2003 GEORGIA NORMS ON THE *TEACHER MOTIVATION DIAGNOSTIC QUESTIONNAIRE*

by

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(Under the Direction of C. Thomas Holmes)

ABSTRACT

This study had two objectives. The first was to establish 2003 Georgia norms on the *Teacher Motivation Diagnostic Questionnaire (TMDQ*), an instrument designed to assess four specific aspects of teacher motivation. The second was to determine, if there was a statistically significant difference between the 2003 norms and the 1991 norms for Georgia teachers on the *TMDQ*. The four aspects of the TMDQ are; 1) Principal Expectations (PE), the teacher's beliefs about the principal's expectations for improved student achievement, 2) Self Concept of Ability (SC), the teacher's self-concepts of ability to improve student achievement, 3) Future Utility (FU), the teacher's beliefs about the future benefits to themselves for improved student achievement, 4) Attitude toward Principal (AP), the attitude of teachers toward their principal.

Surveys with letters of introduction and instructions were mailed to all teachers in 300 randomly selected public schools in Georgia (15,000 teachers). Over 100 survey packets were returned, with 100 having 20% or greater usable teacher return rate (2,083 teacher surveys), the criteria for inclusion as a subject school. The teacher scores were converted to mean scores for each school. The subject school scores were converted into normative scores including means, standard deviations, percentile ranks, and Z scores. T-test were performed on each of the four pairs of scores, 2003 and 1991, for the four

aspects of the TMDQ, as well as the overall mean, which represented the overall teacher motivation level. The findings showed statistically significant increased levels of teacher motivation for Georgia teachers from 1991 to 2003 in three of the four aspects, as well overall teacher motivation level. The only aspect not showing a statistically significant difference was Attitude toward Principal.

INDEX WORDS: Motivation, Morale, Teacher Motivation, Teacher Morale, Teacher Attitudes, Teacher Questionnaires, Attitudes, Motivational Levels, Teacher Motivational Levels, Teacher Principal Relationship.

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And

DEDICATION

This work is dedicated to the memory of my father who passed onto a better life during my journey to complete this project.

To: ALMOND ADAMS PARKER, (POP)
A man whose wisdom and education far surpassed his schooling.

Much thanks to my family for the help and sacrifices they made, my wife Lynn, Kristi, Thad, and Marla. Thanks also to my mother Louise Parker for many days and nights of room and board.

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CHAPTER I

INTRODUCTION

Teacher shortages are evident in many counties in Georgia. As Governor Perdue (2002) stated in an interview, "The surge in teacher attrition rates is appalling." (p.5). While Governor, Barnes (2002) pointed out that a large number of current teachers are near retirement age, "there are an estimated 8,000 teachers in the 25- to 30- year range" (p.4.). There is in place a program for non-certified persons to enter the teaching field, called Teach Georgia. This allows people with degrees other than teaching degrees to be placed in the classrooms, with little more training in pedagogy than substitute teachers. Of course to remain, they are required to earn the teacher education class credits. There is a greater burden placed on certified teachers. After having been in the classroom, and receiving a degree from an accredited college or university, and having received state certification, veteran teachers were required to pass a comprehensive certification test for certificate renewal and to continue in their profession. The forecast is for this problem to get worse. Many teachers are approaching retirement and fewer are entering the field. The state and federal governments are placing more requirements on those already in the profession. Former Governor Barnes's education reform programs for example require all teachers renewing their certificates to have demonstrated technology competency (this requirement is usually met by teachers giving up seven Saturdays to attend In-tech classes along with the time spent at home or at school meeting the other requirements of the course). Administrators are pressuring classroom teachers to have students show high scores on standardized achievement test. Several cases have emerged where teachers and/or administrators have been investigated for unethical

acts of having, allowing, or requiring teachers teach the questions from the test before students were administrated the test.

Statement of the problem

As pointed out by Governor Perdue and past Governor Barnes (2002), there is a teacher shortage in the State of Georgia and it is projected to worsen. There are shortfalls in the state as well as local budgets. The salaries of teachers are not likely to increase, so other factors to attract and retain teachers need to be identified.

Justification of the study

In the nineteen seventies Matthews wrote on the subject of student achievement, *Improving Academic Performance* (Matthews, 1979) and *The Principal's Influence on Student Achievement* (Matthews and Brown, 1976). In Matthews and Brown's 1976 publication, a conceptual model of factors influencing student achievement was presented. From this model Matthews developed the *Teacher Motivation Diagnostic Questionnaire, (TMDQ*). As an outcome of their research in 1976, Matthews and Brown postulated three factors which affect teacher motivation: "(a) the teacher's self-concept of ability to affect student achievement, (b) the teacher's attitude toward the principal, and (c) the teacher's beliefs of the principal's value and expectations for achievement" (p.12). In 1979 Matthews added, "the teacher's beliefs about future utility of improved performance" (p.64). As an outcome of identifying these four factors, Matthews (1985) developed the *Teacher Motivation Diagnostic Questionnaire*.

The reliability and validity of the *TMDQ* have been well established, originally by Matthews and Holmes (1982). National norms were established in 1992 by McDonough.

Building on McDonough's study, Norton (1992) completed her study using the *TMDQ*, which established norms for teacher motivational levels in the State of Georgia.

The purpose of this study is to investigate the motivational level of public school teachers in Georgia and to compare the current motivational scores to the motivational scores reported in 1992. While completing the research for this comparison, norms for Public School Teachers in the State of Georgia will be updated.

Purpose of the study

There is a teacher shortage in the State of Georgia. Many teachers are leaving the field. A large number of teachers are at or near retirement age. There are also a large number of teachers who leave the profession after a very short time in the classroom. If money is not the primary motivator for teachers, as research indicates, then why are so many new teachers choosing not to return to the classroom. The reason for teachers leaving the profession needs to be investigated. This study will shed light on the aspect of current teacher motivational levels.

Definition of terms

Teacher Motivation Diagnostic Questionnaire (TMDQ) - is a survey type instrument which uses an Osgood Semantic Differential format with a seven point scale. The *TMDQ* has four questions for each of four aspects of teacher motivation.

Principal Expectations (PE) - is the aspect of teacher motivation dealing with a teacher's beliefs about what the principal expects of them and how much the principal values student achievement. Quantitatively PE is the sum of responses to Questions 1, 5, 12, and 16 on the *TMDQ*.

Attitude Toward Principal (AP) - is the belief teachers hold about how much their principal likes them or how much they like their principal. The quantitative definition of AP is the sum of responses to Questions 2, 6, 11, and 15 on the *TMDQ*.

Future Utility (FU) - is the belief teachers hold about the benefit to themselves that student achievement would affect. Quantitatively FU is the sum of the responses to questions 3, 7, 10, and 14 on the *TMDQ*.

Self-Concept of Ability (SC) - is the teacher's belief of their ability to improve student achievement. The quantitative definition of SC is the sum of responses to questions 4, 8, 9, and 13 on the TMDQ.

General Teacher Motivational Level - is the total mean score on the *TMDQ*.

Organization of the study

Chapter one of this study includes the introduction, statement of the problem, justification of the study, purpose of the study, and definition of terms. Chapter two contains a review of literature related to motivation, teacher motivation, and a background of the teacher motivational diagnostic questionnaire. Chapter three delineates the methods and procedures used in carrying out the research for this study. Chapter four is a compilation of the findings of this research along with an analysis on the data gleaned from the research. Chapter five contains a narrative of the interpretation and implications of the research findings.

CHAPTER II

REVIEW OF THE LITERATURE

Theories of Motivation

Plato in *The Republic* expressed a belief that people must be well educated to be able to rule the republic. It is therefore necessary to "compel the best minds to attain knowledge"(Plato, 2001, p.262 - 263). Once educated it is necessary to compel these enlightened citizens to go back into the lower levels of society and enlighten those who do not yet have sight. Plato espoused that the republic must educate those people who were to become the rulers. They must be "compelled" to become educated and then "compelled" to serve the greater good of the republic. This compelling to become educated and compelling to serve is one form of motivation. As illustrated by Plato's statements, the discussion of motivation dates back to early scholars. Freud based his theory of human motivational conflict on the "Oedipus complex". He espoused that the motives behind capitalism are based on the urge to "accumulate filthy lucre" (McClelland, 1987, p. 417). More recent writings illustrate a number of motivational theories. Mook (1987) said that the scientific study of why people are motivated or unmotivated is a recent development in human history (p. 5). There are several different theories on human motivation. According to Wlodkowski (1981), motivational theories differ because the authors based the various theories on assumptions regarding the nature of the universe, human beings and their behavior which are incompatible with and contradictory to one another (p. 102). McClelland (1987) wrote, "The psychology of motivation is a broad and loosely defined field. It covers everything from detailed investigations of psychological mechanisms involved in animal

drives to elaborate analyses of the unconscious motives" (preface). In their chapter on work motivation in schools, Hoy and Miskel (1991) provided an overview of the prominent theories of work motivation for educators. Motivation consists of complex forces that start and maintain voluntary activity that is undertaken to achieve personal goals. Several competing theories exist that attempt to explain work motivation. The first of these, Maslow's need hierarchy theory, postulates five hierarchical levels of needs (physiological, security, belongingness, esteem, and self-actualization needs), with higher-level needs activated as lower-level needs are satisfied. A second theory, by Herzberg, recognizes only two factors in work motivation - motivators and hygienes. These consist of separate sets of components, one set (motivators) contributing to job satisfaction and the other set (hygienes) contributing to job dissatisfaction. Motivator components satisfy higher-level needs for esteem and self-actualization, while hygiene components satisfy lower-level physiological, security, and belongingness needs. In addition to the two need theories of work motivation, Hoy and Miskel (1991) presented two more complex theories. The first, expectancy theory, hypothesizes that motivation is a function of expectancy, valence, and instrumentality. The second, goal theory, postulates that the effort of an individual depends on the difficulty and specificity of the goals that are set (p. 202). Hoy and Miskel (1991) credited Vroom with modifying and popularizing the expectancy theory (p. 179). They recognized Locke and his associates for the development of the goal theory (p. 185). Another theory is discussed by McClelland (1987). "The strength of the achievement motive in individuals is best measured by the need for achievement, "n Achievement" (p. 224). He stated that people with a high "n Achievement" perform better if the rewards are intrinsic (p. 227). McClelland's work grew out of the earlier motivational studies of Murray (1938). The "n Achievement" was one of a list of 20 basic human needs constructed by Murray.

Heirarchy of Needs Theory

Maslow (1954) postulated the hierarchy of needs theory bases human motivation into five levels:

> Physiological needs. These being the need for food, water, clothing, and shelter.
>
> Safety needs. If and when physiological needs are met, a new set of needs become prevalent. These are security, stability, dependency, protection, freedom from fear, anxiety, and chaos, need for structure, order, law, and limits.
>
> Belonging and love needs. When the previous, lower level needs, are satisfied, the belonging and love needs emerge. These encompass love, affection, and a sense of belonging. For society to survive and be healthy, the satisfaction of this need is required.
>
> Esteem needs. There are two subsets to this need. The first includes desire for strength, achievement, adequacy, mastery and competence, and for confidence in the face of the world, and for freedom and independence. The second subset includes the desire for reputation or prestige, status, fame, glory, attention, dignity, and importance.
>
> Self-actualization needs. This need addresses self-fulfillment. (p. 35-47)

Theodossin stated in 1982 that Maslow's heirarchy of needs theory has been one of the most influential bases of explaining human motivation (p. 4). In 1968, Maslow said that it should be the goal of management to merge the goals of the individuals with the goals of the organization. Management must recognize that, lower needs gratification can be bought with money - people are motivated only with other commodities such as affection, dignity, respect, belongingness, appreciation and the opportunity for self-actualization. Terpstra (1979) concurred, saying that the primary value of Maslow's theory is its focus on individual needs. To motivate employees, managers must identify their most important needs and link the satisfaction of those needs to job performance (p. 376).

Motivation-Hygiene Theory

Herzberg (1966) studied human needs and motivation. From his studies, he developed a theory of motivation known as the work-motivation theory. His theory presented two sets of needs. One of the needs he proposed, is the animalistic need to avoid pain. The second need is a humanistic need to grow psychologically. Herzberg based his study on interviews of 200 engineers and accountants representative of industry in Pittsburgh. The subjects were asked to recall specific events at work, which had either led to a marked improvement in their job satisfaction or resulted in a marked reduction in job satisfaction. The subjects were further questioned as to why they had reported as they did. Cumulatively, the interviewers asked if their feelings of satisfaction or dissatisfaction about their work affected their personal relationship, performance, and well-being.

From this study, Herzberg (1966) concluded that there are five factors that are strong determiners of job satisfaction. They are; 1) achievement, 2) recognition, 3) work itself, 4) responsibility, and 5) advancement.

