooms and schools (Fuller, Wood, Rapoport, & Dornbusch, 1982; Good & Brophy, 1978). These three kinds of expectations were referred to as high expectations for students, efficacy, and locus of control. Delineating these at this point is necessary in order to examine efficacy and locus of control more fully.

Efficacy

Teachers' "sense of efficacy" refers to the extent to which teachers believe that they have the capacity to affect student performance (Ashton, 1984). In 1974 the term teacher efficacy was defined by Barfield and Burlingame as "a personality trait that enables one to deal effectively with the world" (p. 6). They used a Political Efficacy Scale and renamed it the Teacher Efficacy Scale. They concluded that teachers with low sense of efficacy were less humanistic than average or high efficacy teachers in their beliefs about controlling students (PCI; Willower, Eidell, & Hoy, 1967).

Teacher efficacy, as a construct grounded in psychology, was first introduced in two Rand Corporation evaluations of projects funded by Title III of the Elementary and Secondary Education Act (Armor et al., 1976; Berman et al., 1977). In these studies, teachers' level of

efficacy was determined by computing a total score for their responses to two Likert scale items: (a) "When it comes right down to it, a teacher really cannot do much because most of a student's motivation and performance depends on his or her home environment" and (b) "If I try really hard, I can get through to even the most difficult or unmotivated students" (Armor et al., 1976, p. 2). The Rand study stated that teachers' attitudes about whether they were competent enough to implement innovations appeared to have a major impact on implementation of such innovations. This project surveyed approximately 500 teachers in an attempt to determine the project characteristics and the institutional setting necessary for the implementation of major innovations. With the two items used when standardized regression coefficients were computed, Berman et al. (1977) found significant coefficients between teacher efficacy and the percentage of total teacher change, goals achieved, and total student achievement. The teachers' efficacy feelings were the only factors that had significant relationships with all the independent variables of the study.

Recent researchers used Bandura's (1977, 1982) cognitive social learning theory to conceptualize teacher efficacy. Writing in Psychological Review, Bandura (1977) developed a unified theory of behavioral change on self-efficacy. This theory stated that psychological procedures, whatever their form, altered the level and strength of self-

efficacy. In his model Bandura proposed that expectations of personal efficacy were derived from four principle sources: performance accomplishments, vicarious experience, verbal persuasion, and physiological states.

Bandura outlined a theoretical framework in which the concept of self-efficacy plays a central role for analyzing changes achieved in fearful and avoidant behavior. His analysis of self-efficacy and behavioral change was tested using adult snake phobics. To test social learning analysis and the process of change, experiments were set up to test each of the four areas which were hypothesized to determine efficacy. Consistent with the social learning analysis of the sources of self-efficacy, experiences based on performance accomplishments produced higher and stronger expectations than vicarious experiences.

Within Bandura's analysis, efficacy expectations were distinguished from response-outcome expectancies. He defined an outcome expectancy as a person's estimate that a given behavior will lead to certain outcomes. However, "an efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcome" (Bandura, 1977, p. 193).

Individuals can believe that a particular course of action will produce certain outcomes, but if they doubt that they can perform those activities their behavior is not influenced. People tend to avoid threatening situations

they believe exceed their skills and they become involved in activities they judge themselves capable of handling. Not only does self-efficacy have an influence on what people choose to do, but also on how much effort they will expend when they are faced with obstacles. The stronger the perceived self-efficacy, the stronger the effort.

The origins of efficacy began with White (1959) when he postulated an "effectance motive" which focused on the effects produced by one's own actions through prolonged transactions with one's environment. Bandura's social learning theory of self-efficacy was conceptualized as arising from several sources of information obtained through prolonged transactions with one's environment and were affected by the contextual factors. A good example was the level and strength of perceived self-efficacy in public speaking which differed depending on the subject matter and type of audience.

Bandura stated that motivation was affected by both outcome expectations (i.e., judgments about the likely consequences of specific behaviors in a particular situation) and efficacy expectations (i.e., the individual's belief that he or she was capable of achieving a certain level of performance in that situation). Bandura stated that efficacy expectations were interrelated and that "the types of outcomes people anticipate depend largely on their

judgments of how well they will perform in given situations" (Bandura, 1977, p. 203).

Bandura pointed out that locus of control was an outcome expectancy that may be defined as "a person's estimate that a given behavior will lead to certain outcomes." He defined efficacy expectation as "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1986, p. 79).

Using Bandura's conceptualization, item one of the Rand Efficacy measure was seen as a general teacher efficacy item that related to locus of control or generalized set of beliefs about the ability of teachers to motivate students, while item two focused more on personal sense of efficacy as a teacher. A teacher might view the world of teaching and learning as operating in a certain way but may or may not feel personally capable of operating in that way.

Meijer and Foster (1988) explored the relationship between the characteristics of teachers and the likelihood that they would refer students to special education. Case studies were designed by the researchers describing students. Self-efficacy was measured by designing Likert-scale items based on the work of Gibson and Dembo (1984). Only personal teaching efficacy was measured. After answering the teacher characteristics questions and reading the description of a particular student and situation, the teacher indicated the likelihood that a

student posed a problem by assigning a number from 0 to 100. The teacher also indicated the likelihood that he or she would refer the student for special education.

The data analysis showed that teachers having higher personal teaching efficacy were less likely to refer students than teachers having lower personal teaching efficacy. Although the correlations were significant Meijer and Foster (1988) suggested further research which would deal specifically with the relationship between self-efficacy and referral.

Saklofske, Michayluk, and Randhawa (1988) conducted a study to examine the correlations between teacher efficacy and teacher behaviors. Student-teachers completed a teacher efficacy Self Scale prior to beginning their teaching experiences. The supervising teachers then evaluated their student teachers using the "Extended Practicum evaluation developed by the College of Education Field Experiences Office at the University of Saskatchewan" (Saklofske et al., 1988). Based on a 4-point rating scale on eight categories: professional attributions, lesson planning, unit planning, structuring behaviors, questioning behaviors, reacting behaviors, classroom management behaviors, and lesson presenting behaviors.

Personal teaching efficacy was found to have small but positive correlations with three of the categories of teaching behaviors: (a) lesson presenting behaviors, (b)

classroom management behaviors, and (c) questioning behaviors. The positive correlation led researchers to conclude that a relationship did exist between personal teaching efficacy and teachers' behaviors.

