2001

Hidden Factors In Teachers' Secondary Grading Practices

Robert H. Rich
Seton Hall University

HIDDEN FACTORS IN TEACHERS' SECONDARY GRADING PRACTICES

BY

ROBERT H. RICH

Dissertation Committee

Elaine M. Walker, Ph.D., Mentor
Marilyn E. Birnbaum, Ed.D.
Dwight R. Pfennig, Ed.D.
Soundaram Ramaswami, Ph.D.

Submitted in partial fulfillment of the
requirements of the Degree of Doctor of Education
Seton Hall University
2001

Acknowledgements

Completing a study of this nature could not have been accomplished without the patience, understanding, support, and assistance of my family and dissertation committee. First, I want to thank Dr. Elaine Walker, the chair of my committee, whose scholarly and friendly advice and expertise kept me motivated and moving through the process. I am deeply indebted to her for guiding me through the often puzzling world of statistical analysis, for urging me to avoid my tendency to be parsimonious in style, and most importantly, for encouraging me with her warm and engaging personality to stay the course.

I also wish to thank the other members of my committee Dr. Marilyn E. Birnbaum, Dr. Dwight R. Pfennig, and Dr. Soundaram Ramaswami. As my loyal and endearing friend, colleague, and mentor, Dr. Birnbaum encouraged me from the start to enroll in a doctoral program. She too encouraged me to persevere throughout the course work and guided, counseled, and consoled me right through the final stages of writing the dissertation. Despite the relentless demands and stress associated with her position as superintendent of schools in North Plainfield, she always found the time to help me. To her, I am deeply grateful. I also wish to thank Dr. Pfennig, another friend and colleague and practicing superintendent of schools in Morristown, who also graciously set aside the everyday demands of his position to assist me. Finally, I also wish to thank Dr. Ramaswami, another practicing administrator in the Newark Public Schools, for juggling her time to serve on my committee.

In addition to my committee, I want to thank, but more importantly, dedicate this dissertation to my family: my parents, Marvin and Dawn Rich, whose love, encouragement, and faith in me through my lifetime has never wavered; to my wife Rosemary, whose love, support, and patience throughout the process allowed me to continue to plod ahead; and to my three daughters, Meghan, Emily, and Molly, despite having to be warned occasionally to be quiet while I set aside time for dissertation work, always displayed a genuine love, interest and pride in their Dad who also had homework to do. I hereby finally assure them that earning a doctorate in education does not give me the right to practice medicine. Therefore, despite their fears, I cannot give them any shots. But I do urge them to continue to get their homework done, continue to succeed in school, and continue through their lives to make this Dad and Mom and our family as proud as we are of them today.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

Introduction

Statement of the Problem

Traditional student grading and assessment practices have long been a source of debate and controversy in the educational community. Nevertheless, most public schools have continued to embrace a traditional letter grade approach in report cards at the elementary and secondary levels. In the late seventies, Linda H. Kunder and Paul J. Porwoll (1977) reported that 90% of American high schools used letters grades to represent student achievement. Robert J. Marzano (2000) cites a 1998 study conducted by The College Board that reported that in 3,113 high schools surveyed, 91% reported using A-F or an equivalent numeric-grading scheme. It would appear that over 20 years later, the traditional approach to grading has not changed. There have been some exceptions in primary grades where letter grades have been replaced with marks of outstanding, satisfactory, needs improvement or unsatisfactory. However, one can still sort, classify, and rank students by ability by these codes. These marks do not prevent a reader from easily equating these grades into a typical A-B-C-D-F format.

Critics have argued that the typical letter grade reports never provide enough information about student progress (Wiggins, 1994). Furthermore when supplemental report card comments are provided, teachers often provide vague generalizations and

clichés and often offer personal reactions to students rather than individualized reports of academic progress (Procunier, 1975). As more schools have elected to computerize comments on report cards, it would also appear that even personal comments have been replaced with even more general and stock statements routinely selected by all teachers.

It does, however, appear that the letter grade format is firmly embedded into the mindset of the American culture. H. Parker Blount (1997) notes:

> There are two things about school grades with which few would disagree. First, they are well entrenched. "For the general public," Brown and Craig (1977, 395) noted, "schools without tests and grades remain as inconceivable as schools without teachers, books, pencils, and paper." Second, teachers generally consider grading to be one of the least appealing parts of their jobs. (p. 329)

Despite some calls to replace this system with performance assessments, portfolios, developmental checklists and other alternative systems, there has been little change. Bumper stickers, which announce that "I am a proud parent of an honor roll student," suggest that the culture strongly values individual achievement and competition articulated through letter grades. Furthermore, public schools, influenced by this cultural mindset, have set up other sorting and screening mechanisms such as standardized tests, honors classes, and scholarships (Rich, 1993). In effect, these mechanisms enable the schools to encourage and reward students who compete, achieve, and strive for good grades.

In addition to the middle-class values of achievement, hard work, competition, respect for authority, and self-control, Rich discusses how teachers also value orderliness, thrift, cleanliness, and neatness. Hence, if we accept the notion that letter grades are here to stay, one needs to continue to research how these grades are determined. Do grades primarily reflect individual academic progress and achievement? Most members of the educational measurement community argue that a grade should reflect achievement at a particular point in time (Bigham Baron, 2000; Brookhart, 1993; Frary, Cross and Webber, 1993; Manke and Loyd, 1990, 1991). In practice, however, other non-achievement factors influence grading decisions such as attendance, effort, motivation and deportment (Bigham Baron, 2000; Cizek, Fitzgerald, Shawn, and Rachor, 1996; Cizek et al., 1995; Manke and Loyd, 1990, 1991; Stiggins, Frisbie, and Griswold, 1989). How then do the non-achievement variables, these more subtle or hidden influences such as personality, affective behavior, values and parental influence weigh into grading practices?

There is a considerable body of literature on the "hidden curriculum" in schools and how public schools have traditionally reinforced middle-class values such as achievement, hard work, competition, respect for authority, and self control. F. I. Ortiz (1988) concluded that teachers favor students who share their own values regardless of the students' measured ability. In a study by R. L. Allington (1983), the researcher concluded that teachers interact more with students for whom they hold high expectations. They also praise them more when they are correct and criticize them less

when they are wrong. The reverse occurs for students for whom expectations are low. This would suggest that teachers tend to hold higher expectations for those students who share their values. The question then becomes whether or not teachers also assign grades based upon a student's acceptance of these middle class values.

In a related study of grading practices of teachers in seven high schools, E. John Agnew (1985) found that teachers in the school which had the most minority students and lowest levels of parent education placed the least amount of emphasis on learning and achievement and the most on non-achievement factors i.e. behavior, attendance, and effort to award grades. Although he presented the finding with "trepidation" due to the small size of the school sample, he insisted that the issue was too intriguing to ignore.

In an extensive study on achievement and non-achievement criteria in grading, Josefa G. Nava and Brenda H. Loyd (1992) examined the teacher criteria used in grading and the weight given in a sample of 827 elementary and high school teachers from 18 school districts. Teachers reported that the most important criteria that they "should include" in grading were unit tests, announced quizzes, essays or term papers, effort and semester tests. Four of these five criteria are achievement-related. Only effort was not. Other areas that the teachers would probably include were classroom-related criteria such as projects, homework, book reports, class participation and classroom exercises. Areas that they would probably not include are criteria such as spelling, handwriting neatness, grammar on paper or tests, consideration for other students, and inappropriate behavior. Finally, the teachers indicate that they would "definitely not" consider a student's

socioeconomic status, gender, or parent's involvement in school activities as grading criteria. The study identified four factors for grading criteria: characteristics related to achievement or classroom (tests, quizzes, projects, papers); characteristics or behaviors that facilitate or interfere with learning (effort, cooperativeness, participation, ability level, inattention); academic characteristics not related to specific classroom content (spelling, grammar, handwriting, attendance, cutting classes, completing work on time); and characteristics that are related to overall school or classroom performance but are external to the classroom (socioeconomic status, gender, parental involvement).

Nava and Loyd (1992) suggest, however, that "what teachers say they will do in given certain situations is not what they do in actual situations" (p. 22). They suggest additional study is needed to find out what teachers actually do in real-life grading situations.

Purpose of the Study and Research Questions

The purpose of this study will focus on whether what teachers say about their grading criteria is actually practiced in assigning grades. There appears to have been no systematic study to determine whether responses given by teachers on surveys about grading criteria are actually followed in practice. This study will specifically address the following research questions:

Question 1: What are teachers' perceptions regarding the relative importance of achievement and non-achievement factors influencing grading practices?

Question 2: How much numerical weight do teachers ascribe to achievement and non-achievement grading factors?

Question 3: Is there a discrepancy between what teachers say ought to be the relative importance of achievement and non-achievement factors and the weight that is given in the actual assignment of grades?

Question 4: To what extent do teachers reward students with grades who exhibit other non-achievement factors closely related to middle class values such as effort, classroom behavior, attendance, respect for academic achievement, competitiveness, respect for authority and self control?

Question 5: To what extent do teachers grade differently based on student gender, race, grade level, family income, and classification (general education, special education, limited English proficient)?

Hypotheses

It is hypothesized that there is an incongruity between what teachers say and do in regard to grading practices. It is further hypothesized that "hidden" non-achievement factors play a more important role in determining grades than reported by teachers in surveys or questionnaires.

Significance of the Study

Although there has been considerable survey research on what teachers say they do in actual grading situations, little has been done to explore what they actually do in practice. This study is significant in that it will attempt to identify how strongly

achievement and non-achievement grading factors such as student effort, classroom behaviors, attendance, and student demographics consciously or unconsciously play into teacher decision-making. Admittedly, this research will only begin to gain some insight into one of the more complex, often "hidden dimension" of schooling, but it certainly can direct future discussion on teacher grading practices so that students and their parents have a better understanding of how these decisions are made. Perhaps only then can parents, teachers, administrators and policymakers begin to build some consensus on what factors should be reasonably and explicitly considered in assigning grades. Most importantly, perhaps, teachers will reflect more on what they say and really do in grading so that they can at least openly communicate their philosophies and standards to students, parents, and members of the school community.