Herzberg stated that these satisfiers describe the relationship between a person and what he does (p.72-74). Herzberg, Mausner, and Snyderman (1959) stated that, factors which lead to positive attitudes about the work do so because these factors satisfy the individual's need for self-actualization in his work (p.114). Herzberg used the term "motivators' to describe factors which involve beliefs about accomplishment, professional growth, and recognition. Herzberg said, "*satisfier* factors were named the *motivators*, since other findings of the study suggest that they are effective in motivating the individual to superior performance and effort" (p. 74).

Hersey and Blanchard (1988) wrote that he used this term because these factors have a positive effect on job satisfaction (p. 64).

Opposed to the motivators or job satisfiers, Herzberg (1966) developed a list of dissatisifers. He stated that dissatisfiers were unidimensional as were satisfiers, yet were rarely involved in events that led to positive job attitudes. Dissatisfiers served to bring about job dissatisfaction and contrary to satisfiers they produced short term changes in job attitudes. Herzberg listed the major dissatisfiers as "company policy and administration, supervision, salary, interpersonal relationships and working conditions. Dissatisfier factors essentially describe the environment and serve primarily to prevent job dissatisfaction, while having little effect on positive job attitudes. Due to the preventative nature of these factors, Herzberg, using an analogy to the medical term meaning "preventative and environmental", labeled them "hygiene" factors. Herzberg gives Dr. Robert Ford of the American Telephone and Telegraph Company credit for this excellent synonym to the other term being used at the time - maintenance factors (p.74). Hersey and Blanchard (1988) described hygiene factors as not an intrinsic part of the job, but related to the conditions under which the job is performed. Hygiene factors produce no growth in worker output, they only prevent reduced worker performance (p.64).

In summary, two essential findings were derived from this study *(The Motivation to Work*). First, the factors involved in producing job satisfaction were separate and distinct from the factors that led to job dissatisfaction. Since separate factors needed to be considered, depending on whether job satisfaction or job dissatisfaction was involved, it followed that these two feelings were not the obverse of each other. Thus, the opposite of job satisfaction would not be job dissatisfaction, but rather no job satisfaction: similarly, the opposite of job dissatisfaction

is no job dissatisfaction, not satisfaction with one's job. The fact that job satisfaction is made up of two unipolar traits is not unique, but it remains a difficult concept to grasp. (Herzberg, 1966, pp.75-76)

McGregor's Theory X and Theory Y

McGregor's (1960) Theory X and Theory Y is an approach to explaining managerial behavior. He stated that in order to be successful, managers must have the ability to predict and control human behavior (p. 4). McGregory based Theory X on the following beliefs:

> The average human being has an inherent dislike of work and will avoid it if he can.
>
> Because of this human characteristic of dislike of work, most people must be coerced, controlled, directed, threatened with punishment to get them to put forth adequate effort toward the achievement of organizational objectives.
>
> The average human being prefers to be directed, wishes to avoid responsibility, has little ambition, wants security above all. (pp. 33-34)

Theory Y is based on the following beliefs:

> The expenditure of physical and mental effort in work is as natural as play or rest.
>
> External control and the threat of punishment are not the only means for bringing about effort toward organizational objectives. Man will exercise self-direction and self-control in the service of objectives to which he is committed.
>
> Commitment to objectives is a function of the rewards associated with their achievement.
>
> The average human being learns under proper conditions, not only to accept but to seek responsibility.
>
> The capacity to exercise a relatively high degree of imagination, ingenuity, and creativity in the solutions of organizational problems is widely, not narrowly, distributed in the population.
>
> Under the conditions of modern industrial life, the intellectual potentialities of the average human being are only partially utilized. (pp. 47-48)

> McGregor said that the organization with Theory X managerial techniques uses authority to maintain direction and control. This approach has as a basis, the belief that people will only work under external coercion and control. McGregor (1960) used the analogue of the carrot and stick compared to Theory X. He stated that satisfying physiological and safety needs can be provided for by management. Yet when these needs are met, the carrot and stick method has no effect at all in attaining higher level needs. Management cannot provide a person with self-respect, peer respect, or with the satisfaction of needs for self-fulfillment. Management can either create or not create conditions, which encourage and enable people to seek such satisfactions for themselves. According to McGregor (1960), the philosophy of management by direction and control is inadequate to motivate because based on this approach human needs are relatively insignificant motivators of behavior in society today (p. 42).

Expectancy Theory

The development of the expectancy theory is credited to Vroom (1964). He explained his theory using three primary concepts: 1) valence is the affective orientation an individual has toward particular outcomes, 2) expectancy is a belief in the likelihood that a specific act will be followed by a specific outcome, and 3) force is related to the fact that the behavior of a person is the result of a field of forces with specific magnitudes and directions. Further explaining that "the force on a person to perform an act is a monotonically increasing function of the algebraic sum of the products of the valences of all outcomes and the strength of his expectancies that the act will be followed by the attainment of these outcomes." (p. 15-18)

Porter, Lawler, and Hackman (1975) presented a symbolic model expressing the expectancy theory:

$$MF = E \times V$$

Where MF = motivational force

E = expectancy

V = valence.

They stated that the "expectancy theory provides one way of analyzing and predicting which courses of action individuals will take when they have the opportunity to make choices about their behavior". (p. 56) They explained that the model illustrates that the motivational force to engage in behavior is a multiplicative function of the expectancies the person has about outcomes for the behavior and the valence of these outcomes.

Achievement Motivation Theory

The achievement motivation theory evolved from the work of Murray (1938). Murray developed the idea on need as a construct. The construct of need according to Murray, is a force in the brain region which organizes perceptions, apperception, intellection, conation and action so as to create a unidirectional unsatisfying situation, which gives rise to certain overt behavior intended to create a situation which stills the organism. (pp. 123-124) This achievement need was one of twenty developed by Murray. He labeled this achievement need as "n Ach" and defined it as

> a desire to accomplish something difficult. To master, manipulate or organize physical objects, human beings, or ideas. To do this as rapidly, and independently as possible. To overcome obstacles and attain a high standard. To excel one's self. To rival and surpass others. To increase self-regard by the successful exercise of talent. (p. 164)

Murray developed the Thematic Apperception Test (TAT), published in 1938, an instrument for systematically measuring human motives (McClelland, p.43, 1987). Murray's TAT basically is built on Freud's technique of free associations and inferences for analysis of the resulting "day-dreams". The TAT illicites imaginative stories from subjects after viewing a series of 20 pictures, suggestive of key emotional complexes in the life of the individual. "Perhaps his greatest contribution, in addition to the TAT, is a vocabulary of human motives that has shaped work in the field ever since" (McClelland, p. 44, 1987). Murray's theory does not reduce all

human needs to one basic motive force, as Jung and Rogers, or Maslow's drive for self-realization, or Freud's two to three basic motive forces. Neither does Murray's theory develop a list of motives so long as to be impractical with which to work. Murray utilized a diagnostic council of contemporary experts with various motivational traditions to list and define the main human motives. "(T)he goal is to find the fewest motives that will account for the most human behavior" (p. 45). According to McClelland (1987), only 3 of the 20 motives listed by Murray have been the subject of extensive investigation since his time. These three needs are: 1) the need for achievement, 2) the need for affiliation, 3) and the need for power. (McClelland, 1987) McClelland furthered the work of Murray in the area of need to achieve. He also developed a method of measuring individual differences in human motivation. His methods were also based on the Freudian method of coding fantasy stories written after subjects were allowed to view a variety of pictures. McClelland developed a system of scoring the fantasy stories based on the number of achievement-related ideas in the stories. The count of these achievement-related ideas has been called the score for n Achievement (need for Achievement) (McClelland, 1976, 1984).

Atkinson (1964) added another factor to the concept of *n* Achievement. He factored in the fear of failure, developing the framework of the expectancy-value theory. To go along with the positive value of the need for achievement or motive for success, is a negative value of the tendency to avoid the performance of an act, which is expected to lead to failure. The achievement motivation of an individual to perform any particular task is the sum of the tendency of success (Ts) and the tendency of the individual to avoid the performance (T-f).

Path Goal Theory

Hoy and Miskel (1991) give Locke and his associates credit for development of the goal theory (p. 185). "The basic postulate of the theory is that intentions to achieve a goal constitute the primary motivating force behind work behavior. Goals direct both mental and physical actions of individuals" (Hoy & Miskel, 1991. p. 186). Four generalizations of the goal theory grew out of both laboratory and field studies: 1) specific performance goals elicit a higher level of performance than do general goals, 2) difficult goals, if accepted, result in higher levels of performance than easy goals, 3) subordinate participation in goal-setting activities, as opposed to goal setting by the supervisor alone, leads to employee satisfaction and commitment to the goals, 4) goal setting and feedback combine to enhance employee motivation.

Teacher Motivation

Why do teachers teach? A common response in teacher's lounges is that it certainly isn't for the money, an extrinsic factor. The motivation of teachers is important. Teacher's motivation is critical to the success of public education (Gretzinger, 1992). Evans (1998) "findings revealed …teachers to be motivated by recognition of their efforts or their talents" (p.45). She stated that the most powerful factor of teacher motivation, which attract, maintain, and retain teachers, are intrinsic rewards. She more specifically stated that the dominant motivation and source of reward for teachers lies in promoting students' growth and development. The thing that makes teaching meaningful and worthwhile is watching students learn (p.44). According to Latham (1998),

> research has shown that job satisfaction can improve teaching and help retain teachers, that intrinsic rewards play a greater role in teacher motivation and job satisfaction than extrinsic rewards.

Reiger and Rees reported that there was no significant difference of motivational levels for teachers related to gender, age, or race (Reiger & Rees, 1993). Sergiovanni (1967) said that the work itself accounted for high attitudes of teachers and conditions of work accounted for low attitudes of teachers. Sergiovanni based his research on Herzberg's research. Sergiovanni stated, "The overall design of this study followed, with some additions and modifications, the design developed and used by Herzberg" (Sergiovanni, 1967, p.194). Thompson (1979) supported these studies: "The answer to teacher motivation lies in intrinsic motivation and intrinsic motivation belongs to self-determining and effective teachers. It does not come from money and controls" (p. 43). Caldwell's (1992) research supports the findings of Herzberg and Sergiovanni. He used the survey technique as opposed to the Critical Incidents method used by Herzberg and Seriovanni, dispelling a main criticism of the two previous studies. Using the survey technique he also found teachers to be motivated by achievement, recognition, and responsibility factors more so than hygiene factors. Davisson (1997) completed a study comparing the differences between principal's perceptions and teacher's reported job satisfaction with hygiene and motivation factors identified by Herzberg. Based on a survey designed after Herzberg's motivation-hygiene theory he reported that teacher's self-reported job satisfaction was higher than was perceived by their principals. Engelking (1985) used a "critical incident questionnaire adapted from Herzberg's Motivation-Hygiene methodology" in a study which purports that "The most prominent factors of job satisfaction for teachers at all levels … were Recognition and Achievement." "King and Mathers concluded that intrinsic aspects of teaching and nonmonetary recognition have greater incentive effects than financial rewards, and that the avoidance of negative publicity and sanctions was a powerful motivator in the programs they studied" (Milanowski, 2000). Silver (1982) said that, because school administrators can control the

outcomes of teachers' efforts, they can influence the levels of motivation teachers experience (p.553). Blackman (1982) stated, "A crucial element for effective operation of an educational program is good staff morale" (p.8). Scott (1986) reported in his study on motivational factors of elementary school teachers, findings that were congruent with similar studies, "positive motivation stems from doing the job (intrinsic motivation). Teachers are not motivated by tangible factors, but by intangible factors which deal with their emotional well-being" (p.24). Johnson (1986) capsulated much of the research by quoting Lortie, “teachers want to teach” (p.74). Johnson also referred to Herzberg, "Pay does not motivate, he argued, but can be the source of dissatisfaction”. She went even further by stating that, “the intrinsic rewards of teaching may be compromised when money is introduced as an additional or alternative incentive”(p. 58). Zavada’s (1992) analysis of data in his study implicated that, working with students was the most satisfying aspect of their careers. Another author stated that, "the intrinsic motivation, provides a better incentive for educators" (Gretzinger, 1992). “There is extensive evidence that teachers regard professional efficacy, not money, as the primary motivator in their work, and some evidence that the prospect or extrinsic rewards may diminish the potency of intrinsic rewards for them. Further, there is some indication that competitive rewards for the individual may be less effective in motivating teachers than are inducements designed to engage them in schoolwide enterprises and to promote shared professional goals” (Johnson, 1986, P.55).