Woolfolk et al. (1990) showed a relationship between a teacher's sense of efficacy and their beliefs about how students should be managed. This study examined the relationships between each dimension of efficacy and several measures of teachers' orientations toward management, control, and student motivation. The study of 55 religious school teachers showed a relationship between a teacher's sense of personal efficacy and their pupil control orientation. The greater the teacher's sense of personal and general efficacy the more humanistic their control ideology tended to be.

Woolfolk and Hoy (1990) further found evidence for the independence of general and personal teaching efficacy in their study of prospective teachers. The prospective teachers' beliefs about the two dimensions of efficacy were significantly related, but in opposite dimensions to their bureaucratic orientation. They concluded that the two dimensions of efficacy were simply two different kinds of efficacy expectations. They suggested that the general teaching efficacy dimension had much in common with teachers' beliefs about the nature of ability and whether it was a fixed trait or could be changed.

The results of the two studies mentioned above (Woolfolk et al., 1990) suggested that the tasks of managing and motivating students play a role in teachers' sense of efficacy. It is also suggested that the link between teacher efficacy and student achievement was through the teacher's ability to manage the class.

In a 1990 study designed to examine the relationships between four teacher efficacy belief patterns and teachers' feelings of stress, locus of control, and several demographic variables, researchers found evidence that teachers who believed that they, and teachers in general, could motivate students to achieve showed less evidence of stress and more internal locus of control than teachers who believed that neither they nor teachers in general could affect student performance (Greenwood et al., 1990).

Studies have generally indicated that teachers who believed student learning could be influenced by effective teaching, and who had confidence in their own teaching abilities, persisted longer, and provided a greater academic focus in the classroom than teachers who had lower expectations that they could influence student learning (Ashton, 1984; Brookover, Beady, Flood, Schweitzer & Wisenbaker, 1979; Guskey, 1981; Rose & Medway, 1981).

Locus of Control

Locus of control research was derived from Rotter's (1966) social learning theory which hypothesized that

individual differences existed as to perceived responsibility for one's own actions and the individual's sense of personal control of reinforcement. Social learning theory was a theory concerning how choices were made by individuals from the choices of potential behaviors available to the person.

The expectancy that a behavioral act would produce the desired consequences was strengthened or weakened depending upon whether the desired goal was obtained or not obtained. If an individual's past experiences were perceived as causally connected with one's behavior, then the individual would develop an expectancy for or sense of personal control of reinforcement. The social learning theory viewed the locus of control construct as a generalized expectancy concerning reinforcement (Rogerson, 1978).

Individuals who perceived their reinforcement as contingent upon their own behavior, attributes or capacities were described by Rotter (1966) as having an internal locus of control. Rotter labeled individuals as external if they did not perceive a relationship between their own behavior and the reinforcement. The construct of locus of control dealt with individuals and their self-perceptions, which included their basic values and expectations in conjunction with the situation in which they found themselves (Phares, 1976).

According to the theory of personality proposed by Rotter (1966), behavior varied as a function of generalized expectancies that outcomes were determined by one's actions or by external forces beyond one's control. Expectations about what behaviors would be exhibited were considered to be largely a product of one's history of reinforcement.

Findley and Cooper (1983), in an extensive literature search, reported nearly 100 research studies with tests of the link between locus of control and academic achievement. Paralleling findings on teacher efficacy and student achievement, teachers who had confidence in their teaching ability were more internally controlled (Ashton, 1984; Guskey, 1982; Murray & Staebler, 1974; Rose & Medway, 1981). A summary of selected research from this field follows.

The instruments designed to measure locus of control beliefs resulted in individual's being distributed along a continuum according to the degree to which they accepted personal responsibility for what happened to them (internal control) as opposed to attributing this responsibility to forces or events outside their control (external control) (Murray & Staebler, 1974).

Murray and Staebler examined teacher locus of control and student achievement on several standardized tests. The results indicated that both male and female students, regardless of their locus of control, gained more on the

achievement measures under internal teachers than under external teachers (Murray & Staebler, 1974).

Rose and Medway (1981) worked on the development, reliability, and validation of the Teacher Locus of Control (TLC) Scale, an instrument specifically designed to measure elementary school teacher's perceptions of control in the classroom. Until this time internal-external control had been measured by Rotter's I-E Scale. They stated that the I-E scale was never designed to measure such specific expectancies as those associated with classroom teaching (Rose & Medway, 1981).

The TLC Scale demonstrated more internal consistency and higher correlations with classroom teaching behaviors than the Rotter I-E scale. Significant associations between teacher's TLC scores and classroom behavior variables showed the importance of control beliefs in teachers' management of the classroom environment. Internal teachers had fewer disciplinary commands given to students, lower rates of inappropriate student behavior, higher rates of student-directed activity, and they maximized instruction more efficiently (Rose & Medway, 1981).

Other studies prior to the TLC Scale development had shown evidence of a relationship between teachers' locus of control and their use of effective classroom management techniques. Brophy and Evertson (1976) reviewed the findings of the Texas Teacher Effectiveness Study and found

that teachers who assumed responsibility for classroom events maintained organized learning environments.

A student cross-age tutoring study conducted by Medway and Baron (1977) provided related evidence for the control internal teachers had over student achievement. This research found that internal tutors took a more active role in the instructional process.

Several studies have examined the relation between locus of control and teacher characteristics (Sadowski, Blackwell, & Willard, 1985; Rose & Medway, 1981). Internal teachers were more likely to implement successful innovative techniques and motivate students. Other studies examining teacher variables of age, gender, and race indicated that internality increased with age and that females appeared to be more internally controlled than males (Richardson, 1987). Richardson maintained that young teachers because of their lack of experience may be overly concerned about issues critical to their successful classroom functioning. Since young teachers may be more concerned with classroom management, they may see themselves as being controlled by environmental events and, therefore, adopt more of an external locus of control.

Guskey (1981) reported that females consistently assumed greater responsibility for the learning outcomes of their students than male teachers. Smith (1986) hypothesized that teaching tended to be perceived as a

female occupation and, therefore, female teachers may be more comfortable in the job and more internally controlled.