Limitations

A study of this nature, which will include a relatively small sample of high school teachers and their grading practices, can only begin to identify some of the inconsistencies involving the incongruity between what teachers say and what teachers do. Additionally, the voluntary nature of teacher participation in the study may indeed skew the results since these volunteers are more willing to share their practices with others. This willingness may in itself indicate a more "reflective" and "open" sub group who has more often thought about factors that influence their final grade determinations. How one might solicit information from other more "closed" and perhaps less introspective sub groups is indeed problematic for any researcher. Even with this open

study group, one can never really measure how participants may be trying to provide those "socially correct" responses which they recognize are educationally sound, even though they know that is not necessarily what is really practiced as they grade students.

Definition of Terms

Achievement Criteria: A factor used in determining a grade based upon the amount of subject-specific content learned, thinking and reasoning skills demonstrated, and general communication skills demonstrated.

Attendance: A non-achievement factor used in determining a grade based upon two areas: absenteeism and tardiness. Absenteeism involves the number of days a student misses a class. Tardiness involves the number of days a student comes late to class.

Behavior: A non-achievement criteria category that involves a teacher's perception of the extent to which students followed classroom rules and procedures. It also involves a teacher perception of a student conforming to the preferred attitudes and values and behavior patterns of the teacher.

Effort: A non-achievement criteria category that involves a teacher's perception of how "hard" a student tried to succeed in the classroom setting. Included in this category would be the consideration of the extent to which a student completed classroom tasks on time and in an appropriate manner.

General Ability Class: A general ability class is the lowest ability group when students are tracked according to their prior academic performance in a particular subject area. In the school where the research is conducted, there are four ability levels with the highest being advanced placement (when offered in a particular subject area), followed by honors, college preparatory, and finally general ability. Students are placed by ability in these classes based on prior years grades in that subject, standardized test scores, and teacher recommendations. General ability classes typically consist of the lowest achieving students in a particular subject area.

Hidden Curriculum: "Those nonacademic but educationally significant consequences of schooling that occur systematically but are not made explicit at any level of the public rationales for education" (Vallance, 1977, p. 592). This would include those pervasive activities which involve the "inculcation of values, political socialization, training in obedience and docility, and the perpetuation of traditional class structure—functions that may be characterized generally as social control" (Vallance, p. 590).

Middle Class Values: The attitudes or characteristics that pertain to a respect for achievement, hard work, competition, authority and self-control.

Non-Achievement Criteria: A factor used in determining a grade based on effort, behavior, and attendance.

CHAPTER II

Literature Review

Grading History and Purposes

Robert J. Marzano (2000) notes that the precise history of grading practices is a matter of some debate, "although most historians agree on a number of significant events" (p. 11). According to Marzano, historians agree that prior to the 1700's, students were not given grades, but were given feedback on their performance through narrative comments. In 1780, Yale University began using a four-point scale that is used today in most colleges and universities. Gradually other universities began to move away from narrative approaches to more quantitative approaches. In 1877, Harvard University implemented a scale that classified students according to six divisions:

Division 1: 90 or more on a scale of 100

Division 2: 75-90

Division 3: 60-74

Division 4: 50-59

Division 5: 40-49

Division 6: Below 40

Marzano (2000) observes, "It is not hard to see the beginnings of the A, B, C, approach used in the Harvard divisions. In fact, it wasn't too long after Harvard began using

divisions that Mount Holyoke College started using letter grades" (p.11). Holyoke grouped grades as follows:

A: Excellent = equivalent to percents 95-100

B: Good = equivalent to percents 85-94

C: Fair = equivalent to percents 76-84

D: Passed = barely equivalent to 75

E: Failed = below 75

Marzano asserts that this system for the most part is still in place today. He cites a study of over 1,700 school districts by Robinson and Graver in 1989 that concluded that 80% of schools use letter grades starting in fourth grade. As previously presented in Chapter 1, Marzano also identified a 1998 study conducted by The College Board which reported that in 3,113 high schools surveyed, 91% reported using A-F or an equivalent numeric grading scheme. In indicting this traditional grading system, Marzano cites three inherent problems:

> (1) it allows, and even encourages, individual teachers to include at their own discretion, different non-achievement factors in the assignment of grades; (2) it allows individual teachers to differentially weigh assessment; and (3) it mixes different types of knowledge and skills into single scores on assessments. (p. 13)

Marzano suggests that "how a school or district defines the purpose of grades dictates much of the form and function of grades" (p. 14). He notes that for at least several

decades grades have served a variety of administrative functions which involve decisions about students regarding matriculation and retention, student placement when students transfer from one school to another, and student admission into college. He cites P. W. Airasian's assertion in 1994 that schools also need grades to determine class rank, and graduation credits (p. 14).

Despite the more practical function of grades, an idealistic Marzano argues that most important function of grades should be to provide information and feedback to students. He notes grades should be referenced to content-specific learning goals. A student's knowledge gain, for him, should be the basis for grading. Simply put with Marzano's approach, the point of reference for each student is the level of skill or understanding that a student begins each grading period. Hence, each student has their unique point of reference and grades should be assigned based upon progress demonstrated beyond this starting point. In theory, each student would then be judged based upon a combination of factors: "(1) understanding of and skill in the content, (2) effort, and (3) aptitude" (Marzano, p. 23). However, for this researcher the problem still rests with a failure of teachers to make any of their grading practices explicit. The research suggests that individual teachers use and apply many factors in grading including "knowledge gain" or academic achievement as well as non-achievement factors such as effort, behavior, and attendance. As Marzano asserts the decision in terms of weighing all of these factors in determining grades is very much a value-driven decision.

However, several research studies do offer some insight on which factors that teachers "say" tend to be the most important.

Research on Teacher Grading Criteria

In the research reviewed, academic achievement appears to be the strongest factor in determining grades. There does appear to be considerable variation in which schools weigh and apply those more subjective non-achievement factors such as effort, behavior, and attendance. Although among these factors, effort is reported to be the second strongest variable. As described in Chapter I, Nava and Loyd (1992) examined the teacher criteria used in grading and the weight given in a sample of 827 elementary and high school teachers from 18 school districts. The mean teacher responses as to what criteria should be included in grading were based on a four-point scale: 1, definitely include; 2, probably include; 3, probably not include; and 4, definitely not include. Three achievement factors showed the highest means: unit tests, 1.28; announced quizzes, 1.45; and essays or term papers, 1.59. However, several non-achievement factors scored means which indicate that teachers would most likely consider them in determining grades: effort, 1.61; completing work on time, 1.77; improvement during grading period, 1.77. Following these factors were regular attendance, 2.37; cooperativeness, 2.42; and inappropriate behavior, 2.71. One could conclude that the use of these factors varies from teacher to teacher since the means rest between those factors which would be probably included and those which would probably be not included.

From their study result, Nava and Loyd conclude that teachers do use both achievement and non-achievement criteria in grading. They note:

> Grades reflect not only achievement, but also other traits and behaviors that are, in one way or another, related to achievement. Examples of achievement criteria that teachers use are tests, quizzes, essays or term papers and projects. Non-achievement criteria include effort, participation in class and group activities, improvement during grading period from one grading period to another, and other behavioral traits such as cooperativeness and cheating. (p. 18)

Nava and Loyd suggest that teachers tend to use a variety of criteria and vary the weight that they give to each criterion. Furthermore, what grades indicate seem to be defined by criteria that a particular teacher uses in a particular classroom: "thus, grades may have varied meanings or components, depending on the teacher and/or the classroom" (p. 19). For them, the meaning of a teacher's grade in one classroom most likely has a different meaning than a grade in another classroom. Hence, grades are classroom-specific and must be interpreted as such.

Nava and Loyd also assert that elementary and secondary teachers differ in their approach to grading. Whereas elementary teachers use a more "global assessment" of achievement particularly related to the factor involving student improvement from marking period to period, secondary teachers rely more on student assessments and products: tests, quizzes, projects, homework. Both groups do, however, use non-achievement criteria such as effort, attitude, and behavior in grading. Aside from the

question of whether consideration of achievement and non-achievement factors in grading is a form of "double jeopardy, " what disturbs Nava and Loyd is that there is no information on how teachers measure non-achievement criteria. Although admittedly grades are classroom specific, at least grades based on student assessments and products can be more objectively reviewed, understood by the learner, and evaluated for fairness. However for this researcher, knowledge about these non-achievement factors remains a mystery and still an important part of the hidden curriculum in the schools. Nava and Loyd conclude that all components of a grade should be clearly defined by teachers and clearly communicated to students: "If teachers decide to include non-achievement criteria like effort and improvement, these criteria must be incorporated in the grading process in a consistent manner" (p.22).

In addition to the Nava and Loyd study, two other extensive studies were conducted by Glen E. Robinson and James M. Craver (1989) and Susan Austin and Richard McCann (1992). Robinson and Craver surveyed 1,733 districts on grading policies and found that 84.4% of the districts reported academic achievement as the primary grading criterion. Effort was again recorded as the second most important variable with 28.5% of the districts reporting it as a grading criterion. Behavior (5.4%) and attendance (10.3%) were also reported to a lesser degree as factors in grading. Austin and McCann focused on reviewing written grading policies in 144 school districts in analyzing grading policies, practices, and procedures. Again, academic achievement was noted as the primary grading factor in 79% of the school board and district

documents and 99% of the school-level documents. Effort followed as a factor in 27% of the district-wide documents and 44% of the school-level documents. Behavior and attendance appeared to be a more significant factor than in Robinson and Craver's study. Behavior was indicated as a factor in 11% of district documents and 21% of school level documents. Attendance was mentioned in 14%of district documents and 17% of school-level documents.

In another related study of grading practices, E. John Agnew (1985) reviewed 389 teacher questionnaires from seven average size school districts in California. Several items on the questionnaire asked questions regarding how grades were awarded, that is, how teacher actually calculate and award grades to students. The mean responses for all teachers were based on a five point scale: 1, not important; 2, slightly important; 3, moderately important; 4, very important; and 5, extremely important. Whether student work met or meets grade level criteria was rated the most important with a mean of 3.87. However, several non-achievement factors such as improvement and hard work did score means that indicate that teachers viewed these areas as moderately important. Improvement was second with a mean of 3.87, followed by how hard a student worked, regardless of actual level of performance with a mean of 3.30. How a student's work compared with other students exhibited a mean of 2.82. The lowest mean in overall important was student behavior with a mean of 2.61. However, Agnew reported that teachers who worked mostly with low and remedial students were the least likely to compare students with one another and were most likely to use student behavior as a

stronger factor in grading. As this researcher noted in Chapter I, Agnew also found that teachers in the school which had the most minority students and lowest levels of parent education placed the least amount of emphasis on learning and achievement and the most on non-achievement factors i.e. behavior, attendance, and effort to award grades. Although Agnew presented the finding with "trepidation" due to the small size of the school sample, he implied that this issue needed further investigation.

