

A STUDY OF THE PERSPECTIVES OF OKLAHOMA HIGH SCHOOL
PRINCIPALS REGARDING VARIABLES WHICH AFFECT
STUDENT PERFORMANCE ON THE METROPOLITAN
ACHIEVEMENT TEST

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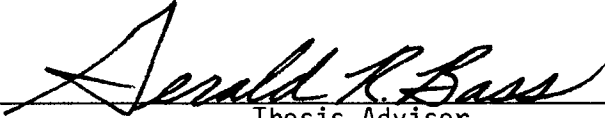
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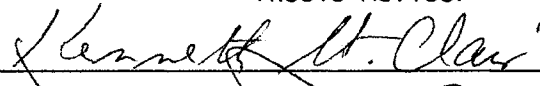
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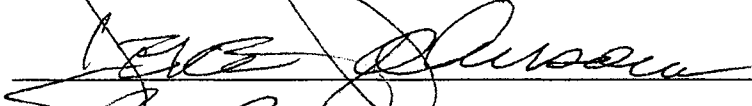
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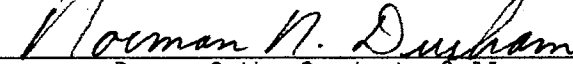


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CHAPTER I

INTRODUCTION

Rationale for the Study

The Declaration of Independence, adopted on July 4, 1776, and signed by members representing the 13 states, affirms in the second paragraph that all men are created equal, that they are endowed by their Creator with certain inalienable rights, and that among these are life, liberty, and the pursuit of happiness. The Constitution of the United States of America guarantees to every citizen these rights. Out of these declarations of rights has grown the popular belief that children from all economic groups are entitled to equal educational opportunity. This interpretation, seemingly, has greatly influenced educational trends during recent years.

The pressure on public schools to provide equal educational opportunities is as great now as it has ever been. Nevertheless, glaring inequalities still characterize much of our educational theory and practice throughout the state and the nation. In efforts to remedy such inequality, a number of questions has been raised. Do children of all economic groups make equal educational progress when offered the same programs of curricular and extracurricular activities? How do children of the unemployed and lower socioeconomic groups compare in educational progress with the children whose parents have greater financial position? How do these students fare on standardized achievement tests when matched

against each other? How do students in Oklahoma fare against students from across the nation? From these questions it may be seen that the problem of educational equality is affected by socioeconomic, demographic, and other variables in the measurement of student performance in Oklahoma public high schools.

The results of a study directed at the questions noted above may be of great interest to all who are involved in the education of Oklahoma school children and especially to groups who are engaged in curriculum construction and curriculum review. During the present time of public concern over student performance on achievement tests, public school administrators are endeavoring to maintain the public's confidence in the quality of education that students are receiving in Oklahoma public schools and high schools in particular. The task of dealing with this legitimate but sometimes misplaced concern is the basis for this study.

Statement of the Problem

A problem for educators in dealing with issues of equality is to increase the awareness of the public, the media, and other educators in the State of Oklahoma as to the variables which could affect student performance on the standardized achievement tests which are mandated by law for Oklahoma's public school students. Information needs to be provided as to how multiple variables may affect student performance. Could it be, for example, that the economic status of the family might be a factor in the educational progress of a child?

In Oklahoma, misunderstandings have occurred regarding achievement tests, their results, and the application of those results. The general public does not know how to interpret the results of these tests and passes judgment quickly, and sometimes unfairly, on the quality of

certain schools (Killackey, 1989). The achievement test that has been mandated for use and which has thus caused the most concern in Oklahoma is the Metropolitan Achievement Test 6th Edition (MAT-6) (Psychological Corporation, 1986). The MAT-6 was mandated for use in Oklahoma public schools (grades 3, 7, and 10) during the 40th Legislative Session (Oklahoma Statutes, 1985). The problem is that this series of tests, which was originally intended to be a barometer of improvement for schools, has become "judge and jury" in the public's perception of which community has the best schools (Ford and Francis, 1988).

Purpose of the Study

The purpose of this study was to investigate those variables which are perceived to have an effect on the outcome of student performance on standardized tests. The specific focus of this study was on principals' perceptions of those variables which most affect student performance on the MAT-6. In order to gather data relevant to this problem, a survey was made of the principals of Oklahoma 3A, 4A and 5A high schools (Appendix A). In identifying their perceptions, the survey was used to seek answers to the following research questions:

1. What factors do principals perceive as being most likely to affect student performance on the MAT-6?
2. What factors do principals perceive as being least likely to affect student performance on the MAT-6?
3. Is there a relationship between size classification of schools and principals' perceptions of factors affecting student performance on the MAT-6?

4. Is there a relationship between number of years of experience as a principal and perceptions of factors affecting student performance on the MAT-6?

5. Is there a relationship between gender of the principal and perceptions of factors affecting student performance on the MAT-6?

6. Is there a relationship between age of the principal and perceptions of factors affecting student performance on the MAT-6?

7. Is there a relationship between household per capita income of the patrons in a community and principals' perceptions of factors affecting student performance on the MAT-6?

8. Is there a relationship between reported local percentile scores of schools and their principals' perceptions of factors affecting student performance on the MAT-6?

9. Is there a relationship between school setting (urban, suburban, or rural) and principals' perceptions of factors affecting student performance on the MAT-6?

Significance

By increasing the awareness of the public, the media, the educators, and the state legislature, this study may enhance the ability of Oklahoma policymakers to concentrate their attention on the provision of moral and financial support to public schools, rather than on seeking reasons to explain perceived problems such as declining or low test scores. Condemnation of public school performance only serves to diminish support for public schools through bad publicity and the resultant poor public image portrayed to the average taxpayer of every public school in every town across the state.

A prime example of this type of potentially damaging report was given in a newspaper article (Ford and Francis, 1988) containing an eye-catching bar graph which visually depicted MAT-6 scores and how schools ranked by those scores. The average reader most likely did little more than glance at the article itself. Rather, an opinion may have been formed by looking only at the bar graph ranking scores of the schools. The image formed could be devastating for a school district which was rated low on the graph. If such articles are published prior to a critical school bond election or during a time when a school district is considering an addition to the curriculum which would involve some expense, the result could be very disheartening to all concerned with the welfare of that school district.

This type of negative publicity often creates a reaction by school board members who are very sensitive to criticism by their constituents (Jensen, 1980). Pressure is thus often brought to bear on school officials by boards to raise test scores. This in turn causes the administration to put more pressure on teaching staffs to raise scores (Killackey, 1989). Since teachers are only human, they will eventually adapt their curriculum to the most heavily emphasized areas of the tests.

Many states have heaped on new standardized test requirements during the 1980s as part of the drive for higher school standards. Teachers, principals and school administrators have found themselves under pressure to make their schools, and themselves, look better through higher scores. In some states, teachers' careers can now be made or broken and school districts can be subject to state takeover partly on the strength of standardized test scores (Cannell, 1989, p. 4).

The significance of these tests and their results cannot be underestimated, considering the attention directed towards education today.

Assumptions

The following assumptions reflect a basis upon which this study was developed:

1. All Oklahoma principals desire to improve their school's performance on the MAT-6.
2. Oklahoma teachers are interested in the improvement of their students' performance on the MAT-6.
3. Oklahoma teachers and students are interested in overall improvement.
4. Oklahoma teachers possess the expertise necessary to assist students in improving their performance on the MAT-6.
5. Oklahoma principals are actively involved, to some degree, in trying to improve their students' MAT-6 performance.

Limitations

Limitations are present in virtually any research project. They must be identified and accounted for. They in fact may be used to an advantage when properly considered. Four particular limitations may affect the findings of this study:

1. The population for the study was limited to principals of the larger high schools in the State of Oklahoma.
2. The perceptions reported by principals may have been affected by their varying backgrounds of education and experience.
3. This study did not seek to identify those factors that affect student performance or to assess the degree to which such performance may be affected; rather, the study sought to identify only principals' perceptions of those factors and of their impact.

4. Principals' attitudes toward achievement tests in general or in the mandated use of such tests may have affected their perceptions.

Definition of Terms

The following terms were utilized in this study:

Principal. The governing officer of a school (Good, 1973).

Raw Scores. The number of questions answered correctly for a cluster, test, domain, or total battery (Oklahoma School Testing Program, 1986).

Scales Scores. Approximately equal units on a continuous scale using numbers which range from 001 through 999. These scores facilitate conversions to other scores and are suitable for studying change in performance over time (Oklahoma School Testing Program, 1986).

National Percentile Ranks. The relative standing of a pupil in comparison with other pupils of the same grade in the norm (reference) group who took the test at a comparable time. Scores range from a low of 1 to a high of 99, with 50 denoting average performance for the grade (Oklahoma School Testing Program, 1986).

National Stanines. Scores that range from a low of 1 to a high of 9, with 5 designating average performance. Stanines, like percentile ranks, indicate a student's relative standing in the norm group (Oklahoma School Testing Program, 1986).

National Normal Curve Equivalents. The normal curve equivalent score (NCE) is derived from the percentile rank. The NCE is a type of standard score resulting from the division of the normal curve into 99 equal units (Oklahoma School Testing Program, 1986).

Local Percentile Ranks. The relative standing of a pupil in comparison with other pupils of the same grade from the local group, all of

whom took the test at the same time (Oklahoma School Testing Program, 1986).

Content Cluster Performance Indicators. On the Individual Report, the student's performance category on each content cluster on MAT-6 is indicated, relative to the performance of a nationwide sample of students tested at the same grade level (Oklahoma School Testing Program, 1986).

Percent by Content Cluster Performance Indicator. The Building and System Summary Reports show the percentage of students achieving in each of the three performance categories for every MAT-6 content cluster reported on the Individual Report (Oklahoma School Testing Program, 1986).

Percent Correct Values. The percent correct shown on the Group Item Analysis Report expressed the percentage of pupils in the national norm group who answered an item or a group of items correctly (Oklahoma School Testing Program, 1986).

Grade Equivalents (GE). A score that represents the average performance of students tested in a given month of the school year (Oklahoma School Testing Program, 1986).

MAT-6 Reports. At grade 10, buildings receive individual Pupil Reports and Parent Reports. The Reports present test results to parents, listing the raw score, national rank by percentile and stanine, and local (state) percentile rank and stanine associated with each (Oklahoma School Testing Program, 1986).

Administrator's Data Summary. Provides a wealth of summary information for groups of students by building and district and at the state level (Oklahoma School Testing Program, 1986).

Summary

The MAT-6, when used for its original intended purpose of improving

weaknesses in individual school curriculums, would appear to be very useful for providing insight and direction for all Oklahoma school districts. However, a problem exists when the results of the MAT-6 are more often than not exhibited on the front pages of the state newspapers (Ford and Francis, 1988; Aydelott, 1989; Killackey, 1989). Those articles may leave out important working definitions and explanations of the MAT-6 scores. The result is often a distorted picture of each individual school's performance (Jensen, 1980). School administrators and teachers cannot be counted among the innocent when it comes to interpretation of the MAT-6 results.

This study therefore was designed to determine principals' perceptions of factors that may affect student performance on the MAT-6. Specifically, principals of Oklahoma's larger high schools were surveyed to identify their perceptions of factors which have the least and the greatest impact. The results of the survey were analyzed to identify possible relationships between characteristics of principals or schools and principals' perceptions.

CHAPTER II

REVIEW OF THE LITERATURE

Chapter II contains aspects of the available literature related to the historical development of achievement tests and to the variables which have been reported to affect standardized achievement testing. The literature has included that which considered achievement testing in general as well as that which explored achievement testing more specifically in the State of Oklahoma. Studies of the use and misuse of achievement testing were reviewed along with those which recommended cautions and information to consider when interpreting the results of achievement tests.

History of the Use of Achievement Tests

The use of standardized achievement tests goes back to the early decades of the twentieth century. A standardized test is one which has been constructed in accord with detailed specifications and for which the items have been selected after tryout for appropriateness in difficulty and discriminating power (Ebel and Frisbie, 1986). It is accompanied by a manual giving definite directions for uniform administration and scoring. Relevant and dependable norms are provided for score interpretation. Such tests provide data which indicate relative rankings among students based on their performance. Such rankings yield comparisons of individuals' scores (as well as average scores for groups) with their

peers at the class, grade, building, district, state, and/or national levels.

As understanding of the relationship between physical and mental development increased somewhat around the turn of the century, the vain hope that mental performance could be predicted from anatomical measurements gave way to the idea of measuring mental performance itself. It is in this theoretical framework that the mental testing movement has grown.

The child is father of the man, so the child's mental attributes ought to be indicators of the future adult's performance. While the measurement changed, the theory did not. Human mental attributes are seen as manifestations of properties that are already imminent at birth. The development of the adult is regarded as an unfolding of a pre-set pattern, so that measurements at an earlier stage can predict the outcome at a later stage. All that is required is to devise an instrument that will detect and measure that intrinsic property of which performance at every stage is only the outward manifestation (Schiff and Lewontin, 1986, pp. 8-9).

The historical irony of mental testing is that it began with a totally different theoretical basis. Between 1905 and 1911, Alfred Binet and Theodore Simon, two French psychologists, devised a series of tests of children's mental performance to aid schools in more effective teaching (Schiff and Lewontin, 1986). The idea was to identify low performing children, so as to bring them up to the same standard as others. There was no implication that such children were destined to be stupid adults because they lacked some intrinsic ability necessary to success. Binet, on the contrary, was explicit in his rejection of any theory of fixed mental abilities. He spoke against the "brutal pessimism" of the idea of stupidity (Schiff and Lewontin, 1986). However, the tests devised by Binet and Simon were soon put to a different use.

Imported into the United States and reworked by Lewis Terman at Stanford University in 1916, an instrument originally designed to assist teachers in helping students became transformed into a device to label

the unteachable (Schiff and Lewontin, 1986). Beginning with Terman, an Army psychologist during World War I, and continuing up to the present day, mental testing has been regarded as a technique for revealing intrinsic differences between people in the capacity for learning and reasoning. Those with low intrinsic capacities, in this theory, cannot be taught and are destined for social failure (Schiff and Lewontin, 1986). "So, in effect, these tests became screening devices to see which children were worth spending educational effort on, and which are destined to be underlings to the more intelligent Caesars" (Schiff and Lewontin, 1986, p. 8).

The fact is that both professional educators and the general public have debated the uses of achievement tests for most of this century. In a 1932 study, Mort stated that there was a danger that the use of results obtained elsewhere should be avoided by those responsible for making comparisons of students and of communities. He warned that, in the long run, even the best teachers tended to emphasize (teach) those phases of the curriculum which were tested. Mort's criticism did not, however, demand abolishing testing. It demanded, rather, the use of more common sense in the interpretation of tests. This could be done by supplementing the discussion of test results by a discussion of the results obtained in other aspects of school work, such as how many participated in "honors" or advanced placement classes. Even these may require discussion in terms of subjective judgment (Mort, 1932).

Strayer (1940) conducted a survey of achievement testing in the public schools of Pittsburg, Pennsylvania. Teachers and administrators there questioned an overemphasis on the Detroit First Grade Intelligence Examination and the Monroe Reading Aptitude Test, which was given along with other intelligence tests in grades one, four, six, and eight.

Strayer concluded that this kind of testing, when done to a large degree, would result in an overemphasis on "test-tool subjects" to the neglect of other, equally important aspects of a child's mental growth. In an educational program which expresses such aims as development of appreciations, desirable attitudes, worthwhile interests, and critical evaluation, tests must be used and interpreted with caution. Strayer also recommended that less emphasis be placed in the future upon achievement tests in determining promotion in borderline cases and in the comparison of one school with another.

One document that is frequently referred to regarding the subject of testing is the Nation at Risk report (National Commission on Excellence in Education, 1983):

Standardized tests of achievement (not to be confused with aptitude tests) should be administered at major transition points from one level of schooling to another and particularly from high school to college work. The purposes of these tests would be to: (a) certify the student's credentials, (b) identify the need for remedial intervention, and (c) identify the opportunity for advanced or accelerated work. The tests should be administered as part of a nationwide (but not Federal) system of State and local standardized tests (p. 10).

Currently, 38 of the 50 American states conduct statewide assessment tests to determine students' achievement levels in the basic skills (Anderson, 1985). Most of these states employ standardized tests to determine the achievement progress of students in the public schools.

Such information is useful "because it helps to inform students, teachers, administration, and the public at large of the educational efforts in their schools" (Ebel and Frisbie, 1986, p. 22). In differentiating the functions of teacher-made tests and standardized achievement tests, it has also been noted that,

. . . for the school or district as a whole, the traditional standardized test provides a general summary of the achievement of its students. By themselves, the scores do not reveal

anything about the causes of performance, but they do provide a general reading to the current status in comparison to the nation at large. By comparison of scores from one year to another, the school or district can also get an indication of improvement or decline in performance (Linn, 1986, p. 189).

This conclusion agreed with those such as Ebel (1979) and the National Commission on Excellence in Education (1983), who suggested the importance of keeping in perspective the purpose of achievement tests: that of a structured, systematic, scientific application of how a school is performing when compared to the nation as a whole (Jencks, 1972).

History of Statewide Assessment in Oklahoma

A formal statewide student testing program had never been instituted in Oklahoma prior to the 1985-86 school year. However, the State Department of Education had conducted a number of studies during the previous 10 years to determine the status of student achievement in the basic skills (Oklahoma School Testing Program, 1986). A 1976 Oklahoma Department of Education report to the state legislature reviewed the achievement status of Oklahoma students in grades 3, 6, 9, and 12. These data, gathered from school districts' annual reports of standardized achievement testing programs, indicated that Oklahoma students were achieving at levels above national norms. During the school years 1977-78 and 1978-79, studies were conducted to determine the achievement status of students in reading and mathematics (Oklahoma School Testing Program, 1986). Using stratified random sampling to select school districts, the studies involved the administration of the California Achievement Test to grades three, six, and nine and the Senior High Assessment of Reading Performance at the 12th grade level (Oklahoma School Testing Program, 1986). As was indicated in previous studies, the performance of Oklahoma public school students was found to be above national norms.

A statewide achievement test survey was conducted in the spring of 1984 to determine the following: (1) schools in which tests are regularly administered, (2) the specific standardized achievement tests being mandated or administered, (3) the grade levels being tested, (4) the skill areas being assessed, and (5) the costs of such programs (Oklahoma School Testing Program, 1986). It was found that of the 457 Oklahoma school districts responding to the survey, all were regularly administering standardized achievement tests. The majority of those responding were testing annually, while others were testing every two years and a few were testing every three years. Reading, mathematics, language arts, science, and social studies skills were most frequently being measured. Results from these tests were expressed in norm-referenced data (e.g., percentiles, grade equivalents, stanines, and normal curve equivalents). According to the survey, data were used primarily to group students for instruction at appropriate levels.

The Oklahoma School Testing Program--Legislation

Oklahoma House Bill 1480, passed during the 39th Legislative Session, required that the State Department of Education submit a plan for a statewide assessment of student achievement in the basic skill areas (Oklahoma State Legislature, 1984). The required plan, which was submitted on January 1, 1985, described three testing options: objectives-based, norm-referenced tests; standardized, norm-referenced tests; and criterion-referenced tests (Oklahoma School Testing Program, 1986). Oklahoma House Bill 1466, passed during the 40th Legislative Session, then mandated that the Oklahoma State Department of Education implement the Oklahoma School Testing Program (OSTP), a program within which a

standardized, norm-referenced test would be administered to students in grades 3, 7, and 10 (Oklahoma State Legislature, 1986).

Beginning with the 1985-86 school year, the [State] Board [of Education] shall cause a norm-referenced test to be administered to every student enrolled in grades three, seven, and ten of the public schools of the state. Children who have individualized education plans pursuant to Public Law 94-142 shall not be required to participate in the Oklahoma School Testing Program Act. However, the right of these students to participate in the OSTP cannot be denied. Parents must be given the opportunity to sign a form indicating their desire to have their children take the tests. The test shall be selected by the Board and shall measure specific skills represented by learner objectives. The student skills to be tested at specified grade levels shall include reading, mathematics, language arts, communications, science, and the principles of citizenship in the United States and other countries of the world, and through the study of the principles of democracy as they apply in the lives of citizens.

The Board shall seek to ensure that data yielded from the test is utilized at the school district level to prescribe skill reinforcement and/or remediation by requiring school districts to develop and implement a specific program of improvement based on the test results (Oklahoma Statutes, 1985, p. 2767).

Test Review and Selection Process

The next required step for the OSTP was the selection of an appropriate achievement test. In accordance with Oklahoma bidding laws, a "mandatory attendance" pre-bid conference was held for all interested bidders on September 17, 1985 (Oklahoma School Testing Program, 1986). All requirements of the OSTP were discussed and bidders were allowed the opportunity to seek clarification of misconceptions regarding bid requirements. For the purpose of conducting independent reviews, 65 teachers and school administrators, serving grades 3, 7, and 10, were invited to examine the curricular validity of tests submitted for examination. These reviewers were selected from among those educators who had earlier participated in the development and/or validation of the Oklahoma

Suggested Learner Outcomes at grades 3, 7, and 10. Seven State Department of Education curriculum specialists were pretrained and served as chairpersons of the 15 "subject-by-grade" subcommittees (Oklahoma School Testing Program, 1986). Criteria used to judge the tests included freedom from ethnic or geographic bias, passage dependency, dependence on knowledge of technical vocabulary, quality of test format, appropriateness for the specified grade level, ease of interpretation, measurement of higher order thinking skills, quality of manuals for test administrators, and layout.

Other technical factors of the tests were reviewed by the Oklahoma School Testing Advisory Committee. This committee was comprised of 18 educators (classroom teachers, directors of testing for large school districts, counselors, psychometrists, a university professor, and a vocational-technical school teacher) and served to critique the original plan for the OSTP as well as the bidding process. Based on these recommendations, the State Board of Education adopted the Metropolitan Achievement Test--6th Edition (MAT-6), published by the Psychological Corporation, as the series of tests to be administered in the Oklahoma School Testing Program. The MAT-6 has thus been administered to nearly all Oklahoma public school students in grades 3, 7, and 10 since the 1985-86 school year.