Summary

Past researchers have shown the impact that certain teacher behaviors have on student learning. Teacher expectations repeatedly had been shown to relate to student achievement. There was an increasing amount of research on certain psychological traits which related to a teacher's feelings about his/her ability to affect learning. Among these were locus of control and sense of efficacy. A teacher's belief in intelligence as a stable trait was one of the most serious obstacles to increasing their sense of efficacy. Theorists have long viewed this belief as the single largest obstruction of equalizing educational opportunity (Ashton & Webb, 1986).

Researchers have attempted to understand the factors which contribute to different teacher expectations in the classroom (Good, 1981). The relationship between teachers' expectancy behavior and their sense of efficacy has been supported by several studies (Cooper, 1984). Moreover, the process-product research showing patterns of behavior characteristic of effective teachers showed that high-efficacy teachers were more successful than low-efficacy teachers and were assigned more demanding academic courses.

CHAPTER 3

Research Methods

The purpose of the present study was to identify the relationships existing between teachers' locus of control, teachers' efficacy and student achievement scores. This chapter includes a discussion of the population, the procedures used, a description of the instruments used, the hypotheses tested, and the procedures used to analyze the data.

Population

The population consisted of 132 academic teacher at nine middle schools in a county school system in Tennessee. Teacher participation was strictly on a voluntary basis and data will be presented on all those who chose to be participants.

Instruments

Teacher Locus of Control Scale (TLC)

This instrument, developed by Rose and Medway (1981), independently measures teacher attitudes toward student success (I+) and student failure (I-) in the classroom. It uses a forced choice (a or b) format and consists of 14 student success and 14 student failure items that require the teacher to react to 28 classroom events by selecting either an internal or external locus of control choice. The

TLC Scale produces two independent scores ranging 0-14 points each for I+ (student success) and I- (student failure). High scores on either scale indicate an internal locus of control; this means that the teacher accepts the responsibility for student success or failure. These can be added across scales to sum a total TLC score.

The validation studies indicated that the scale predicted teachers' willingness to adopt new instructional techniques after in-service training (Rose, 1981). In addition to adoption of innovative educational practices, the TLC Scale has demonstrated significant correlations with teachers' ability to use disciplinary actions effectively (Brophy, 1977), holding students accountable for performance, and maintaining student involvement in instructional activity (Greenwood et al., 1990).

Rand Efficacy Scale

The background for the construct of teacher efficacy came from the field of psychology and was first introduced in two Rand Corporation evaluations of projects funded by Title III of the Elementary and Secondary Education Act (Armor et al., 1976; Berman et al., 1977). In these studies, teachers' level of efficacy was determined by computing a total score for their responses to two 5-point Likert scale items: (a) "When it comes right down to it, a teacher really cannot do much because most of a student's motivation and performance depends on his or her home

environment" and (b) "If I try really hard, I can get through to even the most difficult or unmotivated students." The first item relates to a teacher's general sense of efficacy and might be viewed as a locus of control measure or a generalized set of beliefs about the ability of teachers to motivate students, while the second focuses more on personal sense of efficacy as a teacher (Greenwood et al., 1990).

The Rand Index generates four different combinations of the two items: (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."

The first pattern is stated in negative terms ("a teacher really cannot . . .") and the second in positive terms ("I can get through . . ."). The coding on the second was reversed so that while the strongly agree response was weighted 1 point for the first item, it was weighted 5 points for the second item. With this weighing scheme, the four efficacy belief patterns were scored as follows: (a) Pattern 1 ("teachers cannot; I cannot") had a combined score of 2-4 points, (b) Pattern 2 ("teachers can; I cannot") a combined score of 5-7 points, with the first item equal to 4 or 5 points, (c) Pattern 3 ("teachers can; I can") a

combined score of 8-10 points, and (d) Pattern 4 ("teachers cannot; I can") a combined score of 5-7 points, with the first item equal to 1 or 2 points.

Design

This study was designed to determine the correlation or the degree of relationship among teachers' efficacy belief patterns, teachers' locus of control and student gain scores on academic achievement test. Teachers' demographic variables were included to determine what differences might exist among teachers' locus of control and efficacy and their age, gender, race, certification and years experience.

Tennessee Comprehensive Assessment Program (TCAP)

Achievement scores were obtained from a standardized normed achievement test produced by McGraw-Hill and administered each Spring to all students in grades 2-8. Scale scores were used because they span all grade levels, making them useful for measuring year-to-year growth. Scale scores range from 0 to 999, but are unique to each subtest. These scale scores are derived from student responses relative to the calibrated difficulty of those items (a latent-trait theory model) (Craig, 1993).

Null Hypotheses

H₀1. There is no significant relationship between teacher efficacy, as measured by the Rand Corporation Scale,

and student achievement, as measured by gains in the middle school core curriculum scores on the TCAP test.

H₀2. There is no significant relationship between teachers' scores on locus of control, as measured by the TLC Scale, and student achievement, as measured by gains in the middle school core curriculum scores on the TCAP test.

H₀3. There is no significant relationship between teacher efficacy, as measured by the Rand Corporation Scale, and locus of control, as measured by the Teacher Locus of Control (TLC) Scale.

H₀4. There is no significant relationship between teacher gender and degree of teacher efficacy, as measured by the Rand Scale.

H₀5. There is no significant relationship between teacher gender and locus of control, as measured by the TLC Scale.

H₀6. There is no significant relationship between teachers' age and degree of efficacy, as measured by the Rand Scale.

H₀7. There is no significant relationship between teachers' age and locus of control, as measured by the TLC Scale.

H₀8. There is no significant relationship between teachers' years of experience and degree of teaching efficacy, as measured by the Rand Scale.

H₀9. There is no significant relationship between teachers' years of experience and locus of control, as measured by the TLC Scale.

H₀10. There is no significant relationship between teacher race and degree of teaching efficacy, as measured by the Rand Scale.

H₀11. There is no significant relationship between teacher race and locus of control, as measured by the TLC Scale.

H₀12. There is no significant relationship between college degree obtained and degree of teaching efficacy, as measured by the Rand Scale.

H₀13. There is no significant relationship between college degree obtained and locus of control, as measured by the TLC Scale.

H₀14. There is no significant relationship between type of teacher certification and efficacy, as measured by the Rand Scale.

H₀15. There is no significant relationship between type of teacher certification and locus of control, as measured by the TLC Scale.