Laurence H. Cross and Robert B. Frary (1999) suggest "...there is widespread agreement among measurement specialists that grades, at least in academic subjects, should be based exclusively on measures of current achievement and that growth, ability, effort, conduct and non-achievement factors should not be considered" (p. 53). They cite a study by P. W. Airasian and A. M. Jones in 1993 that noted that is was difficult for most teachers, especially elementary teachers, to make grading judgments separate from their knowledge and perceptions of students. They add that Airasian in 1996 warned that effort, motivation, interest, deportment, and personality factors should not be the dominant influence in determining grades. Even though Airasian believed that these non-achievement factors used in grading for borderline cases operate to the benefit of the student and the "psychic comfort" (p. 55) of the teacher, Cross and Frary are concerned with the flagrant use of this hodgepodge grading approach. They argue that grades should communicate as objectively as possible the levels of educational attainment in the subject: "To encourage anything less, in our opinion, is to distort the meaning of grades

as measures of academic achievement, at a time when the need for clarity of meaning is greatest" (p. 56).

Cross and Frary were invited to conduct research on suspected "hodgepodge grading practices" by a school district serving approximately 150,000 students. Two instruments were developed one for teachers and one for students. In the teacher instrument, consisting of 54 forced-choice items, teachers were asked to describe their actual grading practices, their opinions regarding testing and grading, and to identify their school level, teaching experience, and teaching field. The forced-choice student survey asked students to respond to teacher grading practices and indicate their satisfaction with the grading process. Students were also asked to provide various personal information including gender, ethnicity, perceived level of academic achievement, and effort expended in the classroom. Questionnaires were received from 465 teachers and 8,664 students. In reviewing items that assessed the extent extraneous non-achievement factors are considering in determining grades, 49% of the teachers reported that ability was a factor. Moreover, 72% of the teachers reported that raise grades particularly for low ability students. Furthermore, only 20% of the teachers indicated that they would not consider growth, independent of final achievement, as a factor. Although Cross and Frary argue that poor conduct and attitudes should be dealt with separately and not be a criteria in grading, they report that 39% of the teachers acknowledged that conduct and attitude were considered in determining grades. An even larger percentage of students,

71% endorsed this practice and indicated that some (30%) or most (33%) of their teachers used these behaviors in determining grades.

Cross and Frary conclude by discussing why there has been no call for reforming the reported "hodgepodge" grading practices in the schools. They suggest that there appear to be a common understanding that grades often represent a hodgepodge of factors such as attitude, effort, conduct, growth, and achievement. They note, "That grades are likely to be biased by the subjectivity teachers use in assessing and combining these ingredients may be perceived as less of a concern that discounting effort, ability, attitudes, and growth as irrelevant considerations" (p.70). However, they believe that the measurement community is obligated to identify the technical complexities of measuring and including these factors in grades and of the bias that these factors may introduce to grades.

Researching this issue of bias as it applies to a large, racially diverse, and urban school district, George Farkas et al. (1990) reviewed data for 486 students enrolled in 22 middle schools supplemented with teacher questionnaires. Reviewing scores from the Iowa Test of Basic Skills, they found that low-income students score lower than do high-income students. In their analysis of teacher judgments of student work habits, the results showed a large and significant negative effect for males and an enormous and positive effect for Asians. In looking at the behavioral factor related to student disruptiveness, the results indicated that "...males are more disruptive than females, the poor less disruptive than the less poor, Asians much less disruptive than Anglos, and African-Americans

more disruptive than Anglos " (p. 134). It is significant that African-American students are reported to have better working habits when they have an African-American teacher. Yet African-American teachers consider African-American students to be more disruptive than white teachers find African-American students. Farkas et al. suggest that the higher disruptiveness may be the result of a more intense interaction pattern or that African-American teachers have high aspirations for African-American students and hold them to a higher standard of conduct than white teachers. They also suggest the possibility that African-American teachers are disproportionately assigned to classes with the most disruptive African-American students.

When Farkas et al. examined the grades of students enrolled in required seventh and eight grade social studies courses, they again recorded statistically significant negative effects, although modest ones, for males and African-Americans. The most important positive non-achievement factor was work habits, followed by the negative effect of absenteeism. In summation, Farkas et al. strongly assert:

> Most striking is the powerful effect of student work habits upon course grades. This confirms the notion that, as alleged by both functionalists and revisionists, teacher judgments of student non-cognitive characteristics are powerful determinants of course grades, even when student cognitive performance is controlled. (p. 140)

Stated simply, they conclude that although content mastery is a significant determinant of school achievement, teachers grade on much more than content mastery alone. For

Farkas et al, the evidence suggests that teachers reward "citizenship" over and above cognitive performance.

In exploring the complexities of grading using a qualitative design, Susan M. Brookhart (1993) collected data from 84 classroom teachers that included teachers from all grade levels: K-4 (32%), 5-8 (30 %), 9-12 (23%) and other (16%). Her instrument presented different scenarios related to grading and multiple choices for responses about what the teacher would do in a particular situation. Open-ended questions were also used to allow teachers to explain in more detail why they made a particular choice. These same scenarios had been used in Manke and Loyd's research to investigate what achievement and non-achievement factors are used in grading. However, Brookhart's study was designed to explore the reasons behind the teachers' grading practices. She concluded that teachers view grades as a form of pay: "To teachers, grades are something students earn; they are compensation for a certain amount of work done at a certain level" (p. 139). Yet Brookhart asserts that achievement is only part of this construct, but not the whole of it. In regard to achievement, teachers function as judges of performance, but Brookhart reports that teachers also simultaneously function as student advocates. In explaining the advocacy role, she cites research that child-centered orientations are powerful and persuasive among teachers. Brookhart poses that concerns about "consequences" to students may be expected to have more influence on grading practices. Her study, as did the earlier ones cited, indicates that teachers consider effort as well as achievement in assigning grades. She notes that generally an average or above average

student gets the grade earned, but the below average student gets "a break" if there is any way to justify it. Here, the teacher, as a student advocate, weighs non-achievement factors such as whether the student is academically able, whether the student is trying, or whether a student has demonstrated improvement. Brookhart concludes, "The grading process, as currently practiced, leaves teachers to work out the compromises they must make in their dual role as both judge and advocate for their students" (p. 141). Her study supports the notion that teachers mix the roles of judges and advocates differently for students of different abilities. Hence, grading involves teachers making value judgments about students particularly those associated with non-achievement criteria.

Despite concerns voiced by Cross and Frary and members of the educational measurement community over teachers using any non-achievement factors in determining student grades, the literature does support that to varying degrees these factors are at work. Thomas R. Guskey (1994) has urged that teachers base their grading on three learning criteria: product, process, and progress. Product is defined as what students know and are able to do. Process involves effort, work habits, class participation, and attendance. Progress considers improvement or "learning gain." Guskey argues that grading and reporting are inherently subjective and that subjectivity in this process is not always a negative: "Because teachers know their students, understand various dimensions of student work, and how clear notions of progress made, their subjective perceptions may yield accurate perceptions of what students have learned" (p. 16). He does, however, warn that when subjectivity translates in bias,

negative consequences can result. For example, he cites a study by J. R. Hill in 1991 that concluded that teacher perceptions of student behavior can significantly influence judgments of academic performance. Hill noted that students with behavior problems often have no chance of receiving a high grade because their behavioral infractions overshadow their performance.

Guskey suggests that training programs are needed to help teachers identify and reduce these negative effects and lead to greater consistency in judgment. However, he does report that few teachers receive adequate training in grading as part of their professional development programs. Guskey appears to acknowledge that teachers will continue to use non-achievement factors in determining grades. Therefore, whether or not one agrees with Cross and Frary and the measurement community that these factors should be separated from the grading process, the literature does support that non-achievement factors are a criteria, albeit to a lesser degree, in determining student grades. The challenge then becomes to determine how much these factors influence grades and whether are not information reported in various studies accurately reflect what is actually being done by teachers in practice.

The Hidden Curriculum

Therefore if one accepts the notion that all grading practices involve decisions that are often driven by teacher assessment of non-achievement factors as well as related personal and school values, it is equally important that these core values be understood and scrutinized. Public schools have traditionally reinforced middle-class values such as

achievement, hard work, competition, respect for authority, and self-control. As John Martin Rich (1993) notes, "Above all, they place emphasis on the belief that people who apply themselves get ahead in school and in life" (p. 164). Rich suggests that schools avoid any discussion of the people who get ahead based on family connections, wealth, power, and influence. He continues saying, "The prevailing value is on personal achievement—to achieve one must compete, but compete fairly" (p. 164). For Rich, public schools, therefore, set up sorting and screening mechanisms such as grades, tests, special classes, honor rolls, and scholarships. He also argues that although the American schools support the idea of democracy as the best form of government, schools are not organized democratically. For Rich, schools are usually organized bureaucratically with a hierarchical power structure. Schools insist that students learn to settle differences through discussion, negotiation, and compromise rather than through coercion or violence. Through this process, they believe that students will develop "character," and the schools will be conducted in an orderly environment.

Rich argues that students who have not had these school values reinforced in the home are at a distinct disadvantage in schools. For him, this "hidden curriculum" creates problems when a student's family or social class values are not aligned with the school norms. Teachers reinforce these school norms in subtle ways. Rich outlines some of the research on teachers in this area. As this researcher noted in Chapter 1, Rich cites a study by F. I. Ortiz in 1988 that concluded that teachers favor students who share their own values regardless of the students' measured ability. In studies by R. L. Allington in 1983

and L. Grant and J. Rothenberg in 1986, these researchers concluded that teachers interact more with students for whom they hold high expectations. They also praise them more when they are correct and criticize them less when they are wrong. The reverse occurs for students for whom expectations are low. This would suggest that teachers tend to hold higher expectations for those students who share their values.