Description of the Tests

The MAT-6 tests are overall measurements of achievement in the basic skills of reading, mathematics, language arts, science, and social studies. In the Oklahoma School Testing Program, all of these skills are tested (Psychological Corporation, 1986). These tests are nationally normed tests and, as such, are designed to be administered on a group

basis to students functioning in the mainstream classroom. The norming sample included exceptional students in proportion to their appearance in the national school population (except those designated as Trainable Mentally Handicapped or Severely/Profoundly Mentally Handicapped) to the extent it was feasible for these students to take tests under prescribed testing conditions. The MAT-6 tests have alternate and equivalent forms L and M. Each equivalent form measures the same subject areas and has the same number of items (Psychological Corporation, 1986). The tests are capable of measuring the achievement of Oklahoma students on a scale that allows comparison to a national norm sample which was selected to be representative of the nation's students in each of the grade levels tested. Thus, as norm-referenced tests, the tests provide a method for comparing the achievement of pupils in any class with that of typical pupils of the same age and grade.

As this particular study dealt with 10th grade students, a description of that test version of the MAT-6 is as follows: The MAT-6 Advanced 2 includes two reading tests (vocabulary and reading comprehension), as well as mathematics, spelling, language, science, and social studies (Psychological Corporation, 1986). The reading comprehension and vocabulary tests combine to yield a total reading score. The language and spelling tests combine to yield a total language score. Total basic battery and total complete battery scores are also provided based on test combinations described in the administration materials.

Writing Assessment Component

During the school years 1986-87, the Writing Assessment Component of the OSTP was implemented in all public school districts throughout the state (Oklahoma School Testing Program, 1987b). Within this program, a

standardized, norm-referenced direct writing test was administered to Oklahoma's 10th grade students. Designed to measure students' actual writing skills, the test yields data which indicate overall writing proficiency levels as well as strengths and deficiencies in specific skills. It was the first time that a statewide writing assessment of this nature had been conducted in Oklahoma. Of the 32 states conducting such programs, Oklahoma was the first to use a standardized, norm-referenced direct writing test (Oklahoma School Testing Program, 1987b).

. . . a test which measures writing skills in what is variously called "free writing," "essay writing," or "direct assessment" mode. That is, students actually produce a piece of writing in response to a given stimulus. This piece of writing is then judged, by trained raters operating with agreed upon principles, for its merit (Psychological Corporation, 1986, p. 20).

Two types of scoring were used on the writing assessment: holistic and analytic. In the holistic method, the scorer makes a single, overall judgment of the quality of the writing sample. The holistic scoring scale used in rating Oklahoma students' papers is based on a range of one to eight, with one representing the "low" end of the scale. Since two separate holistic ratings are conducted with each paper, the combined raw score ranges from 2 through 16, with 16 being the highest possible score a student can earn (Oklahoma School Testing Program, 1987b).

Analytic scoring is a method of evaluation in which the rater makes a separate judgment on a number of different features, providing a more comprehensive picture of writing performance. In the scoring of the OSTP writing test, this method is applied after the holistic method of scoring. For the most part, the highest score of four means that the composition is error-free (or essentially so). Conversely, the lowest score of one is assigned to a paper that is error-laden, or demonstrates very little competency of that specific feature (Oklahoma School Testing

Program, 1987b). Since 1986-87, the OSTP has also included the 10th grade writing assessment. On the whole, results indicate that Oklahoma's 10th grade students' writing skill performance levels were estimated to be above the national norm (Oklahoma School Testing Program, 1987b).

Variables and Their Effect

Precise measurement requires careful control, or standardization, of the conditions surrounding it. Obviously, this control renders the behavior being measured to some degree artificial, but artificiality is a price that scientists and engineers, as well as psychologists and teachers, have usually found worth paying to achieve precision (Ebel, 1979).

The behavior in the artificial test situation may be so poorly related to typical behavior in a natural situation that precise measurement is wasted effort. But for the tests of educational aptitude or achievement, the gain in precision resulting from the controlled conditions that formal testing can afford usually far outweighs the slight loss in relevance of behavior (Ebel, 1979, pp. 66-67).

Conditions

Failure to control for certain conditions during the administration of standardized tests can yield invalid results. Necessary conditions to control during test administration include physical environment (room temperature, lighting, noise level, and overcrowding of students), emotional environment (diminishing test anxiety and motivating students through positive attitudes on the part of parents, teachers, and school administrators), and test administration procedures (giving directions accurately, observing strict timing of tests, and monitoring students' test-taking behavior) (Psychological Corporation, 1986).

School leaders can set the tone for their staffs in the areas of morale and work motivation for school personnel and students. Positive

morale and work motivation promotes an ethos that encourages higher achievement by teachers and students. In their research regarding achievement tests, Hoyle, English, and Steffy (1985) noted that achievement is fostered by "a school climate conducive to learning--one that is free from disciplinary problems and that embodies high expectations for student achievement" (p. 8). These are the conditions that researchers say are necessary and ideal for proper test administration.

Effect of Socioeconomic Status

An understanding of the social, psychological, and educational forces bearing on national IQ changes over extended periods is unclear (Walberg, 1974). Nevertheless, evidence from different countries, going back to the 1920s, shows that the quality of intellectual stimulation by the family environment accounts for a great deal of the variation in student abilities and achievements as measured on standardized tests. Investigators such as Walberg and Marjoribanks (1976) have repeatedly shown such indicators of family environment as the number of children in the home and the socioeconomic level of the parents weigh more heavily in the determination of test scores than do variations in schooling, such as expenditures, class size, and teacher characteristics (Lipsitz, 1976). "Such evidence should not be taken as an inegalitarian indictment of the schools; on the contrary, it indicates much greater equality of school opportunity than equality of family opportunity" (Lipsitz, 1976, p. 110).

The work of Zajonc (1976), who won the American Association for the Advancement of Science Socio-Psychological Prize for 1975, showed that earlier increases in family size systematically accounted for much of the decline beginning about 1960 in test scores among college applicants. Zajonc also found that decreases in family size since about 1963

accounted for the rising scores of elementary school children since about 1970. Zajonc predicted that it would be very likely that, by 1982, college applicant scores would be rising sharply because of the earlier large reductions in family size. Family size and social class are, of course, crude indications of the IQ-stimulating qualities of the home. They account for about a quarter of the variance in student test performance (Lipsitz, 1976). There are many exceptions, and bright children may be found in poor families and in large families. Fewer may be found in poor, large families, although there are exceptions even in these cases (Lipsitz, 1976).

Studies by Walberg (1974) and Walberg and Marjoribanks (1976) gave a more precise estimate of the stimulating qualities of the home. Structured interviews with parents were developed to index the complexity of the parents' language, the amount of time spent interacting with a child, the quality of reinforcement of learning, and related factors. Overall ratings of the family environment accounted for 50% to 75% of the variance on mental test scores. Ratings of these qualities also accounted for more of the exceptional cases, as in parents of lower socioeconomic status or of large families who can afford to take the time to enrich their children's intellectual development (Walberg, 1974; Walberg and Marjoribanks, 1976).

Coleman (1966) conducted a survey on the effects of unequal educational opportunity. The survey was completed under a mandate in the Civil Rights Act of 1964 for the Commissioner of Education to assess the "lack of equality of educational opportunity" among racial and other groups in the United States (Coleman, 1966, p. 21). The survey, which was conducted in the Illinois school system, was designed to assess the impact of various factors on educational inequality. Inequality was

defined as differences in such factors as per-pupil expenditure, school plants, libraries, quality of teachers, segregated schooling, and racial composition. Also included were intangible characteristics such as teacher morale, teachers' expectations, level of interest by the student body towards learning, self-image, unequal backgrounds, and other variables. Educators were asked to respond to over 100 variables in the survey.

This examination of the relation of school inputs to effects on achievement showed that those input characteristics of schools that are most alike for minorities and whites have the least effect on their achievement. The magnitudes of differences between schools attended by minorities and those attended by whites were as follows: least, facilities and curriculum; next, teacher quality; and greatest, educational achievement of minority students. The order of importance of these inputs on the achievement of minority students is precisely the same: facilities and curriculum least, teacher quality next, and backgrounds of fellow students, most. And because such educationally strong backgrounds are found more often among whites and those families of higher socioeconomic status, there would be very large overall minority-white achievement differences (Moynihan, 1968, p. 18).

Despite the resistance of those in educational institutions and other government agencies, Coleman's (1966) findings bore out conclusively that socioeconomic status was the most important factor in predicting success of public school students in their educational pursuits and on achievement tests, or similar tests of aptitude (Coleman, 1966).

Educational and Occupational Aspirations

In a study by Hauser (1971), it was found that students from families with high socioeconomic status and who have few siblings or have high intelligence tend to have high educational aspirations. A modest interaction of gender with these variables was detected; intelligence was relatively more important and family background relatively less important in the case of boys than of girls. Still, family status was more

important than intelligence in the determination of the aspirations of both. These factors combined to indicate a high correlation with successful performance on standardized achievement tests. The effect on aspirations was interpreted by the assumption that performance in school, participation in school-related activities, and parental aspiration intervene between background and aspirations. The conclusion was that aspirations of the students and their families can also have a marked effect on student test performance (Hauser, 1971).

Effect of Neighborhood Composition

Hauser (1972) also indicated that the neighborhood's educational composition was a powerful predictor of students' levels of school performance. In general, the neighborhood's educational composition was more highly related to the student body's composition than to the other determinants of school levels of performance, and the influence of the neighborhood on the school's composition was more important than its effect on other school variables in bringing about the association between neighborhood composition and school performance.

Neighborhood status influences aspiration beyond its effect on the social composition of the high school. About one-third of the relationship between neighborhood status and aspiration is attributable to the influence of neighborhood status on the residual terms (Boyle, 1966, p. 706).

Hauser and Boyle both pointed out, however, the effect of the social composition of student bodies and of educational and occupational aspirations.

Fairness in Standardized Tests

In a study done by Mathews (1985), it was proposed that, if they favor a particular class of society or, conversely, if they place another

class at a disadvantage, examinations are to be regarded as unfair. There are some groups within society, distinguished by wealth, class, creed, or culture, which must gain or be denied advantage by some aspects of any process of assessment and selection (Jensen, 1980). If our society were culturally homogeneous, then perhaps bias could be avoided. But it is not, nor is it likely to be. Even if it were, our inherent differences are sufficient for some to take advantage of any selection system which leads to the more desirable careers, while others cannot (Jensen, 1980).

A study by Eells (1951) made explicit the concept of cultural "bias" and unfairness in testing and illustrated a methodology for investigating it:

By cultural bias in test items is meant differences in the extent to which the child being tested has had the opportunity to know and become familiar with the specific subject matter or specific process required by the test item. If a test item requires, for example, familiarity with symphony instruments, those children who have opportunity to attend symphony concerts frequently will presumably be able to answer the question more readily than those children who have never seen a symphony orchestra. To the extent that intelligence test items are drawn from cultural materials of this sort, with which high (socioeconomic) status pupils have more opportunity for familiarity, status differences in I.Q.'s will be expected (p. 58).

In test items, bias is considered the presence of a synthetic error in judgment (Osterland, 1983). Items are judged relatively more or less difficult for a particular subgroup by comparison with the performances of another subgroup or groups drawn from the same population. A test item is said to be unbiased when the probability for success on the item is the same for equally able examinees of the same population regardless of their subgroup membership.

Mathews (1985) reported that the children of some working-class parents either cannot or do not take as much advantage of the competitive

examination system as do those of the other classes. It does not necessarily follow, however, that examinations are deliberately biased to maintain this state of affairs. Mathews pointed out that examinations deal almost exclusively with cognitive-intellectual skills to the almost total exclusion of other kinds of skill: artistic-aesthetic, affective-emotional, physical-manual, or personal-social skills. He also maintained that middle-class children can take advantage of this bias, drawing on the "cultural capital" of their parents. Middle-class parents are highly skilled in the cognitive-intellectual mode, partly because they are themselves products of such an educational system. It is transmitted before the child ever reaches school and continues to be transmitted throughout the child's educational career (Mathews, 1985).

Test performance may be impacted by a variety of possible causal factors: home, background, lack of motivation, lack of facilities, teacher prejudice, and so on (Mathews, 1985). Mathews reported that, by the time the first public examination arrives, a disproportionate number of children from the lower social classes are either no longer a part of the population of examination candidates or they are relegated to lower level examinations. The influence of social class on performance declines in later years (at age 18 and thereafter), although it is reiterated that those working-class children who remain in the education system at that stage have been highly selected by passing through increasingly narrow examination hoops (Mathews, 1985). If public examinations at 16 plus were abolished, examinations in later years would almost cease to be a divisive social influence. This is not to say that differential access of the various classes in society to higher education and high status careers would not still take place; it almost certainly would, but public examinations could no longer be held responsible, and social engineers

would have to seek a different explanation for trends in test scores (Mathews, 1985).

Schiff and Lewontin (1986) recently completed a study in which they were able to observe and study the status of 32 adopted babies from birth through the sixth grade in France between the years 1972 and 1977. By following their achievement on standardized tests throughout the six grades they were able to draw conclusions as to the importance of the social contribution to both the school and the psychometric failures of children of working-class families. The 32 subjects originated from mothers of the working class, but were adopted by upper-class families.

Their position at birth was at the lowest rung on the social ladder. Yet, their position in the school system and their I.Q. scores, along with aptitude scores, are close to those which were recorded by national surveys for their social class by adoption. The results demonstrate the importance of the social contribution to the school and to the psychometric failures of children of working class families (Schiff and Lewontin, 1986, p. 43).

Test Use and Misuse

More recently, the requirement that the examination results of individual schools must be made public has added fuel to the debate of test use and misuse in Oklahoma (Ford and Francis, 1988; Aydelott, 1989). It is understandable at present that parents will seek to place their children into those schools which appear to give the best chance of examination success. It is also natural that the decision will be based on totals of examination successes rather than on a finer analysis of the complex statistics of the grades of various groups of children in multiple subjects and in various kinds of school learning situations. Those conclusions were stated by Rutter (1979) after he studied the achievement levels of children in different schools. The analysis was not concerned

with examination results alone; he measured other outcomes including attendance, behavior in school, and delinquency. Rutter went beyond what was expected of the school to such things as the characteristics of the individual pupils, the social processes and organization within the schools, and the social environment in which each school was set.

Rutter (1979) also considered such things as relationships between teachers and pupils, and the policy of the schools towards homework in general, "those features of the social organization of school life which create the context for teaching and learning" (p. 106). He found that there was a very strong and highly consistent correlation between overall school processes and pupil behavior. The correlation with academic attainment was also very substantial. Rutter did not find any relationship between the various educational outcomes and the physical resources of the schools or the continuity of teaching staff.

However, Rutter (1979) maintained that parents who value examination success must accept that the kind of school which their children attend will have an effect on their examination results:

If examination results are high among their educational goals, choice of school will be important. But that choice will require a deeper and more subtle evaluation of the school than the blanket evaluations which have tended to be attached nationally to independent, grammar, secondary modern and comprehensive schools, particularly those based solely on grand totals or percentages of examination passes (p. 125).

Test Discrimination Against Minority Students

One of the most persistent and serious allegations against tests is that they discriminate against minority groups, particularly Blacks, American Indians, Puerto Ricans, and Chicanos (Sax, 1974). Virtually all studies agree that children from disadvantaged homes attain lower intelligence and achievement test scores than do children from middle- and

upper-socioeconomic levels (Sax, 1974). The psychology of the disadvantaged child is permeated with a concern for obtaining the basic necessities of life (food, clothing, shelter), although there is as wide a range of individual differences among the disadvantaged as one might expect in any group.

To the extent that education fails to provide these necessities, it is seen as useless and irrelevant and a force to be neutralized in the fight for survival. Many children from disadvantaged homes are not as highly motivated by the promise of future benefits from attending school and 'doing one's best' as are middle-class and upper-class students (Sax, 1974, p. 369).

Minority group children tend to put forth their best efforts when an immediate gain can be realized and, furthermore, they are more concerned with pleasing their peers than their parents or teachers (Sax, 1974). Their need for immediate reinforcement and their particularly strong peer-group attachments must be understood if the relationship between test performance and socioeconomic status is to be interpreted properly. In contrast, the middle-class or upper-class child strives to make the best possible effort on tests because that child is convinced--with good reason--that doing well now will have immediate benefit (Sax, 1974). This child has been brought up on the old adage that "You can be anything you want to be," thus reinforcing the current system of examinations.

To understand why minority children, on the average, score lower on all forms of standardized tests--achievement, aptitude, and IQ varieties--school personnel must be educated to see that test scores only measure past learning of information and skills that are sampled by the tests and the schools, not as global measures for the intellectual functioning for minority children (Scarr, 1981, p. 435).

Summary

This review of literature has established that the use of standardized tests should follow a path of caution. Standardized norm-referenced

tests are designed to be used nationwide and, since there is no "nation-wide curriculum," it is unlikely that these tests will fit exactly the curriculum of every school, district, or state. This explains student performance that is sometimes lower than that reported on tests which cover objectives taught locally. The research shows that failure to control certain necessary conditions can yield invalid results. Conditions to control would include noise, lighting, temperature, overcrowding, test anxiety, and motivation on the part of teachers, parents, and school administrators. There would also need to be controlled test administration procedures, strict timing of tests, and monitoring of students' test-taking procedures.

The research has also shown that standardized test results represent student achievement levels only at the time the test was given. Student's test scores can change to a degree over the passage of time, accumulation of additional knowledge, or improvement of skills. Test outcomes have been shown to be affected by demographic factors related to the socioeconomic level of the community: median income of the community and median education levels of community members, for example. Other variables that research has shown to be relevant to standardized test performance include aspirations of parents, family involvement, positive attitudes during test administration by teachers and administrators, high expectations by the community as a whole, neighborhood composition, expenditure per pupil, presence of minorities in the school, test-bias, facilities, and educational resources.

CHAPTER III

METHODS AND PROCEDURES

The purpose of this study was to investigate those variables which are perceived to have an effect on the outcome of student performance on standardized tests. The specific focus of this study is on Oklahoma secondary school principals' perceptions of those variables which most affect student performance on the MAT-6. The following nine research questions were formulated to provide more specific direction for the study:

1. What factors do principals perceive as being most likely to affect student performance on the MAT-6?

2. What factors do principals perceive as being least likely to affect student performance on the MAT-6?

3. Is there a relationship between size classification of schools and principals' perceptions of factors affecting student performance on the MAT-6?

4. Is there a relationship between number of years of experience as a principal and perceptions of factors affecting student performance on the MAT-6?

5. Is there a relationship between gender of the principal and perceptions of factors affecting student performance on the MAT-6?

6. Is there a relationship between age of the principal and perceptions of factors affecting student performance on the MAT-6?

7. Is there a relationship between household per capita income of the patrons in a community and principals' perceptions of factors affecting student performance on the MAT-6?

8. Is there a relationship between reported local percentile scores of schools and their principals' perceptions of factors affecting student performance on the MAT-6?

9. Is there a relationship between school setting (urban, suburban, or rural) and principals' perceptions of factors affecting student performance on the MAT-6?

This chapter of methodology is divided into the following sections: (1) Population and Sample, (2) Instrumentation, (3) Data Collection, and (4) Treatment of Data.

Population and Sample

The population selected for this study was all building principals of 3A, 4A, and 5A high schools in the State of Oklahoma. These include the 128 largest high schools in the state. A list of those principals and their mailing addresses was obtained from the Oklahoma State Department of Education. The choice of the top 128 high schools according to Average Daily Membership (ADM) was made to more effectively preserve anonymity of students than would be possible in the smaller 2A and 1A schools, and to ensure that respondents were all full-time high school principals.

A 60% rate of return would be successful according to Huck, Cormier, and Bounds (1974) since it would provide a minimum of 76 subjects, which would still account for approximately 43% of the student population in Oklahoma public high schools (Oklahoma Secondary Schools Activities Association (1987). Table I provides data regarding the number of schools

and of students in each class and the relationship to the total number of students in Oklahoma public high schools.

TABLE I
SUMMARY OF SCHOOLS BY CLASS IN THE
STATE OF OKLAHOMA

Class	Number of High Schools	Cumulative Number of Students Enrolled	Cumulative % of Total Oklahoma Population of High School Students
5A	32	46,396	37
4A	32	68,295	54
3A	64	90,258	71
2A	64	102,935	81
1A or lower	<u>295</u>	<u>126,736</u>	100
Total	487	126,736	

Instrumentation

The instrument which was developed for this study was originally constructed from items identified in the literature as variables which had possible impact upon achievement test scores. It was revised and refined from its original format and structured through recommendations from the committee chair and after a pilot study conducted prior to the full survey. The pilot respondents were area superintendents, elementary

principals, and professors at Oklahoma State University who were invited to complete the instrument and to offer a critique which would include their evaluation of the readability and the professional relevancy of the survey items. Fifteen responses were received and utilized. The respondents in the pilot study were excluded from the final data-gathering efforts. A copy of the instrument can be found in Appendix A.

The first seven items (A-G) of the survey were designed to collect demographic information about the respondents. Items included were classification (size) of school, years of service as principal, gender, age, estimated average household income of school patrons, composite average score for the school on the MAT-6 for the 1988-89 school year, and the identity of the school setting as urban, suburban, or rural.

The second part of the instrument contained 23 items that measured the principals' perceptions of what variables most affected their students' scores on the MAT-6. Item 1 was designed to require the respondent to be specific about the teacher's level of education and the perceived effect on achievement test outcomes. Moynihan (1968) said that socioeconomics of the family and community were the main factors affecting student performance, and quality of teachers would affect performance least if those socioeconomic variables were put into rank order.