H₀16. There is no significant relationship between teacher efficacy, locus of control, and student achievement when gender, age, experience, certification, and major are controlled for as predictor variables.

Procedures

After approval was obtained from the central office administration, questionnaires were sent to all teachers at nine middle schools. Principals were asked to assist in the gathering of achievement data from student records and matching that data with the teacher that student had in each of the academic courses.

Four years of achievement scores were obtained on 1,226 students from records at the high schools where the ninth graders were attending. A scale score was obtained for five subjects for grades 5 through 8. The fifth grade scores were used as a base year for computation (sixth grade minus fifth grade equals gain score for sixth grade). Using this method, a gain score was computed for each subject and a teacher number was assigned to that score. A mean of all gain scores for each teacher was computed by subject and this mean gain served as the dependent variable for the analysis.

Analysis

As a first step in the data analysis, Pearson's product-moment correlation coefficients were computed to describe the degree of relationship between the independent variables, teacher efficacy and locus of control, and the dependent variable of student achievement scores. The Pearson product-moment correlation formula was employed to describe the degree of relationship between the independent

variables of locus of control as measured by the Rose and Medway TLC Scale and the Rand Efficacy Scale.

To further elaborate the relationships between the study variables, stepwise multiple regression analysis were computed between teacher efficacy and locus of control and student achievement scores. Regression analysis was also used to determine which demographic variables were better predictors of student achievement.

Summary

A descriptive correlational design was used to study the relationships among teacher efficacy, teacher locus of control, and gains in student achievement scores in nine middle schools in a Northeast Tennessee county. The population consisted of 132 regular classroom teachers in all subject areas.

The instruments used were the Rand Scale to measure personal and teacher efficacy and the TLC Scale to measure the degree of each teacher's internal or external control. Demographic data were collected from the Educators' Demographic Data Survey.

The Superintendent of Schools gave permission to gather data from each school to match student scores with teachers. He also encouraged each school to participate.

Four years of scale scores were obtained from each student's test record. Twelve hundred students' records were compiled for the fifth through the eighth grades. Five

scale scores were obtained for each year, for each of the core curriculum subjects. Statistics were then run with teacher variables matched with the students they taught.

CHAPTER 4

Results

The purpose of this study was to determine if teacher effectiveness, as measured by value added gain scores on student achievement, was related to the teacher personality characteristics of efficacy and locus of control. The value-added mean gain scores for each teacher were correlated with teachers' scores on the Rand Corporation Efficacy Scale and the Rose and Medway Teacher Locus of Control Scale (TLC).

Sample Demographics

The unit of analysis of this study sample was the teacher. Ninety teachers (68%) responded to the questionnaires from a total population of 132. Gender, age, race, level of college degree held, years teaching experience, type of certification, college major, college attended and career level status were the demographic variables selected for analysis.

Of the 90 teachers who responded to the questionnaire 57 (63%) were female and 33 (37%) were male. Most respondents were between the ages of 36-45 (52.2%) and 46-55 (42.2%) with the highest percentage in the 36-45 age group and the lowest in the under 26 age group (4.4%) (see Table 1). A majority of teachers held Master's (46.7%) or Bachelor's (42.2%) degrees. Eighty-five were regular

Table 1

Frequency and Percentage of Gender and Age

Category	Number	Percent
Gender		
Female	57	63.3
Male	<u>33</u>	<u>36.7</u>
	90	100.0
Age		
Under 26	4	4.4
26-35	12	14.5
36-45	44	52.2
46-55	25	42.2
56 and over	<u>5</u>	<u>5.6</u>
	90	100.0

education teachers while five were special education teachers. Years of teaching experience varied from 1-5 years (7.8%) to 30 and over (1.1%). Most teachers had between 11-25 years experience; 11-15 years (21.2%), 16-20 years (31.1%), and 21-25 (18.8%). Elementary (46.7%) and secondary teachers (46.7%) were equally represented. A majority of the teachers graduated from East Tennessee State University (64.4%). The University of Tennessee (11.1%) and other universities (24.4%) made up the remainder of the study sample (see Table 2). The majority of teachers participating in this study were Career Ladder Level I teachers (86.7%), one teacher was Career Ladder II (1.1%)

and 11 were Career Ladder Level III (12.2%) (see Table 3).
This study represented nine middle schools.

Table 2

Frequency and Percentage of Degree, Assignment, Years
Experience, Certification, Major, and College

Category	Number	Percent
<u>Degree of Respondent</u>		
Bachelors	42	46.7
Masters	38	42.2
Masters Plus	9	10.0
Specialist	<u>1</u>	<u>1.1</u>
	90	100.0
<u>Assignment</u>		
Regular	85	94.4
Special Ed	<u>5</u>	<u>5.6</u>
	90	100.0
<u>Years Teaching Experience</u>		
1-5	7	7.8
6-10	8	8.9
11-15	19	21.2
16-20	28	31.1
21-25	17	18.8
26-30	12	11.1
30 and over	<u>1</u>	<u>1.1</u>
	90	100.0
<u>Certification</u>		
Elementary	42	46.7
Secondary	42	46.7
Special Ed	<u>5</u>	<u>6.6</u>
	90	100.0
<u>Major</u>		
General Ed	32	35.6
Special Ed	4	4.4
Subject Area	49	54.4
Other	<u>5</u>	<u>5.6</u>
	90	100.0
<u>College</u>		
ETSU	57	64.0
UT	10	11.2
Other	<u>23</u>	<u>24.8</u>
	90	100.0

Table 3

Frequency and Percentage of Career Ladder Status

Career Ladder status	Number	Percent
Level I	78	86.5
Level II	1	1.1
Level III	11	12.4

Instrumentation Reliability

Rose and Medway (1981) reported Kuder-Richardson formula 20 reliabilities of .81 and .71 respectively for the I- and I+ scales of their TLC Scale. The internal consistency reliability coefficients obtained for the present study with Cronbach's alpha were .73 and .83 respectively for I- and I+. An alpha coefficient of .79 was obtained for both scales combined. This was consistent with those reported by Rose and Medway and indicated that both scales measure the same construct and could be added for the total TLC scale.