In addition to the middle-class values of achievement, hard work, competition, respect for authority, and self-control, Rich discusses how teachers also value orderliness, thrift, cleanliness, and neatness. He concludes, "Middle-class children have an advantage over lower-class children, not only because their values are supported in school, but also because in middle class homes, more emphasis is placed on reading, learning, and getting ahead" (Rich, 1993, p. 165). In supporting this tendency toward a middle-class bias among teachers, Rich refers to a study conducted by the National Education Association in 1987 which reported that the largest portion of teachers in public schools come from middle-class and upper-lower class backgrounds. According to Rich, this NEA survey reported that nearly 40% of new teachers under 30 were raised in white-collar homes.

Rich points to a need for teachers to become aware of their own value orientations. They must identify those values that are fostered in their classrooms that stem from their own social class backgrounds. They must recognize how these values may influence their behavior and attitudes for students from different social classes. With this self-awareness, they must make an effort to understand the social differences and the reasons for the differences. In many respects, he is asking teachers to be more

tolerant of diversity. With these recommendations, Rich does not appear to be suggesting that school or middle class values are necessarily wrong, but they can influence the manner in which teachers positively and negatively communicate with students. Perhaps, more damaging is the way in which their values might influence their low or high expectations of students in regards to achievement.

In outlining the research on the hidden curriculum, Gisela Ernst (1993) recognizes that although the traditional curriculum does an excellent job of presenting middle American perspectives, it reinforces a sense of middle class superiority and "degrades the image of cultural minorities" (p. 88). She agrees with Rich in noting that the values encouraged by teachers in the classroom generally mirror the beliefs and life styles of the middle class. Citing research in this area, Ernst refers to the assertion by S. Aronwitz and H. A. Giroux in 1985 that schools, concerned with consensus and conformity, legitimize the interests and values the culture of mainstream America. They also "marginalize" the life experiences of subordinate groups by ignoring the histories of women, racial minorities, and the working class in school curricula. She also cites the work of J. Anyon in 1980 who criticized the social studies textbooks in the schools that were dominated by "trends" which supported mainstream values: (a) an overemphasis on social harmony and political consensus ignoring social struggles and class conflicts, (b) an intense nationalism, (c) an exclusion of labor history, and (d) a number of myths related to political, economic, and social life.

In presenting her argument for a multicultural classroom, Ernst describes a more neutral curriculum that promotes values, attitudes and behaviors that support cultural pluralism. She suggests that different groups of students working in a multicultural curriculum can learn to appreciate the diversity of all cultures while recognizing that cooperation among different groups does not necessarily emerge from those who share the same values. Her response to Rich's concern regarding the majority of public school teachers coming from middle class backgrounds would be to hire more school teachers and staff which reflect the cultural and ethnic pluralism within American society. It should be noted that the National Center for Education Statistics (1997) reported that in 1993-94 black, non-Hispanic students reflected 16% of public school students, while black, non-Hispanic teachers reflected only 9% of the teaching population.

In writing about the value systems common to Latino cultures, Carrie Rothstein-Fisch, Patricia Greenfield and Elise Trumbull (1999) speak how schools foster the values related to individualism viewing the student as an individual who should be developing independence. This valuing of individual achievement clashes with the value of "collectivism" common to many immigrants, particularly those among the rural poor from Mexico and Central and South America. They describe "collectivism" as a cluster of interrelated values that emphasize the interdependence of family members: "Within this value system, children are taught to be helpful to others and to contribute to the success of any group they belong to—beginning with the family" (Rothstein-Fisch et al., 1999, p. 64). They conclude that when collectivistic students encounter schools with

individualistic values, conflicts that are based on hidden values and assumptions can occur. As an example, they cited a kindergarten teacher who was asking students to describe the physical properties of a chicken egg. When one immigrant child tried several times to talk about how she cooked eggs with her grandmother, her comments were ignored in favor of another child who described the yellow and white colors of the eggs when they were cracked. Whereas children from collectivistic cultures make meaning of objects in connection with social interactions, the teacher here expected students to describe eggs as isolated physical entities. To address this value conflict, Rothstein-Fisch et al. developed the Bridging Cultures Project, a research-based, professional development program, designed to introduce elementary school teachers, serving large Latino immigrant populations, to a new way of understanding values that influence the behavior of these learners.

Writing in support of the activities related to the Bridging Cultures Project, Bianca Quiroz, Patricia Greenfield, and Marie Altchech (1999) discussed how some of the cross-cultural conflicts related to individualistic and collectivistic cultures might be addressed in parent-teacher conferences. One type of conference that allows the child to become an active participant with the parent and teacher violates the collectivistic value that encourages children to respect and look up to their parents as authority figures. One of the alternative formats proposed in the Bridges Cultures Project was to set up preliminary group conferences for all parents and their children. The children presented their parents with folders that contained test scores, report cards, and parenting materials.

The teacher then explained to the group how to interpret the test scores including a discussion of percentiles and stanines. Time was also spent on explaining the report card format, the meaning of the grades, and the overall expectations of the instructional program. Finally, the teacher offered advice on what the parents could do at home to help their children progress academically. According to teachers involved in this alternative format, this group conference created a less threatening environment than the individual conference format. Parents asked questions that benefited the entire group, and parents supplied company and support for each other. Parents also had the option of signing up for private conferences at a later time. In reviewing the discussion of Quiroz et al., the implication is that it is not only important to develop professional development programs to help teachers understand the different values that influence the behavior of their learners, but also to seek changes in the processes and ways in which the schools communicate with parents in order to minimize value conflicts. They also argue that the behavior of teachers themselves is not specific to a particular ethnic group. Latino teachers, like others, have often been acclimated to the "individualistic" process as they have moved through college and teacher training programs. The writers argue that they will not necessarily be attuned to the potential cross-cultural conflicts. They conclude that, "Culture lies in values and practices, not in ethnic labels" (Quiroz et al., 1999, p. 68).

Elizabeth Vallance (1977) also speaks of a pervasive hidden curriculum and its function as "the inculcation of values, political socialization, training in obedience and

docility, and the perpetuation of traditional class structure—functions that may be characterized generally as social control" (p. 590). She defines the hidden curriculum as "those nonacademic but educationally significant consequences of schooling that occur systematically but are not made explicit at any level of the public rationales for education" (p. 592). Vallance suggests three dimensions in which the hidden curriculum may be viewed: (a) in the contexts of schooling, including the class structure and the whole organizational pattern of the educational establishment as a microcosm of the social value system, (b) in the processes operating in schools including values acquisition and socialization, and (c) in the differing degrees of "intentionally" or the depths of "hiddenness" ranging from incidental and quite unintended results of schooling to those deeply embedded in the historical social function of education. It would appear that Rich's identification of the traditional middle class values reinforced in the schools are those deeply embedded in school culture and in some respects, intentional in nature. However, his description of the negative teacher behavior toward those students who do not share traditional values may not for many teachers be a conscious or intentional act. It is for this reason that Rich seeks greater self-awareness in teachers.

William Ayers and William Schubert (1993) also speak of the dilemma of identifying those implicit and explicit values taught in the classroom. For them, the issue of what values should be conveyed should be placed out in the open in the classroom allowing the learner to ask, "What is worthwhile? What is valuable to think about, study, do, be, and become?" (p. 18). Similarly, John Portelli (1993) argues that since the hidden

curriculum always has a normative or moral component, educators have a responsibility to make the hidden curriculum as explicit as possible.

Michael Apple (1995) in writing about the hidden curriculum suggests that it involves more than the facts and skills that educators plan to teach, and that:

> The curriculum needs to be connected to the larger environment of the classroom and the experiences, planned and unplanned, that students have there; and because schools are connected to the larger society, with all of its unfortunate inequalities, the curriculum should take in account the wide range of social messages that both students and teachers receive there. (p. 1)

For Apple, the hidden curriculum consists of the "tacit" social and institutional values that are inculcated over many hours, days and years. He suggests that although these values may be taught in an unconscious fashion, they are the most powerful messages communicated by schools. He cites research that shows that the messages communicated in a school's hidden curriculum sometimes support class, race, and gender divisions in the larger society.

Apple divides the hidden curriculum into three areas: (a) values taught by the school and through teacher-student classroom interaction, (b) hidden social messages in the instructional materials, and (c) the knowledge that is missing in the communicated and planned curriculum. Two values that he notes that are taught to all students are conformity and competitiveness. The competitiveness value is supported by the public schools' obsession with individual and group testing and other assessments. He notes

that the value messages in the schools may not be the same for each group. For example, Apple notes that girls may be given less encouragement in science and in mathematics classes than boys. He also offers that boys might also be encouraged to be more aggressive and physical in the way they play than girls might. Whereas Rich described the general middle class values promoted for all students, Apple suggests that another layer of selective values are reinforced which are based more on a student's social class, race, and gender. However like Rich, he also is concerned with teachers who may have preconceived notions about individual students' abilities to achieve that are based on their perceptions of the students' ethnic or socioeconomic backgrounds.

Writing a few years later, Apple (1998) observes that "students in most schools and in urban centers in particular are presented with a view that serves to legitimize the existing social order..." (p. 60). Apple is concerned that men and women are not viewed as creators of their own values, but as receivers of the values of the existing social order. In addressing the overt or planned curriculum in the schools, Apple speaks of a hidden curriculum where a "selective tradition" operates. For him, the knowledge of some groups is taught while another group's knowledge is omitted. For example, he mentions history textbooks that focus on military campaigns and presidential administrations that ignore or only briefly mention contributions of unions, minorities, and women. Like Rich, Apple does not argue that all of the values communicated in the hidden curriculum are necessarily negative. For example, he cites students learning how to cooperate is a positive consequence of schooling. However, he implies that educators need to

scrutinize this "selective curriculum" in order to more fairly develop a neutral curriculum which serves all groups.

William Bigelow (1990), a high school teacher in Portland, Oregon believes that it is the teacher's responsibility to have students plays the role of social researchers, investigating their own school lives. He asks students to actually research the curriculum—both explicit and hidden—at their own school. Students are asked to observe their classes as if they were attending them the first time, observing the teaching methodology, the class content, and the grading procedures. In their logs, they are asked to reflect on the kind of knowledge and understandings that are valued in the classroom and the relationships that are encouraged among students. Finally, they are asked to assess whether their teachers promote questioning and critique or obedience and conformity. For Bigelow, teachers must also empower students to explore the nature of the hidden curriculum in the classrooms.