Item 2 was included to compel the respondents to be specific in their perceptions of the effect of a lower dropout rate on a school's MAT-6 performance. Mathews (1985) concluded that, by the time a first public examination arrives, a disproportionate number of children from the lower social classes are either no longer a part of the school population examination candidates or they are relegated to lower-level testing. Therefore, the children who remain in the education system at that stage have been highly selected by passing through increasingly narrow

examination hoops. Following Mathews' conclusions, a lower dropout rate would indicate a student body composed of more able test takers, thereby increasing the chances for examination success by that school. A positive response to item 2 may be accompanied by a positive response to items 7, 21, and 22, since those items would indicate that schools with higher socioeconomic status enjoy a lower dropout rate and thereby have more able test takers. Rutter (1979) indicated in his research on standardized testing that schools with higher socioeconomic status enjoyed greater student participation, as a rule, and lower dropout rates.

Item 3 dealt with differences between the scores of metropolitan versus nonmetropolitan students. A study by Hauser (1971) pointed out that neighborhood composition could be a powerful predictor of students' levels of school performance. He indicated that metropolitan and nonmetropolitan districts and neighborhoods possessed certain characteristics that may give metropolitan districts an advantage on standardized tests due to their size, enabling them to offer a larger, more diverse curriculum.

Items 4, 8, 15, 19, 21, and 22 were intended to check for consistency in answering questions that dealt directly with socioeconomic variables. If a respondent answered "frequently" or "always" to item 4, then responses may be provided in a similar manner on items 8, 15, 19, and 22. Coleman (1966) and Moynihan (1968), in their research on standardized testing, reported findings that bore out conclusively that socioeconomic factors were the most significant variables affecting standardized achievement test outcomes.

Items 6, 10, 18, and 23 were designed to identify the respondents' perceptions of how much positive attitudes, encouragement, and awareness on the part of the test administrators could affect test outcomes. In

its research on achievement testing, the Psychological Corporation (1986) reported that positive attitudes and awareness on the part of teachers, administrators, and parents could have a significant impact on the outcome of achievement test results.

Items 9, 14, 21, and 22 dealt with bias on standardized achievement tests (Sax, 1974; Jensen, 1980; Scarr, 1981). Factors included for their possible effects on MAT-6 outcomes were minority student ratio, cultural test bias, parental occupation, and community economic status.

The rationale for items 6, 10, 18, 20, 21, 22, and 23 was similar. They were intended to identify the degree to which respondents were consistent in their perceptions of these items that dealt with the effect of home and family environment on achievement test outcomes. Research by Hauser (1971), Rutter (1979), and Mathews (1985) indicated that aspirations by parents, teachers, administrators, community, and the students themselves can also have a marked effect on student test performance.

Items 5 and 13 dealt with the effect of leadership style by the principal on student performance on the MAT-6. Hoyle, English, and Steffy (1985) indicated that school leaders could set the tone for their staffs and students prior to test administration, thereby promoting an "ethos" of much higher achievement which would, in turn, be transmitted to higher achievement test performance.

Data Collection

The 128 surveys were mailed to principals during the last week of May, 1989. They were mailed using first-class postage, complete with a stamped, addressed envelope for return. A cover letter was used to provide an overview of the study and to request participation (Appendix B). Also included were self-addressed postcards on which principals were

asked to indicate that the survey had been completed and returned and whether or not they wished to receive an abstract of the results of this research during the 1989-90 school year. The purpose of the postcards was to aid in the identification of subjects for a follow-up letter to nonrespondents. This procedure enabled the nonrespondent list to be narrowed quickly and cost efficiently. In the cover letter, the principals were asked to respond as quickly as possible and a two-week response period was allowed before any follow-up procedure was initiated. The follow-up procedure entailed the mailing of postcards to those principals who had not responded on the initial mailing. Those postcards contained a second request for their assistance in completing the survey instrument. Following an additional time of one week, personal telephone calls were made to the nonrespondents, again requesting their assistance in the project.

The initial mailing resulted in 67 surveys returned, a return rate of 52%. The second mailing accomplished a return of 16 additional surveys, resulting in a return rate of 65%. The final telephone follow-up brought in another seven surveys, for a total of 90, resulting in a return of 70.3% for the survey instrument. Table II provides information on the return rate of the surveys and distribution by class.

Treatment of Data

This survey displayed a Likert-type response (Likert, 1967), which allowed the subject to indicate degrees of perception as to variables that affected student performance on the MAT-6. Upon receipt of the completed instruments, each response was coded for input into the computer. This treatment focused on two areas: (1) demographic information (items A-G) and (2) perceptions of factors affecting test performance

(items 1 through 23). All responses initially underwent frequency and percentage comparison. A Pearson Correlation Coefficient was developed on those items with continuous variables, and a point biserial was compiled on those items with dichotomous variables.

TABLE II
DISTRIBUTION OF RETURN BY CLASS

Number of Principals	5A	4A	3A	Total
Total Subjects	32	32	64	128
Respondents	26	24	40	90
Response Rate	81.3%	75.0%	62.5%	70.3%

The demographic information was categorized as follows:

1. Item A (classification of school): 5A, 4A, 3A.
2. Item B (years of experience): 11 or less, 11-20, 21 or more.
3. Item C (gender): male or female.
4. Item D (age): 25-35, 36-50, 51 or more.
5. Item E (average income): \$10,000-30,000, \$31,000-50,000, \$51,000-70,000.
6. Item F (average percentile score on MAT-6): 0-33, 34-66, 67-100.
7. Item G (school setting): urban, suburban, rural.

Summary

The purpose of this study was to gather and analyze information regarding the perceptions of high school principals toward the variables that affect student outcomes on the MAT-6 test in their schools. The population included the 128 3A, 4A, and 5A building principals of public high schools in the State of Oklahoma.

An instrument was designed, based on the available research, to gather data to be used in the analysis. The instrument requested demographic information along with responses which sought to identify principals' perceptions of factors affecting student performance on the MAT-6. This was mailed to all principals in the population.

The data gathered were processed using the Statistical Program for Social Studies (SPSS-x21). This program provided a frequency and percentage tally on all items, a Pearson Correlation Coefficient on those items with continuous variables, and a point biserial on those items with dichotomous variables. The results of these efforts are presented in Chapter IV.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The purpose of this chapter was to report the data gathered from instruments returned by 90 high school principals in 3A, 4A, and 5A schools in the State of Oklahoma. The instrument was designed to measure perceptions of principals with regard to variables that most affect student performance on the MAT-6 achievement test. The total number of surveys returned was 90 (of 128 distributed), resulting in a 70.3% return.

Frequencies and Percentages

The following is a report of the results of the frequency and percentage tallies on all variables, both demographic and principals' perceptions.

Demographic Variables

The respondents managed schools with as few as 245 students and as many as 3,147 students. As noted in Figure 1, of the 90 principals who responded to this item, 40 principals (44.4%) were in 3A schools (fewer than 505 students), 24 (26.7%) were in 4A schools (505-939 students), and 26 (28.9%) were in 5A schools (940 or more students). Responses were received from 62.5% of the 3A principals and from 75% and 81.2% of the 4A and 5A principals, respectively. School membership in each respective class is determined by average daily membership each year.

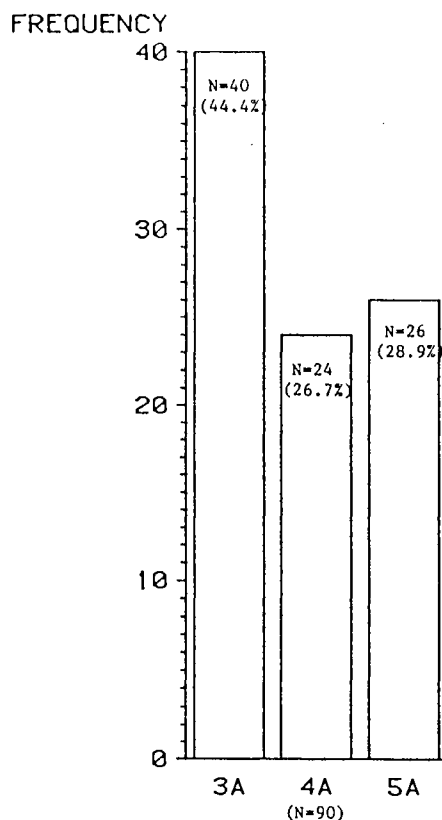


Figure 1. Item A: Size Classification of School

As shown in Figure 2, 43 respondents (47.8%) claimed less than 8 years of service as a principal, 30 (33.3%) reported that they had 8-14 years of experience, and 17 (18.9%) said that they had 15 or more years of experience. Compared to national figures, this sample of Oklahoma principals' experience is somewhat similar. Saks (1988) showed that, across the nation, 6% of high school principals have one year of experience or less. Some 28% have 2-3 years of experience, and 14% have 3-5 years of experience. The highest percentage was in the five years and above category, with 53% of the high school principals listed in that category (Saks, 1988).

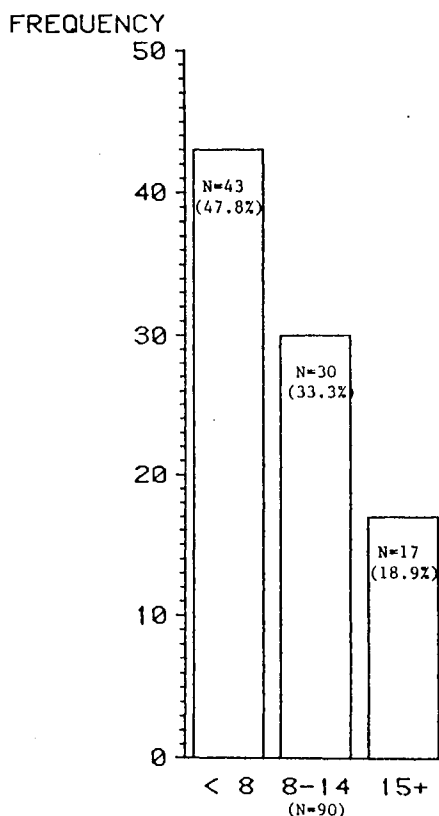


Figure 2. Item B: Years Served as Principal

A total of 89 principals responded to item C. Of that number, 82 (92.1%) were male, and 7 (7.9%) were female (Figure 3). Nationally, 97% of the high school principals were listed as male and only 3% as female (Saks, 1988).

The ages of respondents, summarized in Figure 4, were concentrated in the 41-50 age group (49 respondents or 54.4%). Only 13 respondents (14.4%) were in the 31-40 age group, while 28 (31.1%) were 51 or older. Principals' ages in Oklahoma are consistent with those reported nationwide, in which 7% were listed as 30-35, 19% as 36-41, 23% as 42-47, 40% as 48-55, and 11% as 56-65 years old (Saks, 1988). The picture that emerges of the nation's high school principals is an accurate reflection

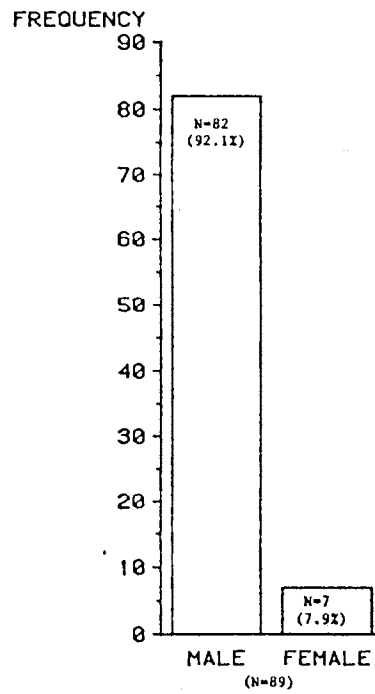


Figure 3. Item C: Gender Distribution of Respondents

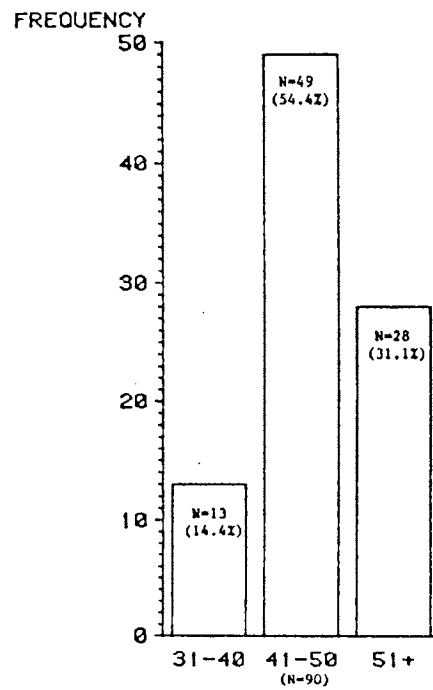


Figure 4. Item D: Age Distribution of Respondents

of America's local power structure: "middle-aged, predominantly male, reasonably affluent, and white" (Saks, 1988, p. 8).

In item E, principals were asked to provide the estimated average household income of the patrons of the attendance area. Eighty-eight principals responded to this item. As noted in Figure 5, incomes were grouped into three categories. The income range of \$10,000 to \$30,000 was selected by 60 principals (68.2%), while the \$31,000 to \$50,000 range was reported by 23 (26.1%). Only five principals (5.7%) reported family incomes of \$51,000 and up.

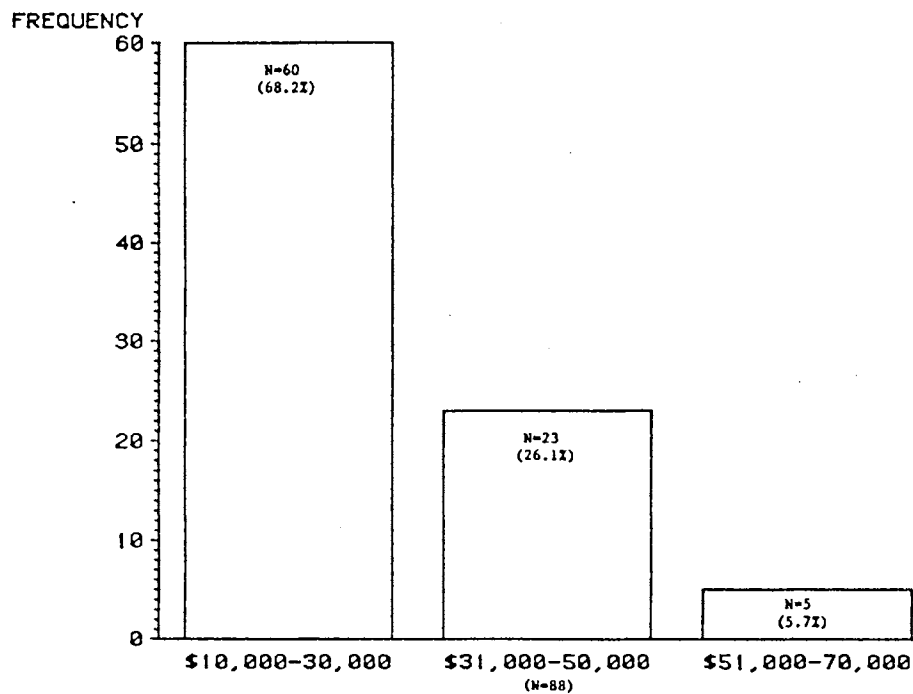


Figure 5. Item E: Estimated Household Income

When asked to indicate the range within which their schools' average percentile score on the MAT-6 was placed, 49 principals (59.0%) selected the range of 31%-60%. Only one principal (1.2%) indicated an average score in the percentile range of 0 to 30. The remaining 33 respondents (39.8%) reported average scores above the 60th percentile, as noted in Figure 6. There were seven respondents who failed to complete this item. According to the Oklahoma School Testing Program Summary Report (1989), there were 36,825 10th grade public high school students who took the MAT-6 in the 1988-89 school year. Oklahoma's 10th grade students had a composite average score of 56% on the MAT-6.

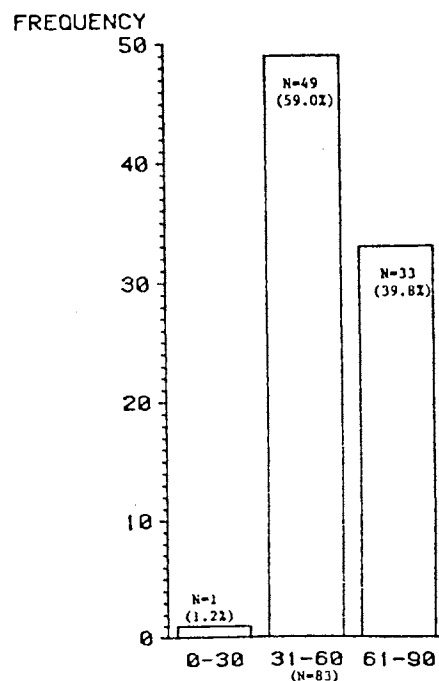


Figure 6. Item F: Average Range of Local Percentile Scores

As indicated in Figure 7, 21 principals (23.6%) identified their school settings as urban, 26 (29.2%) as suburban, and 42 (47.2%) as rural. There was one missing case. According to Saks (1988), Oklahoma is listed as having primarily rural school districts, thus lending validity to the responses by the high school principals to this demographic question.

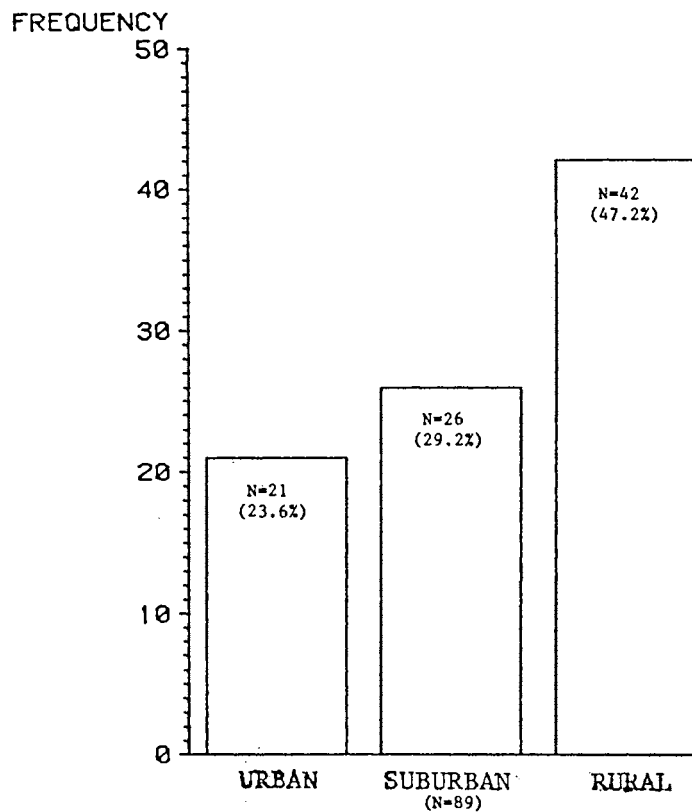


Figure 7. Item G: Identity of School

Factors Affecting MAT-6

Items 1 through 23 each solicited principals' perceptions of one factor that has been reported as having an effect on performance in achievement tests.

Item 1. Do students in schools in which a higher percentage of teachers hold master's degrees tend to score higher on the MAT-6?

Of the 88 principals who responded to item 1, only one noted that a higher percentage of teachers holding a master's degree would never account for a school having higher MAT-6 scores. Only 25 (28.1%) said that higher MAT-6 scores were seldom caused by teachers having a master's degree. As noted in Figure 8, 62 principals (69.7%) perceived that higher scores were frequently due to more teachers having a master's degree, and 1 principal (1.1% of the total) perceived that there was always a relationship in this item. There was one missing case.

Item 2. Do students in schools with a lower dropout rate tend to score higher on the MAT-6?

Eighty-eight principals responded to item 2, leaving two missing cases. Figure 9 provides data indicating that two principals (2.3%) perceived that a lower dropout rate never resulted in higher MAT-6 scores for those schools. Lower dropout rates were cited by 13 principals (14.8%) as seldom causing schools to have higher MAT-6 scores. Fifty-three principals (60.2%) reported that higher MAT-6 scores were frequently caused by lower dropout rates, and 20 principals responded "always" to this item.

Item 3. Do students in metropolitan areas tend to score higher than students in nonmetropolitan areas on the MAT-6?

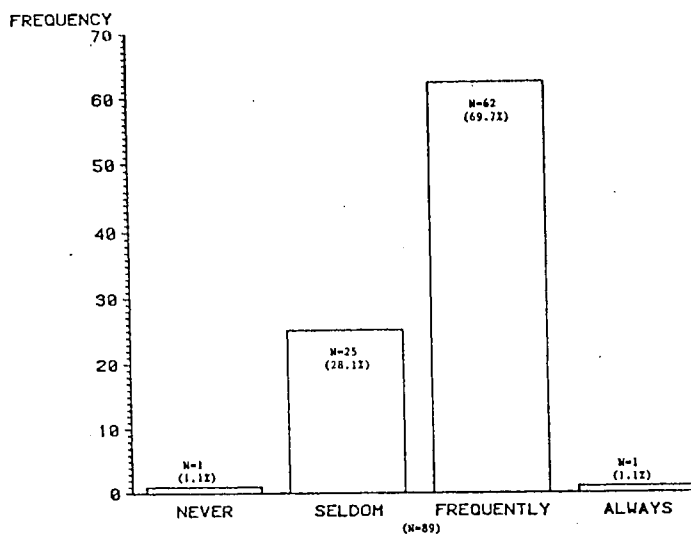


Figure 8. Item 1: Do Students in Schools in Which a Higher Percentage of Teachers Hold Masters' Degrees Tend to Score Higher on the MAT-6?