Teacher efficacy has generally been measured by two items developed by the Rand Corporation (Armor et al., 1976; Berman et al., 1977). It has been validated as a means of differentiating more effective from less effective teachers, especially in terms of student achievement (Ashton & Webb, 1986). As a test for reliability of this instrument three items were added to the scale from the efficacy scale

developed by Gibson and Dembo (1984) with item 4 measuring teacher efficacy and item 5 measuring personal efficacy to correspond with items 1 and 2 of the Rand Scale. Item 3 dealt with a teacher's belief in intelligence as a stable trait. As discussed in the literature review, this belief, which many hold, may be the largest obstruction to improving education (Ashton & Webb, 1986). The Alpha coefficient with item 3 included was .7168 and without item 3 the efficacy construct had an alpha of .8121. These items correlated highly together and measured the same latent variable.

Research Question 1

The first research question was what relationships exist between a teacher's sense of efficacy and student achievement? Pearson's correlation coefficients were used to answer this question and null hypothesis 1.

H₀1: There is no statistically significant relationship between student achievement score gains in any of the five subject areas taught and the teachers' sense of efficacy. Hypothesis 1 was retained.

Pearson's product-moment correlation coefficients were used to examine this relationship. No statistically significant relationships were found between reading, language arts, mathematics, social studies or science and teachers's sense of efficacy (see Table 4).

Table 4

Correlation Coefficients of Research Variables by Subject

Variable	Subjects				
	Reading	Language Arts	Mathe- matics	Science	Social Studies
Rand	.0818	-.2554	-.0064	.0466	-.0565
EFFC	.1326	-.3719	-.0487	.1567	.0778
TLC	-.1378	-.0781	.0357	.2134	.1752

Research Question 2

The second research question was what relationships exist between a teachers' locus of control and student achievement? Pairwise correlations were used to show the relationship between teachers' locus of control (TLC) scores with student achievement scores. Pearson's product-moment correlation coefficients were used to address this question and null hypothesis 2. There is no significant relationship between teachers' scores on locus of control and student achievement gains in the middle school core curriculum.

H₀2: The null hypothesis was retained. There is no statistically significant relationship between student achievement score gains and teachers' locus of control.

Research Question 3

The third research question was what relationships exist between a teacher's sense of efficacy (Rand and EFFC)

and teacher's locus of control (TLC) in middle school teachers. The correlation coefficient showing the relationship between efficacy and locus of control was .4545 ($p < .001$) (see Table 5). Hypothesis 3 was rejected since this was significant.

Table 5

Correlation Coefficients by Research Variables

Variable	Rand	EFFC	TLC
Rand	1.0000	.9239*	.4545*
EFFC	.9239*	1.0000	.4104*
TLC	.4545*	.4104*	1.0000

Note. Rand is the two-item Rand Corporation Index. EFFC is the Rand Index plus reliability item 4 (teacher efficacy), and item 5 (personal efficacy), and item 3 (teachers' belief in intelligence). TLC is Teacher Locus of Control (Rose & Medway scale).

* $p < .001$.

Research Question 4

The fourth research question was what relationships exist between a teacher's sense of efficacy, teacher's locus of control, and the demographic variables of gender, age, race, years teaching experience, type of certification, college major, Career Ladder level status and student achievement? Pairwise correlations were calculated to address this question and hypotheses 4 through 15 showing all relationships (see Table 6). All categorical variables

were dichotomized by recoding (certification/major: 1 = Secondary and 0 = Elementary; Career Ladder: 0 = Lower and 1 = Upper; sex: 0 = Male and 1 = Female; college: 0 = East Tennessee State and 1 = Other.

Table 6

Correlation Coefficients of Research Variables by Demographics

Variable	Demographics						
	Certi- fication	Career Ladder	Age	Experi- ence	Sex	Major	College
Rand	-.0226	-.0251	-.0574	-.1253	.3938	-.0187	-.1487
EFFC*	-.0048	-.0569	-.1164	-.1799	.4063**	-.0269	-.1984
TLC	.0218	.0138	.1002	.0746	.1568	.0873	-.0150

* EFFC variable includes Rand plus reliability questions

**p < .001.

Null Hypotheses 4 through 15

H₀4: It states that there is no significant relationship between teacher's gender and teacher efficacy. A correlation coefficient of .3938 (p < .001) was found which indicated a significant relationship did exist for this variable. Null hypothesis 4 was rejected.

H₀5: There is no significant relationship between scores for either males or females and teachers' locus of control scores. No statistically significant relationship was found, thus hypothesis 5 was retained.

H₀6: There is no significant relationship between teacher age and degree of efficacy. Hypothesis 6 was retained as no statistically significant correlation coefficient was found.

H₀7: There is no significant relationship between teacher age and locus of control. No statistically significant relationships were found; therefore, null hypothesis 7 was retained.

H₀8: There is no significant relationship between teaching experience and degree of teaching efficacy. Hypothesis 8 was retained as no statistically significant correlation coefficient was found.

H₀9: There is no significant relationship between teaching experience and locus of control. No statistically significant correlation coefficients were found resulting in retaining hypothesis 9.

H₀10: There is no significant relationship between teacher race and degree of teaching efficacy. Only 2 of 90 cases returned indicated that their race was other than the general population. Based on this comparison, any correlation would provide an unreliable statistic for this correlation.

H₀11: There is no significant relationship between teacher race and locus of control. Only 2 of 90 cases returned indicated that their race was other than the general population. The percentage of the sample population

which indicated a race other than the general population was too small to determine any correlation.

H₀12: There is no significant relationship between level of college degree obtained and degree of teaching efficacy. No statistically significant correlation coefficients were found; therefore, the null hypothesis was retained.

H₀13: There is no significant relationship between level of college degree obtained and locus of control. Statistically significant correlation coefficients were not found; thus, the null hypothesis was retained.

H₀14: There is no significant relationship between type of teacher certification and degree of teaching efficacy. No statistically significant correlation coefficients were found; therefore, null hypothesis 14 was retained.

H₀15: There is no significant relationship between type of teacher certification and locus of control. No statistically significant correlation coefficients were found; therefore, null hypothesis 15 was retained.

Research Question 5

How well can teacher locus of control and teacher efficacy predict student achievement, while controlling for gender, age, experience, certification, and major?