David Darling (1998) offers some suggestions to educators on how to deal with the hidden curriculum. Beyond simply revealing the hidden curriculum to the student, the teacher should discuss it and sensitize students to the "everyday subtle influences that condition them" (p. 1). Although speaking more about the teaching materials and the curriculum than about the individual values of the teachers themselves, he suggests that in developing lesson plans teachers should identify and communicate the hidden lessons that are the unconscious parts of the curriculum. Hence, if the overt curriculum selectively excludes the contributions of all groups as Apple suggested earlier, then

teachers must actively seek to articulate these omissions in the course of their lessons.

A common theme that is presented by most of these theorists is that all those involved in schooling must be equally attuned to the other dimensions of the hidden curriculum. As Vallance suggests, they must be aware of the contexts and processes of schooling, including the whole organizational pattern of the educational establishment as a microcosm of the social value system. What messages are educators sending in the way schools organize their schedules, group by abilities, reward and rank their students, and interact and communicate with parents from different socioeconomic groups, races, and cultures? For example as Quiroz et al. have suggested, have educators looked at the ways that they have traditionally conducted parent-teacher conferences? Have they considered that group conferencing might satisfy the values and needs of those parents with "collectivistic" orientations? If schools indeed have embraced certain middle class and traditional values for all students, have they clearly identified them and communicated them to their constituents? Have they also involved parents and the community in affirming and supporting these values?

As Apple has noted, have schools identified the hidden social messages embedded in their instructional materials? Have they scrutinized all of the "knowledge" that is missing in the communicated and planned curriculum? And in doing so, have they ignored the histories of women, racial, minorities, and the working class in the curricula as Ernst has alleged? Have they also communicated different value messages to and standards for different groups in the school based on their class, gender, ethnicity or race?

Have they, for example, developed subtle non-supportive behaviors toward girls in science and in mathematics? Have they developed a set of different standards in the ways in which boys and girls are expected to behave? Have schools also inspected the values that schools are fostering through their extracurricular programs?

Furthermore, schools must take an anthropological look at the middle class values that Rich suggests are fostered in the schools. These middle-class values such as achievement, hard work, competition, respect for authority, and self-control must be examined. Are these the only values that schools need to instill in their learners? Have they promoted the individual values of independence and achievement and ignored the needs of other children whose values are based on family interdependence, helpfulness and group success? What about the other related values which de-emphasize competition and stress cooperation and teamwork. Are schools sending conflicting signals related to values? Should students be encouraged to be selfishly competitive in the classroom to secure top grades, but then asked to make individual sacrifices for the good of the team on the athletic field? What about the belief that students should not blindly accept all authority? Should schools seek to develop in learners the ability to question rules and policies that they see as unjust? At what point is conflict itself a desired value when confronting social injustice? The literature certainly suggests that there are more questions than there are answers regarding the hidden curriculum. It is indeed obvious that these issues are varied and complex. Although these issues extend beyond a consideration of teacher grading practices alone, this study will attempt to investigate and

scrutinize at least one of the hidden dimensions of schooling. This study will try to look at teacher grading practices as one of the educationally significant consequences of schooling that occurs systematically but often is not made explicit at any level of the public rationales for education.

CHAPTER III

Methodology

Nature of the Problem

All of the studies cited on grading in Chapter II have relied on teachers reporting in surveys what criteria they have considered in determining student grades. When they report that classroom achievement or "knowledge gain" is the primary factor, followed by effort, and less importantly behavior and attendance, the researcher is expected to accept their word at "face value." As Nava and Loyd (1992) have suggested, there is still a need to determine whether what teachers say they do is what they actually do in real grading situations. Hence, given the type of studies that have been done in the past, it became necessary to design a study that addresses whether teachers' espoused grading philosophies are consistent with their practices. It is equally important to determine if those non-achievement factors such as effort, behavior, attendance, and middle class values, whether intentional or not, play a more important role in assigning grades. Similar to other studies, a survey instrument was designed to collect information regarding teachers' articulated grading criteria. However, teachers were also asked to "rate" or grade students in a A-B-C-D-F format in terms of achievement and those four aforementioned non-achievement factors: effort, behavior, attendance, and middle class values. This grading was done after the teacher had already posted a grade in that subject area for the marking period. Teacher demographics in terms of age, gender, race,

teaching experience was secured from a district database. Student demographic data was also collected to include information regarding gender, race, grade level, student classification (regular education, special education, and limited English proficient), and family income.

Hence, not only the issue of the consistency of teachers' stated grading philosophies and practices were explored, but also whether other teacher and student variables can lead the researcher to conclude what other factors may be playing into the determination of a grade. For example, do teachers weigh achievement and non-achievement factors differently? Are grades adjusted or equally distributed regardless of a student's race, gender, and income level? Are bilingual or special education students graded differently than regular education students?

Sample

The sample for this study was drawn from a school district serving over 3,100 students in Central New Jersey, which consists of three K-5 elementary schools, one central sixth grade school, and a 7-12 middle/high school. The student population is ethnically diverse: 34% white, 41% Hispanic, 18% black, and 6% other native origin. The New Jersey Department of Education (2001) divides its 573 school districts into eight district factor groups (DFG) based on the socioeconomic status of the residents in each district. The following demographic variables were used in determining the DFG designations: adult high school graduation rates, college attendance rates, occupational status of household members, population density, median family income, unemployment

rates, and poverty levels. These groupings were updated in 1992 based on the 1990 United States Census. Of the eight groups, the first lowest socioeconomic designation, the *A* group includes the 35 largest and poorest urban districts in the state including Newark, Jersey City, Camden, and Trenton. The highest socioeconomic designation, the *J* group, includes the 15 wealthiest suburban districts including Franklin Lakes, Upper Saddle River, Millburn, and Montgomery. Positioned somewhat below the middle in socioeconomic status with 87 other districts in a *FG* category is this district being studied. The district was selected not only because it is positioned generally in the middle with regard to socio-economics, but also because of its significant minority student population of 66% which stands in stark contrast to its teaching population which is 95.5% white. Although the DFG group looks at socioeconomic status based on resident population, the school population had 32.1% of its population qualifying for free or reduced lunch as of October 15, 2000 under Federal Department of Agriculture Bureau of Child Nutrition Program guidelines.

For the purposes of this study, twenty-nine secondary teachers (grades 9-12) were solicited for participation. Aside from responding to a three-part survey, teachers were asked to grade ten systematically selected students on achievement and non-achievement factors in the first general ability classes in their daily schedule. As defined in Chapter I, a general ability class is the lowest ability group when students are tracked according to their prior academic performance in a particular subject area. In this high school, there are four ability levels with the highest being advanced placement (when offered in a particular

subject area), followed by honors, college preparatory, and finally general ability. Students are placed by ability in these classes based on prior years grades in that subject, standardized test scores, and teacher recommendations.

After identifying the general ability class, they selected every other student on their class roster until they reached a total of ten students. General classes were selected in order to examine a more consistent academically low to average population that tends to be more diverse in terms of student demographics. Participation by teachers was voluntary and anonymous. The instrument will be described in detail in the next section of this chapter.

Sixteen teachers (55%) responded to the survey. Of this group, 68.8% (n= 11) were female and 31.3% were male (n= 5). All of the participants were white. Thirty-eight percent (n= 6) were English teachers; 25% (n= 4), mathematics; 13% (n= 2), science; and 25% (n= 4), social studies. Fifty percent of the teachers (n= 8) had a bachelor's degree and 50% of the teachers (n= 8) had a master's degree. The average number of years of teaching experience was 16 years ranging from 0-36 years, and the average age was 46 years. Table 1 reports ranges in experience and age along with the means and standard deviations for the 16 teachers.

Table 1

Descriptive Statistics for Teaching Experience and Teacher's Age

Variable	n	M	SD
Teaching Experience	16	15.88	12.93
Teacher's Age	16	45.81	11.41

Information regarding 160 students was collected during this study. Of this group, 46.9% (n= 75) were female and 53.1% were male (n= 85). In regard to race, 33.8% (n= 54) were white; 15.6% (n= 25), black; 45.6% (n= 73), Hispanic, and 5.0% (n= 8) were other. In terms of grade level placement, 44.4% (n= 71) were in grade 9; 16.3% (n= 26), grade 10; 19.4% (n= 31), grade 11; and 20.0% (n= 32), grade 12. Students were also classified as regular education, special education, and limited English proficient. In this group, 77.5% (n= 124) were regular education; 16.3% (n= 26), special education; and 6.3% (n= 10) were limited English. Finally, 33.2% (n= 53) were eligible for free or reduced lunch. As reported earlier, the total school population has 32.1% of its population qualifying for free and reduced lunch under Federal Department of Agriculture Bureau of Child Nutrition Program guidelines. This study sample is a good representation of the entire school population.

Tables 2-6 report frequencies and percents related to gender, race, grade level, classification, and income levels of the 160 students.

Table 2

Frequencies for Student Sample by Gender

Variable	n	%
Female	75	46.9
Male	85	53.1
Total	160	100.0

Table 3

Frequencies for Student Sample by Race

Variable	n	%
White	54	33.8
Black	25	15.6
Hispanic	73	45.6
Other	8	5.0
Total	160	100.0

Table 4

Frequencies for Student Sample by Grade Level

Variable	n	%
Grade 9	71	44.4
Grade 10	26	16.3
Grade 11	31	19.4
Grade 12	32	20.0
Total	160	100.0

Table 5

Frequencies for Student Sample by Student Classification

Variable	n	%
Regular	124	77.5
Special Education	26	16.3
Limited English	10	6.3
Total	160	100.0

Table 6

Frequencies for Student Sample by Student Income

Variable	n	%
Free Lunch	42	26.3
Reduced Lunch	11	6.9
Paid Lunch	107	66.9
Total	160	100.0

Instrumentation

A two-part instrument was designed for data collection in this research. The instrument was piloted with three secondary teachers prior to the actual study. Based upon interviews following the pilot, some minor revisions were made to clarify directions and terms. A copy of this instrument is located in Appendix A. Each of the five research questions were addressed and "operationalized" through the instrument as follows:

Question 1: What are teachers' perceptions regarding the relative importance of achievement and non-achievement factors influencing grading practices? Parts IA and IC

of the survey involve teachers rating thirteen grading criteria according to the degree of importance that each one should include in grading, along a five point, Likert-type scale: "not important, "somewhat important," "moderately important," "very important," and "extremely important." In Part IA, they rated the following eight factors:

A. How the students' work compares with that of classmates.

B. Whether a student masters the content taught in the course.

C. How much a student improves during the marking period.

D. How much effort the student exhibits during a marking period.

E. How well the student behaves in class.

F. Whether the student attends class regularly.

G. Whether the student arrives to class on time.

H. Whether a student values learning and achievement.

In Part IC, teachers used the same Likert-scale to rate each of the following factors:

A. Student's Respect for Academic Achievement and Learning

B. Student's Effort/Hard Work

C. Student's Competitiveness

D. Student's Respect for Authority

E. Student's Self Control

Question 2: How much numerical weight do teachers ascribe to achievement and non-achievement grading factors? Part IB asks teachers to weigh five grading factors: academic achievement, effort/hard work, general classroom behavior, attendance, and

overall character. They are asked to indicate the relative importance of each factor in determining student grades by entering a percentage from 0 to 100 so that the total sum of all factors adds up to 100%.