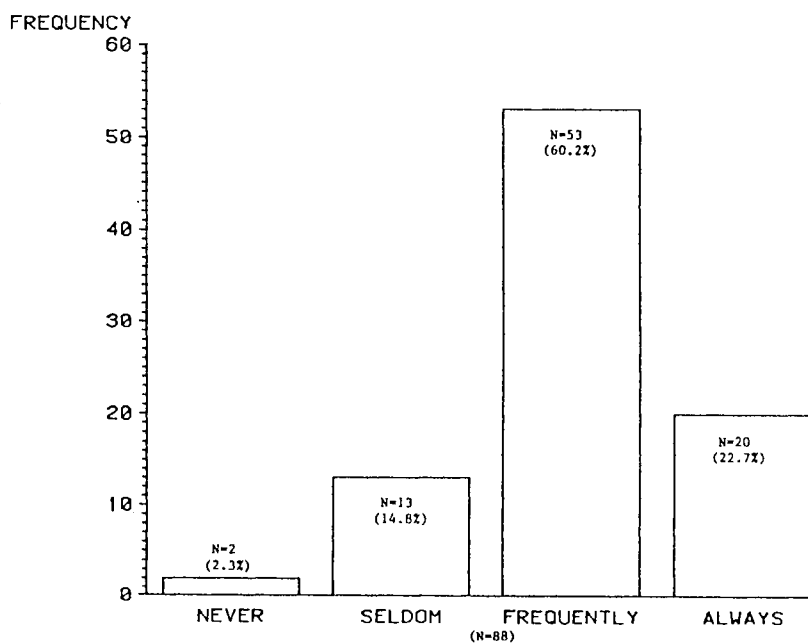


Figure 9. Item 2: Do Students in Schools With a Lower Dropout Rate Tend to Score Higher on the MAT-6?

Four principals (4.8%) said that they never perceived metropolitan students as scoring higher than those in nonmetropolitan areas. Figure 10 indicates that 41 (48.8%) answered "seldom," and 37 (44.0%) answered "frequently" to item 3. Only 2 of the 84 principals who responded to this item stated that students' MAT-6 scores were always higher in metropolitan areas than in nonmetropolitan areas. There were six missing cases.

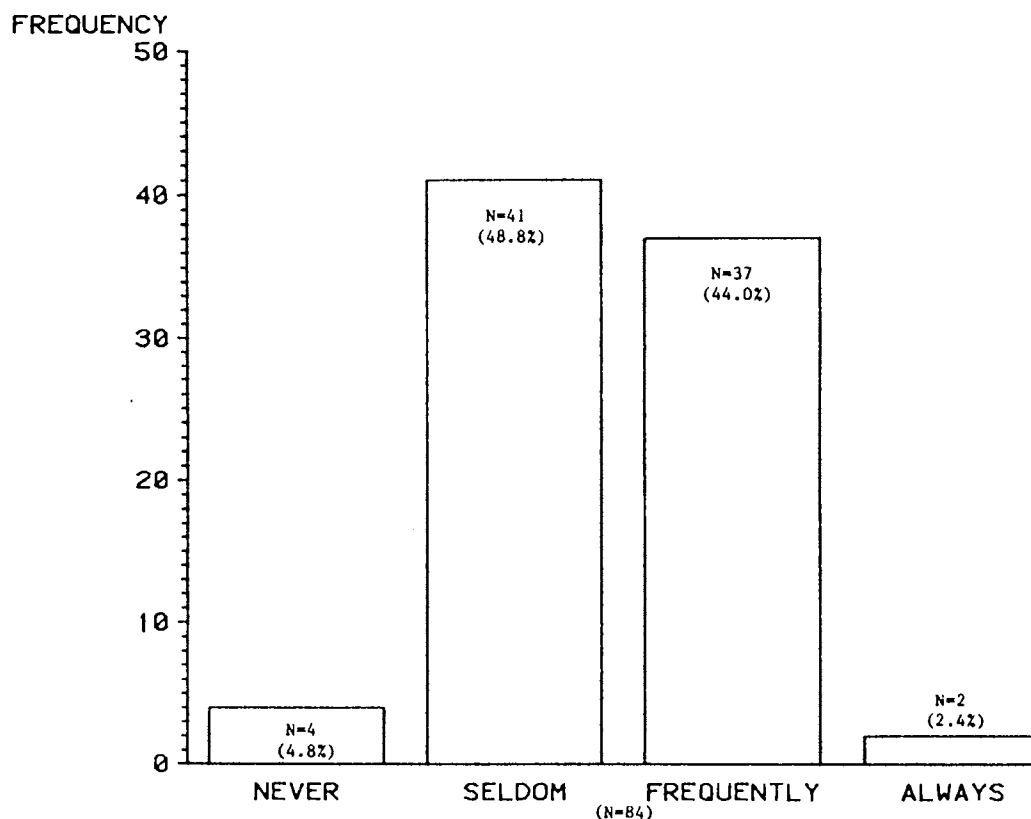


Figure 10. Item 3: Do Students in Metropolitan Areas Tend to Score Higher Than Students in Non-metropolitan Areas on the MAT-6?

Item 4. Do students in schools with lower pupil teacher ratios tend to score higher on the MAT-6?

As shown in Figure 11, 89 principals answered item 4 with 14 (15.7%) saying "always" and 61 (68.5%) replying "frequently." Another 14 (15.7%) perceived that lower pupil/teacher ratios seldom affected scores on the MAT-6. None of the principals reported a perception that lower pupil/teacher ratios never affected MAT-6 scores. There was one missing case.

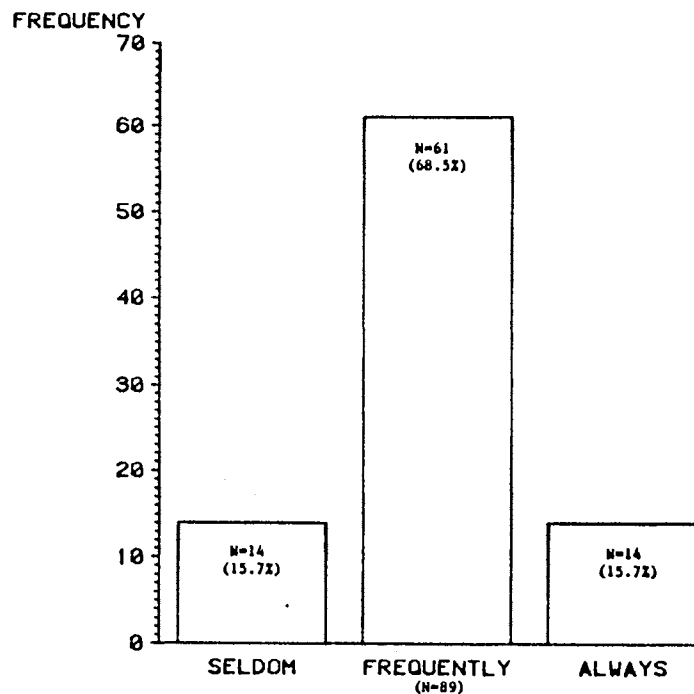


Figure 11. Item 4: Do Students in Schools With Lower Pupil/Teacher Ratios Tend to Score Higher on the MAT-6?

Item 5. Do students in schools with principals who practice a democratic leadership style tend to score higher on the MAT-6?

Of the 86 principals who responded to item 5, only one perceived that students in schools with principals who practice a democratic leadership style never score higher on the MAT-6. As noted in Figure 12, another 24 principals (27.9%) replied that they seldom perceived that higher scores were due to principals practicing a democratic style of leadership. A majority of 57 (66.3%) perceived that higher MAT-6 scores were frequently related to principals practicing a democratic style of leadership, and 4 principals (4.7% of the total) perceived that there was always a relationship in this item. There were four missing cases.

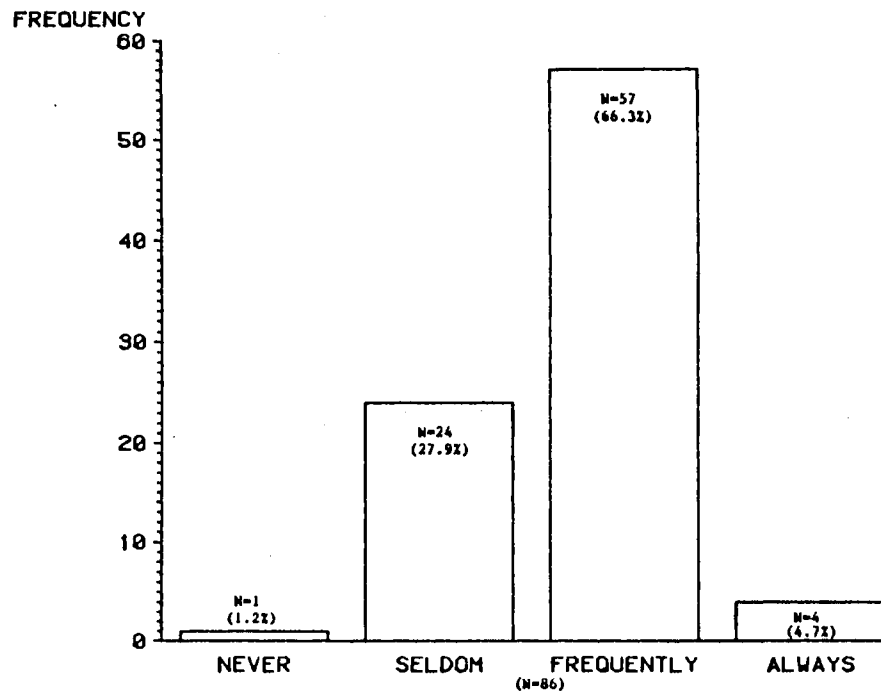


Figure 12. Item 5: Do Students in Schools With Principals Who Practice a Democratic Leadership Style Tend to Score Higher on the MAT-6?

Item 6. Do students in school districts where the superintendent has a greater awareness of and sensitivity to achievements tests tend to score higher on the MAT-6?

Eighty-eight principals responded to item 6, leaving two missing cases. Figure 13 provides data indicating that only one principal (1.1%) perceived that school districts in which the superintendent has a greater awareness of and sensitivity to achievement tests never resulted in higher MAT-6 scores. Superintendent awareness and sensitivity were cited by 14 principals (15.9%) as seldom being related to higher MAT-6 scores. Fifty-nine principals (67.0%) reported that higher MAT-6 scores were frequently related to superintendent awareness of achievement test scores, and 14 principals responded "always" to this item.

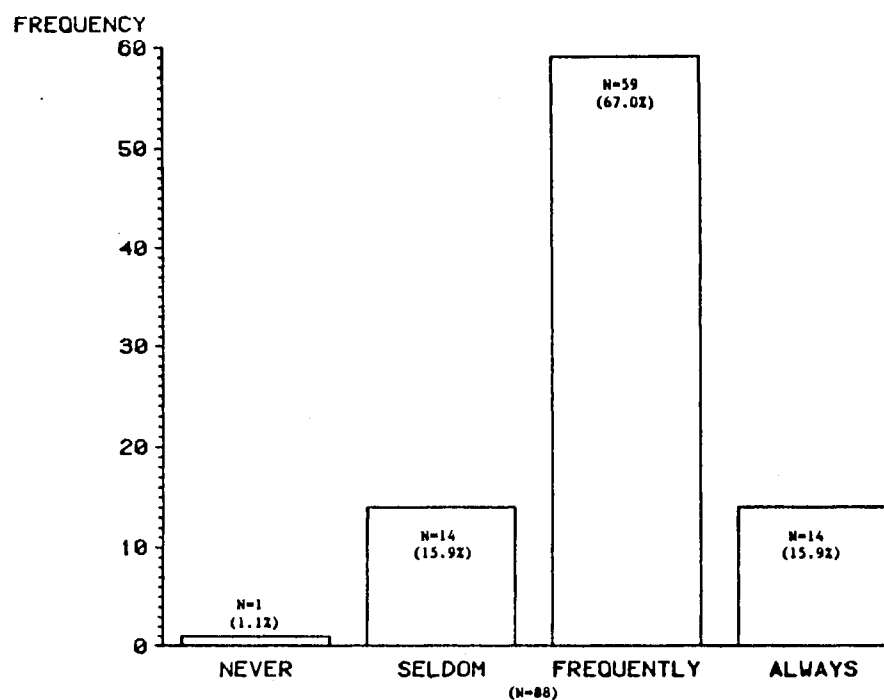


Figure 13. Item 6: Do Students in School Districts Where the Superintendent has a Greater Awareness of and Sensitivity to Achievement Tests Score Higher on the MAT-6?

Item 7. Do students in schools in which students are heavily involved in extracurricular activities tend to score higher on the MAT-6?

None of the 89 school principals who responded to item 7 stated that students' MAT-6 scores were never higher in school districts where students were heavily involved in extracurricular activities. As noted in Figure 14, 8 principals (9.0%) answered "seldom" and 69 (77.5%) answered "frequently" to this item. Twelve (13.5%) said that they perceived students in schools heavily involved in extracurricular activities as always scoring higher than those in schools not so heavily involved. There was one missing case.

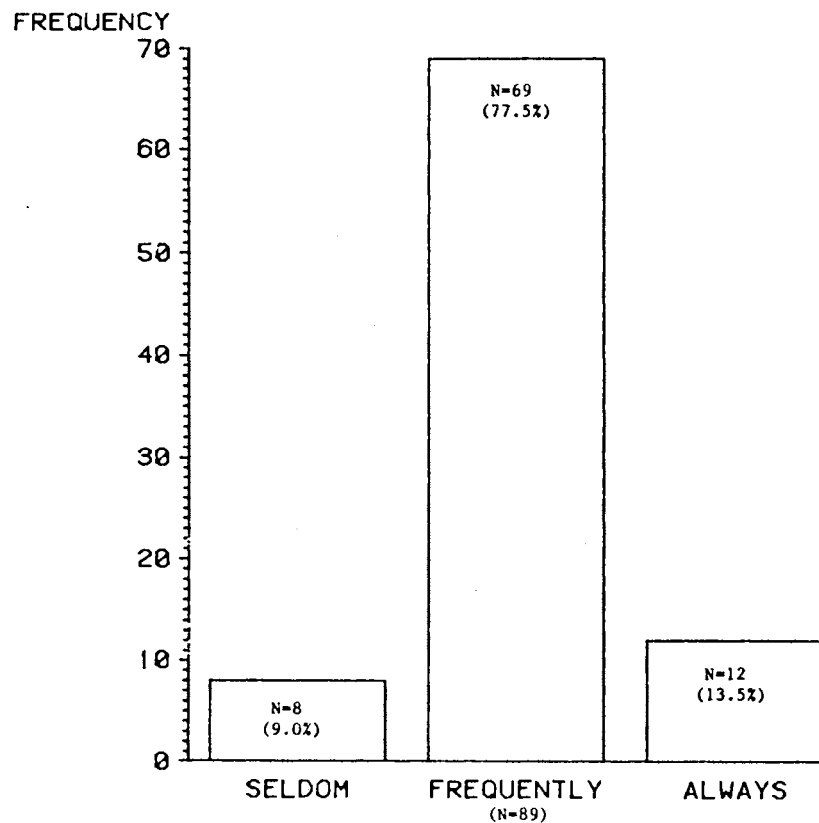


Figure 14. Item 7: Do Students in Schools in Which Students are Heavily Involved in Extracurricular Activities Tend to Score Higher on the MAT-6?

Item 8. Do students in school districts with higher district expenditures per pupil tend to score higher on the MAT-6?

Of the 88 principals who responded to item 8, there was not one who believed that district expenditure per pupil was never a factor in students scoring higher on the MAT-6. As noted in Figure 15, there were 15 principals (17.0%) who believed that district expenditure per pupil was seldom a factor in higher MAT-6 scores. A majority of 64 (72.7%) believed that district expenditure per pupil was frequently a factor in students having higher MAT-6 scores, and 9 principals (10.2% of the total) perceived that there was always a relationship in this item. There were two missing cases.

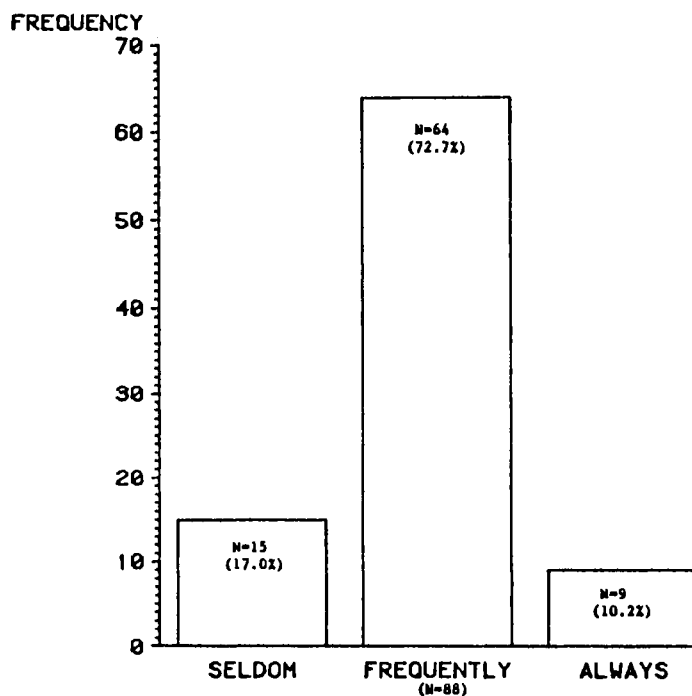


Figure 15. Item 8: Do Students in School Districts With Higher District Expenditures Per Pupil Tend to Score Higher on the MAT-6?

Item 9. Do students in schools with lower minority populations tend to score higher on the MAT-6?

Figure 16 indicates that only three of the principals who responded to item 9 considered that there was never a relationship between lower minority populations and higher student scores on the MAT-6. There were another 11 principals (12.4%) who replied that students seldom had higher scores on the MAT-6 due to lower minority populations in schools. There were 53 (59.6%) who said that MAT-6 scores were frequently higher because of lower minority populations in schools and 22 (24.7%) who perceived that there was always a relationship. There was one missing case.

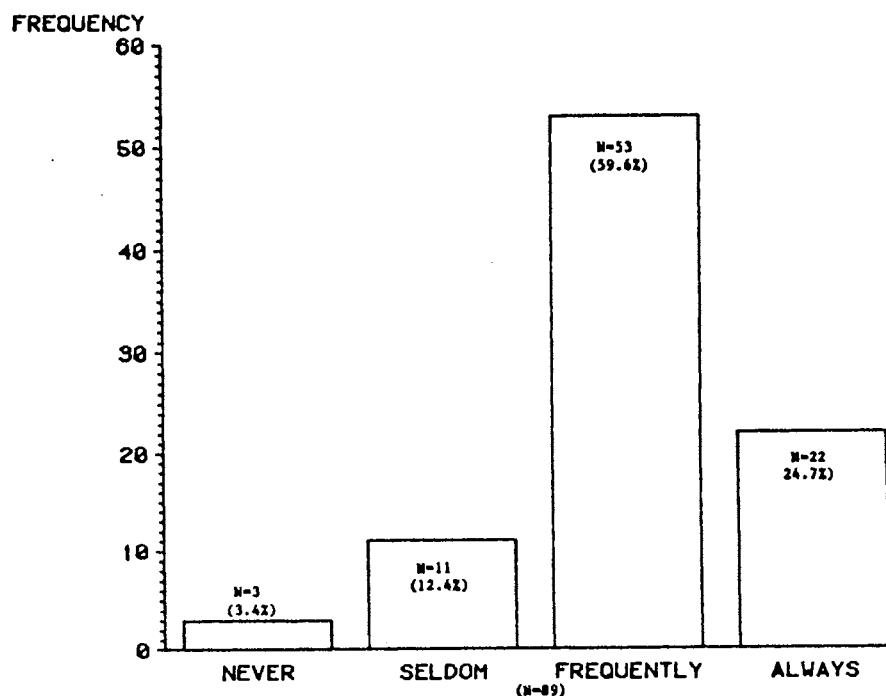


Figure 16. Item 9: Do Students in Schools With Lower Minority Populations Tend to Score Higher on the MAT-6?

Item 10. Do students in schools where teachers have increased awareness of and sensitivity to achievement tests tend to score higher on the MAT-6?

As noted in Figure 17, there were three principals (3.4%) who perceived that teacher awareness and sensitivity seldom was a factor in higher MAT-6 scores. Over three-fourths (76.1%) of the principals perceived that higher MAT-6 scores were frequently related to teacher awareness and sensitivity to achievement tests and 18 principals (20.5%) perceived such a relationship to always exist. There were two missing cases.

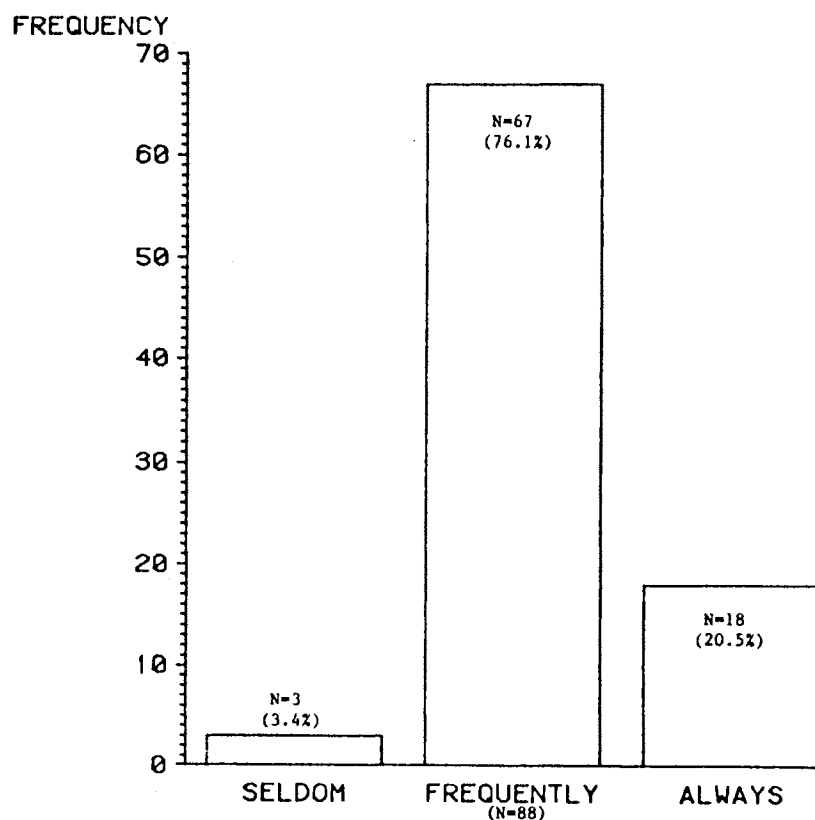


Figure 17. Item 10: Do Students in Schools in Which Teachers Have Increased Awareness of and Sensitivity to Achievement Tests Tend to Score Higher on the MAT-6?