Two leading authors on the subject of motivation are Herzberg and Sergiovanni. Herzberg used the critical incident technique, developed by Flanagan, in his research studies (Hoy & Miskel, 1991, p.174). Sergiovanni replicated the Herzberg study with teachers, using critical incident interviews and then analyzing the content (Hoy & Miskel, p.176).

McDonough (1992) in her study stated that "Principals, as educational leaders, have a responsibility to initiate, encourage, and facilitate instructional improvement and student achievement. It can generally be assumed that a major concern for school principals as educational leaders is to have highly motivated and enthusiastic staff members, and at the same time, have effective schools which meet the expectations for educational achievement by students." (p.4). Much of the research cited in this study, supports Hackman and Oldham's (1980) Teachers Job Characterics Model. For their model they purport three conditions which are factors in creating high internal work motivation. First, the work must be meaningful, generating value and worthiness. Second, a the teacher must have personal responsibility and accountability for the work results. And third, personal feedback on job performance is required. (p. 90)

Teacher Motivation Diagnostic Questionnaire

According to Calloway (1994), a questionnaire has a specific and limited purpose. It is a device to be used for obtaining answers or responses to questions pertaining to personal opinions, attitudes, or characteristics (p.79). She cites 16 authors to support her statements about the advantages of the questionnaire (Callaway 1994, p.79).

The *Teacher's Motivation Diagnostic Questionnaire (TMDQ)* is an instrument developed by Matthews, to assess critical aspects of teacher motivation which the principal can influence and which can indirectly influence student achievement (Matthews & Holmes, 1982, p. 22). The *TMDQ* measures four aspects of teacher motivation (Callaway, 1994). The four aspects measured by the *TMDQ* are: (1) teachers' attitude toward their principal, (2) teachers' beliefs about the future utility of improved student performance, (3) teachers' beliefs about their principals' expectations for improved student achievement, and (4) teachers' beliefs about the

probability of their success in improving student achievement (Matthews & Holmes, 1982, p. 24). Callaway further lists and defines these four aspects of the *TMDQ* as

> an instrument which presents a total of 16 questions to assess four aspects of teacher motivation (attitude toward the principal, future utility, principal's expectations, and self-concept of ability). Four questions for each of the aspects are presented. (1994, p. 7)
>
> *Attitude Toward Principal* (AP)--the affective orientation of teachers toward their principals. It can be described as the work relationship between teachers and their principals. Attitude toward principal is assessed by responses to questions 2, 6, 11, and 15 on the *TMDQ*.
>
> *Future Utility* (FU)-- the beliefs of teachers about the benefits to them personally of improving student achievement. Because interpretations of this construct are individual in nature, it is simply defined, as the belief that improved student achievement would have positive outcomes for them personally. Future utility is assessed by responses to questions 3, 7, 10, and 14 on the *TMDQ*.
>
> *Principal Expectations* (PE)--the beliefs of teachers about the expectation of their principals for improved student achievement. It includes the beliefs of teachers about the value their principals place on high test scores. Principal expectations is assessed by responses to questions 1, 5, 12, and 16 on the *TMDQ*.
>
> *Self Concept of Ability* (SC)--beliefs of teachers about the probability that the academic achievement of their students could be improved. It includes their beliefs about their ability to help raise the academic achievement of their students, in general, to help raise test scores, in particular. Self-concept of ability is assessed by responses to questions 4, 8, 9, and 13 on the *TMDQ* (p. 7-8).

McDonough (1992) stated that, "Teachers beliefs about principal's expectations refer to what teachers believe principals expect of them and how much their principals value academic disciplines." (p.12).

According to Callaway's research "the *TMDQ* can be considered to have a high degree of face validity" (Callaway, 1994, p. 136). She also stated that the *TMDQ* has a high degree of convergent construct validity (p.137). Based on her research, Callaway further says that principals are unable to assess teacher's motivational levels simply by observation or interaction with teachers. The *TMDQ* can be used to assess teacher's attitudes toward their principal and

principal's expectations (p.138). "Attitude toward the principal refers to the affective orientation of teachers toward their principals. It can be described as the work relationship between teachers and their principals." (p. 136). She further said that, the principal can directly influence the four aspects of teacher motivation as measured by the *TMDQ* (p. 138-139).

Principal's Influence on Teacher Motivation

In the *Guide Book for School Principals* published in 1961, Hansford stated, "The principal who is perceptive enough to be truly concerned about the welfare of his staff is likely to have high staff morale" (p.27). Education administrators must concern themselves with how a high level of teacher motivation can be aroused, directed, and sustained (Luce, 1998). The school principal can be the major influence on teacher's motivational level. Marx and Tombaugh (1967) stated " It is our deep conviction that the problem of motivation is central to the problem of education" (p.xii). Cook (1970),Shin (1976), and Sommers 1969) all reported in their individual studies that principal's leadership style and teacher morale or job satisfaction are directly related. Fox (1971) wrote that a principal "is first and foremost a climate leader, and that his key function is improvement of the school's climate." Matthews and Brown (1976) stated that, in order to be effective in improving student achievement, it is vital for principals to influence the behavior of teachers, using appropriate leadership strategies. Later (1979) Matthews said that leadership influences the desire to perform. In 1984 Matthews stated that "if perceived as leading toward improved academic performance, then subordinates' positive attitudes toward the superior will have a positive effect on their desire to improve academic performance" (p.8). Hoyas (1979) supports this statement, "Good human relations and communication skills [on the part of the principal] were vital to high teacher morale and

effectiveness" (p.9). Kelly (1980,p.41) reports that "the principal is the individual in the school who is most responsible for the outcomes of productivity and satisfaction attained by students and staff. According to Magoon and Linkous (1981) the principal can develop or maintain high morale by being open, sharing and creative (p.2-5). Morris (1985) suggested in her dissertation that specific behavior on the part of the principal, designed to specifically address achievement, may produce positive changes in teacher self-concept of ability and simultaneously raise or maintain other teacher motivational variables (p.133). In their article on the "Organizational Climate Description Questionnaire", Hoy and Clover (1986) related that climate had a major affect on the motivations of individuals. They state that motivation and behavior of teachers is directly shaped by interpersonal relationships between teachers and between principals and teachers. "In brief, the concept of organizational climate can be summarized as a relatively enduring quality of the school environment that (a) is affected by the principal's leadership…" (1986). Johnston and Venable (1986) "found a significant positive relationship (p.05) between representative rule and loyalty to the principal for secondary teachers, and a significant negative relationship between punishment-centered rule and loyalty to elementary principals (p.01)". In 1986, Fox reported that principals could influence high principal expectation, which improved teacher motivation (p.6). Effective principals create clear and reasonable expectations for teachers (Blasé 1987). On the negative side, Richardson and Sistrunk (1988) reported a significant relationship between teacher burnout and teacher's perceptions of their principal's supervisory behavior. Houseknecht's (1990) research linked the principal's behavior to teacher morale. In his abstract he said that there is a significant positive relationship between teacher morale and teachers' perception of principal's leadership behavior (p.0). Wey's (1980) research indicates that teacher morale is affected by the leadership style and power base usage of the

principal. Wey further said that the results indicate that higher teacher morale is associated with agreement between (1) teacher perceived and ideal leadership style, (2) principal identified and teacher perceived power base usage, and (3) teacher perceived and ideal power base usage. This study verified that constructive use of leadership and power plays a key role in establishing and maintaining high teacher morale (Wey 1990).

In his dissertation, Burns (1990) linked the principal's leadership style to teacher morale. His study indicated that principals whose leadership style is of a participative and to a lesser degree a consultative nature, have teachers whose morale and satisfaction is significantly greater than those teachers who have principals who operate under a benevolent-authoritative or exploitive-authoritative nature. More specifically, Burns reported that there was a significant relationship between teacher morale and rapport with principal.

Blase (1990,1991) found positive and negative relationships between teachers and principals. He said control and protectionist strategies have negative effects on teacher performance, while normative influence strategies positively affect teacher performance. McDonough (1992) wrote, "It is general knowledge that effective instructional leadership begins with the principal. … It is the principal's responsibility to initiate, encourage, and facilitate motivation." (p.94).

Blase and Roberts (1994) explained one method they believe develops a motivated staff. They said that the benefits of building trust through shared governance has the effect of making teachers feel satisfied, motivated, and confident (p.29). Blase along with Roberts (1994) also reported that teachers describe the political strategies of principals as effective, if the strategies are appropriate, positively related to the principal's purpose or goals, and produce beneficial effects on teachers. According to Mayo (1997), "enhancing the status and practices of teachers

would encourage a boost in morale, generate intrinsic and extrinsic incentives to improve job performance". Czubaj (1996) stated that to remain motivated stress needs to be kept to a minimum. Luce (1998) said, "Educational administrators need to concern themselves with how a high level of teacher motivation can be aroused, directed and sustained. Administrators must design and use practices, which encourage teachers to try new things, to take on new challenges, and which inspire teachers to achieve excellence. It is of primary importance that administrators foster the individual and collective best efforts and contributions of teachers in order to accomplish school goals and improve student learning."

Summary of Chapter II

This review of literature investigated several theories of motivation. Maslow's need hierarchy, Herzerberg's motivators and hygienes, the expectancy theory by Vroom and Locke's goal theory were summarized. McClelland is credited with the need for achievement ("n achievement") as a theory of motivation. After several general theories of motivation are explained, studies are cited which investigate the motivation of educators (Hoy & Miskel 1991).

The *Teacher's Motivational Diagnostic Questionnaire* (TMDQ) is researched. Studies are referenced which established both State and National norms for the TMDQ (McDouough, 1992 & Norton, 1992). The study used to validate the reliability of the TMDQ is also cited (Callaway,1994). Finally the relationship of the Principal's influence to teacher's motivation is researched. The information reported in this paper indicates, that the principal not only has an influence, but his/her actions are the greatest influence on teacher motivation/morale.

CHAPTER III

PROCEDURES

This study has two objectives. The first objective is to establish 2003 norms for Georgia public teachers on the *Teacher Motivation Diagnostic Questionnaire*. The second objective is to compare the 2003 norms to the 1991 norms established for the same instrument and determine if there is a statistically significant difference in teacher motivational levels, as measured by the *Teacher Motivation Diagnostic Questionnaire*, for Georgia public teachers during these two time periods. *The Teacher Motivation Diagnostic Questionnaire* is a four-part instrument designed to indicate motivational levels for four aspects of teacher motivation. They are;

> the teacher's beliefs about the principal's expectations for improved student achievement,
>
> the attitudes of teachers toward their principals,
>
> teacher's self-concepts of ability to improve student performance,
>
> teachers' beliefs about the future utility of improved student achievement.

The 1991 norms for the *Teacher Motivation Diagnostic Questionnai*re were established and published by Norton (1992). This study followed methods and procedures similar to those used by Norton.

The population studied and the methods of selecting the sample are described in this chapter. This chapter also contains a description of the test instrument, a statement of the research hypothesis, a description of how and when the data were collected and analyzed.

Research Design

This study measured the level of beliefs teachers held about certain aspects of motivation. A sample of the entire Georgia public school teacher population was surveyed. The results of the sample were inferred to represent the same results had the entire population been surveyed. Because of these factors, this is descriptive and inferential research. Therefore methods and techniques designed to gather, analyze, and compare data must be appropriate for descriptive/inferential data. Creswell (2002) said that descriptive statistics helps describe responses to questions, determines overall trends, and the distribution of data (pp. 230 - 231). Fraenkel and Wallen defined descriptive statistics as "data analysis techniques enabling the researcher to meaningfully describe data with numerical indices or in graphic form" (p.475). The results of the survey are presented in standardized empirical form so that the data were meaningful. The means for each subject school is reported. The percentile was computed for each of the mean scores as well as the Z score (see Appendix D and E). This allowed for the Georgia state norms to be presented for the *Teacher Motivation Diagnostic Questionnaire,* meeting the first objective of this study. The second objective is met by comparing these norms to the 1991 norms published in 1992 by Norton. Factors such as time, cost, and survey return rate caused the gathering of data from the complete population, all public school teachers in the State of Georgia, to be impractical and probably impossible. This fact required the use of inferential statistical methods to be used in this study. Creswell (2002) stated that "Inferential statistics enable a researcher to draw conclusions, inferences, or generalizations from a sample to a population of participants" (p.231). Best (1981) said that the purpose of inferential statistics is to draw conclusions from a sample to the entire population of subjects (p.222). Because this

study uses the same type of statistics and normalizes the data similarly to Norton's (1992) the results of this study can be compared to Norton's findings.