H₀16: It states that there is no significant relationship between each of the independent variables

(teacher efficacy, locus of control, gender, age, experience, certification, college major) and the dependent variable (student achievement scores). Pearson's product-moment correlation coefficients were used to determine the relationships between each of the separate subject areas' mean gain score and each of the teacher variables. These were compared to point-biserial correlations and deemed to be appropriate when one of the variables was dichotomous and the other was interval or ratio data (Hinkle, Wiersma, & Stephen, 1988).

No statistically significant correlation coefficients were found between the teacher variables and reading, language arts, science, and social studies (see Table 7). Mathematics was statistically significant with the following teacher variables: The coefficient obtained for math gain scores and age was .5210 ($p < .01$). The correlation between teacher experience and age was .7822 ($p < .001$). This indicated that these items should be considered as one teacher variable in examining the relationship with mathematics scores. For certification the coefficient obtained was .5034 ($p < .01$). The correlation between certification and college major was .7941 ($p < .001$) indicating that these teacher variables should be used together to explain the relationship with mathematics gain scores. The results are shown in Table 7.

The teacher variables which showed significant correlation with mathematics gain scores were placed in a stepwise multiple regression analysis to determine which variables were better predictors of student achievement. Age entered the first regression equation at the first step ($F = 11.17$, $p < .0022$), accounting for 27% of the variance in mathematics gains. In the second step the college major entered the equation ($F = 10.16$, $p < .0005$), increased the variance accounted for in mathematics gains to 41%.

Table 7

Correlation Coefficients of Subject by Demographics

Subject	Demographics						
	Certi- fication**	Career Ladder**	Age	Experi- ence	Sex**	Major**	College**
Reading	.1949	.1805	-.0169	-.0295	-.0342	.1282	.0081
Language Arts	-.1347	.0061	.0746	.0233	.0219	-.0796	.0669
Mathe- matics	.4753*	-.2068	.5210*	.4155*	.0701	.4674*	.2705
Science	.0667	-.0898	.0851	.2388	-.0694	-.0307	.1294
Social Studies	-.2049	-.4152	-.0794	-.0570	.5245	.1055	-.2287

* $p < .01$.

** Categories which were dichotomized by recoding to 0 and 1 before correlations.

The fifth research question and hypothesis 16 were partially rejected due to correlation with mathematics achievement gains and age and experience and college major

and certification. The multiple regression model further indicated that age and major could account for 41% of the variance in mathematics scores and were, therefore, good predictors of gain for this subject. However, no predictor variables were found for the other four subject areas.

It appeared that the older, more experienced teachers who were either certified in mathematics or had a major in mathematics had higher gain scores than did less experienced teachers who were general education majors. Both of these variables showed a positive relationship. Of the mathematics teachers surveyed ($n = 30$), mean achievement score gains showed a positive increase as the teachers' ages increased. The certification variable indicated that secondary certified or mathematics majors achieved a higher mean gain than did those teachers who had only an elementary certification (see Table 7).

In summary these relationships to mathematics gain scores indicated that experience and the number of colleges courses taken should be considered as predictor variables with regression models using student achievement. The positive relationship between females and degree of teacher efficacy indicates that efficacy differences do exist. However, they do not seem to be related to how well students do on TCAP mean gain scores.

CHAPTER 5

Summary, Conclusion, Recommendations and Implications

Summary

The primary goal of this study was to determine if there were certain teacher characteristics which could be used to predict gains in student achievement scores. The instruments selected, the Rand Efficacy Scale and the Teacher Locus of Control Scale, had previously demonstrated a high degree of reliability and had been validated as constructs for measuring these characteristics by past studies. The dependent variable used to measure teacher effect was the mean gain on achievement scores for all the students that a teacher taught during the years studied.

The first research question asked whether a relationship existed between a teacher's sense of efficacy and student achievement? None of the five subject areas showed a statistically significant relationship between student gain and teachers' personal or teaching efficacy. The population surveyed showed a great degree of variation in teacher mean gain, but this was not correlated with teachers' scores on the Rand Efficacy Scale. A recent study in Texas also failed to find a significant correlation between teaching efficacy and student achievement ($N = 150$) (Huguenard, 1992). An earlier study in West Virginia

attempted to find a correlation between efficacy and mean residual student achievement and found none (Perry, 1979).

Research question 2 asked whether relationships existed between a teacher's locus of control and student achievement? Again, none of the five subject areas showed a significant relationship between student gain and the teacher's score on the TLC Scale. Most locus of control research, including Rose and Medway (1981), have attempted to measure certain classroom behaviors associated with student learning. They assumed that teachers' ability to control students increased their learning; therefore, the larger the correlation coefficient between TLC and pupil control the more student achievement was increased. This study, however, attempted to use an objective measure and found no relationship.

The third research question asked what relationships existed between a teacher's sense of efficacy and teachers' locus of control? This correlation showed a significant relationship between these scales and indicated that these teacher characteristics were related to each other. This was consistent with other research on this relationship which found teachers who had strong teaching and personal efficacy (Rand scale) were significantly more internally-oriented in their beliefs regarding both student successes and failures (TLC scale) (Greenwood et al., 1990; Ashton, Webb, & Doda, 1983).

The fourth research question asked what relationships existed between a teacher's sense of efficacy, teacher's locus of control, and selected teacher demographic variables. Correlations were run with all variables and teacher efficacy was significantly correlated with the gender of the teacher. Females tended to have stronger feelings of efficacy than did males. This was consistent with the research of Greenwood et al. (1990) which found that 60% of the females said they could make a difference and teachers in general make a difference, while only 35% of the males answered positively to both questions. Smith (1986) found that females appear to be more internally controlled than males in the teaching field; this he reasoned was because they are more comfortable in the job. Guskey (1981) found that female teachers consistently assumed greater responsibility for learning outcomes of their students than did male teachers.

The final research question asked how well teacher locus of control and teacher efficacy could predict student achievement, while controlling for gender, age, experience, certification, and major? Age, experience, certification, and major were significantly correlated with achievement score gains.

In the multiple regression analysis, age was the first variable to enter the equation. The older, more experienced teachers showed more gain in achievement scores than did the

younger, less experienced teachers in mathematics. The methods used by the more experienced teachers may contribute to larger gains in mathematics scores.