Item 11. Do students in schools with faculty having a greater number of years of teaching experience tend to score higher on the MAT-6?

As shown in Figure 18, 2 of the 89 principals who responded to item 10 stated that higher MAT-6 scores were never related to teachers having greater years of teaching experience. Another 25 principals (28.1%) perceived that this was seldom a reason for higher scores. A majority of 61 principals (68.5%) said that higher MAT-6 scores were frequently related to teachers having greater teaching experience, and 1 principal (1.1% of the total) perceived that there was always such a relationship. There was one missing case.

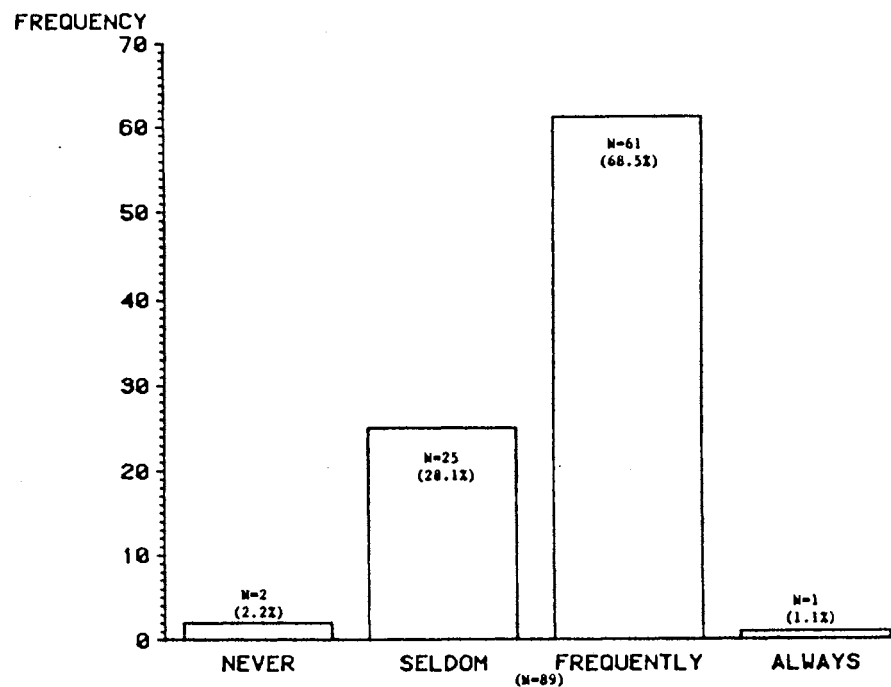


Figure 18. Item 11: Do Students in Schools With Faculty Having a Greater Number of Years Of Teaching Experience Tend to Score Higher on the MAT-6?

Item 12. Do students from larger districts tend to score higher than students from smaller districts on the MAT-6

Of the 88 principals who responded to item 12, 2 said that they perceived that this was never the case. Figure 19 indicates that one-half (44 of the principals) said that students from larger school districts seldom scored higher on the MAT-6 than those from smaller districts. Another 39 (44.3%) replied that MAT-6 scores were frequently higher for students from larger districts, and 3 principals (3.4%) said that scores were always higher for students from the larger districts. There were two missing cases.

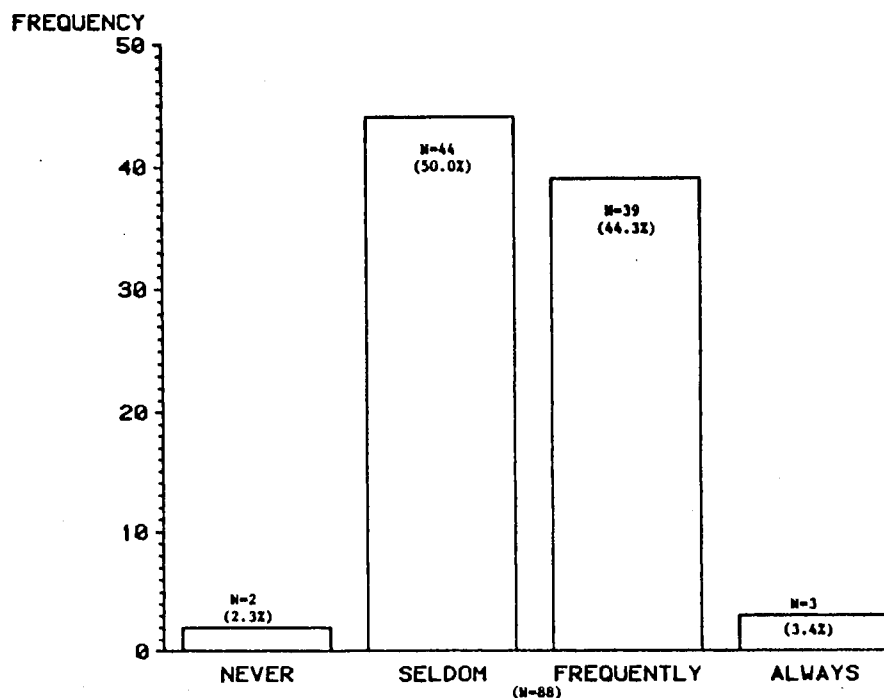


Figure 19. Item 12: Do Students From Larger Districts Tend to Score Higher Than Students From Smaller Districts on the MAT-6?

Item 13. Do students in schools with principals who practice an autocratic leadership style tend to score higher on the MAT-6?

There were 83 principals who responded to item 13. Nine indicated that they never perceived students from schools with principals who practiced an autocratic style of leadership as having higher MAT-6 scores. As noted in Figure 20, over three-fourths of the principals (77.1%) replied that this was seldom the case. Only nine (10.8%) said that MAT-6 scores were frequently higher because principals used an autocratic leadership style and one principal (1.1% of the total) perceived that there was always a relationship in this area. There were seven missing cases.

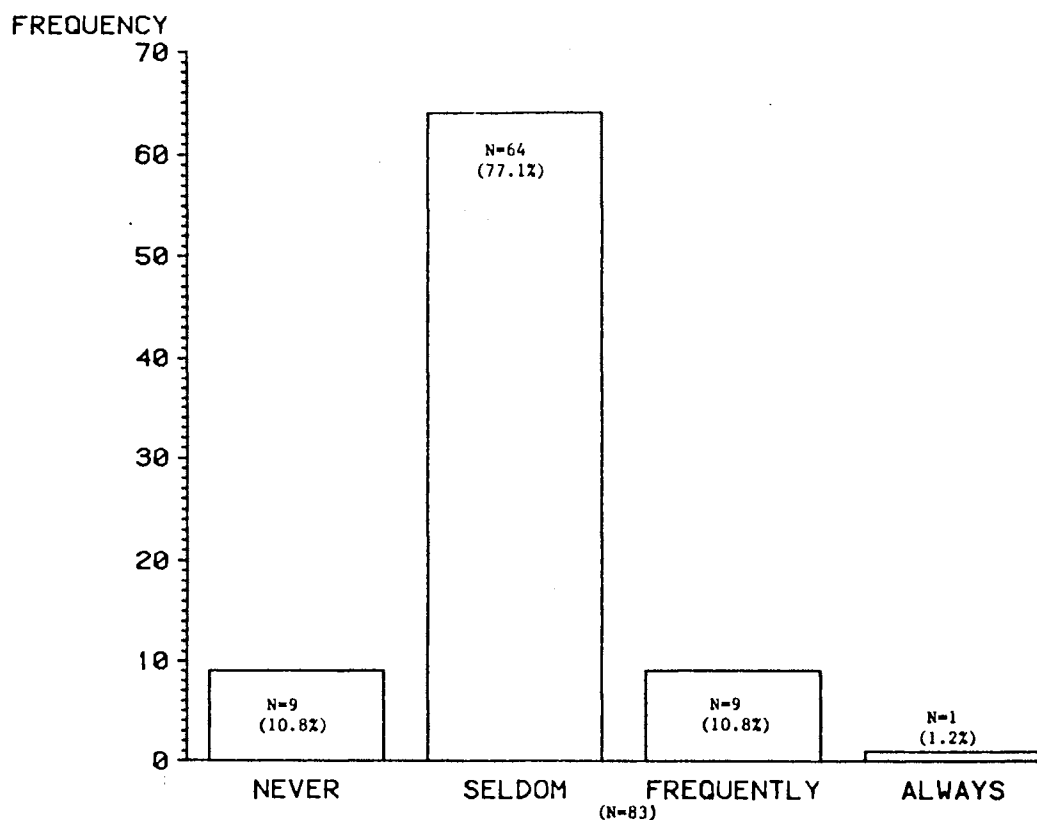


Figure 20. Item 13: Do Students in Schools With Principals Who Practice an Autocratic Leadership Style Tend to Score Higher on the MAT-6?

Item 14. Do students in some districts tend to score higher because of cultural test bias on the MAT-6?

Only 2 of the 90 principals who responded to item 14 perceived that student scores on the MAT-6 were never higher because of cultural test bias. There were 28 principals (31.1%) who responded that cultural test bias was seldom a factor. Figure 21 indicates that 43 (47.8%) frequently and 17 (18.9%) always perceived such bias as a factor in students' MAT-6 scores.

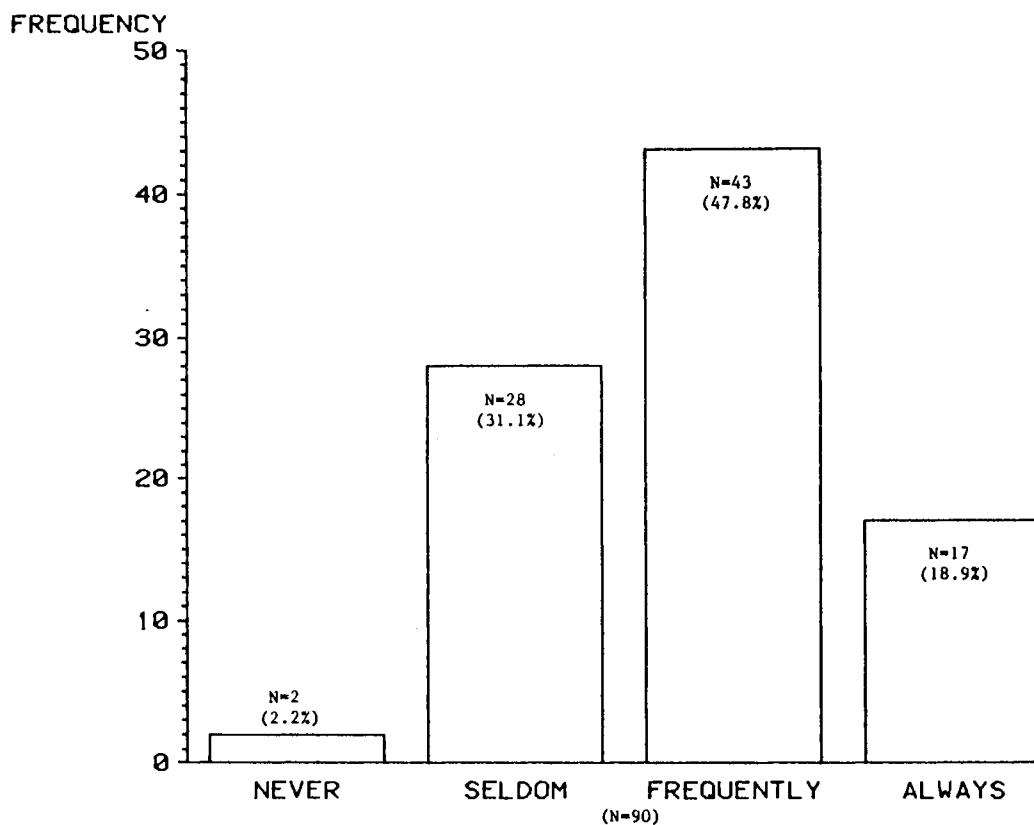


Figure 21. Item 14: Do Students in Some Districts Tend to Score Higher Because of Cultural Test Bias on the MAT-6?

Item 15. Do students in school districts with a higher ad valorem tax base tend to score higher on the MAT-6?

As shown in Figure 22, 85 principals answered item 15, with 2 (2.4%) saying "never" and 23 (27.1%) replying "seldom." Two-thirds (57) of the principals perceived that a higher ad valorem tax base frequently resulted in higher scores on the MAT-6. There were only three principals (3.5%) who perceived that this item was always a factor. There were five missing cases.

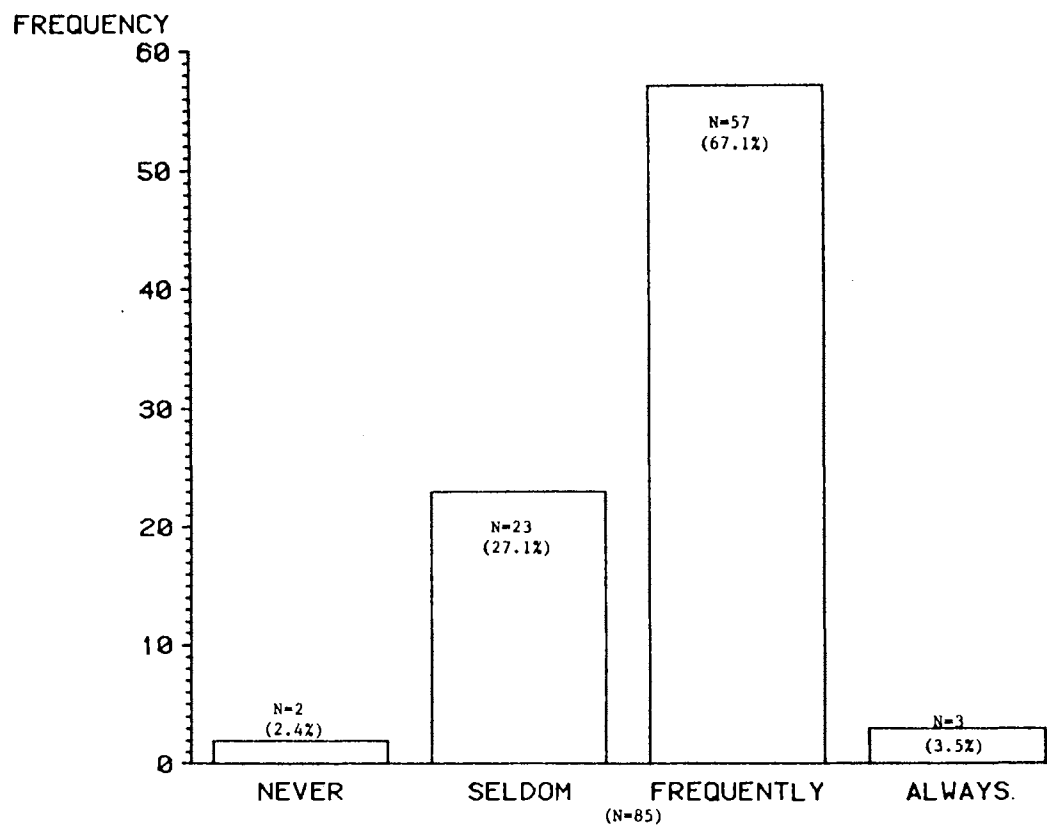


Figure 22. Item 15: Do Students in School Districts With a Higher Ad Valorem Tax Base Tend to Score Higher on the MAT-6?

Item 16. Do students in schools with larger curriculum offerings tend to score higher on the MAT-6?

As indicated in Figure 23, none of the 88 principals who responded to item 16 utilized the never response. There were four principals (4.5%) who perceived that larger curriculum offerings seldom resulted in higher MAT-6 scores. Over two-thirds (70.5%) of the principals perceived larger curriculums to always be a factor in higher MAT-6 scores and another 22 (25.0%) frequently perceived such a relationship. There were two missing cases.

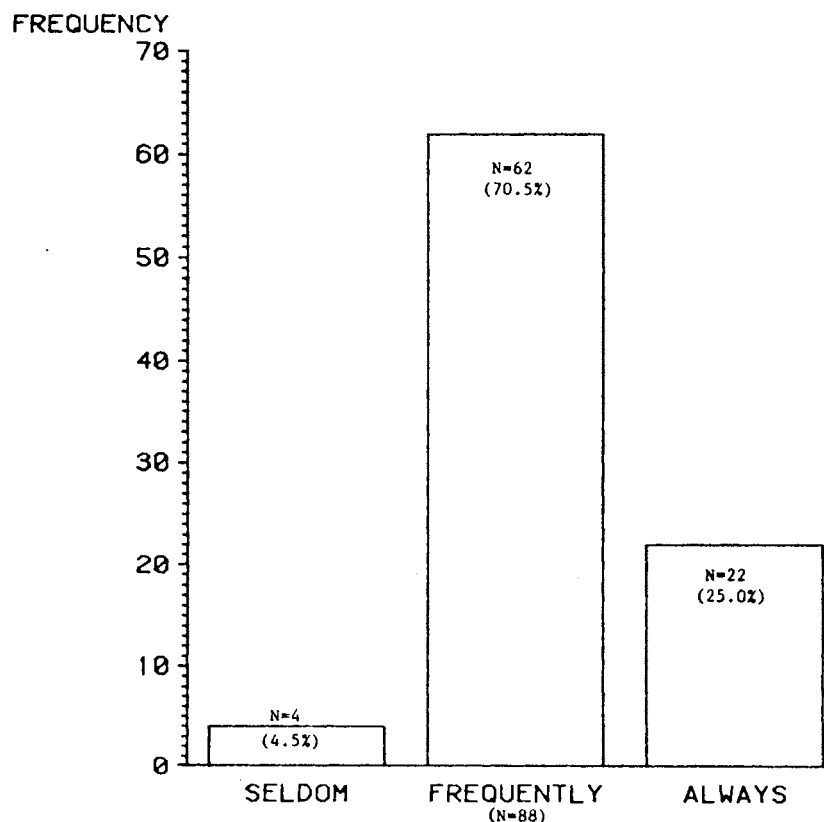


Figure 23. Item 16: Do Students in Schools With Larger Curriculum Offerings Tend to Score Higher on the MAT-6?

Item 17. Do students in school districts in which parents have high levels of education tend to score higher on the MAT-6?

Eighty-nine principals responded to item 17, with none choosing to utilize the "never" or "seldom" responses. As noted in Figure 24, all of the principals perceived a relationship between parents having higher levels of education and students having higher MAT-6 scores. Of the 89 principals who responded to item 17, 50 (56.2%) said that higher parental levels of education frequently resulted in higher MAT-6 scores, and 39 (43.8% of the total) perceived that there was always such a relationship. There was one missing case.

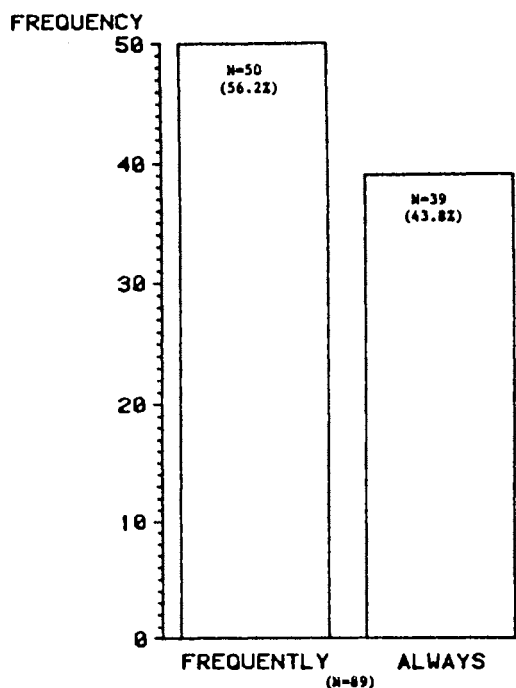


Figure 24. Item 17: Do Students in School Districts in Which Parents Have High Levels of Education Tend to Score Higher on the MAT-6?

Item 18. Do students in schools where the principal has increased awareness of and sensitivity to achievement tests tend to score higher on the MAT-6?

Eighty-nine principals responded to this item, leaving one missing case. Figure 25 provides data indicating that principals chose not to utilize the "never" response. Only four principals (4.5%) perceived that there was seldom a relationship between increased principal awareness of achievement test scores and higher MAT-6 scores. Three-fourths (78.7%) of the principals reported that higher MAT-6 scores were frequently related to principal awareness, and another 15 (16.9%) responded "always" to this item.

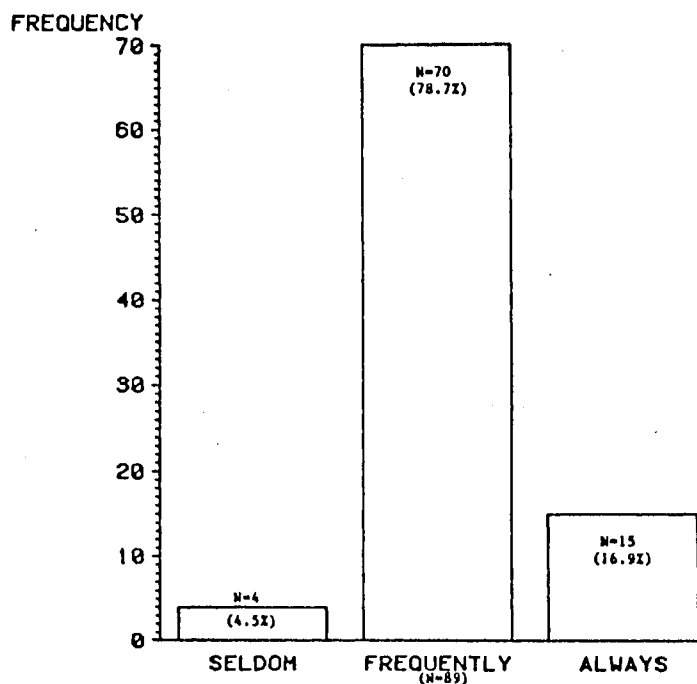


Figure 25. Item 18: Do Students in Schools Where the Principal has Increased Awareness of and Sensitivity to Achievement Tests Tend to Score Higher on the MAT-6?