Univariate t- test is used to ascertain any statistically significant differences between mean of scores on this study and Norton's (1992). "The mean is the most popular statistic to analyze responses of all participants to items on an instrument. The researcher determines this measure by summing all the scores and then dividing the sum by the number of scores" (Creswell, 2002). The Univariate t-test was applied to the means of the four different aspects and the mean of the sum of all aspects on the *Teacher Motivation Diagnostic Questionnaire* administrated to the randomly selected sample of Georgia teachers in this study and to the means of the same four aspects and sum of the scores from Norton's study published in 1992.

Population and Sample

The population for this study was all public schools in the State of Georgia during the 2003 -2004 school year. The population for the second study (Norton, 1992) was all the public elementary and secondary schools in the State of Georgia during October/November 1991. Because this study is comparing scores from 1991 to scores in 2003 on the same instrument, this study closely followed Norton's study, published in 1992 which reported the scores from the *Teacher Motivation Diagnostic Questionnaire* administered in 1991. Norton obtained her sample from *the 1991 Georgia Public Information Directory*. All schools in the directory were assigned a random number and she selected three hundred schools assigned the numbers 1 through 300. This study used the Georgia Public Education Directory obtained from the Georgia Department of Education, from which 300 schools were randomly selected. The Georgia Department of Education web-cite was further utilized to access the subject schools "report card"

as a means of determining the number of certified teachers on staff. In the Norton study, the initial mail out for consisted of the schools with the numbers 1 through 200 assigned. A second mailing of the remaining 100 schools was effected approximately one month later. This study executed the posting of all 300 packets to the subject schools in one day. Norton excluded two schools from her sample, which had been in the sample used in her comparison study by McDonough (1992). Norton compared her results via. Univariate t-test to McDonough's results. The McDonough study established the national norms for the same instrument. Norton reported that a sample size of 100 is the essential minimum and the sample size of 300 used for this study makes for more powerful results. She said that larger samples are inversely proportionate to sampling error, the larger the sample, the smaller the error (Norton, p.87-88). Norton received 90 total usable responses in the first mail-out with 38 valid responses to the second mailing. The Norton study had 128 useable responses from a total of 300 mailing or a 43% response rate. The results of this study will establish norms for the *Teacher Motivation Diagnostic Questionnaire* for 2003 Georgia public teachers.

Instrument

In the 1970s Matthews wrote on the subject of student achievement, *Improving Academic Performance* (Matthews, 1979), *The Principal's Influence on Student Achievement* (Matthews & Brown, 1976). In Matthews and Brown's 1976 publication, a conceptual model of factors influencing student achievement was presented. From this model Matthews developed the *Teacher Motivation Diagnostic Questionnaire*, (*TMDQ*). As an outcome of their research in 1976, Matthews and Brown postulated three factors which affect teacher motivation: "(a) the teacher's self-concept of ability to affect student achievement, (b) the teacher's attitude toward

the principal, and (c) the teacher's beliefs of the principal's value and expectations for achievement" (p.12). In 1979 Matthews added the fourth aspect, "the teacher's beliefs about future utility of improved performance" (p.64).

The *Teacher Motivation Diagnostic Questionnaire (TMDQ)* - is a survey type instrument which uses an Osgood Semantic Differential format with a seven point scale. The *TMDQ* has four questions for each of four aspects of teacher motivation.

Principal Expectations (PE) - is the aspect of teacher motivation dealing with a teacher's beliefs about what the principal expects of them and how much the principal values student achievement. Quantitatively PE is the sum of responses to Questions 1, 5, 12, and 16 on the *TMDQ*.

Attitude Toward Principal (AP) - is the belief teachers hold about how much their principal likes them or how much they like their principal. The quantitative definition of AP is the sum of responses to Questions 2, 6, 11, and 15 on the *TMDQ*.

Future Utility (FU) - is the belief teachers hold about the benefit to themselves that student achievement would affect. Quantitatively FU is the sum of the responses to questions 3, 7, 10, and 14 on the T*MDQ*.

Self-Concept of Ability (SC) - is the teacher's belief of their ability to improve student achievement. The quantitative definition of SC is the sum of responses to questions 4, 8, 9, and 13 on the *TMDQ*.

General Teacher Motivational Level - is the total mean score on the *TMDQ*.

The reliability and validity of the *TMDQ* have been well established, originally by Matthews and Holmes (1982). In their study in 1982, Matthews and Holmes reported a reliability index of .90 as a results of an odd-even correlation of teacher responses, corrected by

the Spearman-Brown Prophesy Formula, on the Student Achievement Diagnostic Questionnaire for Administrators, later named the Teacher Motivation Diagnostic Questionnaire (p.24). National norms were established in 1992 by McDonough. Building on McDonough's study, Norton (1992) completed her study using the *TMDQ*, which established norms for teacher motivational levels in the State of Georgia.

Hypothesis

The null hypothesis was postulated by the author of this study. Within the parameters of this study the null hypothesis is;

There is no statistically significant difference in the mean scores of the four distinct aspects nor the mean of the aggregate scores between this study and the mean scores of the paired four distinct aspects nor the mean of the aggregate scores for the results reported by Norton in 1992. To delineate this statement:

There will be no statistically significant difference between the mean of the score for Georgia public teachers on the aspect of principal's expectations as reported by Norton (1992) and the mean score of this study for the same aspect.

There will be no statistically significant difference between the mean of the score for Georgia public teachers on the aspect of teacher's attitude toward principal as reported by Norton (1992) and the mean score of this study for the same aspect.

There will be no statistically significant difference between the mean of the score for Georgia public teachers on the aspect of self-concept of ability as reported by Norton (1992) and the mean score of this study for the same aspect.

There will be no statistically significant difference between the mean of the score for Georgia public teachers on the aspect of future utility as reported by Norton (1992) and the mean score of this study for the same aspect.

There will be no statistically significant difference between the mean of the score for Georgia public teachers on the aggregate scores for all four aspects of the *Teacher Motivation Diagnostic Questionnaire* as reported by Norton (1992) and the mean score of the aggregate scores for this study.

Data Treatment

The data were collected via mail-out survey. A packet was mailed to the principal of each sample school. Included in each packet was an introductory letter to the principal with instructions (see appendix A), a brief letter for each teacher expressing gratitude for time and effort along with instructions for completing the survey (see appendix A), a copy of the survey for each teacher to complete (see appendix A), a plain letter size envelope for each teacher to seal their completed survey prior to placing in the return envelope, and a postage paid, addressed envelope with the return address of the surveyor to be used to return the surveys.

The entire mail-out of the 300 packets was posted in one day. The packets were posted out at the Fort Valley Post Office. The postage paid upon return envelopes were addressed to return to the Fort Valley Post Office. Upon receipt of return packets, the Post Office personnel held them in a bundle until I paid the postage and picked them up. Upon receiving the returned surveys, the individual teacher scores on each aspect of the *TMDQ* for each school will be entered into an excell spread sheet for computation and analysis. The computations will yield the mean score for each school on each of the four aspects. A total of the four mean scores will

be divided by four to generate an overall mean score for that school on the *TMDQ*. The mean was one of the statistical data used to analyze, report, and compare the findings of this study, similar to it's use by Norton (1992). As Creswell (2002) wrote "The mean is the most popular statistic to analyze responses of all participants to items on an instrument. … In calculating other types of scores for other statistics, the mean plays an important role" (p.232). He further explained the method of computing the mean, being the sum of all the scores divided by the number of scores. The mean is also known as the arithmetic average.

Standard deviation was computed for each sample school for each of the four aspects of the *TMDQ* and the overall score for the *TMDQ*. Inferential statistics was used to ascertain any statistically significant difference between the scores of this study and the scores reported for the same instrument by Norton (1992). Norton used the Wilkes Lambda test for the multiple analysis of variance (MANOVA) (p.95). If a statistically significant difference is recognized for any of the pairs of aspects, she ran a Univariate t-test to determine where the statistically significant difference had occurred and at what level. For this study the same test for specific statistically significant difference is employed. To recognize and report a statistically significant difference the variance must be at or below the .05 alpha level. According to Best (1981) the .05 alpha level of significance is generally used in the field of education.

After analysis and comparison of the statistical data, the author is justified in either accepting or rejecting the null hypotheses. He further uses narration to indicate whether there was an increase, no change, or a decrease in the motivational level of public teachers over a 12-year period, 1991 - 2003. The 2003 State of Georgia norms are published for the *Teacher Motivational Diagnostic Questionnaire* with standard deviations. These norms and standard deviations may be used as a basis for comparison of other teachers/schools/systems in the State

of Georgia on the *Teacher Motivation Diagnostic Questionnaire.* For further comparisons the subject school mean scores are reported for each of the four aspects of the *Teacher Motivation Diagnostic Questionnair*e. Additionally, the percentile rankings and the computed Z score is reported for each overall subject school mean score.

Further explanation of the data will be in Chapter V.

CHAPTER IV

FINDINGS

The purpose of this study is two-fold. The first objective is to compare the motivational level of Georgia Public School Teachers in 1991 to the motivational level of Georgia Public School Teachers for the 2003 - 2004 school year, as measured by the *Teacher Motivational Diagnostic Questionnaire*. The second purpose of this study is to update Georgia norms for the *Teacher Motivational Diagnostic Questionnaire*. The validity of the instrument is also tested within the scope of this study. The test used to identify any statistically significant difference of the means of the four aspects after a twelve and a half-year span is the t-test. Pearson Correlation Coefficient is used to test the validity of the instrument.

For the previous study by Norton, surveys were mailed out to all teachers in 200 school in October 1991 followed up with a mail out to all teachers in another 100 schools in November 1991. For this study, surveys were mailed out to all certified teachers in 300 schools the first week of April 2004. The schools for this study were randomly selected from the *2002 Georgia Public Education Directory*. The number of teachers in the selected schools was taken from the school report card posted on the Georgia Department of Education web-site. On June 7, the final set of eleven returned packets was picked up at the Fort Valley Post Office, with one not having a large enough number of teacher responses (20% minimum), bringing the total usable subject schools to 100. The teacher responses on the questionnaire were tallied and a mean computed for each question. The means for the four questions on each of the four aspects were summed and a mean for each aspect computed. The means for the individual questions on each of the four aspects were correlated as an indication of construct validity for the instrument. The means

for each of the four aspects for the school is used as the subject score. The 100 schools were the subjects for this study. Norton used 128 subject schools.

Twenty-one packets were returned which were not distributed to the teachers. Comments were written on eleven of the returned packets. Several reasons were given for non-participation; teacher's time, testing, and too many previous surveys is a partial list of the comments. Ten packets had no comments as to why the school was not participating. Six administrators simply said they choose not to participate. Courtesy phone calls or messages informed me that some schools would not participate. Several calls requested information. Administrators in schools from several large systems stated that, they required permission from their central office in order to participate. The time required for approval would not permit inclusion of these schools in this study. A list of the Administrator's comments is in the appendix, Appendix C. Teachers also wrote comments on their surveys. A list or the teacher comments is in the appendix, Appendix B.

The *Teacher Motivational Diagnostic Questionnaire* is a sixteen-question instrument, which measures four aspects of teacher motivation. The four aspects are Principal Expectations, Self Concept of Ability, Future Utility, and Attitude Toward the Principal. Principal Expectations is measured by questions 1, 5, 12, and 16. Self Concept of Ability is measured by questions 4, 8, 9, and 13. Future Utility is measured by questions 3, 7, 10, and 14. Attitude toward the Principal is measured by questions 2, 6, 11, and 15. Pearson Correlation Coefficient was used to test the correlation of the four questions for each aspect. "Matthews indicated the best evidence of the construct validity of the *TMDQ* can be found by comparing each of the four constructs with the four questions designed to elicit teacher responses about the construct"

(Norton, 92, p. 91). The correlations of the questions for each construct are in the following tables.

Table 1.1

Correlations for questions on Principal Expectations (n=100)

Question number	5	12	16
1	.70	.85	.85
5		.68	.68
12			.84

Table 1.2

Correlations for questions on Self Concept of Ability (n=100)

Question number	8	9	13
4	.10	.82	.40
8		.31	.51
9			.44

Table 1.3

Correlations for questions on Future Utility (n=100)

question number	7	10	14
3	.77	.63	.71
7		,71	.79
10			.89

Table 1.4

Correlations for questions on Attitude Toward the Principal (n=100)

question number	6	11	15
2	.81	.69	.68
6		.61	.60
11			.92

The means of the *Teachers Motivational Diagnostic Questionnaire* for this study are in Tables 2 Through 5. These means are from a random selection of all public schools in the State of Georgia with a sample size large enough to represent the population, therefore the means reported in this study is a representation of the means for the whole population of all teachers in the State of Georgia. For interpretative and comparison reasons the raw scores for the subject schools, the corresponding percentile scores, and the Z scores are listed in the appendix.