Question 3: Is there a discrepancy between what teachers say ought to be the relative importance of achievement and non-achievement factors and the weight that is given in the actual assignment of grades? The second part of the instrument involves teachers assigning A-B-C-D-F grades for 10 systematically selected students for the first general ability class in their daily schedule for each of the following factors: achievement, effort, behavior, attendance, and personal values. The students' actual grades for the most recent marking period are also collected from the district database. The data is analyzed to determine if there are any differences in the grading factor correlations by comparing those teachers who reported that greater than 80% of their grades are based solely on academic achievement with those that reported that less than 80% of their grade are based on this factor.

Question 4: To what extent do teachers reward students with grades who exhibit other non achievement factors closely related to middle class values such as effort, classroom behavior, respect for academic achievement, competitiveness, respect for authority and self control? Again, the second part of the instrument involves teachers assigning A-B-C-D-F grades for 10 randomly selected students in a randomly selected general ability class for each of the following factors: academic achievement, effort, classroom behavior, attendance, respect for academic achievement, competitiveness,

respect for authority, and self control. These grades are correlated with the actual third marking period grade given by the teacher.

Question 5: To what extent do teachers grade differently based on student gender, race, grade level, family income, and classification (general education, special education, limited English proficient)? In addition to data collected in Part II, other teacher and student data including demographics and report card grades for the most recent third marking period were collected from the district database. At all times, specific student information remained confidential.

Data Collection

Solicitation letters were sent to a total of 29 secondary teachers of English, mathematics, science, and social studies. A copy of the instrument was sent with the letter. The solicitation letter indicated that the objective of the research was to gather information regarding those factors that teachers use to determine grades. To minimize teachers giving socially acceptable responses during the study, they were not informed about the specific focus of the study. The letter also informed the teachers that their participation in this study was entirely confidential. Individual responses were not seen by anyone other than the researcher. Participants were also assured confidentiality by deletion of any identifying information after completion of the study. Teachers were also reminded that they may withdraw from participation without any negative consequences. Teachers were asked to complete the questionnaire and perform the grading activity for the first general ability class that appears in their daily schedule. Within that class, they needed to

systematically select every other student in their class until they reached a total of ten (10) students.

The study was conducted in April and May of 2001. The initial participation letters were mailed to 29 secondary teachers in early April. This mailing yielded 11 responses during a four-week waiting period. A second request was sent to the non-participants, and that produced another five responses for a total of 16. During this waiting period, the researcher learned that two of the non-participants had resigned from their teaching positions and had left the district. Therefore, given an actual pool of twenty-seven teachers, the response rate of 16 really reflected 59% of the invited participants. Therefore, the main data analysis applies to the 16 teachers who randomly selected and graded 10 general ability students each. This produced information regarding a total of 160 students.

Data Analysis

Although descriptive statistics i.e. frequencies and means were used to describe some of the survey data related to what teachers say about grading, the framework for most of the data analysis about what teachers do was correlational. With the exception of Pearson r, which was used to analyze partial correlations, Spearman rho was used as the primary correlational tool for the rank-ordered data. One-way Analysis of Variance (ANOVA) and independent t-tests were used to determine if there were any significant differences in means among teacher and student sub groups. The statistical software package SPSS 8.0 was used for data analysis.

CHAPTER IV

Results

Investigation of Research Questions

As outlined in Chapter I, the purpose of this study is to focus on whether what teachers say about their grading criteria is actually practiced in assigning grades. This study, as previously discussed, is designed to address the following questions:

Question 1: What are teachers' perceptions regarding the relative importance of achievement and non-achievement factors influencing grading practices?

Question 2: How much numerical weight do teachers ascribe to achievement and non-achievement grading factors?

Question 3: Is there a discrepancy between what teachers say ought to be the relative importance of achievement and non-achievement factors and the weight that is given in the actual assignment of grades?

Question 4: To what extent do teachers reward students with grades who exhibit other non achievement factors closely related to middle class values such as effort, classroom behavior, attendance, respect for academic achievement, competitiveness, respect for authority and self control?

Question 5: To what extent do teachers grade differently based on student gender, race, grade level, family income, and classification (general education, special education, limited English proficient)?

It was hypothesized that there is an incongruity between what teachers say and do in regard to grading practices. It was further hypothesized that "hidden" non-achievement factors play a more important role in determining grades than reported by teachers in surveys or questionnaires. In the next two sections, the results of what teachers say and do are discussed and summarized as they pertain to each of the aforementioned research questions.

What Teachers Say

The first two research questions seek an understanding of what teachers say about the relative importance of achievement and non-achievement factors in grading and how much weight they say they give to these grading factors in assigning grades. The data analysis related to these first two questions follows.

Question 1: What are teachers' perceptions regarding the relative importance of achievement and non-achievement factors influencing grading practices? As described in Chapter III, a teacher questionnaire was used to assess the importance and weight of achievement and non-achievement grading factors in evaluating students. The survey involved teachers rating grading criteria according to the degree of importance, along a five point, Likert-type scale: "not important, "somewhat important," "moderately important," "very important," and "extremely important." Frequencies of responses to the grading criteria in the survey were tabulated, and means and standard deviations are presented in Table 7.

Table 7

Means and Standard Deviations for Teacher Ratings of Achievement and Non-Achievement Criteria

Variable	n	M	SD
Content Mastery	16	4.44	.63
Student Effort	16	3.88	1.15
Student Improvement	16	3.44	1.09
Student Attendance	16	3.00	1.59
Self Control	16	2.94	1.57
Respect for Learning	16	2.88	1.41
Respect for Authority	16	2.81	1.52
Student Behavior	16	2.75	1.29
Student Values Learning	16	2.75	1.44
Student Work Comparison	16	2.50	1.15
Student Tardiness	16	2.44	1.41
Competitiveness	16	2.19	1.22

Table 7 indicates that the most important criterion that teachers use in determining grades is content mastery (M= 4.44) that falls between the "extremely important" (5) and "very important" (4) rating on the Likert scale. It should be noted that this was the only factor that was achievement-related. The other variables are all non-achievement criteria and mostly attitudinal in nature with the exception of the student work comparison factor. They have grouped themselves into two other clusters. Student effort (M= 3.88), student improvement (M= 3.44) and student attendance (M= 3.0) fell within the "moderately important" and "very important" cluster. The next cluster involved those factors which

fell within the "somewhat important" to "moderately important" categories: self control (M= 2.94), respect for learning (M = 2.88) respect for authority (M= 2.81), student values learning (M= 2.75), student behavior (M= 2.75), student work comparison (M= 2.50), student tardiness (M= 2.43) and competitiveness (M = 2.18). An important observation is that none of these factors fell into the "not important" or "somewhat important" range.

In analyzing whether any of the differences between means were significant by teacher gender, independent t-tests were used. In analyzing other independent variables such as subject taught, advanced degrees, teaching experience, and age, the Analysis of Variance (ANOVA) was applied. Race was not included in this analysis since all of the teachers were white. Based upon a pre-determined significance level of $p < .05$, there were no significant differences in gender, subject area taught, educational degree, or years of teaching experience. Tables 26-29 in Appendix B report the results of the t-tests and ANOVA analysis of these demographic factors. There were, however, significant differences ($p = .054$) based on teacher age in the importance they assign to competitiveness as a grading criterion. The ANOVA for teacher ratings by teacher age of the importance of all achievement and non-achievement factors including the competitiveness factor is presented in Table 30 in Appendix B. The means for three age groupings are presented in Table 8.

Table 8

Means and Standard Deviations for Teacher Ratings of Importance of Competitiveness as a Grading Factor

Teacher Age	n	M	SD
20-29 Years	2	4.00	1.41
30-39 Years	3	2.33	1.53
40+ Years	11	1.82	.87
Total	16	2.19	1.22

The analysis of this data suggests that the youngest teachers (20-29 years old) consider competitiveness a very important grading factor (M= 4.0), whereas teachers who are older (30-39 years old) consider this factor somewhat important (M= 2.33). The oldest teachers (40 years and older) rate this factor even lower but still moderately important (M= 1.82). Overall, teachers still do regard this factor at least as moderately important (M= 2.19) as they do with all the other factors rated in the survey.

Question 2: How much numerical weight do teachers ascribe to achievement and non-achievement grading factors? In the questionnaire, teachers were asked to weigh five grading factors: academic achievement, effort/hard work, general classroom behavior, attendance, and overall character. They indicated the relative importance of each factor in determining student grades by entering a percentage from 0 to 100 so that the total sum of all factors added up to 100%. Frequencies of responses to the criteria were tabulated and means and standard deviations are presented in Table 9.

Table 9

Means and Standard Deviations for Teacher Weighing of Achievement and Non-Achievement Criteria

Variable	n	M	SD
Student Achievement	16	70.63	19.14
Student Effort	16	15.81	9.00
Student Classroom Behavior	16	6.38	5.80
Student Attendance	16	5.00	5.16*
Student Character	16	2.25	3.61**

* Seven of the sixteen teachers surveyed or 43.8% said that 0%of their grade is based on attendance. These outliers explain why the standard deviation exceeds the mean.

** Ten of the sixteen teachers surveyed or 62.5% said that 0% of their grade is based on student character. These outliers explain why the standard deviation exceeds the mean.

The purpose of this exercise was to seek an understanding of how teachers weigh various factors when they make final grading decisions. Teachers report that nearly 71% (M= 70.62) of their grades are based solely on student achievement and nearly 16% (M= 15.81) is based on effort. Teachers also report that the other non-achievement factors such as classroom behavior (M= 6.38), student attendance (M= 5.00), and student character (M= 2.25) play less significant roles in determining grades.