Item 19. Do students in schools which have newer facilities and structures tend to score higher on the MAT-6?

There were 88 respondents to item 19, leaving only two missing cases. As noted in Figure 26, principals were somewhat consistent in their perceptions as to whether newer facilities and structures were related to students having higher MAT-6 scores. Principals chose not to utilize either the "never" or the "always" response, with 45 (51.1%) reporting that they seldom perceived newer facilities and structures as being related to higher MAT-6 scores and 43 principals (48.9%) frequently perceived such a relationship.

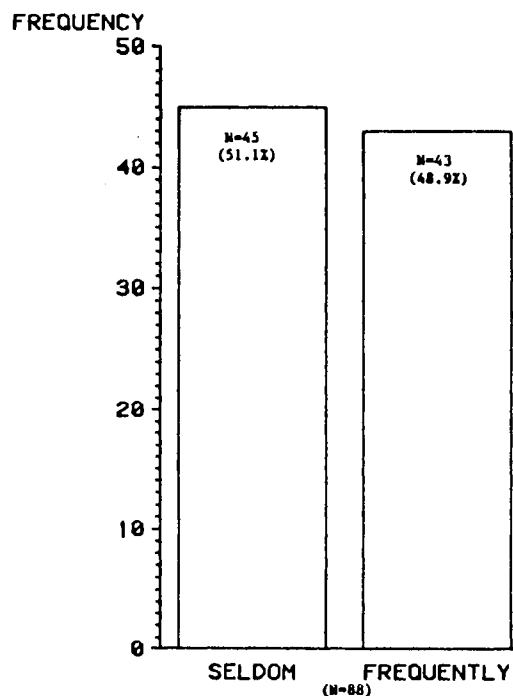


Figure 26. Item 19: Do Students in Schools Which Have Newer Facilities and Structures Tend to Score Higher on the MAT-6?

Item 20. Do students from school districts with a higher proportion of dual-parent households tend to score higher on the MAT-6?

Of the 88 principals who responded to item 20, none chose to utilize the "never" response. Only seven principals (8.0%) noted that students from districts with a higher proportion of dual-parent households seldom tend to score higher on the MAT-6 (Figure 27). Two-thirds of the principals (59.0%) replied that they perceived higher MAT-6 scores to be frequently related to a higher proportion of dual-parent households. Another 22 (25.0%) perceived that there was always such a relationship. There were two missing cases.

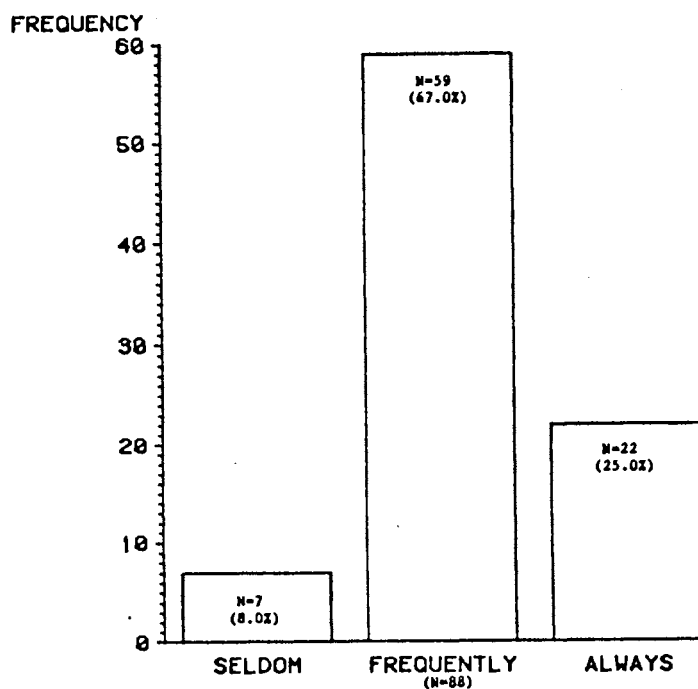


Figure 27. Item 20: Do Students From School Districts With a Higher Proportion of Dual-Parent Households Tend to Score Higher on the MAT-6?

Item 21. Do students in school districts with a higher proportion of patrons in white-collar occupations tend to score higher on the MAT-6?

There were 85 respondents to item 21, leaving five missing cases. Principals did not utilize the "never" response in their perceptions of the relationship between a higher proportion of patrons in white-collar occupations and higher MAT-6 scores. As noted in Figure 28, only two principals (2.4%) indicated that they seldom perceived a relationship in this item.

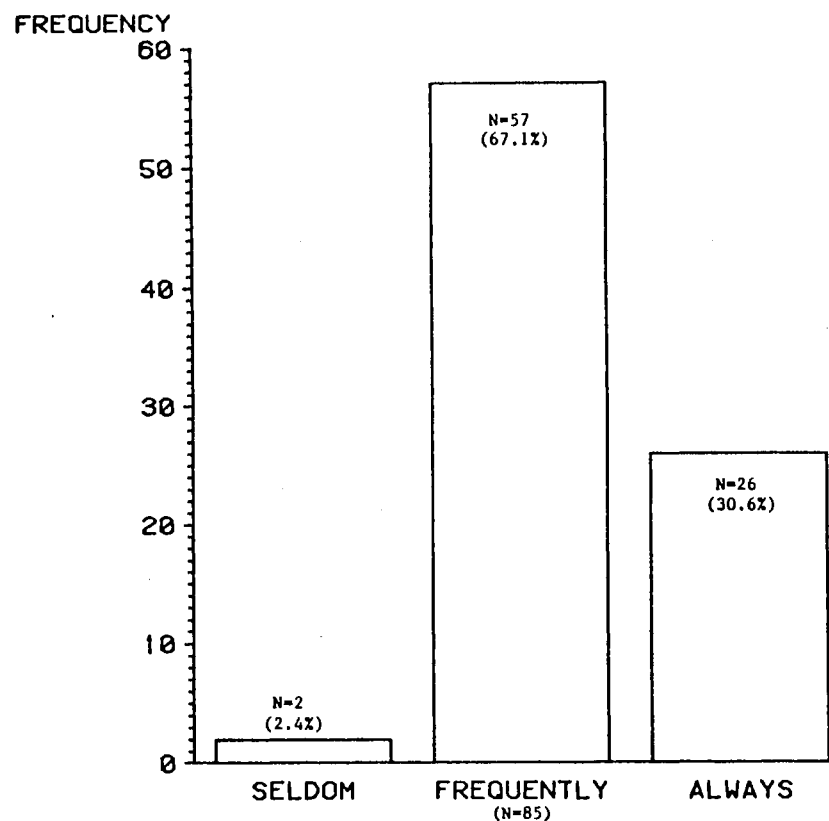


Figure 28. Item 21: Do Students in School Districts With a Higher Proportion of Patrons in White-Collar Occupations Tend to Score Higher on the MAT-6?

Item 22. Do students in school districts for which the population has higher economic status tend to score higher on the MAT-6?

As shown in Figure 29, 89 principals answered item 22, with none choosing to utilize the "never" response. Only two (2.2%) respondents perceived that there was seldom a relationship between school districts having a high economic status and students having higher MAT-6 scores. Over two-thirds of the principals (70.8%) perceived that higher economic status was frequently related to scores on the MAT-6, while another 24 principals (27.0%) said that there was always such a relationship.

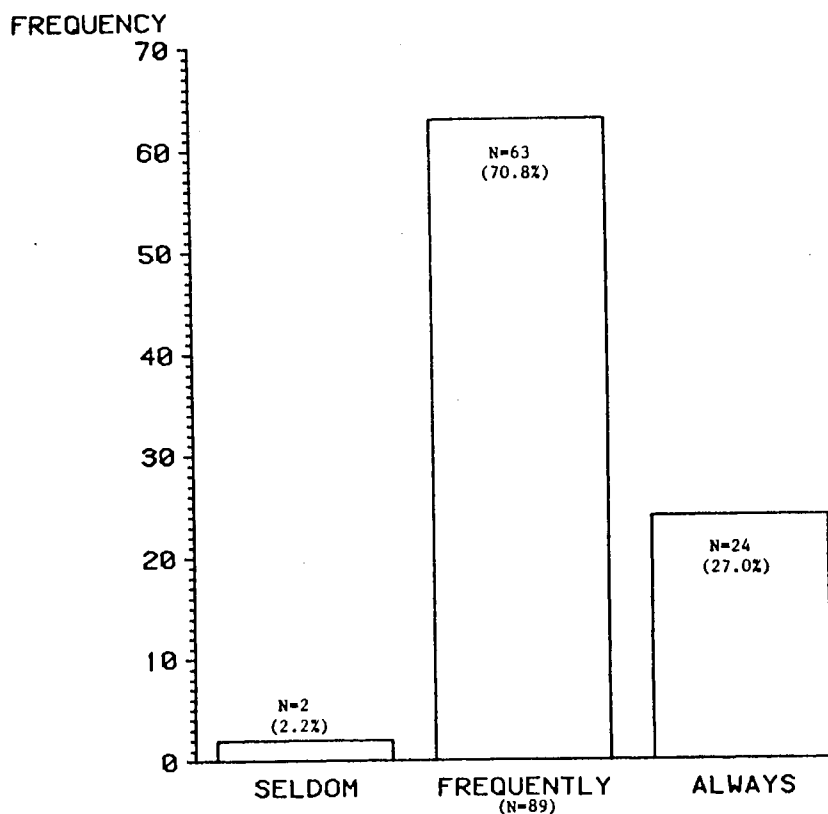


Figure 29. Item 22: Do Students in School Districts for Which the Population has Higher Economic Status Tend to Score Higher on the MAT-6?

Item 23. Do students in school districts where the school board has a greater awareness of and sensitivity to achievement tests tend to score higher on the MAT-6?

There were 90 principals who responded to item 23, with none utilizing the "never" response. As noted in Figure 30, 17 principals (18.9%) replied that they seldom perceived school board awareness and sensitivity to be a factor in students having higher MAT-6 scores. Over two-thirds (62 principals, 68.9%) said that they frequently believed higher MAT-6 scores were related to school board awareness, and another 11 (12.2%) believed that there was always such a relationship.

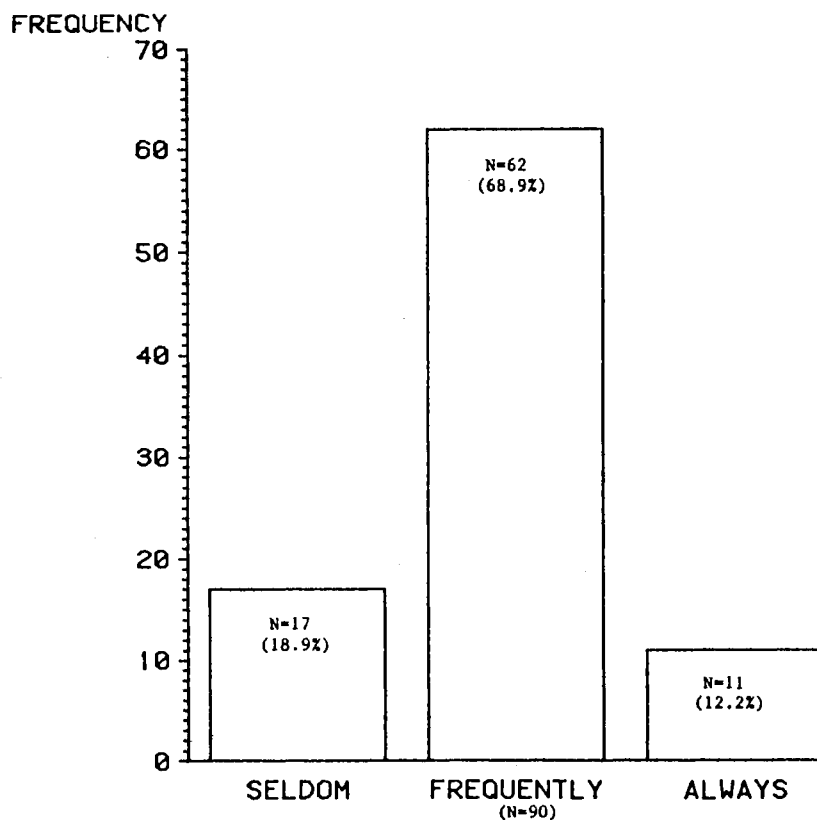


Figure 30. Item 23: Do Students in School Districts Where the School Board has a Greater Awareness of and Sensitivity to Achievement Tests Tend to Score Higher on the MAT-6?

A summary of all 23 items that were surveyed to determine principals' perceptions of their effect on the outcomes of student MAT-6 scores is provided in Table III.

TABLE III
SUMMARY OF PRINCIPALS' PERCEPTIONS

Item No.	Item Content	Number of Respondents				No Response	\bar{X}
		Never 1	Seldom 2	Frequently 3	Always 4		
1	With Masters	1	25	62	1	1	2.71
2	Dropout Rate	2	13	53	20	2	3.03
3	Metro-Higher	4	41	37	2	6	2.44
4	Low Ratio	0	14	61	14	1	3.00
5	Democratic	1	24	57	4	4	2.74
6	Superintendent	1	14	59	14	2	2.98
7	Extracurricular	0	8	69	12	1	3.04
8	Expenditure	0	15	64	9	2	2.93
9	Low Minority	3	11	53	22	1	3.06
10	Teachers Aware	0	3	67	18	2	3.17
11	Experience	2	25	61	1	1	2.69
12	Larger School	2	44	39	3	2	2.49
13	Autocratic	9	64	9	1	7	2.02
14	Test Bias	2	28	43	17	0	2.83
15	High Ad Valorem	2	23	57	3	5	2.72
16	Lg. Curriculum	0	4	62	22	2	3.20
17	Parents Educ.	0	0	50	39	1	3.44
18	Principal Aware	0	4	70	15	1	3.12
19	New Facilities	0	45	43	0	2	2.49
20	Dual-Parent	0	7	59	22	2	3.17
21	White-Collar	0	2	57	26	5	3.28
22	Economic Status	0	2	63	24	1	3.25
23	Board Aware	0	17	62	11	0	2.93
	Total	29	433	1257	300	51	

It is noteworthy, when examining Table III, that principals' perceptions can be broken down into positive and negative responses, with "never" or "seldom" representing negative responses and "frequently" or "always" representing positive responses. A similar ranking can be developed from the mean scores. The most negative responses rank in the following descending order: (1) Autocratic Leadership Style, (2) Larger School, (3-Tie) Metro-Higher and New Facilities, and (5) Test Bias. Principals thus perceive that these factors would not be related to higher MAT-6 scores.

Those variables which principals responded to with the highest positive perception rank as follows: (1) Parents' Education, (2) Economic Status, (3-Tie) Teachers' Awareness and Principal Awareness, and (5) Larger Curriculum. In addition to the top two factors, other factors associated with socioeconomic status also rated high, including white-collar occupations, dual-parent households, and higher per-pupil expenditures. While the principals perceived that both teacher and principal awareness of and sensitivity to test scores were of high impact, they also perceived that such attitudes by the school board and the superintendent were also related to higher scores.

Correlation Coefficients

In order to further study and verify the consistency of these survey results, a statistical correlation measure was applied to each item on the survey. The method used for items with continuous variables and those with discontinuous variables was the product-moment correlation coefficient developed by Pearson. A point biserial coefficient was used for those items with dichotomous variables (items A, C, G). In this section, each noteworthy significant relationship is presented. These

noteworthy relationships were significant at the .05 level. The correlation coefficient which was utilized as a cutoff was $r = +$ or $- .30$. Appendix C contains tables which display all coefficients.

Demographics: Items A Through G

With regard to the demographic data, the relationships listed as follows were considered noteworthy:

Item A (classification of school) with: item G (identity of school setting) ($r = -.61$). It was evident that there was an inverse relationship between classification of school and school setting. The r value indicated larger 4A and 5A schools were much more likely to be classified as urban or suburban, while the 3A schools were much more likely to be classified as rural.

Item B (years as principal) with: (1) item D (age of principal) ($r = .53$); (2) item G (identity of school setting) ($r = .30$). The r values indicated that there is a converse relationship between item B (years as principal) and item D (age of principal). As the years as principal increases, naturally the age of the principal will increase, but it was also evident that older principals will be found in the urban school districts, next oldest in suburban districts, then rural districts, in that order. Item G also had a noteworthy relationship as school settings had a converse relationship with years as principal, meaning that the urban schools tended to have principals with more years of experience than those in suburban or rural school districts, respectively.

Item C (identity of gender) was not shown to have any noteworthy relationships with any of the other demographic variables. It is concluded by the author that because 92.1% of the respondents were male, there is a possibility that the female responses from the remaining 7.9%

were obscured from the statistical analysis and are therefore unavailable for this study. Item E (estimated household income) and item F (local percentile score) had some directional significance at low positive and low negative levels, but were not significant at the $r = +$ or $-.30$ cutoff value for this study.

Item D (age of principal) correlated with: (1) item G (identity of school setting) ($r = -.32$), and (2) item B (years as principal) ($r = .53$).

Item G (identity of school setting) correlated with: (1) item A (school classification) ($r = -.61$), (2) item B (years as principal) ($r = -.30$), and (3) item D (age of principal) ($r = -.32$).

The relationships between items D and G and items A and B were discussed in the first paragraph of this section. The demographic data were tested with items 1 through 23. Only one relationship was statistically significant at the .05 level. This was also the only relationship considered noteworthy using the $r = +$ or $-.30$ cutoff value. The study found that the number of years served as a principal (item B) had a positive relationship with higher district expenditure per student (item 8) ($r = .31$). As principals served longer, they tended to perceive that higher district expenditures per pupil would lead to higher MAT-6 scores (see Table III in this chapter and Table IV in Appendix C).

Effect of Socioeconomics: Items 4, 8, 15,
19, 21, and 22

With regard to the effect of socioeconomics on MAT-6 performance, the relationships listed below were considered noteworthy. With regard to the effect of a lower pupil/teacher ratio, item 4 correlated with: (1) item 5 (democratic leadership) ($r = .30$), (2) item 10 (teacher

awareness) ($r = .30$), and (3) item 22 (economic status) ($r = .33$). The responses to item 4, which asked the effect of lower pupil/teacher ratio on student MAT-6 scores indicated that a majority of principals perceived that maintaining a lower pupil/teacher ratio frequently led to higher MAT-6 scores. This study also found that principals who perceived that a lower pupil/teacher ratio was significant to higher MAT-6 scores would answer positively to the effect of teachers having an increased awareness of and sensitivity to achievement test scores (item 10) and districts having a higher economic status (item 22) (see Table III in this chapter and Table IV in Appendix C).

With regard to the effect of districts with a higher expenditure per pupil (item 8) with: (1) item B (years as principal) ($r = .31$), (2) item 11 (teaching experience) ($r = .33$), and (3) item 19 (newer facilities) ($r = .30$). The response to item 8, which asked principals to indicate the effect of districts having a higher expenditure per pupil raising MAT-6 scores found that a majority of principals believed that higher expenditures per pupil led to higher MAT-6 scores. The data also indicated that the principals who answered positively to the effect of higher expenditure per pupil (item 8) were likely to answer positively to the effect of faculty having a greater number of years of experience (item 11). The principals who believed that higher expenditure per pupil tended to cause higher MAT-6 scores also indicated that new facilities and structures frequently caused students to have higher MAT-6 scores (item 19) (see Table III in this chapter and Table V in Appendix C).

The effect of a higher ad valorem tax base (item 15) had this relationship : (1) item 22 (economic status) ($r = .34$). The response to item 15, which asked principals to indicate whether a higher ad valorem tax base tended to cause students to have higher MAT-6 scores (item 15),

found that a majority of the principals frequently perceived this item to be a factor. The data also found that principals believed that districts with a higher economic status had higher MAT-6 scores (item 22) (see Table III in this chapter and Table V in Appendix C).

In comparing the effect of newer facilities and structures (item 19), the following relationships were considered noteworthy: (1) item 5 (democratic leadership) ($r = .41$), (2) item 11 (teaching experience) ($r = .41$), and (3) item 8 (higher district expenditure) ($r = .30$). The response to item 19, which asked principals if newer facilities and structures caused students to score higher on the MAT-6, did find that the principals were somewhat indecisive, with a slight majority indicating that this was seldom a factor in higher MAT-6 scores, and a large number indicating that this was frequently the case. Principals who answered "seldom" or "frequently" to item 19 were likely to answer "frequently" to the effect of principals with a democratic style of leadership (item 5), higher district expenditures per pupil (item 8), and the effect of teachers having greater number of years of experience (item 11) (see Table III in this chapter and Table VI in Appendix C).

With regard to students in districts with a higher proportion of white-collar patrons scoring higher (item 21), the following were the noteworthy relationships: (1) item 14 (cultural test bias) ($r = .40$), (2) item 16 (larger curriculum offerings) ($r = .35$), (3) item 17 (parents' high level of education) ($r = .64$), (4) item 20 (dual-parent households) ($r = .47$), and (5) item 22 (economic status) ($r = .85$). The response to item 21, which asked principals if a higher proportion of white-collar occupations caused students to tend to have higher MAT-6 scores, did find that the majority of the principals frequently said that this was a factor in higher MAT-6 scores. The principals who answered positively to a

higher proportion of white-collar occupations being a cause for higher MAT-6 scores, also indicated that cultural test bias (item 14), larger curriculum offerings (item 16), parents having a higher level of education (item 17), a higher proportion of dual-parent households (item 20), and districts having higher economic status (item 22) were frequently a cause for higher student MAT-6 scores (see Table III in this chapter and Table VI in Appendix C).