T-tests were run on the two sets of scores, one from 1991 and one from 2003, for each aspect on the *TMDQ*. The number of subjects in the 1991 study is 128. The number of subjects in this study is 100. The analysis of the aspect, Principal Expectations, indicates that teachers had a statistically significant higher level for this motivational factor in the school year 2003-2004, than they had in 1991 (Table 2). Therefore the null hypothesis, that no statistically significant difference existed between the two means, is rejected.

Table 2
Principal Expectations for the 1991 and 2003 TMDQ Samples

Sample	n	mean	S.D.	t	df	p
1991	128	5.75	.53	-8.219	226	.000
2003	100	6.28	.39			

Significant difference at .05

The analysis of the aspect, Attitude Toward Principal, indicates that teachers had no statistically significant difference in the level for this motivational factor in the school year 2003-2004, than they had in 1991 (table 3). Therefore the null hypothesis, that no statistically significant difference between the means exist, is accepted.

Table 3
Attitude Toward Principal for the 1991 and 2003 TMDQ Samples

Sample	n	mean	S.D.	t	df	p
1991	128	5.49	.69	-.411	226	.681
2003	100	5.52	.60			

No significant difference at .05

The analysis of the aspect, Future Utility, indicates that teachers had a statistically significant higher level for this motivational factor in the school year 2003-2004, than they had in 1991 (table 4). Therefore the null hypothesis, that no statistically significant difference between the two means exist, is rejected.

Table 4
Future Utility for the 1991 and 2003 TMDQ Samples

Sample	n	mean	S.D.	t	df	p
1991	128	5.36	.47	-3.215	226	.002
2003	100	5.56	.49			

Significant difference at .05

The analysis of the aspect, Self Concept of Ability, indicates that teachers had a statistically significant higher level for this motivational factor in the school year 2003-2004, than they had in 1991 (table 5). Therefore the null hypothesis, that no statistically significant difference between the two means exist, is rejected.

Table 5
Self Concept of Ability for the 1991 and 2003 TMDQ Samples

Sample	n	mean	S.D.	t	df	p
1991	128	5.31	.35	-2.981	226	.003
2003	100	5.45	.32			

Significant difference at .05

The analysis of the overall teacher motivation indicates that teachers had a statistically significant higher level for overall motivation in the school year 2003-2004, than they had in 1991 (Table 6). Therefore the null hypothesis, that no statistically significant difference between the two means exist, is rejected.

Table 6
Teacher Motivation for the 1991 and 2003 TMDQ Samples

Sample	n	mean	S.D.	t	df	p
1991	512	5.48	.55	-6.011	910	.000
2003	400	5.70	.57			

Significant difference at .05

CHAPTER V

DISCUSSION AND CONCLUSION

This study investigated the current level of motivation exhibited by public school teachers in the State of Georgia. Teacher motivation has been shown to impact student achievement (Blackman, 1982, Gretzinger, 1992, Latham, 1998). Bishay stated,"the possibility that enhanced levels of teacher motivation will lead to superior student achievement cannot be dismissed" (1996). Not all studies report findings linking higher student achievement to higher teacher motivation. However, no studies were found linking lower teacher motivation to lower student achievement. To put it simply, higher teacher motivation may not raise student achievement, but it does not hurt. The schools need teachers. The *No Child Left Behind* legislation not only mandates that we have teachers, but that the teachers be "highly qualified." Even while "[t]he surge in teacher attrition rates is appalling" (Perdue, 2002), greater burdens are being placed on teachers and more stringent requirements to enter and remain in the certified ranks are enacted. The need to attract new and retain current teachers who are highly qualified is apparent. Salary has been shown to not be a factor in teacher motivation, the work itself has been shown to be a factor in teacher motivation (Spear, 2000). In the State of Georgia, teacher motivation levels have significantly increased over the last 12 years for three of the four factors measured by the *Teacher Motivation Diagnostic Questionnaire*.

Attitude toward the Principal is the only factor, which did not increase. While this aspect showed no improvement, there was neither any decline in the motivational factor.

With the greater push for higher test scores, it may be clear why teacher believe that principals expect more. With all the publicity on *No Child Left Behind* mandates, one might say the general public believes that principals have a higher expectation of student achievement. Certainly teachers have been bombarded with the need and expectation of higher test scores. Tied to this factor, may be the vision teachers have of the benefit to staying off the list of schools not making adequate yearly progress. The federal government has tied to Title I funding sanctions for schools not achieving adequate student test scores. The performance of the school's students is now being displayed publicly. The threat of drastic change for consistent poor performance by the student population is a lingering aura in some school climates. The *No Child Left Behind Act of 2001* has rolled into every school in the state and permeated most every decision making forum as a cold mist floating through the trees of a thick forest along a river on a gray January morning. This has stirred the administrators who are searching and fanning the coals, hunting for that spark to ignite the blaze of higher student achievement and keep the cold fog from chilling their administration to the bone rendering an irreversible and fatal downward spiral of a non-recoverable spin.

Three out of the four aspects on the *TMDQ* had statistically significant differences on mean scores. Three out of the four aspects also had differences in the range of the scores for the subject schools for a seven-point scale. This difference averaged .95 smaller range on the four aspects for the 2003 study. The aspect on the 2003 study with a greater range was Future Utility. One subject school had a mean score on Future Utility of "7". The next highest score was "6.6". Attitude toward the Principal had the greatest difference in score ranges. The difference in the two ranges was 2.76 points smaller range for the 2003 study. This aspect, being the only one with no statistically significant difference on the mean scores, as expected had the smallest

difference in mean score between the two studies. Although the aspect of Attitude toward the principal had no statistically significant difference on the mean scores, the mean score for the 2003 study was higher than the mean score for the 1991 study. The range for Self Concept of Ability on the 2003 study was the smallest for all reported scores; 1.61. These data could indicate several different or combinations of characteristic evolutions among the teacher population in Georgia. I propose that the population of teachers in Georgia has become more homogenous in their motivation. This could be caused by the factor of in-service training, which emphasizes student achievement. It could be caused by better more, effective teacher training programs, which more effectively helps prospective teachers to align their expectations with true job outcomes. It's "matterafactual", the attrition rate of teachers is high. Possibly, greater numbers of teachers with lower motivational levels are leaving the profession than teachers with higher motivational levels. If more highly motivated teachers are more effective at helping students achieve, then the poorer performing teachers are indeed being weeded out. And that's probably a good thing.

Recommendations

There was a statistically significant increase found in the motivational levels for teachers in Georgia from the Norton study in 1991 to this study in 2003-2004 school year. The Norton study in 1991 compared the Georgia means to those reported in the National Study by McDonough, with the Georgia means being statistically higher on all four aspects. One can only properly compare the current Georgia means Nationally to the National means of McDonough's 1992 study. It is recommended that current National norms be established for appropriate comparisons.

The current study was conducted during a different time period in the school year. The teachers were completing, beginning, or preparing for very important testing units in many of the subject schools. Measurements at various periods of the school year might yield interesting results. This is a second recommendation.

With regard to any survey, it is a strong recommendation by this author that web-based procedures be utilized. The paper survey involved over 45,000 pages and 15,000 envelopes being handled and two-way postage provided for 300 packets. The return of over 2,083 surveys required inputting over 33,328 bits of data by typing. Once input into the computer, manipulation and computations were less cumbersome. Having the survey and results start and finish electronically would eliminate much of the costly and cumbersome processes.

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APPENDIX A

SUBJECT SCHOOL PACKET

1. Letter to the Principal
2. Directions for the Principal
3. Letter to the Teachers
4. Directions for the Teachers
5. Teacher Motivational Diagnostic Questionnaire

Letter to the Principal

Dear Principal_____:

I am conducting a doctoral study to establish 2003 Georgia norms for a teacher motivation instrument.

I hope you will have the enclosed *Teacher Motivation Diagnostic Questionnaire* distributed to your teachers. This should take no more than fifteen minutes of your teachers' time. I have selected only 300 schools so it is important that your teachers participate. If you choose not to participate in this study please let me know as soon as possible, so I can try to find a replacement school.

I foresee no risk to you or your teachers if your teachers complete this questionnaire. ALL RESPONSES ON THIS QUESTIONNAIRE WILL BE ANONYMOUS.

If you have any questions about the research being conducted, please feel free to contact me at (478) 953-5202. Thank you very much for your time and consideration. Please let me know if you would like to receive a copy of the results of my study.

Sincerely,

Terry A. Parker

Thanks!

Dr. Thomas Holmes
Professor

Additional Questions or problems regarding your rights as a research participant should be addressed to Chris A. Joseph, Ph.D. Human Subjects Office, University of Georgia, 606A Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411: Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

DIRECTIONS FOR THE PRINCIPAL

1. Please distribute a copy of the *Teacher Motivation Diagnostic Questionnaire* with teacher's packet to each teacher in your school.

2. I have tried to provide enough questionnaires for all your teachers. If you need more questionnaires, please make enough copies for this study.

3. The teachers are instructed to place the completed questionnaires in the envelope provided and deposit them in the U.S. Postal System. No postage is required on the envelopes provided. (Please help in seeing that all responses are kept anonymous **- Please don't send any teachers' names**.)

4. If you would like a copy of the results for your school, please notify me by e-mail at "parkerterr@aol.com." (The envelopes are coded so that your school can be identified: however, questionnaires are anonymous.)

THANK YOU VERY MUCH FOR YOUR TIME AND CONSIDERATION

Letter to the Teachers

Dear Teacher,

My name is Terry A. Parker (phone 478 953 - 5202) and I am conducting a doctoral research study, through the University of Georgia, College of Education, Department of Education Leadership, to determine the motivation levels of teachers in Georgia. The title of my study is *2003 Norms for Georgia Teachers on the Teacher Motivation Diagnostic Questionnaire Compared to the 1991 Norms for Georgia Teachers on the Teacher Motivation Diagnostic Questionnaire***.** As the title indicates, I will also compare the motivational levels of Georgia teachers in 2003 to the motivational levels of Georgia teachers in 1991.

Please take the time to complete the enclosed *Teacher Motivation Diagnostic Questionnaire* (*TMDQ*) for me. This should take no more than fifteen minutes of your time. Your participation is voluntary in all or in part. I have selected only 300 total schools so your participation is very important.

I foresee no risks to you if you complete this questionnaire. ALL RESPONSES ON THIS QUESTIONNAIRE WILL BE ANONYMOUS. Each questionnaire contains a school number for tracking the rate of return. NO individual responses will be identified.

If you have any questions about the research being conducted, please feel free to contact me at (478) 328-6020 (Work) or (478) 953-5202 (Home). Thank you very much for your time and consideration. Please let me know if you would like to receive a copy of the results of my study.

Sincerely,
Terry A. Parker
Doctoral Student
University of Georgia
Phone (478) 953-5202
e-mail;parkerterr@aol.com

Additional Questions or problems regarding your rights as a research participant should be addressed to Chris A. Joseph, Ph.D. Human Subjects Office, University of Georgia, 606A Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411: Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

Directions for the Teachers

TEACHER INSTRUCTIONS FOR COMPLETING

QUESTIONNAIRE (*TMDO*)

- Each teacher in your school is to receive an identical packet.

- Each packet contains:
    1. Introductory letter.
    2. *Teacher Motivational Diagnostic Questionnaire (TMDQ*) – 16 questions; each coded with school number to track the rate of return, principals will not see responses – you seal. **THERE WILL BE NO WAY TO IDENTIFY INDIVIDUAL RESPONSES.**
    3. Letter size envelope to seal completed *TMDQ* survey.

- Please respond to each of the 16 questions by filing in the circle, which represents most closely the answer that best represents your current opinion.

- Note that the scale range low to high, strong to weak, small to large, bad to good changes directions on the survey.

Your opinion is valuable for each question.

*****PLEASE DO NOT SIGN OR IDENTIFY YOURSELF*****

- Upon completion: Seal your *TMDQ* survey in the individual envelope and place that sealed envelope in the large return envelope provided. The return envelope should be placed in a discrete location allowing teachers to anonymously deposit the completed surveys. This could be a workroom, lounge, or near a sign-in desk.

- After being available for a period of one week, a designated person is to seal and deposit the return envelope in the U. S. Mail. This could be a designated teacher, media specialist, or school secretary.

- Principals may request the final data if they wish to see the results**.**

- **NO INDIVIDUAL RESPONSES WILL BE REPORTED AND NO INDIVIDUAL WILL BE IDENTIFIED.**

THANK YOU AGAIN FOR YOUR ASSISTANCE! YOU HAVE BEEN AN ASSET TO THIS RESEARCH!