Based on what teachers say, student achievement stands alone as having the most influence in deciding grades followed by a consideration of effort. Other factors such as classroom behavior, attendance, and character have some minor influence. However, one is safe to conclude that teachers are saying that the best way to achieve high grades is for

a student to demonstrate not only achievement, but also to lesser degree demonstrate the other non-achievement factors such as effort, proper behavior, good attendance, and positive character traits.

In analyzing whether any of the differences between means were significant among teacher sub groups such as gender, subject taught, advanced degrees, teaching experience, and age, t-tests were used for gender and the Analysis of Variance (ANOVA) was used for the other independent variables. Race was again not included in this analysis since all of the teachers were white. Based upon a pre-determined significance level of $p < .05$, neither differences in teachers involving subject area taught, educational degree, years of teaching experience nor teacher's age were found to be significant. Tables 31-34 in Appendix C report the results of the ANOVA analysis of these demographic factors. However, differences in regard to gender were found to be significant as presented in Table 10.

Table 10

Independent T-Tests for Teacher Weighing of Achievement and Non Achievement Factors by Teacher Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means		
Variable		F	Sig.	t	df	Sig. (2-tailed)
Student Achievement	Equal variances assumed	.682	.423	4.770	14	.000**
	Equal variances not assumed			4.955	8.572	.001**
Student Effort	Equal variances assumed	.363	.556	-5.056	14	.000**
	Equal variances not assumed			-4.988	7.573	.001**
Student Classroom Behavior	Equal variances assumed	.292	.598	-2.501	14	.025*
	Equal variances not assumed			-2.367	6.913	.050*
Student Attendance	Equal variances assumed	3.193	.096	-2.397	14	.031*
	Equal variances not assumed			-3.157	13.995	.007**
Student Character	Equal variances assumed	8.490	.011	-2.345	14	.034*
	Equal variances not assumed			-1.727	4.593	.150

* Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

Table 11 displays the differences in the means by gender for each of the student factors weighed that were shown to be significant: achievement, effort, classroom behavior, attendance, and character.

Table 11

Means, Mean Differences, and Standard Deviations for Teacher Weighing of Achievement and Non-Achievement Criteria Based on Teacher Gender

Teacher Gender		Student Achievement	Student Effort	Student Classroom Behavior	Student Attendance	Student Character
Female	_	11	11	11	1	11
	__	80.45	11.09	4.27	3.1	1.00
	S__	12.54	5.49	4.78	5.1	2.00
Male	_	5	5	5		5
	__	49.00	26.20	11.00	9.0	5.00
	S__	11.40	5.67	5.48	2.2	5.00
Total	_	16	16	16	1	16
	__	70.63	15.81	6.38	5.0	2.25
	M Diff	31.45	-15.10	-6.73	-5.8	-4.00
	S__	19.14	9.00	5.80	5.1	3.61

The data demonstrates that female teachers assigned a much higher weight to achievement than any of the other non-achievement factors; whereas males based over half of their grades on the non-achievement factors. Female teachers say that 80% of their grades (M= 80.45) is based on achievement alone and that a little more than 10% is based on effort (M= 11.09). Other non-achievement factors such as behavior, attendance, and character combine for the final 10%. However, males say that about 50% of their grades (M = 49.00) is based on achievement and the other 50% is based on non-achievement factors with effort (M= 26.20) and student behavior (M= 11.00) being the strongest. Considering that among the respondents, 11 were female and only 5 were

male, one is cautious at overstating the significance of this finding with such a small male sample.

What Teachers Do

The second part of the instrument involved teachers in assigning A-B-C-D-F grades for 10 randomly selected students in a randomly selected general ability class for each of the following factors: achievement, effort, behavior, attendance, and personal values. As noted in Chapter III, other teacher and student data including demographics and report card grades for the most recent third marking period were collected from the district database. The data analysis related to these final three research questions follows.

Question 3: Is there a discrepancy between what teachers say ought to be the relative importance of achievement and non-achievement factors and the weight that is given in the actual assignment of grades? As discussed earlier, the teachers reported in the survey that nearly 71% (M= 70.63) of their grades was based solely on student achievement and nearly 16% (M= 15.81) was based on effort. The other non-achievement factors including classroom behavior (M= 6.38), student attendance (M= 5.0), and student character (M= 2.25) were assigned less significant weight in determining grades. The task was to examine whether or not what they said about how they weighed achievement and non achievement factors was consistent with the grades that they gave students for the marking period and the actual grades or ratings they assigned their students according to the achievement and non-achievement factors. To determine if any discrepancies existed, the data was analyzed to determine if there were

any differences in the grading factor correlations by comparing those teachers in Group A who reported that greater than 80% of their grades (n= 70) is based solely on academic achievement with those in Group B that reported that less than 80% of their grade is based on this factor (n=90). One would assume that that there should be differences between the two groups. In Group A that reports that 80% or more of a grade is based on academic achievement, one should assume that the strongest correlation would be found between the marking period grade and the academic achievement factor. In Group B that reports that less than 80% of their grade is based on achievement, the correlation between the marking period grade and academic achievement should be somewhat weaker. For Group B, other non-achievement variables should emerge with stronger correlations.

Table 12 compares how the achievement and non-achievement grading variables correlate with the students' actual marking period grades for these two groups. Again all of these correlations were positive and significant at the .01 levels (2-tailed).

Table 12

Comparison of Spearman Rho Correlation Coefficients on Student Grades with Other Grading Factors for Teachers Reporting 80% More and 80% Less of Grade Based on Academic Achievement Rated by Teachers

Teacher Ratings	Correlation Coefficient (r) All Groups (n= 160)	Correlation Coefficient (r) Group A >= 80% (n= 70)	Correlation Coefficient (r) Group B <80% (n= 90)
Academic Achievement	.754	.757	.741
Effort	.717	.802	.652
Respect for Academic Achievement	.617	.706	.527
Competitiveness	.591	.656	.531
Self Control	.535	.632	.454
Classroom Behavior	.510	.497	.482
Respect for Authority	.454	.462	.425
Attendance	.384	.412	.323

The correlations for both groups regarding academic achievement remain virtually the same. In Group A (>= 80%), the correlation coefficient is equal to .757 while in Group B (<80%) the correlation is equal to .741. It would appear that academic achievement still has a strong positive relationship with students' grades despite what teachers said about how much it is weighed in determining grades. However, for Group A, the strongest overall correlation is not academic achievement, but effort at .802. This would appear to be inconsistent with their reporting that academic achievement is given the strongest weight in grading. Also having a high positive correlation is respect for academic achievement (r= .706). Having moderate correlations are competitiveness (r=

.656) and self control (r= .632). Despite what Group A is saying about the significant importance of academic achievement as a grading factor, these other non-achievement factors are also playing a significant role in grading.

In analyzing the results for Group B, this same inconsistency regarding what is said and what is actually done surfaces. Although Group B says that it de-emphasizes the importance of student achievement alone in weighing grades, the correlation between students grades and academic achievement suggests that it is the strongest factor and that the other non achievement factors such as effort (r= .652), respect for academic achievement (r=.527), and competitiveness (r= .531) have moderate correlations. The evidence for Group B suggests that despite what this group says about the diminished weight of academic achievement, it is still the most significant factor and that the other non achievement factors play a lesser role than these same factors play in Group A.

Question 4: To what extent do teachers reward students with grades who exhibit other non achievement factors closely related to middle class values such as effort, classroom behavior, attendance, respect for academic achievement, competitiveness, respect for authority and self control? To answer this question, marking period grades were collected from the student database. In the instrument, teachers were asked to assign A-B-C-D-F letter grades for each of their students on the academic achievement factor and several other non-achievement factors. The task was to determine the strength of the relationships between the assigned grade and the other achievement and non-achievement factors. The A-B-C-D-F letter grades are a form of ranking and were coded

on a scale of 0-4 with a 4 equal to an A, the B a 3, the C a 2, the D a 1, and the F a 0. Spearman Rho was selected to analyze the results for this ranked data. The correlations are presented in Table 13.

Table 13

Spearman Rho Correlations for Teacher Grading of Achievement and Non-Achievement Criteria

Variable		Student Marking Period Grade	Academic Achievement	Effort	Classroom Behavior	Attendance	Respect for Academic Achievement	Competitiveness	Respect for Authority	Self Control
Student Grade	Correlation Coefficient	1.000	.754**	.717**	.510**	.384**	.617**	.591**	.454**	.535**
	Sig. (2-tailed)	.	.000	.000	.000	.000	.000	.000	.000	.000
Academic Achievement	Correlation Coefficient	.754**	1.000	.748**	.482**	.370**	.691**	.721**	.438**	.479**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000	.000	.000	.000
Effort	Correlation Coefficient	.717**	.748**	1.000	.707**	.459**	.850**	.748**	.669**	.665**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000	.000	.000	.000
Classroom Behavior	Correlation Coefficient	.510**	.482**	.707**	1.000	.516**	.703**	.496**	.765**	.747**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000	.000	.000	.000
Attendance	Correlation Coefficient	.384**	.370**	.459**	.516**	1.000	.494**	.466**	.409**	.386**
	Sig. (2-tailed)	.000	.000	.000	.000	.	.000	.000	.000	.000
Respect for Academic Achievement	Correlation Coefficient	.617**	.691**	.850**	.703**	.494**	1.000	.723**	.710**	.638**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.	.000	.000	.000
Competitive	Correlation Coefficient	.591**	.721**	.748**	.496**	.466**	.723**	1.000	.493**	.482**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000
Respect for Authority	Correlation Coefficient	.454**	.438**	.669**	.765**	.409**	.710	.493**	1.000	.812**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.	.000
Self Control	Correlation Coefficient	.535**	.479**	.665**	.747	.386**	.638**	.482**	.812**	1.000
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.