In addition to age/experience being a predictor variable for higher mathematics gain scores, college major and certification entered the regression as the second predictor variable. Teachers who were certified or majored in mathematics tended to have students who performed better on achievement tests. All other subjects showed no correlations between specific area certified and achievement mean gain scores. In all subject areas except mathematics teachers who were general education majors with an elementary endorsement taught students who performed as well as those teachers who had secondary endorsements in a specific subject area.

Conclusions

This research failed to establish a relationship between teachers' sense of efficacy, locus of control, and student achievement. However, four significant relationships were found between the variables studied.

A significant relationship was found between the degree of teacher efficacy and locus of control. This finding was supported by other researchers (Greenwood et al., 1990; Ashton et al., 1983). It can be concluded that these personality characteristics are related and that teachers who have a more internal locus of control feel more

strongly than those with an external locus of control that they can affect students' learning.

It can be concluded also that females tend to have a higher degree of teacher efficacy than do males. Again, this was supported by other research (Greenwood et al., 1990; Guskey, 1981). The profession, especially in the middle and lower grade levels, is still dominated by females. This study population consisted of two thirds females and one third males. This is consistent with the overall population in middle schools. In this female dominated population, the male sense of teaching efficacy is not as strong.

Female teachers tend to have a more internal control in the sense that they can make a difference. Although this was not correlated to mean gain in this study, its importance to the total learning environment is crucial because females comprise such a large percentage of the population.

Through the regression analysis it can be concluded that certain demographic variables are predictors of mathematic mean score gain. It can be concluded from this analysis that age and experience are important predictors of the mean score gain of a teacher. Older more experienced teachers were found to produce higher mean gains than the less experienced mathematics teachers.

The other predictor variable which was found was teacher certification and major. It was concluded that in mathematics a teacher who was secondary certified with a college major in mathematics produced higher mean gain scores than did those teachers with an elementary certification. The amount of mathematics a teacher takes in college is a predictor of student mean gain scores in the middle school.

Furthermore, it can be concluded that in language arts, reading, science, and social studies, elementary certified teachers are not different from the secondary certified teachers in mean gain scores. The current practices in middle schools of hiring elementary certified teachers due to their scheduling flexibility is substantiated. However, it is concluded that mathematics teachers should be more subject area specific.

Recommendations

The fact that teachers with a content specific college major in mathematics had higher gains than general education majors, indicates the importance of further mathematics training for those interested in teaching mathematics at the middle school level. The basic mathematics courses do not offer enough training for the middle school teacher, especially in the seventh and eighth grades, where algebraic concepts are introduced.

A logical recommendation then for school systems is not only to hire the best trained, but also to retain its best teachers, since experience coupled with college major are the two best predictor variables for improving student achievement in mathematics. There is a real need at the middle school level to hire teachers specifically for mathematics if achievement score gains are to be improved.

The following studies would provide further insight into the importance of teacher efficacy, teacher locus of control, and the demographic variables which may be studied as possible predictors of teacher effectiveness.

1. Future studies will need to examine teacher efficacy as a contextual variable which increases as a teacher has more training and confidence in a particular situation.
2. A state-wide assessment should be performed to ascertain the importance of teacher certification and major at the middle school level, especially in mathematics.
3. This study should be replicated with a more diverse population of teachers using a statistical model which controls for differences in student population.
4. A study should be conducted to determine if the use of mean gain scores as an objective measure of teacher effectiveness can be meaningful and valid.
5. Future studies should examine the relationship between not only teacher efficacy and student achievement

but students' attitudes and self-esteem which might be affected by this teacher characteristic.

6. The measurement of teacher effect on mean gain scores should be examined by studying the commonalities found among those teachers who consistently rank in the top and/or at the bottom in value-added scores.

7. Future studies should also attempt to examine other factors which might play an important role in student achievement (i.e., home, peer group, and ability).

Implications

This study attempted to establish a link between certain teacher characteristics and student achievement. It is apparent to this researcher and to anyone who has ever gone through school that good teachers do make a difference and that effective teachers have expectations that they can affect learning. A person's feelings about his/her ability to affect a desired outcome are by logic connected to how much effort that person is willing to expend and that does have a relationship to their chances for success.

Using achievement scores to measure effective teaching is precarious at best. The use of mean gain scores to predict teacher effectiveness characteristics can be misleading if adjustments are not made for prior growth and normal gain patterns. The statistical model used to predict these effects must control for those items which cannot be controlled in real life.

Future studies using achievement scores as measures of teacher effectiveness will need to use multiple years of data with different students to better validate the use of this variable in measuring teacher effect. The more years of data that are used the better able the researcher will be to determine teacher effect and what variables are better predictors of this effect.

Until multiple years of data are collected and analyzed, quick assumptions about variables which seem to distinguish more from less effective teachers needs to be cautiously made. If learning were a true linear function and there were certain constants to be counted on, then measuring learning would not be so difficult, but there are no constants.

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APPENDICES

APPENDIX A
DEMOGRAPHIC DATA

DEMOGRAPHIC DATA

NAME: _____ (OPTIONAL)

SEX: _____ MALE _____ FEMALE

YOUR AGE _____ RACE: _____ BLACK _____ WHITE (CAUCASIAN)

_____ YEARS _____ OTHER

PLEASE INDICATE HIGHEST DEGREE LEVEL YOU HAVE ACHIEVED:

- _____ (1) BACHELOR'S
 _____ (2) MASTER'S
 _____ (3) MASTER'S PLUS 30
 _____ (4) EDUCATIONAL SPECIALIST
 _____ (5) DOCTORATE

WHAT IS YOUR PRIMARY ASSIGNMENT?

- _____ (1) CLASSROOM TEACHER
 _____ (2) SPECIAL EDUCATOR

_____ SUBJECTS TAUGHT

HOW MANY YEARS HAVE YOU BEEN IN EDUCATION? _____ YEARS

WHAT ARE YOUR AREAS OF CERTIFICATION?

WHAT WAS YOUR MAJOR IN COLLEGE? _____

WHAT WAS YOUR MINOR IN COLLEGE? _____

FROM WHAT COLLEGE OR UNIVERSITY DID YOU RECEIVE YOUR BACHELOR'S DEGREE?

WHAT IS YOUR CAREER LADDER STATUS?