TEACHER MOTIVATION
DIAGNOSTIC QUESTIONNAIRE

1. How much does your principal want test scores to improve?
STRONG O O O O O O O WEAK

2. How much do you want to please your principal?
STRONG O O O O O O O WEAK

3. How much would higher student achievement help you?
SMALL O O O O O O O LARGE

4. How much higher could your students' test scores be?
HIGH O O O O O O O LOW

5. How much does your principal expect test scores to improve?
LARGE O O O O O O O SMALL

6. How much do you want to make your principal happy?
WEAK O O O O O O O STRONG

7. How much would higher achievement be to your advantage?
SMALL O O O O O O O LARGE

8. How good are you at helping students raise test scores?
BAD O O O O O O O GOOD

9. How much could your students' achievement be raised?
LOW O O O O O O O HIGH

10. How much would you benefit from higher achievement scores?
LARGE O O O O O O O SMALL

11. How much does your principal try to please you?
LOW O O O O O O O HIGH

12. How important are high test scores to your principal?
LOW O O O O O O O HIGH

13. How good could you be at improving student achievement?
GOOD O O O O O O O BAD

14. How much good would higher test scores do you?
LARGE O O O O O O O SMALL

15. How much do you like the way your principal works with you?
LARGE O O O O O O O SMALL

16. How much does your principal want higher test scores?
WEAK O O O O O O O STRONG

ADAPTED FROM NASSP BULLETIN VOL. 66, NUMBER 458, PAGE 26
(School number)

APPENDIX B

TEACHER COMMENTS

1. "I'm sure there is a reason for the repetitiveness of this form as well as the altering of the + and - responses on the sides of the paper. I don't think this is a very valid questionnaire because it is so dependent upon my feeling about my principal. All of that could change next year when he retires from here. Just thought you'd like to know."

2. Question 1 (marked 7): How much does your principal want test scores to improve? "Personally or because of outside pressure?"

3. Questions 1, 4, 9, 10, 14, 16, "same questions."

4. "Forget it! Why are you wasting my time with the same questions over and over---I have better things to do."

5. Question 13 (marked 6): How good could you be at improving student achievement? "from incred. low students to very low stud. in the sch."

6. "Not only is this survey redundant it misses the point of teacher motivation. A good teacher is motivated only to do the best he/she can for the student's welfare and learning. We aren't here to please others.

7. Question 2 (marked 1): How much do you want to please your principal? "Irrelevant – Students are important and our principal would be the first to say so."

8. Question 3 (marked 1): How much would higher student achievement help you? “It would help the student.”

9. Question 5 (marked 6): How much does your principal expect test scores to improve? “Again irrelevant – state mandated 5% increase.”

10 . Question 6 (no response): How much do you want to make your principal happy? “I’m here for the students.”

11. Question 7 (no response): How much would higher achievement be to your advantage? “none”

12. Question 10 (no response): How much would you benefit from higher achievement scores? “See other questions.”

13. Question 11 (no response): How much does your principal try to please you? “Again – whatever is best for students- not teachers or principals.”

14. Question 12 (no response): How important are high test scores to your principal? “ See questions - 1, 5, 16.”

15. Question 14 (no response): How much good would higher test scores do you? “See question 7.”

16. Question 16 (no response): How much does your principal want higher test scores? “See questions 5, 1, 12.”

17. “Very redundant.”

18. Question 4 (marked 4): How much higher could your students’ test scores be? “They are good already.”

19. Question 14 (marked 7): How much good would higher test scores do you? “I feel good about students succeeding.”

20. Question 4 (marked 1): How much higher could your students’ test scores be? “Students are scoring very well, way above grade level.”

21. “Unclear, already high.”

22. Question 9 (marked 7): How much could your students’ achievement be raised? Inserted the word “already” beside HIGH.

23. Question 4 (marked 5): How much higher could your students’ test scores be? “Unclear of question.”

24. “Why ask the same questions 3x in different ways? We would be better motivated if we had a stronger more organized principal.”

25. "Questions seem to be redundant and repetitive. Test scores would improve for students in Sp. Ed. if they were able to be tested on –"

26. "This is a repetitive survey!"

27. Question 4 (marked 4): How much higher could your students' test scores be? "Sp. Ed. Teacher"

28. "? The same questions again?"

29. Question 4 (marked 6): How much higher could your students' test scores be? "N/A"

30. Question 14 (marked 7): How much good would higher test scores do you? Crossed out the word "good" and inserted the word "better".

31. "This is the most ridiculous questionnaire I have ever seen. Is it some kind of trick?"

32. Question 1 (marked 7): How much does your principal want test scores to improve? "All principals do in today's educational world!"

33. "This questionnaire is highly redundant - similar questions are poorly stated – i. e. teachers are not in the field to "please" principals – i. e. raising test scores is reflective of increased student achievement – not a direct benefit for me as a teacher etc. Unable/unwilling to complete questionnaire due to poor construction of questions."

34. "Sorry, this is ridiculous."

35. Question 4 (marked 2): How much higher could your students' test scores be? "Who knows?"

36. Question 7 (marked 5): How much would higher achievement be to your advantage? Question 10 (marked 5): How much would you benefit from higher achievement scores? "Same" Connected both questions.

37. Question 9 (marked 6): How much could your students' achievement be raised? "Who knows?"

38. Question 11 (marked 7): How much does your principal try to please you? "That's not really his job."

39. Question 12 (marked 7): How important are high test scores to your principal? "Same as # 1."

40. Question 14 (marked 5): How much good would higher test scores do you? "Would do students good."

41. Question 16 (marked 7): How much does your principal want higher test scores? "Same as # 1 & 12."

42. Question 1 (no response): How much does your principal want test scores to improve? "Don't know"

43. Question 5 (no response): How much does your principal expect test scores to improve? "Don't know"

44. Question 12 (no response): How important are high test scores to your principal? “Don’t know.”

45. Question 16 (no response): How much does your principal want higher test scores? “Don’t know.”

46. Question 9 (marked 1): How much could your students’ achievement be raised? “PID and SID students. Do not test my students.”

47. “This survey is not set up very well. The ratings should all be set up the same for all questions (ex. Low High). Also the questions seem redundant. I can’t believe a doctorate level survey is not set up in a better way. Did your professor approve this?”

48. Question 5 (marked 6): How much does your principal expect test scores to improve? Question 12 (marked 7): How important are high test scores to your principal? Question 16 (no response): How much does your principal want higher test scores? “Same info basically.”

49. Question 14 (marked 6): How much good would higher test scores do you? “?, sounds ignorant.”

50. “Your questions are redundant.”

51. “This appears to be poorly written. You flip/flop on the scale. All high/good/large should be on 1 side and lows on the other. Plus it is very redundant. Is this just a questionnaire to test are following directions?”

52. "Why are all of these reworded. Redundant." (Arrows drawn connecting questions 1 and 5, 2 and 6, 4 and 7)

53. "This is awful!!!"

54. "Very redundant questions. Redundant!" (Arrows drawn connecting questions 3,7,and 10 and again connecting 4 and 9)

55. Circles drawn around the word "principal" in questions 1 and 2 with this comment "Administration team instead of principal might have changed my answers and others."

56. Question 4 (no response): How much higher could your students' test scores be? "N/A to me."

57. "Why are you repeating the question?" (Circled questions 12 and 16 on the survey.)

58. "Special Ed. Teacher MID."

59. Question 4 (marked 4): How much higher could your students' test scores be? "depends on the student"

60. Question 5 (marked 3): How much does your principal expect test scores to improve? "not much room for big improvements"

61. Question 8 (marked 4): How good are you at helping students raise test scores? "Don't know."

62. "Too many are repetitive!"

63. Question 8 (no response): How good are you at helping students raise test scores? "Don't know yet – 1st year."

64. "How many times can you ask the same question?"

65. "These questions are redundant and confusing because the answer choices reverse at random."

66. "Observations about questionnaire: 1) Some questions seemed repetitive, 2) Your range was too broad."

67. 'This is ridiculous. Why are there repetitive questions like people don't read?"

68. "First and foremost, I am unsure what this questionnaire was intended to measure. Your title states that you are measuring "teacher motivation", but I don't understand what form of motivation you are trying to measure. Are you attempting to judge my motivation to teach? To improve test scores? To satisfy my principal? To be a people pleaser? The questionnaire asks the same basic three questions over and over again in different forms, so you are obviously being very specific in what you are trying to measure; however it is not clear to your responders. As we were completing this survey this morning, my colleagues and I stood in the hallway and discussed the questions and our potential responses to them. One of us has a doctorate, two have Educational Specialist Degrees and one of those with an Ed. S. also has National Board Certification, so I am not speaking of teachers who have just entered the classroom. Between the three of us we have over 40 years of teaching experience between us, and we were still uncomfortable answering this survey because we were uncertain of its purpose. I chose to respond to your questionnaire despite my questions because I know how difficult

it is to get people to participate in your research. (I finished my own doctorate not long ago.) Please see my comments below for each question."

69. Question 1 (marked 7): How much does your principal want test scores to improve? "My initial reaction to this question was to give you a smart answer: "No, my principal wants our test scores to remain low so that we can stay on the list of schools not making Annual Yearly Progress and we can all lose our jobs!" However, after thinking about it for a while, I came to the conclusion that there may really be some principals out there who do not feel that their schools should be judged based on test scores and who really do not care how their students perform on these state-mandated tests. As a professional educator, this is on the AYP list and has been for several years, I suppose my reaction to this question could be biased based on the fact the "improved test scores" and "getting children to school" (attendance) has been stressed and re-stressed to us this year!"

70. Question 2 (marked 6): How much do you want to please your principal? "Please my principal in what way? By doing my job to the best of my ability every single day? If that is the meaning of the question then my desire to "please" him is very strong at all times. While I think that pleasing him is important, I believe that meeting the needs of my students is vastly more important and sometimes those two conflict mightily."

71. Question 3 (marked 7): How much would higher student achievement help you? "With No Child Left Behind (NCLB), improved student achievement is mandatory to maintaining my employment. However, I find it very difficult to reconcile myself to the idea that the answers a child gives on a test can determine my future. I can think of so many circumstances when this would not be good for the child or the teacher. What if the child is a spiteful toward a teacher.? Middle school children do not

think like adults and this could reasonably be a possibility. What if the child is apathetic and randomly marks answers? What if the child doesn't test well? What if the child just had a bad day?"

72. Question 4 (marked 4): How much higher could your students' test scores be? "Our students scores range from the very highest to the very lowest, so the answer to how much improvement a child could make is dependent upon which group the child is in. Our students are also grouped by ability in reading and mathematics, so classes would have different expectations for testing achievement. Those with lower ability or lower existing scores would have less chance of improving than those with higher scores."

73. Question 5 (marked 7): How much does your principal expect test scores to improve? "I'm not exactly sure what his expectations are, but I know that he HOPES FOR and DESIRES a great improvement. I think this question would have been more effective if you had given percentages of improvement or something like that to choose from."

74. Question 6 (marked 1): How much do you want to make your principal happy? "Making my principal "happy" is not part of my job description. However, if you mean that I do my job to the best of my ability every day without having to be reprimanded and scolded, then yes, I am concerned about his "happiness" with my job performance. "Happiness" describes an emotion that is outside of the professional working relationship. If you had asked if I valued gaining and/or maintaining a professional working relationship with this man, my answer would have been much different from the one I gave you."

75. Question 7 (marked 7): How much would higher achievement be to your advantage? "Of course I would like to see my students achieve higher scores on tests (which is the assumption I am operating

under when you say “improve student achievement”). The public would certainly have a more positive perception of me, and I would definitely feel better about myself.”

76. Question 8 (marked 4): How good are you at helping students raise test scores? “Obviously I must not be much good at helping students achieve more. Every day I give 110% of my energies to helping students, and I receive only 1% of their efforts in return, so I must be doing something wrong somewhere along the line.”

77. Question 9 (marked 7): How much could your students’ achievement be raised? “See my comments for Question #14. I am using the assumption that you mean “achievement = test scores” when answering these questions.”

78. Question 10 (marked 7): How much would you benefit from higher achievement scores? “See my comments for Question #3.”

79. Question 11 (marked 4): How much does your principal try to please you? “He does his best to ensure that I have what I need to teach students to the best of my ability. He is also responsive to my needs as a professional educator and has always been very supportive.”

80. Question 12 (marked 7): How important are high test scores to your principal? “I’m sure these are very important. He wishes to remain employed.”

81. Question 13 (marked 4): How good could you be at improving student achievement? “See comments for Question #8.”

82. Question 14 (marked 7): How much good would higher test scores do you? “See comments for Questions # 3 and # 7.”

83. Question 15 (marked 6): How much do you like the way your principal works with you? “My major concern with him is that he has his group of “preferred teachers” to whom he listens almost exclusively. As a result he always gets the same type of advice. These teachers are the ones who are most vocal but who are now always most concerned about our children.”