The effect of school districts with higher economic status (item 22) had the following notable relationships: (1) item 4 (lower pupil/teacher ratio) ($r = .33$), (2) item 14 (cultural test bias) ($r = .47$), (3) item 15 (higher ad valorem tax base) ($r = .34$), (4) item 16 (larger curriculum offerings) ($r = .44$), (5) item 17 (parents' high level of education) ($r = .58$), (6) item 20 (dual-parent households) ($r = .55$), and (7) item 21 (white-collar occupations) ($r = .85$). The data gathered from item 22, which asked principals if districts for which the population has high economic status also have students who tend to score higher on the MAT-6, indicated that the majority of principals frequently perceived this to be the case. The data gathered from item 22 indicated that principals who answered positively to this question, would also be likely to answer with a positive response to a lower pupil/teacher ratio (item 4), cultural test bias (item 14), higher ad valorem tax base (item 15), larger curriculum offerings (item 16), parents having higher levels of education (item 17), higher proportion of dual-parent households (item 20), and a higher proportion of patrons in white-collar occupations (see Table III in this chapter and Table VI in Appendix C).

Perceptions of Test Bias: Items 2, 9, 14,
17, and 20

In regard to MAT-6 scores that the respondents perceived due to test bias, the following were the noteworthy relationships. The effect of a lower dropout rate (item 2) raising scores had notable relationships with: (1) item 5 (democratic leadership) ($r = .37$) and (2) item 9 (low minority population) ($r = .34$). The response to item 2, which asked principals if lower dropout rates caused school districts to have students that scored higher on the MAT-6, did find that the majority of principals perceived that a lower dropout rate raised MAT-6 scores. The principals who responded positively to lower dropout rates causing an increase in MAT-6 scores were likely to have responded in a positive manner to democratic leadership by the principal causing higher MAT-6 scores (item 5), and schools with a lower minority student population tend to score higher on the MAT-6 (item 9) (see Table III in this chapter and Table IV in Appendix C).

The effect of students scoring higher because of a lower proportion of minority student population (item 9) had notable relationships with: (1) item 5 (democratic leadership) ($r = .38$), (2) item 12 (large districts score higher) ($r = .31$), (3) item 17 (parents have higher level of education) ($r = .33$), and (4) item 20 (dual-parent households) ($r = .30$). The responses to item 9, which asked principals if a lower proportion of minority student population caused districts to have students who tend to score higher on the MAT-6, indicated that a majority of principals frequently said that MAT-6 scores were higher for this reason. These principals were also likely to have answered positively to principals who practice a democratic leadership style (item 5), that students from

larger districts tend to have higher MAT-6 scores (item 12), that students in school districts where parents have higher levels of education tend to score higher on the MAT-6 (item 17), and students from districts with a higher proportion of dual-parent households than single-parent households score higher on the MAT-6 (item 20) (see Table III in this chapter and Table V in Appendix C).

The effect of students scoring higher because of cultural test bias (item 14) had important relationships with: (1) item 16 (larger curriculum offerings) ($r = .43$), (2) item 20 (dual-parent households) ($r = .39$), (3) item 21 (white-collar occupations) ($r = .40$), and (4) item 22 (economic status) ($r = .47$). The responses to item 14, which asked principals if they perceived that students in some districts score higher on the MAT-6 due to cultural test bias, indicated that a majority of principals frequently believed this was the case. The data indicated that the principals who answered "frequently" to this question would also be likely to answer "frequently" to larger curriculum offerings causing higher MAT-6 scores (item 16), a higher proportion of dual-parent households causing higher MAT-6 scores (item 20), a higher proportion of patrons in white-collar occupations causing higher MAT-6 scores (item 21), and students from districts having high economic status as a cause for higher MAT-6 scores (item 22) (see Table III in this chapter and Table VI in Appendix C).

Students scoring higher because of parents having higher levels of education (item 17) had notable relationships with: (1) item 9 (lower minority population) ($r = .33$), (2) item 16 (larger curriculum offerings) ($r = .45$), (3) item 20 (dual-parent households) ($r = .49$), (4) item 21 (white-collar occupations) ($r = .64$), and (5) item 22 (economic status) ($r = .58$). The data gathered from item 17 indicated that the majority of

principals perceived that districts in which parents possess a high level of education had students who tend to score higher on the MAT-6. The data indicated that principals who answered positively to this question were likely to answer positively to the following questions: "Does a lower proportion of minority student population cause a district to have students who tend to score higher on the MAT-6?" (item 9), "Do schools with larger curriculum offerings have students who tend to score higher on the MAT-6?" (item 16), "Do students from districts with a higher proportion of dual-parent households than single-parent households have students who tend to score higher on the MAT-6?" (item 20), "Do students from districts with a higher proportion of patrons in white-collar occupations have students who tend to score higher on the MAT-6?" (item 21), and "Do students in school districts for which the population has higher economic status tend to have higher MAT-6 scores?" (item 22) (see Table III in this chapter and Table VII in Appendix C).

In comparing the cause of higher scores due to dual-parent households (item 20), the following relationships were noteworthy: (1) item 9 (low minority populations) ($r = .30$), (2) item 14 (cultural test bias) ($r = .39$), (3) item 16 (larger curriculum offerings) ($r = .44$), (4) item 17 (parents have high level of education) ($r = .49$), (5) item 21 (white-collar occupations) ($r = .47$), and (6) item 22 (economic status) ($r = .55$).

The responses to item 20, which asked principals if students from districts with a higher proportion of dual-parent households than single-parent households tend to score higher on the MAT-6, indicated that a large majority perceived this to be true. The data indicated that when this did occur, principals were likely to answer in a like manner to the questions of low minority student population causing higher MAT-6 scores

(item 9), districts having students who score higher on the MAT-6 due to cultural test bias (item 14), schools having larger curriculum offerings having students who tend to score higher on the MAT-6, districts in which the parents possess higher levels of education having students who tend to have higher MAT-6 scores (item 17), districts in which there are a higher proportion of the patrons in white-collar occupations having students who tend to score higher on the MAT-6 (item 21), and students from districts having higher economic status score higher on the MAT-6 (item 22) (see Table III in this chapter and Table VII in Appendix C).

Perceptions of Leadership: Items 5 and 13

With regard to the effect of principal leadership style on MAT-6 scores, the following were noteworthy relationships. Item 5 (democratic leadership) with: (1) item 1 (teachers have master's degree) ($r = .38$), (2) item 2 (lower dropout rate) ($r = .37$), (3) item 4 (lower pupil/teacher ratio) ($r = .30$), (4) item 6 (superintendent awareness) ($r = .46$), (5) item 9 (low minority population) ($r = .38$), (6) item 11 (teaching experience) ($r = .33$), (7) item 19 (new facilities) ($r = .41$), and (8) item 23 (school board awareness) ($r = .30$).

The response to item 5, which asked principals to indicate their perception of how much a democratic leadership style by the principal affected the outcome of student MAT-6 scores, showed that a majority said that democratic leadership style tend to cause students to have higher MAT-6 scores. These same principals were also likely to respond that a higher percentage of teachers possessing master's degrees frequently cause students to have higher MAT-6 scores (item 1), that students in schools with a lower dropout rate tend to have higher MAT-6 scores (item 2), that students in schools with a lower pupil/teacher ratio tend to

have higher MAT-6 scores (item 4), that students in districts where the superintendent has a greater awareness and sensitivity to achievement tests tend to have higher MAT-6 scores (item 6), that students in schools with a low minority student population tend to have higher MAT-6 scores (item 9), that students in schools in which the faculty has a greater number of years of teaching experience tend to have higher MAT-6 scores (item 11), that students in school districts with newer facilities and structures tend to have higher MAT-6 scores (item 19), and that students in schools where the school board has a greater awareness and sensitivity to achievement test scores tend to have higher MAT-6 scores (item 23) (see Table III in this chapter and Table V in Appendix C).

With regard to the effect of autocratic leadership (item 13) and higher MAT-6 scores by students, there were no noteworthy values found. The responses to item 13, which asked principals to indicate if they perceived that an autocratic leadership style would lead to higher MAT-6, led to a negative response. The majority of the principals indicated that an autocratic style of leadership seldom or never led to higher MAT-6 scores by students. There were absolutely no significant relationships found between this item and others on the principal survey (see Table III in this chapter and Table VI in Appendix C).

Effect of School District Size: Items

3 and 12

Principals' perceptions as to the effect of school district size on MAT-6 scores had the following noteworthy relationships. With regard to students scoring higher due to residence in a metropolitan area (item 3), the following relationship was noteworthy: item 12 (large districts score higher) ($r = .53$). The response to item 3, which asked principals

to indicate whether students in metropolitan areas tended to score higher than those in nonmetropolitan areas, indicated that principals were in disagreement over their response, with a slight majority in the "seldom" category and a large number answering in the "frequently" category. The principals who answered "seldom" to the question of students in metropolitan areas having higher MAT-6 scores than those in nonmetropolitan areas were likely to answer "seldom" to the question of whether students in larger school districts score higher on the MAT-6 than those in smaller school districts (item 12).

With regard to students having higher scores due to residence in a large district (item 12), the following were the noteworthy relationships: (1) item 3 (metropolitan areas score higher) ($r = .53$) and (2) item 9 (low minority population) ($r = .31$). The responses to item 12, which asked principals whether they perceived that larger school districts had students who tend to score higher on the MAT-6 than those in smaller school districts, indicated that a slight majority believed that this was seldom the case. However, a large number of principals believed that this was frequently true. These principals were also likely to respond "seldom" to the question of students from metropolitan areas scoring higher on the MAT-6 than those from nonmetropolitan areas (item 3), and "frequently" to the question of whether students from schools with a lower proportion of minority student population tend to score higher on the MAT-6 (item 9).

Effect of Awareness and Sensitivity: Items

6, 10, 18, and 23

In regard to the effect of awareness and sensitivity that principals perceived as affecting MAT-6 scores, the following were the noteworthy

relationships. The perception that superintendent awareness and sensitivity of achievement test scores caused students to tend to score higher on the MAT-6 (item 6) had notable relationships with: (1) item 5 (democratic leadership) ($r = .46$), (2) item 10 (teacher awareness) ($r = .35$), (3) item 16 (larger curriculum offerings) ($r = .36$), (4) item 18 (principal awareness) ($r = .55$), and (5) item 23 (school board awareness) ($r = .50$).

The responses to item 6, which asked principals if increased awareness and sensitivity to achievement tests by the superintendent would tend to cause students to have higher scores on the MAT-6, did indicate that a majority of the principals said that this was frequently a cause for students having higher MAT-6 scores. The principals who responded frequently to the effect of superintendent awareness and sensitivity on MAT-6 scores, were also likely to respond "frequently" to the effects of principals who exhibited a democratic leadership style (item 5), teachers having increased awareness and sensitivity to achievement test scores (item 10), schools having larger curriculum offerings (item 16), the principal having increased awareness and sensitivity to achievement test scores (item 18), and the school board having increased awareness and sensitivity to achievement test scores (item 23) (see Table III in this chapter and Table V in Appendix C).

With regard to those respondents who perceived that greater teacher awareness and sensitivity to achievement test scores caused students to tend to score higher on the MAT-6 (item 10), the following were noteworthy relationships: (1) item 4 (lower pupil/teacher ratio) ($r = .30$), (2) item 6 (superintendent awareness) ($r = .34$), and (3) item 23 (school board awareness) ($r = .48$). The responses to item 10, which asked principals if an increased awareness and sensitivity by teachers to

achievement test scores caused students to have higher MAT-6 scores, indicated that a majority of the principals perceived this to frequently be the case. Principals who responded "frequently" or "always" to the effects of teacher awareness would likely respond "frequently" or "always" to the effect of a lower pupil/teacher ratio on raising MAT-6 scores (item 4), superintendents having an increased awareness and sensitivity to achievement test scores (item 18), and the school board having an increased awareness and sensitivity to achievement test scores (item 23) (see Table III in this chapter and Table VI in Appendix C).

With regard to those respondents who perceived that greater principal awareness and sensitivity to achievement test scores caused students to tend to score higher on the MAT-6 (item 18), the following were noteworthy relationships: (1) item 6 (superintendent awareness) ($r = .55$), (2) item 10 (teacher awareness) ($r = .50$), and (3) item 23 (school board awareness) ($r = .58$). The responses to item 18, which asked principals to state whether they perceived increased principal awareness and sensitivity to achievement test scores causing student MAT-6 scores to tend to be higher, indicated that a majority of the principals perceived that this was frequently or always true. These principals were likely to answer positively to the effects of the superintendent having an increased awareness and sensitivity to achievement test scores (item 10), and the school board having an increased awareness and sensitivity to achievement test scores (item 23) (see Table III in this chapter and Table VII in Appendix C).

With regard to those respondents who perceived that school board awareness and sensitivity to achievement test scores caused students to tend to score higher on the MAT-6 (item 23), the following were noteworthy relationships: (1) item 5 (democratic leadership) ($r = .30$),

(2) item 6 (superintendent awareness) ($r = .50$), (3) item 10 (teacher awareness) ($r = .48$), (4) item 11 (teaching experience) ($r = .30$), and (5) item 18 (principal awareness) ($r = .58$). The responses to item 23, which asked principals if they believed that the school board having an increased awareness and sensitivity to achievement test scores would tend to cause students to have higher MAT-6 scores, indicated that a majority answered "frequently" to this question. These principals were likely to answer "frequently" or "always" to the effect of principals practicing a democratic style of leadership raising student MAT-6 scores (item 5), the superintendent having an increased awareness and sensitivity to achievement test scores (item 6), teachers having an increased awareness and sensitivity to achievement test scores (item 10), the faculty having a greater number of years of experience tending to raise student MAT-6 scores (item 11), and the principal having an increased awareness and sensitivity to achievement test scores (item 18) (see Table III in this chapter and Table VII in Appendix C).

Perceptions of Faculty Experience: Items

1 and 11

With regard to those respondents who perceived that students tend to score higher on the MAT-6 in schools in which a higher percentage of teachers hold a master's degree (item 1), the noteworthy relationships were: (1) item 5 (democratic leadership) ($r = .38$) and (2) item 11 (teaching experience) ($r = .46$). The responses to item 1, which asked principals if a higher percentage of teachers holding masters' degrees would cause students to tend to have higher MAT-6 scores, indicated that a majority of principals frequently said this was true. This study also indicated that principals who said that a higher percentage of teachers

holding a master's degree would cause students to tend to have higher MAT-6 scores, would also answer that students in schools where the principal practices a democratic style of leadership would frequently tend to have higher MAT-6 scores (item 5), and that students in schools where the faculty has a greater number of years of teaching experience would frequently tend to have a higher MAT-6 scores (item 11) (see Table III in this chapter and Table V in Appendix C).

With regard to those respondents who perceived that students tend to score higher on the MAT-6 in schools in which the teachers had a greater number of years of teaching experience (item 11), the following relationships were noteworthy: (1) item 1 (teachers hold master's degree) ($r = .46$), (2) item 5 (democratic leadership) ($r = .33$), (3) item 8 (higher district expenditure) ($r = .33$), (4) item 19 (new facilities) ($r = .42$), and (5) item 23 (school board awareness) ($r = .30$). The responses to item 11, which asked principals to indicate if they perceived that a greater number of years of teaching experience would tend to cause students to have higher MAT-6 scores, indicated that a majority of principals frequently believed this to be true. These principals were also likely to be split in opinion as to whether newer facilities and structures would tend to cause students to have higher MAT-6 scores (item 19).

These same principals were likely to answer "frequently" to the effects of a higher percentage of teachers holding masters' degrees causing students to tend to have higher MAT-6 scores (item 1), principals practicing a democratic style of leadership causing students to tend to have higher MAT-6 scores (item 5), districts with a higher expenditure per pupil causing students to tend to have higher MAT-6 scores (item 8), and the school board having an increased awareness and sensitivity to achievement test scores causing students to tend to have higher MAT-6

scores (item 23) (see Table III in this chapter and Table VI in Appendix C).

Perceptions of Curriculum: Items 7 and 16

With regard to those respondents who perceived that students who are heavily involved in organizations, clubs, and other extracurricular activities tend to score higher on the MAT-6 (item 7), there were no noteworthy relationships found. The responses to item 7, which asked principals if students who are heavily involved in extracurricular activities tend to score higher on the MAT-6, indicated that a majority of principals said this is frequently or always the case. There were no other significant or noteworthy relationships between item 7 and other items on the survey (see Table III in this chapter and Table V in Appendix C).

With regard to those respondents who perceived that students in schools with larger curriculum offerings tend to score higher on the MAT-6 (item 16), the noteworthy relationships were: (1) item 6 (superintendent awareness) ($r = .36$), (2) item 14 (cultural test bias) ($r = .43$), (3) item 17 (parents have high level of education) ($r = .45$), (4) item 20 (dual-parent household) ($r = .44$), (5) item 21 (white-collar occupations) ($r = .35$), and (6) item 22 (economic status) ($r = .44$). The responses to item 16, which asked principals if they perceived that schools with larger curriculum offerings would tend to have students who scored higher on the MAT-6, indicated that the majority perceived that this was frequently or always true.

These principals were likely to respond "frequently" or "always" to the effects of increased awareness and sensitivity to achievement test scores by the superintendent (item 6), some students score higher on the

MAT-6 because of cultural test bias (item 14), students score higher on the MAT-6 because parents have a higher level of education (item 17), students score higher on the MAT-6 because of a higher proportion of dual-parent households in the district (item 20), students score higher on the MAT-6 because of a higher proportion of patrons in white-collar occupations in the district (item 21), and students score higher on the MAT-6 because of a higher economic status of the district population (item 22) (see Table III in this chapter and Table VI in Appendix C).

Summary

The purpose of this chapter was to report the data gathered through the use of a survey sent to a sample of school principals from across the State of Oklahoma. The data were summarized, and an analysis was offered. This analysis found 94 statistically significant relationships out of a possible 450. Those noteworthy significant relationships were presented, and tables were provided to display all coefficients, significant or otherwise. Chapter V presents the summary, conclusions, recommendations for further research, recommendations for practical application, and commentary.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS, AND COMMENTARY

Summary

A problem for educators in dealing with issues of equality is how to increase the awareness of the public, the media, and other educators in the State of Oklahoma regarding variables which could affect student performance on the standardized achievement tests which are mandated by law for Oklahoma's public school students. Information must be provided relating to how multiple variables may affect student performance.

The purpose of this study was to investigate those variables which are perceived to have an effect on the outcome of student performance on standardized tests. The specific focus of this study is on principals' perceptions of those variables which most affect student performance on the MAT-6. A population of Oklahoma high school principals was thus surveyed using an instrument designed to measure the extent to which certain variables, which were identified through relevant literature, were perceived to affect student performance on the MAT-6 achievement test in Oklahoma's public high schools.

For this study, the 3A, 4A, and 5A high school principals of Oklahoma were surveyed. There were 128 principals represented in this population. The 128 schools they represent account for 71% of the 10th grade class of students required to take the MAT-6 each year through the

Oklahoma School Testing Program. The total number of surveys returned was 90 (of 128 distributed), resulting in a 70.3% return. The data analysis involved frequency distributions and related percentages in order to classify responses for counting and comparison purposes. The SPSS program was also used to calculate the relationship between each variable using either the Pearson Correlation Coefficient or a point biserial coefficient.

The literature reviewed for this study mentioned relationships, findings, or conclusions that can indicate effects of demographic variables on achievement test performance by students. It was stated in the literature that demographic variables such as per capita income and community setting could have significant effects on the outcome of student achievement test scores.

However, there were no noteworthy relationships found in this study between demographics and perceptions of the effects on MAT-6 scores. There were statistically significant relationships of the demographic variables when compared to the respondents themselves. This study found that the majority of the respondents had been principals eight years or less and were in the 41-50 age group. Furthermore, it was found that principals in urban settings tended to have greater age and experience when compared to suburban and rural principals. It was also noted that those principals who identified themselves as being from a rural setting reported both lower income per average household and lower MAT-6 scores than did those from suburban and urban settings. Suburban principals reported the highest income per household and the highest MAT-6 scores.

The literature reviewed for this study indicated that achievement test scores were heavily influenced by socioeconomic factors that could affect each individual student's performance on such tests. This study

found that principals strongly perceived that the two most important socioeconomic factors responsible for students having higher MAT-6 scores were a higher proportion of patrons in white-collar occupations and a high economic status. Principals also perceived that a lower pupil/teacher ratio, higher district expenditure per student, and higher ad valorem tax base were related to higher MAT-6 scores. A majority of principals perceived that newer facilities and structures were seldom a factor in higher MAT-6 scores.

The literature indicated that there was ample evidence to show that achievement test bias does exist. This study showed that principals are more concerned with test bias resulting from economic concerns than from racial or ethnic factors. The question that inquired directly about cultural bias drew mixed responses. One-third of the 90 principals indicated that this was seldom or never a factor on achievement tests. However, a full two-thirds felt that cultural test bias was frequently or always a factor in MAT-6 scores. Principals indicated their strong opinions in regard to test bias in several other related areas. There were overwhelming positive responses to the questions that asked if students from homes containing dual parents and those homes containing parents with higher levels of education had an advantage on the MAT-6 test. Principals perceived that such variables were frequently or always related to student performance. This would seem to indicate that principals perceive strength of the family unit and the education of the parents to be critical factors in overcoming any built-in bias on achievement tests. Principals also indicated that a low minority student population would frequently mean a rise in scores for a school district. This would seem to support the literature which verifies this phenomenon.

The research indicated that the leadership style of the principal is definitely a factor related to student performance on the MAT-6. There was ample evidence that principals who use a democratic form of leadership manage schools in which students enjoy a higher degree of success on achievement tests such as the MAT-6. It was found in this study that a democratic style of leadership as opposed to an autocratic form of leadership by the principal could positively affect several factors surrounding the test-taking process. There were noteworthy relationships with the democratic style in the areas of lower dropout rate, lower pupil/teacher ratio, higher percentage of teachers holding masters' degrees, superintendent sensitivity to achievement tests, low minority student population, faculty years of experience, newer facilities, and school board awareness. These data would thus seem to indicate a perception that a principal who uses a democratic style of leadership will be perceived to be more effective in regard to having a student body that performs at a higher level on achievement tests.

The research did not present convincing evidence that school size was perceived as a positive influence in raising achievement test scores. The principals responded accordingly, as a majority answered that this was seldom the case. A like response was given by the principals as to whether or not the location of schools in metropolitan areas was related to higher student scores on the MAT-6.