_____ CL I _____ CL II _____ CL III

APPENDIX B
QUESTIONNAIRES

QUESTIONNAIRE I

Please select the one response of each pair (and only one) which you more strongly believe to be the case as far as you are concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

1. When the grades of your students improve, it is more likely
 - a. because you found ways to motivate the students, or
 - b. because the students were trying harder to do well.
2. Suppose you had difficulties in setting up learning centers for students in your classroom. Would this probably happen
 - a. because you lacked the appropriate materials, or
 - b. because you didn't spend enough time in developing activities to go into the centers?
3. Suppose your students did not appear to be benefiting from a more individualized method of instruction. The reason for this would probably be
 - a. because you were having some problems managing this type of instruction, or
 - b. because the students in your class were such that they needed a more traditional kind of approach.
4. When a student gets a better grade on his report card than he usually gets, it is
 - a. because the student was putting more effort into his schoolwork, or
 - b. because you found better ways of teaching the student.
5. If the students in your class became disruptive and noisy when you left them alone in the room for 5 minutes, would this happen
 - a. because you did not leave them interesting work to do while you were gone, or
 - b. because the students were more noisy that day than they usually are?
6. When some of your best students fail a math test, it is more likely
 - a. because they weren't attentive to the lesson, or
 - b. because you didn't use enough examples to illustrate the concept.

7. Suppose you were successful at using learning centers with your class of 30 students. Would this occur
 - a. because you worked hard at it, or
 - b. because your students easily conform to the new classroom procedure?

8. When a student pulls his or her grade up from a "C" to a "B," it is most likely
 - a. because you came up with an idea to motivate the student, or
 - b. because the student was trying harder to do well.

9. Suppose you are teaching a student a particular concept in arithmetic or math and the student has trouble learning it. Would this happen
 - a. because the student wasn't able to understand, or
 - b. because you couldn't explain it very well?

10. When a student does better in school than he usually does, it is more likely
 - a. because the student was trying harder, or
 - b. because you tried hard to encourage the student to do better.

11. If you couldn't keep your class quiet, it would probably be
 - a. because the student's came to school more rowdy than usual, or
 - b. because you were so frustrated that you weren't able to settle them down.

12. Suppose a play put on by your class was voted the "Best Class Play of the Year" by students and faculty in your school. Would it be
 - a. because you put a lot of time and effort in as the "director," or
 - b. because the students were cooperative?

13. Suppose it were the week before Easter vacation and you were having some trouble keeping order in your classroom. This would more likely happen
 - a. because you weren't putting extra effort into keeping the students under control, or
 - b. because the students were more uncontrollable than usual.

14. If one of your students couldn't do a class assignment, would it be
 - a. because the student wasn't paying attention during the class lesson, or
 - b. because you gave the student an assignment that wasn't on his or her level?

15. Suppose you wanted to teach a series of lessons on Mexico, but the lessons didn't turn out as well as you had expected. This would more likely happen
 - a. because the students weren't that interested in learning about Mexico, or
 - b. because you didn't put enough effort into developing the lessons.

16. Suppose a student who does not typically participate in class begins to volunteer his or her answers. This would more likely happen
 - a. because the student finally encountered a topic of interest to him or her, or
 - b. because you tried hard to encourage the student to volunteer his or her answers.

17. Suppose one of your students cannot remain on task for a particular assignment. Would this be more likely to happen
 - a. because you gave the student a task that was somewhat less interesting than most tasks, or
 - b. because the student was unable to concentrate on his or her schoolwork that day?

18. Suppose you were unable to devise an instructional system, as requested by the principal, which would accommodate the "needs of individual students" in your class. This would most likely happen
 - a. because there were too many students in your class, or
 - b. because you didn't have enough knowledge or experience with individual instructional programs.

19. If the students in your class perform better than they usually do on a test, would this happen
 - a. because the students studied a lot for the test, or
 - b. because you did a good job of teaching the subject area?

20. When the performance of a student in your class appears to be slowly deteriorating, it is usually
 - a. because you weren't trying hard enough to motivate him or her, or
 - b. because the student was putting less effort into his or her schoolwork.

21. Suppose a new student was assigned to your class, and this student had a difficult time making friends with his or her classmates. Would it be more likely
 - a. that most of the other students did not make an effort to be friends with the new student, or
 - b. that you were not trying hard enough to encourage the other students to be more friendly toward the newcomer?

22. If the students in your class performed better on a standardized achievement test given at the end of the year compared to the students you had last year, it would probably be
 - a. because you put more effort into teaching this year, or
 - b. because this year's class of students were somewhat smarter than last year's.

23. Suppose, one day, you find yourself reprimanding one of your students more often than usual. Would this be more likely to happen
 - a. because that student was misbehaving more than usual that day, or
 - b. because you were somewhat less tolerant than you usually are?

24. Suppose one of your underachievers does his or her homework better than usual. This would probably happen
 - a. because the student tried hard to do the assignment, or
 - b. because you tried hard to explain how to do the assignment.

25. Suppose one of your students began to do better schoolwork than he usually does. Would this happen
 - a. because you put much effort into helping the student do better, or
 - b. because the student was trying harder to do well in school?

26. Suppose you ask two students to work together on an activity and the students were able to work together well. Is it more likely
 - a. that they were some of your better students, or
 - b. that you gave the students explicit instructions on what to do?

27. If a student who is usually very quiet begins to talk in class, is it more likely
 - a. because the student finally found something that interests him or her, or
 - b. because you tried hard to encourage the student to talk in class.

28. If the students in your class remained quiet when you left them alone for a few minutes, this would more likely happen
 - a. because you knew how to keep them quiet when you are out of the room, or
 - b. because the students were more controllable than usual.

Questionnaire II

Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate letters under each statement.

SD = Strongly disagree
 MD = Moderately disagree
 DS = Disagree slightly more than agree
 AS = Agree slightly more than disagree
 MA = Moderately agree
 SA = Strongly agree

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.

SD MD DS AS MA SA

2. If I really try hard, I can get through to even the most difficult or unmotivated students.

SD MD DS AS MA SA

3. "Smartness" is not something you have, rather it is something you get through hard work.

SD MD DS AS MA SA

4. A teacher is very limited in what he/she can achieve because student's home environment is a large influence on his/her achievement.

SD MD DS AS MA SA

5. When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student.

SD MD DS AS MA SA

VITA

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