84. Question 16 (marked 7): How much does your principal want higher test scores? “See comments for #1.”

85. Question 2 (marked 7): How much do you want to please your principal? “But most of all I want to please my Lord 1st! In doing that then I won’t have to worry about pleasing my principal.”

86. Question 4 (marked 6): How much higher could your students’ test scores be? “They are already high.”

87. Question 5 (marked 6): How much does your principal expect test scores to improve? “Our scores are already high.”

88. Question 3 (no response): How much would higher student achievement help you?, and Question 4 (no response): How much higher could your students’ test scores be? “Our test scores are pretty good!”

89. Question 9 (no response): How much could your students' achievement be raised?, and Question 10 (no response): How much would you benefit from higher achievement scores? "We have good test scores."

90. Question 14 (no response): How much good would higher test scores do you? "?"

91. Question 4 (no response): How much higher could your students' test scores be? "N/A Non classroom teacher."

92. "These questions leave me puzzled."

93. Question 4 (no response): How much higher could your students' test scores be? "N/A"

94. "Special Ed"

95. Question 4 (marked 6): How much higher could your students' test scores be? "If they would try. They are burnt out on testing by 5th grade."

96. Question 4 (no response): How much higher could your students' test scores be? "N/A I teach kindergarten."

97. "Why so repetitive!"

98. "This is a doctoral questionnaire? What a Joke"

99. "These seem to be asking the same thing!"

100. Question 2 (marked 7): How much do you want to please your principal?, and Question 6 (no response): How much do you want to make your principal happy? "Same question."

101. "This is a redundant, poorly thought out questionnaire. It really does not merit my time and effort. You ask 4 questions over – why? Your word choice is open to very wide interpretation and not accurate for a 21st Century workplace. Please respect our intelligence if you want accurate responses and valid data."

102. Question 2 (no response): How much do you want to please your principal? "Irrelevant question"

103. Question 6 (no response): How much do you want to make your principal happy? "Same as #2, poor item!"

104. Question 7 (no response): How much would higher achievement be to your advantage? Circled the word "advantage" and wrote "This is not a motivator!"

105. Question 9 (marked 7): How much could your students' achievement be raised? "Same as # 4"

106. Question 10 (no response): How much would you benefit from higher achievement scores? Circled the word "benefit" and wrote "poorly worded"

107. Question 11 (no response): How much does your principal try to please you? Circled the word "please" and wrote "poor choice of words."

108. Question 6 (marked 4): How much do you want to make your principal happy? Circled the word "happy", and wrote "odd and funny word to use! Want a professional respectful relationship"

109. Question 14 (marked 4): How much good would higher test scores do you? Inserted the word "for" between the phrase "do you" and then added "What?"

110. "To Hell to Georgia…….. Go Jackets"

111. Drew arrows connecting these pairs of questions 2 & 6, 3 & 7, and 8 & 13 and wrote "same"

112. Question 4 (marked 5): How much higher could your students' test scores be? "Due to ability level."

113. "These questions are the same."

114. "I am a special education teacher. Answers reflect that."

115. Question 4 (marked 4): How much higher could your students' test scores be? "They are usually high."

116. Question 4 (no response): How much higher could your students' test scores be? "Don't know-haven't had stand. test yet."

117. Question 9 (no response): How much could your students' achievement be raised? "Nothing to compare to"

118. Question 8 (no response): How good are you at helping students raise test scores? "We'll see."

119. Question 3 (no response): How much would higher student achievement help you? "I'm sorry but I don't understand this question."

120. Question 6 (marked 7): How much do you want to make your principal happy? "Same as #2"

121. "Very ambiguous questions."

122. "This was a strange little survey. Were you testing reading skills?"

123. "A strange questionnaire. Good luck!"

124. Question 6 (no response): How much do you want to make your principal happy? "not happy, but satisfied"

125. Question 4 (no response): How much higher could your students' test scores be? "Ambiguous question"

126. Question 9 (no response): How much could your students' achievement be raised? "up to the student"

127. Question 11 (no response): How much does your principal try to please you? "I wouldn't know."

128. First two questions answered followed by a BIG question mark over the rest of the questionnaire.

129. "This is a poorly written survey! I expect better writing and organization from someone working on a doctorate. This is redundant. He adjectives used do not match the type of questions." These comments were followed by a big frowning face.

130. "Some of these questions and/or responses are redundant and are difficult to decipher – 1, 5, 12, 16."

131. "Very misleading questions but nature of survey may be misunderstanding of survey as well. I Teach EBD so affective is more concern (?) than test scores. Days of OSS/ISS etc. vs. test scores mean more."

132. "I am an SLP so some of these didn't seem applicable to me."

133. "Our principal is awesome: supportive, kind and personable. Our superintendent is none of the above!"

134. "I have to say that while I am happy to participate in your research, this questionnaire is horrible. I do not feel that it can possibly measure teacher motivation with any accuracy. We are in a school with great students, an awesome principal and already high test scores. There is not much motivation to raise already excellent scores. Plus this questionnaire is too obviously repetitive and the questions and answers do no really go together. I like your topic for research, but wish you had chosen a different instrument!"

135. “Principal resigning at end of school year.”

136. Connecting line drawn between questions 2 and 6 with word “same?” written in between.

137. Question 3 (marked 7): How much would higher student achievement help you? Wrote in word “Great “ underneath the word “Large” on the response scale.

138. “Questions are <u>not</u> worded well! Redundant questions.”

139. “Two comments about survey: 1) questions seem redundant 2) I would think scale should run the same way for every question: Small – Large or Large – Small. This would lessen the chance of inaccurate responses.”

140. “You asked the same questions over and over – why?”

141. Responder grouped some of the questions into subgroups (1,12,16, also 3,7,10,14, also 2, 6,then 11 &15, and finally 8,13) with this comment: “These are basically the same? This is more @ test than motivation of teachers!!”

142. “Some of these scales are confusing!”

143. “Why did you keep asking the same few questions over and over?”

144. “Poorly designed questionnaire”

145. "This is stupid! This is not doctoral material! Sorry we wasted our time!"

146. "Extremely poorly designed…the answers rarely fit well w/the questions. If this were improved, quality of response would improve."

147. "These questions are about the most poorly written items I've ever tried to answer."

148. "This is a poorly constructed survey!"

149. "This is a very poorly written survey."

150. "Did you come up will (sp) all these on your own?"

151. "I'm sorry but this does not make sense and will not waste my time to answer."

152. "How many ways can you phrase the same question? Exactly how does this survey give an indication of overall teacher motivation?"

153. "Terry, this survey appears to be more of a test on survey "taking" than on research for information."

154. "Poor questionnaire."

155. "Can not speak for my principal."

156. "These questions are vague."

157. “All the low should be on one side – high on the other.”

158. “What idiot out there thinks their principal doesn’t want to see improved test scores?”

159. “Many of these questions are absurd.”

160. “The name of the questionnaire is teacher motivation – it should be importance of test scores."

161. “I am very motivated to help my students achieve success, but I am not convinced that those who score poorly on standardized tests are doomed to be lifelong failures.”

162. “I apologize, but I cannot participate in a survey that is so wrought with errors.”

163. “Redundant”

164. “If this gets you a doctorate, I am signing up.”

165. “This is insulting. The same questions have been asked over and over.”

166. “But I am a self-contained MID teacher, and am realistic.”

APPENDIX C

COMMENTS FROM ADMINISTRATORS

Comments on returned packets

1. ten packets were returned with no comments

2. "unable to participate"

3. "this is an alternative school with only 3 teachers"

4. "I have chosen for my teachers not to participate."

5. "we choose not to participate in this study"

6. "we do not wish to participate"

7. "we choose not to participate. Thank you for your thoughtfulness."

8. "we will not be able to participate in your study."

9. "school is now closed"

10. "Our school setting is very unique in that we are a small alternative program…We do not have a principal on site…I do not think our program would offer much to your study and will return your package."

11. "at this time we will not be able to participate with this questionnaire. We are sorry that we can't help at this time. Please don't hesitate to call on us in the future."

12. "Thank you for your interest in our school…Unfortunately, my staff members have participated in nine surveys already this year and have requested to not participate in any more this year. I must respect their wishes, for they have goodheartedly completed all others asked of them."

Phone comments

1. Not participating in survey, school is involved in SACs and standardized testing.

2. teachers are surveyed to death and starting CRCT

3. need another return envelope or address to send it to.

4. Want to wait another week before giving the survey to teachers

5. Not going to participate

6. CRCT next week and will not participate

7. All surveys must be approved by associate superintendent (approved and participated)

8. Not able to find the time

9. Need return address for surveys

APPENDIX D

2003 School Scores on the TMDQ

School Number	PE	FU	SA	AP	Mean
1	5.36	5.75	5.96	4.68	5.44
2	6.25	4.88	5.18	5.52	5.46
3	6.47	5.41	5.38	5.83	5.77
4	6.65	6.01	5.57	6.03	6.07
5	6.07	5.34	5.05	5.10	5.39
6	5.44	5.00	4.97	5.31	5.18
7	6.34	5.89	5.50	6.31	6.01
8	5.61	5.18	5.14	6.11	5.51
9	6.55	5.37	5.55	4.97	5.61
10	6.00	4.99	5.11	4.60	5.17
11	6.85	5.75	6.10	6.18	6.22
12	6.29	5.93	5.50	5.72	5.90
13	6.49	4.97	5.00	5.21	5.42
14	6.62	5.51	5.26	4.01	5.35
15	6.80	6.09	5.72	6.05	6.17
16	6.13	5.46	5.29	5.60	5.62
17	6.21	5.33	4.91	5.55	5.50
18	6.60	5.35	5.68	5.38	5.75
19	6.25	6.19	6.00	5.27	5.93
20	6.67	5.87	5.58	5.96	6.02
21	5.68	5.54	5.24	4.79	5.31
22	6.18	5.00	4.80	4.07	5.01
23	6.54	5.48	5.54	5.88	5.86
24	6.65	5.75	5.85	5.08	5.83
25	6.41	5.67	5.39	6.54	6.00
26	6.41	5.52	5.49	5.93	5.84
27	6.67	6.35	6.17	6.72	6.48
28	6.60	4.90	5.18	4.82	5.38
29	6.39	6.33	5.86	6.47	6.26
30	6.88	7.00	6.13	6.00	6.50
31	5.59	6.06	5.91	4.68	5.56
32	6.62	5.49	5.23	5.10	5.61
33	5.61	4.76	5.24	6.34	5.49
34	6.46	5.18	5.36	5.81	5.70
35	5.90	5.46	5.46	5.56	5.60
36	5.82	5.60	5.35	5.88	5.66

School Number	PE	FU	SA	AP	Mean
37	6.46	5.71	5.54	5.23	5.74
38	6.22	5.54	5.40	6.08	5.81
39	6.34	5.75	4.89	5.20	5.56
40	6.45	6.27	6.05	5.56	6.08
41	6.90	6.63	6.09	6.77	6.59
42	5.58	5.48	4.88	5.08	5.25
43	6.22	5.57	5.34	5.52	5.66
44	6.50	5.55	5.39	5.61	5.76
45	6.48	5.64	5.49	5.30	5.73
46	6.63	5.06	5.38	5.10	5.54
47	6.71	5.52	4.56	5.65	5.61
48	6.53	5.70	5.42	5.96	5.90
49	6.36	6.05	5.50	6.10	6.00
50	6.36	5.50	5.53	6.08	5.87
51	5.25	5.30	6.02	4.89	5.36
52	6.66	6.13	5.88	5.31	5.99
53	6.07	5.30	5.04	5.60	5.50
54	6.66	6.04	5.55	5.25	5.72
55	6.09	5.67	5.51	5.60	5.72
56	6.27	5.42	5.57	5.63	5.72
57	6.15	5.08	5.29	5.31	5.46
58	6.39	5.60	5.25	4.64	5.47
59	6.66	5.51	5.82	6.61	6.15
60	5.71	4.91	5.00	6.12	5.43
61	6.60	5.28	5.47	6.84	6.05
62	6.00	5.88	5.78	4.72	5.60
63	6.33	6.50	5.63	5.21	5.92
64	5.72	4.99	5.33	5.67	5.43
65	6.25	5.46	5.37	5.93	5.75
66	6.00	4.31	5.50	5.27	5.27
67	6.50	5.94	5.36	5.83	5.91
68	5.42	4.07	4.97	5.76	5.06
69	6.82	6.11	6.00	5.57	6.13
70	6.21	5.75	5.70	5.10	5.69
71	6.10	5.57	5.55	4.69	5.48
72	6.54	5.83	5.42	6.29	6.02
73	6.73	5.43	5.41	6.34	5.98
74	6.10	5.63	5.61	4.95	5.57
75	6.50	4.88	5.52	4.56	5.37
76	6.69	5.92	5.40	5.51	5.88
77	6.51	4.57	5.45	5.07	5.40