The literature indicated that a heightened awareness of or sensitivity to achievement test scores by key persons in a school district could affect the outcome of achievement test scores. A majority of the principals who responded to this study indicated that sensitivity to and awareness of achievement test scores frequently have a positive impact on student MAT-6 scores. Principals also perceived a positive relationship

between test scores and the effect of other persons or personnel, in the following descending order: (1) teachers, (2) school board members, and (3) superintendents. This would seem to verify that the key personnel who have the most immediate contact with the students themselves can exert the most influence in the area of achievement test performance.

As shown in the literature, student performance on achievement tests could be affected by larger curriculum offerings and increased student involvement in extracurricular activities. Principals indicated by a strong majority their perceptions that student MAT-6 scores did tend to be higher in schools that had large curriculum offerings and students who were heavily involved in extracurricular activities, perhaps due to these added opportunities. Moreover, when the influence of a larger curriculum was met with a positive response by principals, there were also positive responses in the areas of cultural test bias, superintendent awareness, parents having higher levels of education, higher proportion of dual-parent households, higher proportion of patrons in white-collar occupations, and the district having a higher economic status. There appeared to be a relationship with community affluence and the ability of schools to offer the larger curriculums and to promote extracurricular activities, factors that principals perceive to be related to student achievement of higher MAT-6 scores.

Conclusions

It was concluded from this study that:

1. Principals in the larger Oklahoma high schools perceive that socioeconomic factors are related to student performance on standardized achievement tests. Specifically, they believe that higher per capita family income is likely to result in higher student scores on the MAT-6.

2. Suburban school districts are perceived to have higher MAT-6 scores than urban or rural school districts, in that order.

3. A large majority of school principals perceived that the two most important factors in predicting higher MAT-6 scores were the proportion of families with white-collar occupations in the community and whether the community enjoyed a high economic status.

4. Principals believed strongly that students in school districts with a higher proportion of dual-parent households, as opposed to single-parent households, and districts that had a higher proportion of parents with higher levels of education frequently or always scored higher on the MAT-6 than did students in other districts.

5. When there is a sense of urgency conveyed to the students by key personnel (such as the principal, teachers, school board members and superintendent, in that order) in the school districts, students are perceived to perform at a somewhat higher level on achievement tests such as the MAT-6.

6. The majority of principals said that school districts with large and varied curriculums often produce students who tend to score higher on the MAT-6.

7. The majority of Oklahoma principals used in this study perceived that a democratic leadership style, as opposed to an autocratic leadership style, would frequently or always produce more positive results in regard to higher MAT-6 scores.

8. The questions that dealt with socioeconomic factors drew the strongest reactions by the principals, as demonstrated by their use of the "frequently" or "always" responses on the survey.

9. The majority of principals perceived that higher expenditures per pupil and a higher ad valorem tax base were positive factors in

higher student MAT-6 scores, but did not perceive that this translated into a similar effect created by newer facilities.

Recommendations

Research is available on the subject of factors which affect student performance on standardized achievement tests, but not on the MAT-6 test in particular. Efforts should be made to study the actual factors which affect student performance on the MAT-6 in Oklahoma. Research should seek to identify why it is that MAT-6 scores in Oklahoma apparently decrease steadily from 3rd to 7th and then 10th grades, respectively. It would also be useful to determine the exact levels of district wealth, proportion of white-collar occupations, general health of the local economies, levels of parental education, and family status in regard to single-parent versus dual-parent households when comparing MAT-6 results across counties and regions of the State of Oklahoma.

It was determined from this study that the older, more experienced principals were employed by the urban and suburban school districts, respectively. It might be useful to know if this factor had any effect on the outcome of MAT-6 scores, as the rural schools tended to report lower MAT-6 scores than did the suburban and urban districts. It should also be ascertained that the MAT-6 is administered in a consistent manner across the State of Oklahoma and that no district has an unfair advantage due to unethical coaching practices or unlawful possession of test copies. It would also be useful to conduct a follow-up survey to see how much influence the MAT-6 results might have on potential movement of families with school children from one district to another.

The perceptions of the Oklahoma school principals chosen for this study toward variables that most affect student achievement on the MAT-6

in Oklahoma's public high schools were positive. The responses by the principals indicated that their perceptions were quite strong as to the variables which most affected student outcomes on the MAT-6. It is evident that there are techniques and strategies that principals can apply to increase student success on the MAT-6 in their schools. To be properly applied, the variables that insure success on achievement tests must be considered and utilized through a joint effort of the persons who have the most hands-on contact with the students. The principals, teachers, school board members, and superintendent have been shown to have the most influence and contact with students, aside from the students' immediate families.

Information should be made available in the form of texts, manuals, and workshops which stress successful techniques in regard to taking the MAT-6. This information should be presented to interested parties to promote student success on the MAT-6, but by the same token, this information should be kept in perspective as to the district and the state goals regarding Oklahoma children's total education. The schools should not feel that they are being pressured, not by external forces to garner this information, but by internal goals for success.

Commentary

The question could be asked, "What does all this mean to me?" It means that standardized multiple-choice tests have come to dominate the United States educational system over the last 20 years. Test scores now limit programs that students can enter and dictate where they are placed. Test scores are used to evaluate teachers, administrators, schools, and entire school systems. Tests literally determine the content curriculum of our schools, as well as the style of teaching. Those who favor

standardized testing applaud these trends in the public schools. They point to increased accountability and the resulting improvement of student achievement, staff competence, and quality of education. These same proponents of standardized testing point out that it is a necessary component for the school reform movement.

What is not pointed out is the fact that these objective tests sometimes produce results that are inaccurate, inconsistent, or biased against minorities, females, and students from low-income families. This, in turn, causes a narrowing of the curriculum, which frustrates teachers and students. These tests may actually be driving students out of schools rather than improving them and advancing their cause. Using test scores as the sole or major basis for making educational decisions will lead to less public understanding of the schools and a weaker educational system. This trend may be putting too much power into the hands of the test-making companies, rather than allowing schools and students to control their own destinies. The billion-dollar-a-year testing industry is more than happy to accept this responsibility.

Researchers have identified several characteristics of standardized tests that could negatively bias the scores of minority students and of students from low-income families. These tests tend to reflect the language, culture, or learning style of middle- to upper-class whites. Scores on tests such as the MAT-6 are as much measures of race or ethnicity and income as they are measures of achievement, ability, or skill. Researchers have also discovered that individuals exhibit different ways of knowing and problem solving that are the result of different learning styles, not differing abilities. These styles of learning are often related to race, income level, and gender, yet the standardized tests assume that all students perceive information and solve problems the same

way. In a similar fashion, principals may assume that their own white middle-class values are the proper basis for making educational decisions. Principals must become more aware of the changing demographics of their student population.

It would seem, therefore, that the use of standardized test scores as the main criterion for making important decisions is reckless, yet the Oklahoma legislature has passed legislation that does just that. Schools in Oklahoma that are determined to be "at risk," by their performance on the MAT-6, are subject to closure or consolidation according to legislation that is now a part of the Oklahoma statutes.

The inordinate amount of attention given to MAT-6 performance by Oklahoma schools through the media frequently "fails to see the forest for the trees" by overlooking critical side effects of standardized testing. Not only does the use of standardized tests affect low-achieving students, but the high-achieving students are affected as well. The high-achieving students who stray from the basics are likely to be frustrated by a narrowed curriculum in which expectation has been lowered in anticipation of the standardized test. Many schools across the nation, not just those in Oklahoma, have begun campaigns to improve test scores at almost any cost. These strategies narrow the curriculum as schools literally "teach the test" that is to be given each spring. It would seem that too much time is being given to "coaching for the test"--time that could be given to "real teaching."

We simply cannot meet our primary needs for education in this state or any other state by relying solely on standardized test results for educational reform. Testing must be used as a source of additional information for obtaining certain basic, but limited, information about education. Testing can help teachers recognize not only what a student

knows, but how that student learns. As principals were perceived to have a key role in student performance on achievement tests in this study, it would behoove them to study achievement test results carefully in order to be in an advantageous position to facilitate change. Tests such as the MAT-6 were originally designed for this purpose, as well as for recognizing those weaknesses in the school's curriculum that demanded attention.

Alternatives to standardized testing must be carefully designed to avoid reproducing the biases, the inaccuracies, and the damage to students, curricula, and individual school districts. It would also be wise to keep the media accurately and regularly informed so as to promote total coverage and a positive portrayal of the good things that are happening in Oklahoma schools. It is hoped that proper presentation of this information will help our students not only to compete on a statewide and nationwide basis, but to make them better overall scholars as well.

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APPENDIXES

APPENDIX A

INSTRUMENT

A STUDY OF OKLAHOMA HIGH SCHOOL PRINCIPAL'S PERCEPTIONS OF MAT-6 PERFORMANCE

- A. Circle the classification of your school: 3A 4A 5A
- B. How many years have you served in the capacity of principal_____?
- C. Please identify your gender: ___Male ___Female
- D. Circle the range that corresponds to your age as a principal:
25-30 31-35 36-40 41-45 46-50 51-55 56-up
- E. Circle the estimated average household income of your patrons:
\$10,000-20,000 \$21,000-30,000 \$31,000-40,000
\$41,000-50,000 \$51,000-60,000 \$61,000-70,000
- F. Circle the range of Local Percentile Scores containing your high school's composite average score on the MAT-6 for the 1988-89 school year:
0-10 11-20 21-30 31-40 41-50 51-60 61-70 71-80 81-90 91-100
- G. Please check the identity of your school setting:
___Urban ___Suburban ___Rural

FOR THE FOLLOWING QUESTIONS, PLEASE INDICATE YOUR OPINION BY CIRCLING THE APPROPRIATE RESPONSES USING THIS SCALE:

1 - never 2 - seldom 3 - frequently 4 - always

- | | | | | |
|--|---|---|---|---|
| 1. Do students in schools in which a higher percentage of teachers hold a masters degree tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 2. Do students in schools with a lower dropout rate tend to have higher scores on the MAT-6? | 1 | 2 | 3 | 4 |
| 3. Do students in metropolitan areas tend to score higher than students in non-metropolitan areas on the MAT-6? | 1 | 2 | 3 | 4 |
| 4. Do students in schools with a lower pupil/teacher ratio tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 5. Do students in schools with principals who practice a democratic style of leadership tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 6. Do students in school districts where the superintendent has a greater awareness of and sensitivity to achievement test scores tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 7. Do students in schools, in which students are heavily involved in organizations, clubs, and other extracurricular activities tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 8. Do students in school districts with higher district expenditure per pupil tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 9. Do students in schools with a lower proportion of minority student population tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 10. Do students in schools where the teachers have an increased awareness of and sensitivity to achievement test scores tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 11. Do students in schools in which the faculty has a greater number of years of teaching experience tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 12. Do students from the larger school districts tend to have higher scores than those from smaller districts on the MAT-6? | 1 | 2 | 3 | 4 |
| 13. Do students in schools with principals who practice an autocratic style of leadership tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 14. Do students in some districts score higher because of "cultural test bias" on the MAT-6? | 1 | 2 | 3 | 4 |
| 15. Do students in schools with a higher ad valorem tax base tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 16. Do students in schools with larger curriculum offerings tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 17. Do students in school districts in which parents have higher levels of education tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 18. Do students in schools where the principal has an increased awareness of and sensitivity to achievement test scores tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 19. Do students in schools which have newer facilities and structures tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 20. Do students from a district with a higher proportion of dual-parent households than single-parent households tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 21. Do students in school districts with a higher proportion of patrons in "white-collar" occupations tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 22. Do students in school districts for which the population has higher economic status tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |
| 23. Do students in schools where the school board has a greater awareness of and sensitivity to achievement test scores tend to score higher on the MAT-6? | 1 | 2 | 3 | 4 |

APPENDIX B

CORRESPONDENCE

UNION HIGH SCHOOL . 6636 SOUTH MINGO . TULSA OKLAHOMA 74133 . (918) 252-2581



May 24, 1989

Dear Principal,

I am currently conducting a research program that will measure variables Oklahoma high school principals perceive to be the most prominent in explanation and prediction of Metropolitan Achievement Test 6 scores in Oklahoma 3A, 4A, and 5A high schools.

Variables which have surfaced most often in literature about student performance on achievement tests are used in this survey. I am focusing on the 10th grade students in the 3A, 4A, and 5A classes, as 71 percent of the 10th grade students are represented in these three classifications of Oklahoma high schools.

I know that you are a very busy person but this survey should just take a few minutes to complete and I would appreciate it very much if you would participate. Please send the survey back to me in the enclosed self-addressed stamped envelope.

A postcard is also included to confirm that you have completed the survey without making any identifying marks on the survey itself. This will assure anonymity for you, yet it allows me to know if you participated and will make my follow up studies much easier to complete. The postcard will also allow you to indicate if you would like a summary of the results of this study by making a check on the blank provided below your name.

If you have any other questions, please call me at (918) 252-2581. Thank you for your help.

Very sincerely yours,

Clark Ogilvie
Assistant Principal

APPENDIX C

TABLES IV THROUGH VII

TABLE IV
CORRELATION COEFFICIENTS FOR DEMOGRAPHICS
(ITEMS A-G)

A. Class of School	1.0	.12	.20	.21	.27	.25	-.61	.20	.02	.08	-.23	.12	-.14	-.03	.15	.08	-.05	.01	.20	.06	-.07	.05	.07	.17	.02	-.09	.01	-.09	.06	.00	
B. Years as Principal	.12	1.0	-.06	.53	.02	-.13	-.30	.09	.09	-.26	.08	.20	.14	.01	.31	-.03	.16	-.18	.04	.14	-.02	.10	-.09	-.02	.09	.11	.03	.08	.07	.13	
C. Identity of Gender	.20	-.06	1.0	.00	.02	.06	-.19	.08	.04	.00	-.08	-.02	.00	-.03	.13	.02	.11	.09	.03	.07	.12	-.02	.04	-.05	-.09	.04	-.01	-.15	-.04	-.04	
D. Age of Principal	.21	.53	.00	1.0	.04	.16	-.32	.16	.01	-.02	-.03	.12	.11	.05	.22	.16	.04	.13	.08	.20	.07	.11	.28	.11	.06	.03	.06	.15	.08	.05	
E. Household Income	.27	.01	.02	.04	1.0	.24	-.27	.02	.09	.14	-.16	.02	.11	.02	.17	.20	.16	.01	.13	.05	.05	.01	.04	.06	.00	.07	.17	.10	.08	.04	
F. Percentile Scores	.25	.13	.06	.16	.24	1.0	-.14	.15	.13	.11	-.02	.01	.04	.01	-.04	.25	.03	.03	.22	.06	.08	.10	-.04	.05	.07	.02	.08	-.02	.16	.04	
G. Identity of Setting	-.61	-.30	-.19	-.32	.27	-.14	1.0	-.18	.08	-.04	.12	.11	.16	.02	-.15	.12	.07	.13	.02	.15	.02	.09	.23	.23	.00	.13	.23	-.09	.09	.06	
#1 Teachers Hold Masters																															
#2 Lower Dropout Rate																															
#3 Metropolitan Score Higher																															
#4 Low Pupil Teacher Ratio																															
#5 Principal Democratic Leadership Style																															
#6 Greater Superintendent Awareness of MAT-6																															
#7 Extracurricular Activities																															
#8 Higher District Expenditure																															
#9 Low Minority Student Population																															
#10 Greater Teacher Awareness of MAT-6																															
#11 Greater Teaching Experience																															
#12 Large Districts Score Higher																															
#13 Principal Autocratic Leadership Style																															
#14 Cultural Test Bias Higher Scores																															
#15 Higher Ad Valorem Tax Base																															
#16 Large Curriculum Offerings																															
#17 Higher Parent Education Level																															
#18 Greater Principal Awareness of MAT-6																															
#19 New Facilities Score Higher																															
#20 Dual-Parent Higher MAT-6 Scores																															
#21 White-Collar Higher MAT-6 Scores																															
#22 Economic Status Higher Scores																															
#23 Greater School Board Awareness of MAT-6																															

CORRELATION COEFFICIENTS FOR ITEMS 9-16

TABLE VI

	A. Class of School
	B. Years as Principal
	C. Identity of Gender
	D. Age of Principal
	E. Household Income
	F. Percentile Scores
	G. Identity of Setting
	#1 Teachers Hold Masters
	#2 Lower Dropout Rate
	#3 Metropolitan Score Higher
	#4 Low Pupil Teacher Ratio
	#5 Principal Democratic Leadership Style
	#6 Greater Superintendent Awareness of MAT-6
	#7 Extracurricular Activities
	#8 Higher District Expenditure
	#9 Low Minority Student Population
	#10 Greater Teacher Awareness of MAT-6
	#11 Greater Teaching Experience
	#12 Large Districts Score Higher
	#13 Principal Autocratic Leadership Style
	#14 Cultural Test Bias Higher Scores
	#15 Higher Ad Valorem Tax Base
	#16 Large Curriculum Offerings
	#17 Higher Parent Education Level
	#18 Greater Principal Awareness of MAT-6
	#19 New Facilities Score Higher
	#20 Dual-Parent Higher MAT-6 Scores
	#21 White-Collar Higher MAT-6 Scores
	#22 Economic Status Higher Scores
	#23 Greater School Board Awareness of MAT-6
#9 Low Minority Student Population	.08-.03-.02-.16-.20-.25-.12-.24-.34-.17-.17-.38-.27-.19-.07-1.0-.14-.10-.31-.16-.18-.25-.29-.33-.05-.29-.30-.29-.20-.09
#10 Greater Teacher Awareness of MAT-6	.03-.16-.11-.04-.16-.01-.07-.10-.21-.06-.30-.16-.34-.12-.19-.14-1.0-.13-.01-.12-.14-.06-.20-.21-.50-.00-.06-.27-.26-.48
#11 Greater Teaching Experience	.01-.18-.09-.13-.01-.03-.13-.46-.08-.24-.11-.33-.21-.14-.33-.10-.13-1.0-.26-.28-.15-.06-.21-.14-.26-.42-.01-.03-.13-.30
#12 Large Districts Score Higher	.20-.04-.03-.08-.13-.22-.02-.25-.21-.53-.01-.19-.21-.20-.11-.31-.01-.26-1.0-.15-.03-.20-.18-.10-.00-.26-.03-.17-.16-.11
#13 Principal Autocratic Leadership Style	.06-.14-.07-.20-.07-.06-.15-.21-.07-.09-.00-.02-.11-.05-.09-.16-.12-.28-.15-1.0-.04-.26-.15-.05-.01-.00-.18-.12-.07-.00
#14 Cultural Test Bias Higher Scores	-.07-.02-.12-.07-.05-.08-.02-.06-.12-.21-.21-.10-.19-.02-.02-.16-.14-.15-.03-.04-1.0-.17-.43-.27-.05-.17-.35-.40-.47-.08
#15 Higher Ad Valorem Tax Base	.09-.10-.02-.11-.01-.10-.09-.11-.15-.04-.02-.17-.21-.03-.24-.25-.06-.06-.20-.26-.17-1.0-.13-.25-.01-.27-.13-.23-.34-.00
#16 Large Curriculum Offerings	.07-.09-.04-.28-.04-.04-.23-.24-.25-.12-.20-.27-.36-.21-.15-.29-.20-.21-.18-.15-.43-.13-1.0-.45-.15-.11-.44-.35-.44-.18

CORRELATION COEFFICIENTS FOR ITEMS 17-23

TABLE VII

#17 Higher Parent Education Level	A. Class of School	.17
#18 Greater Principal Awareness of MAT-6	B. Years as Principal	.02
#19 New Facilities Score Higher	C. Identity of Gender	.09
#20 Dual-Parent Higher MAT-6 Scores	D. Age of Principal	.01
#21 White-Collar Higher MAT-6 Scores	E. Household Income	-.09
#22 Economic Status Higher MAT-6 Scores	F. Percentile Scores	-.06
#23 Greater School Board Awareness of MAT-6	G. Identity of Setting	.00
	#1 Teachers Hold Masters	.11
	#2 Lower Dropout Rate	.06
	#3 Metropolitan Score Higher	.05
	#4 Low Pupil Teacher Ratio	.23
	#5 Principal Democratic Leadership Style	.20
	#6 Greater Superintendent Awareness of MAT-6	.24
	#7 Extracurricular Activities	.13
	#8 Higher District Expenditure	.16
	#9 Low Minority Student Population	.25
	#10 Greater Teacher Awareness of MAT-6	.26
	#11 Greater Teaching Experience	.20
	#12 Large Districts Score Higher	.28
	#13 Principal Autocratic Leadership Style	.33
	#14 Cultural Test Bias Higher Scores	.21
	#15 Higher Ad Valorem Tax Base	.16
	#16 Large Curriculum Offerings	.10
	#17 Higher Parent Education Level	.27
	#18 Greater Principal Awareness of MAT-6	.09
	#19 New Facilities Score Higher	.21
	#20 Dual-Parent Higher MAT-6 Scores	.25
	#21 White-Collar Higher MAT-6 Scores	.29
	#22 Economic Status Higher Scores	.00
	#23 Greater School Board Awareness of MAT-6	.42
		.08
		.00
		.18
		.22
		.58
		.25
		.10
		.14
		.00
		.11
		.00
		.18
		.08
		.00
		.18
		.08
		.16
		.09
		.04
		.04
		.06
		.07
		.08
		.11
		.26
		.10
		.31
		.25
		.29
		.25
		.23
		.14
		.16
		.30
		.06
		.01
		.17
		.12
		.40
		.21
		.39
		.11
		.44
		.49
		.05
		.10
		.47
		.59
		.10
		.47
		1.0
		.85
		.10
		.14
		.14
		.00

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VITA

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Candidate for the Degree of

Doctor of Education

Thesis: A STUDY OF THE PERSPECTIVES OF OKLAHOMA HIGH SCHOOL PRINCIPALS REGARDING VARIABLES WHICH AFFECT STUDENT PERFORMANCE ON THE METROPOLITAN ACHIEVEMENT TEST

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