School Number	PE	FU	SC	AP	Mean
78	6.77	6.17	5.65	5.38	5.99
79	6.39	5.57	5.53	5.72	5.80
80	6.13	5.66	5.68	5.70	5.79
81	6.35	5.73	5.37	5.69	5.78
82	6.72	6.02	5.55	5.61	5.97
83	5.38	4.73	5.06	5.30	5.14
84	6.25	5.54	5.51	5.97	5.82
85	6.10	5.67	5.46	5.92	5.79
86	6.24	6.32	5.56	4.93	5.76
87	6.36	5.33	5.32	5.79	5.70
88	6.50	6.20	5.71	5.96	6.10
89	6.17	5.55	5.45	6.08	5.81
90	6.13	6.34	5.76	5.24	5.87
91	6.12	5.20	5.15	5.18	5.44
92	6.59	5.97	5.64	6.34	6.13
93	6.41	5.59	5.39	4.95	5.59
94	6.50	5.50	5.23	6.54	5.94
95	6.00	5.66	5.08	4.61	5.34
96	6.36	5.40	5.41	4.82	5.50
97	4.95	4.46	5.26	4.42	4.77
98	6.38	5.57	5.54	4.52	5.50
99	6.06	5.44	5.09	5.25	5.46
100	6.00	5.47	5.00	5.25	5.43
101	6.28	5.56	5.45	5.52	5.70
School Number	PE	FU	SA	AP	Mean

APPENDIX E

FINDINGS

1. School Scores on Principal Expectations by Means, Percentile, and Z scale

School mean	Z score	Percentile rank
4.95	-3.42	0
5.25	-2.64	1
5.36	-2.37	2
5.38	-2.32	3
5.42	-2.21	4
5.44	-2.16	5
5.58	-1.81	6
5.59	-1.77	7
5.61	-1.73	9
5.61	-1.71	9
5.68	-1.53	10
5.71	-1.47	11
5.72	-1.43	12
5.82	-1.18	13
5.90	-0.96	14
6.00	-0.72	15
6.00	-0.72	15
6.00	-0.72	15
6.00	-0.72	15
6.00	-0.72	15
6.06	-0.56	15
6.07	-0.55	22
6.07	-0.54	22
6.09	-0.49	23
6.10	-0.46	24
6.10	-0.45	24
6.10	-0.45	24
6.12	-0.41	27
6.13	-0.40	30
6.13	-0.40	30
6.13	-0.38	30
6.15	-0.32	31
6.17	-0.27	32
6.18	-0.25	32
6.21	-0.18	34
6.21	-0.17	34
6.22	-0.16	37
6.22	-0.16	37

Mean	Z Score	Percentile
6.24	-0.10	38
6.25	-0.08	39
6.25	-0.08	39
6.25	-0.08	39
6.25	-0.08	39
6.27	-0.03	44
6.29	0.03	44
6.33	0.14	45
6.34	0.15	47
6.34	0.15	47
6.35	0.17	49
6.36	0.21	49
6.36	0.21	49
6.36	0.21	49
6.36	0.22	49
6.38	0.26	54
6.39	0.28	57
6.39	0.28	57
6.39	0.28	57
6.41	0.33	59
6.41	0.33	59
6.41	0.34	59
6.45	0.44	61
6.46	0.46	62
6.46	0.47	62
6.47	0.48	64
6.48	0.50	65
6.49	0.53	66
6.50	0.56	67
6.50	0.56	67
6.50	0.56	67
6.50	0.56	67
6.50	0.56	67
6.51	0.60	71
6.53	0.65	73
6.54	0.67	74
6.54	0.67	74
6.55	0.69	76
6.59	0.79	77
6.60	0.82	78
6.60	0.82	78
6.60	0.83	78
6.62	0.87	82
6.62	0.87	82
6.63	0.88	83
6.65	0.94	85
6.65	0.95	85
6.66	0.96	86

Mean	Z Score	Percentile
6.66	0.98	86
6.66	0.98	86
6.67	0.99	90
6.67	0.99	90
6.69	1.04	91
6.71	1.10	92
6.72	1.12	93
6.73	1.16	94
6.77	1.26	95
6.80	1.34	96
6.82	1.39	97
6.85	1.46	98
6.88	1.53	99
6.90	1.58	
SD	0.39	
mean	6.28	

2. School scores on Future Utility by mean, Z score and Percentile

Mean	Z score	Percentile
4.07	-3.04	0
4.31	-2.55	1
4.46	-2.24	2
4.57	-2.03	3
4.73	-1.68	4
4.76	-1.62	5
4.88	-1.40	7
4.88	-1.38	7
4.90	-1.35	8
4.91	-1.32	9
4.97	-1.20	10
4.99	-1.17	12
4.99	-1.17	12
5.00	-1.14	13
5.00	-1.14	13
5.06	-1.02	15
5.08	-0.99	16
5.18	-0.78	18
5.18	-0.78	18
5.20	-0.73	19
5.28	-0.57	20
5.30	-0.53	21
5.30	-0.52	21
5.33	-0.47	23
5.33	-0.46	23
5.34	-0.45	25
5.35	-0.43	26
5.37	-0.39	27
5.40	-0.34	29
5.41	-0.31	30
5.42	-0.29	30
5.43	-0.27	31
5.44	-0.25	32
5.46	-0.21	34
5.46	-0.20	34
5.46	-0.20	34
5.47	-0.19	37
5.48	-0.17	39
5.48	-0.17	39
5.49	-0.14	39
5.50	-0.12	40
5.50	-0.12	40
5.51	-0.10	43
5.51	-0.09	43
5.52	-0.08	45
5.52	-0.08	45

Mean	Z score	Percentile
5.54	-0.04	47
5.54	-0.04	47
5.54	-0.04	47
5.55	-0.03	50
5.55	-0.01	50
5.57	0.01	54
5.57	0.02	54
5.57	0.02	54
5.57	0.02	54
5.59	0.05	56
5.60	0.08	58
5.60	0.08	58
5.63	0.13	59
5.64	0.17	59
5.66	0.20	61
5.66	0.21	61
5.67	0.22	65
5.67	0.22	65
5.67	0.22	65
5.70	0.29	66
5.71	0.31	66
5.73	0.35	68
5.75	0.39	69
5.75	0.39	69
5.75	0.39	69
5.75	0.39	69
5.75	0.39	69
5.83	0.55	74
5.87	0.63	75
5.88	0.66	76
5.89	0.67	77
5.92	0.73	78
5.93	0.76	79
5.94	0.78	79
5.97	0.83	81
6.01	0.93	82
6.02	0.94	83
6.04	0.99	84
6.05	1.00	85
6.06	1.01	86
6.09	1.09	87
6.11	1.12	88
6.13	1.15	89
6.17	1.24	90
6.19	1.29	91
6.20	1.31	92
6.27	1.45	93
6.32	1.56	94

Mean	Z score	Percentile
6.33	1.58	95
6.34	1.59	96
6.35	1.62	97
6.50	1.92	98
6.63	2.18	99
7.00	2.94	100
SD	0.49	
mean	5.56	

3. School scores on Self Concept by means, Z scores, and percentile

Mean	Z score	Percentile
4.56	-2.77	0
4.80	-2.05	1
4.88	-1.80	2
4.89	-1.75	3
4.91	-1.69	4
4.97	-1.50	5
4.97	-1.49	5
5.00	-1.41	7
5.00	-1.41	7
5.00	-1.41	7
5.04	-1.27	10
5.05	-1.25	11
5.06	-1.21	12
5.08	-1.16	13
5.09	-1.11	14
5.11	-1.06	15
5.14	-0.96	16
5.15	-0.94	17
5.18	-0.85	18
5.18	-0.83	19
5.23	-0.69	20
5.23	-0.68	21
5.24	-0.67	22
5.24	-0.66	23
5.25	-0.63	24
5.26	-0.58	25
5.26	-0.58	26
5.29	-0.50	27
5.29	-0.49	28
5.32	-0.39	29
5.33	-0.36	30
5.34	-0.36	31
5.35	-0.32	32
5.36	-0.28	33
5.36	-0.27	34
5.37	-0.26	35
5.37	-0.25	36
5.38	-0.23	37
5.38	-0.23	37
5.39	-0.20	39
5.39	-0.19	40
5.39	-0.18	41
5.40	-0.17	42
5.40	-0.17	42

Mean	Z Score	Percentile
5.41	-0.14	44
5.41	-0.12	45
5.42	-0.10	46
5.42	-0.09	47
5.45	-0.01	48
5.45	-0.01	49
5.46	0.03	51
5.46	0.04	52
5.47	0.06	53
5.49	0.12	54
5.49	0.13	55
5.50	0.14	56
5.50	0.16	57
5.50	0.16	57
5.50	0.16	57
5.51	0.19	60
5.51	0.20	61
5.52	0.22	62
5.53	0.24	63
5.53	0.26	64
5.54	0.27	65
5.54	0.27	65
5.54	0.29	67
5.55	0.30	68
5.55	0.31	69
5.55	0.32	70
5.55	0.33	71
5.56	0.35	72
5.57	0.38	73
5.57	0.39	74
5.58	0.39	75
5.61	0.51	76
5.63	0.55	77
5.64	0.58	78
5.65	0.61	79
5.68	0.70	80
5.68	0.72	81
5.70	0.78	82
5.71	0.83	83
5.72	0.86	84
5.76	0.96	85
5.78	1.02	86
5.82	1.15	87
5.85	1.25	88
5.86	1.28	89
5.88	1.33	90
5.91	1.43	91
5.96	1.61	92

Mean	Z Score	Percentile
6.00	1.72	93
6.00	1.72	93
6.02	1.78	95
6.05	1.87	96
6.09	1.99	97
6.10	2.03	98
6.13	2.11	99
6.17	2.24	100
SD	0.32	
mean	5.45	

4. Schools scores on Attitude toward Principal

Mean	Z score	Percentile
4.01	0	-2.51
4.07	1	-2.42
4.42	2	-1.83
4.52	3	-1.67
4.56	4	-1.60
4.60	5	-1.54
4.61	6	-1.52
4.64	7	-1.47
4.68	8	-1.40
4.68	9	-1.40
4.69	10	-1.38
4.72	11	-1.33
4.79	12	-1.22
4.82	13	-1.17
4.82	14	-1.16
4.89	15	-1.05
4.93	16	-0.99
4.95	17	-0.95
4.95	18	-0.95
4.97	19	-0.92
5.07	20	-0.76
5.08	21	-0.74
5.08	22	-0.73
5.10	23	-0.70
5.10	23	-0.70
5.10	23	-0.70
5.10	26	-0.70
5.18	27	-0.57
5.20	28	-0.53
5.21	29	-0.52
5.21	30	-0.52
5.23	31	-0.48
5.24	32	-0.46
5.25	33	-0.45
5.25	33	-0.45
5.25	35	-0.44
5.27	36	-0.42
5.27	37	-0.42
5.30	38	-0.37
5.30	39	-0.37
5.31	40	-0.35
5.31	41	-0.35
5.31	41	-0.35
5.38	43	-0.24

Mean	Z Score	Percentile
5.38	43	-0.24
5.51	45	-0.01
5.52	46	-0.01
5.52	47	0.00
5.55	48	0.05
5.56	49	0.06
5.56	49	0.06
5.57	52	0.09
5.60	53	0.13
5.60	54	0.13
5.60	55	0.14
5.61	56	0.15
5.61	57	0.16
5.63	58	0.19
5.65	59	0.21
5.67	60	0.24
5.69	61	0.29
5.70	62	0.31
5.72	63	0.34
5.72	64	0.34
5.76	65	0.41
5.79	66	0.45
5.81	67	0.48
5.83	68	0.51
5.83	69	0.52
5.88	70	0.59
5.88	70	0.59
5.92	72	0.66
5.93	73	0.68
5.93	74	0.69
5.96	75	0.73
5.96	76	0.73
5.96	77	0.74
5.97	78	0.75
6.00	79	0.80
6.03	80	0.85
6.05	81	0.89
6.08	82	0.93
6.08	83	0.94
6.08	83	0.94
6.10	85	0.97
6.11	86	0.98
6.12	87	1.00
6.18	88	1.09
6.29	89	1.28
6.31	90	1.31
6.34	91	1.36
6.34	92	1.36

Mean	Z Score	Percentile
6.34	93	1.37
6.47	94	1.59
6.54	95	1.70
6.54	95	1.70
6.61	97	1.81
6.72	98	2.00
6.77	99	2.08
6.84	100	2.20
SD		0.60
mean		5.52