N= 160

** Correlation is significant at the .01 level (2-tailed)

All of the correlations presented in Table 13 were positive and significant at the .01 levels. Table 14 shows the strengths of the relationships between the assigned teacher grades and the other achievement and non-achievement factors:

Table 14

Spearman Rho Correlation Coefficients, Coefficients of Determination and Percentage of Shared Variance Rated by Teachers of Student Marking Period Grade and Other Achievement and Non-Achievement Factors

Teacher Ratings	Correlation Coefficient (r)	Coefficient of Determination	Percentage of Shared Variance
Academic Achievement	.754	.57	57
Effort	.717	.51	51
Respect for Academic Achievement	.617	.38	38
Competitiveness	.591	.35	35
Self Control	.535	.29	29
Classroom Behavior	.510	.26	26
Respect for Authority	.454	.21	21
Attendance	.384	.15	15

Academic achievement (r= .754) and effort (r= .717) had the strongest positive correlations with the students' final marking period grades. Fifty two percent of the variance is shared or explained by academic achievement, while 51% is explained by effort. Having moderate positive correlations were respect for academic achievement (r= .617), competitiveness (r= .591), self control (r= .535), and classroom behavior (r= .510).

The percents of variance explained by these factors range from 38% for respect for academic achievement to 26% for classroom behavior. Having the lowest positive correlations were respect for authority (r= .454) and attendance (r= .384). The variances explained by these two factors are 21% and 15% respectively. Based upon the explained variance, these two factors appear to be the least significant, and they could possibly be dismissed as strong criteria that teachers consider in determining student grades.

Setting aside the correlations between the students' marking period grades and all of the other grading factors, it was also instructive to look at the strengths of the relationships that academic achievement and effort had with those other factors which did not correlate as strongly with students' marking period grades. Academic achievement had high positive correlations with effort (r= .748) and competitiveness (r= .721), moderate positive correlations with respect for academic achievement (r= .691), and low positive correlations with classroom behavior (r= .482), self control (r= .479), respect for authority (r= .438), and attendance (r= .370). Effort had high positive correlations with respect for academic achievement (r= .850) and academic achievement (r= .748), competitiveness (r= .748), and classroom behavior (r= .707), moderate positive correlations with respect for authority (r= .669) and self control (r= .665), and a low positive correlation with attendance (r= .459). On the surface it would appear that final grade determinations are strongly related to academic achievement and effort. However, the analysis of these inter-correlations suggests that academic achievement is also closely associated with effort and competitiveness and that effort is also closely associated with

respect for academic achievement, competitiveness, and classroom behavior. Therefore, one suspects that there is more at work here than just academic achievement and effort and that other factors may be more influential than originally suspected.

Partial correlations were examined to determine the effects of removing each of the strongest variables, academic achievement and effort, from the correlations among the other variables and the marking period grade. This Pearson r analysis did result in a significant, but proportional reduction of all of the correlation coefficients with the exception of attendance. By controlling for academic achievement, the correlation for the students' marking period grade and effort changed from .734 to .359. Likewise controlling for effort, the correlation between the grade and academic achievement changed from .769 to .476. Tables 15 and 16 compare Pearson r correlations with partial correlation coefficients when controlling for academic achievement and effort.

Table 15

Comparison of Correlation Coefficients Rated by Teachers for Student Marking Period Grade and Other Grading Factors when Controlling for Academic Achievement

Teacher Ratings	Correlation Coefficient Pearson r	Partial Correlation Coefficients Pearson r	Difference
Competitiveness	.629	.153	-.476
Respect for Academic Achievement	.634	.204	-.430
Effort	.734	.359	-.375
Classroom Behavior	.552	.260	-.292
Attendance	.437	.158	-.279
Self Control	.575	.318	-.257
Respect for Authority	.505	.253	-.252

In Table 15, when controlling for academic achievement, effort, for example, which had a high positive correlation with students' marking period grades (r= .734) was reduced to .359 which would now indicate a low positive correlation with this same factor. Other factors which showed moderate positive Pearson r correlations with marking period grades including competitiveness (r= .629), respect for academic achievement (r= .634), classroom behavior (r= .552), self control (r= .575), respect for authority (r= .505), also diminished in strength. Competitiveness dropped to .153, respect for academic achievement to .204, classroom behavior to .260, self control to .318, and respect for authority to .253. The weakest factor, attendance (r= .437), also

dropped to .158. Again, this supports the argument that the other factors of competitiveness, respect for academic achievement, and effort are strongly related to academic achievement.

Table 16 compares Pearson r correlations with partial correlation coefficients when controlling for effort.

Table 16

Comparison of Correlation Coefficients Rated by Teachers for Student Marking Period Grade and Other Grading Factors when Controlling for Effort

Teacher Ratings	Correlation Coefficient Pearson r	Partial Correlation Coefficients Pearson r	Difference
Respect for Academic Achievement	.634	.011	-.623
Classroom Behavior	.552	.057	-.495
Competitiveness	.629	.155	-.474
Respect for Authority	.505	.032	-.473
Self Control	.575	.181	-.394
Academic Achievement	.769	.476	-.293
Attendance	.437	.476	+.39

When controlling for effort, respect for academic achievement (r= .634) showed the most drastic change dropping to .011, a difference of .623. Conversely, academic achievement, which had a strong inter-variable correlation with effort (r= .769), decreased to .476. Those other variables having moderate associations with effort such

as competitiveness (r= .629), classroom behavior (r= .552), respect for authority (r= .505) all were reduced to .155, .057, and .032 respectively. Self control (r= .575) also dropped to .181. Attendance, which had the lowest correlation with effort (r= .437), rose slightly to .476. Again, this supports the argument that the other factors including respect for academic achievement, classroom behavior, competitiveness, respect for authority and academic achievement are strongly related to effort.

By controlling for academic achievement and effort, it would appear that many variables with the exception of the attendance factor are in someway interdependent and related in the way they influence grading. Excluding either the relationship of academic achievement or effort appears to significantly diminish the strength of all of the relationships. Nevertheless, the evidence does suggest that teachers reward those students with grades by considering both academic achievement as well as effort. However, other non-achievement factors closely related to middle class values such as classroom behavior, respect for academic achievement, competitiveness, respect for authority and self control also to varying degrees influence grading decisions.

Question 5: To what extent do teachers grade differently based on student gender, race, grade level, family income, and classification (general education, special education, limited English proficient)? Finally, an analysis was done to determine whether any of the differences between means for grading factors were significant based on student gender, race, grade level, family income, and classification (regular, special education, and limited English proficient). T- tests and the Analysis of Variance

(ANOVA) were applied. Based upon a pre-determined significance level of $p < .05$, some differences related to gender, grade level, and student classification were significant. Tables 35-36 in Appendix D demonstrate that differences related to race and family income were not significant.

According to gender, males and females showed significant t- test differences in the means related to the student grades, academic achievement, effort, respect for academic achievement, and self control. Table 17 outlines the significant mean differences based on gender.

Table 17

Independent T-Tests for Student Grades and Achievement and Non-Achievement Factors by Gender Rated by Teachers

Variable		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	d	Sig. (2-tailed)
Final Grade	Equal variances assumed	.186	.667	3.256	15	.001**
	Equal variances not assumed			3.264	156.72	.001**
Academic Achievement	Equal variances assumed	3.427	.066	2.371	15	.019*
	Equal variances not assumed			2.393	157.94	.018*
Effort	Equal variances assumed	1.377	.242	3.028	15	.003**
	Equal variances not assumed			3.048	157.91	.003**
Classroom Behavior	Equal variances assumed	5.996	.015	1.920	15	.057
	Equal variances not assumed			1.946	156.72	.053*
Attendance	Equal variances assumed	2.811	.096	.744	15	.458
	Equal variances not assumed			.746	157.20	.457
Respect for Academic Achievement	Equal variances assumed	.006	.940	2.842	15	.005**
	Equal variances not assumed			2.856	157.614	.005**
Competitiveness	Equal variances assumed	2.379	.125	1.820	158	.071
	Equal variances not assumed			1.829	157.723	.069
Respect for Authority	Equal variances assumed	2.900	.091	1.530	158	.128
	Equal variances not assumed			1.548	157.430	.124
Self Control	Equal variances assumed	8.757	.004	3.145	158	.002**
	Equal variances not assumed			3.195	155.422	.002**

* Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

Table 18 displays the differences in the means by gender for each of the factors shown to be significant whether or not equal variances were assumed: student grades, academic achievement, effort, respect for academic achievement, and self control.

Table 18

Means, Mean Differences, and Standard Deviations for Significant Differences for Student Grades and Achievement and Non-Achievement Factors By Gender Rated by Teachers

Student Gender		Student Grade	Academic Achievement	Effort	Respect for Academic Achievement	Self Control
Female	n	75	75	75	75	75
	M	2.24	2.16	2.43	2.52	3.20
	SD	1.17	1.03	1.16	1.11	1.01
Male	n	85	85	85	85	85
	M	1.62	1.74	1.84	2.00	2.61
	SD	1.21	1.19	1.29	1.20	1.31
Total	n	160	160	160	160	160
	M	1.91	1.94	2.11	2.24	2.89
	M Diff.	.62	.49	.60	.52	.59
	SD	1.23	1.13	1.27	1.18	1.21

The data demonstrates that in all cases females had higher means in all categories when compared to males. The mean differences range from .42 for academic achievement to .62 for the students' marking period grades. One could confidently conclude that in all of these categories the 75 females were graded or rated almost half a letter grade or half a point value higher than the 85 males.

By grade level, students in different grade levels showed significant differences in the means in regard to the student's grade ($p = .02$), classroom behavior ($p = .004$), respect for academic achievement ($p = .03$), respect for authority ($p = .012$) and self control ($p = .023$). Table 19 outlines the significant mean differences based on grade level.

Table 19

ANOVA for Student Grades and Achievement and Non-Achievement Factors by Student Grade Level Rated by Teachers

Teacher Ratings		SS	df	MS	F	Sig.
Student Marking Period Grade	Between Groups	14.633	3	4.878	3.365	.020*
	Within Groups	226.142	156	1.450		
	Total	240.775	159			
Academic Achievement	Between Groups	7.080	3	2.360	1.875	.136
	Within Groups	196.295	156	1.258		
	Total	203.375	159			
Effort	Between Groups	6.845	3	2.282	1.440	.233
	Within Groups	247.130	156	1.584		
	Total	253.975	159			
Classroom Behavior	Between Groups	19.153	3	6.384	4.583	.004**
	Within Groups	217.291	156	1.393		
	Total	236.444	159			
Attendance	Between Groups	5.500	3	1.833	1.117	.344
	Within Groups	256.094	156	1.642		
	Total	261.594	159			
Respect for Academic Achievement	Between Groups	12.327	3	4.109	3.065	.030*
	Within Groups	209.167	156	1.341		
	Total	221.494	159			
Competitiveness	Between Groups	4.901	3	1.634	1.643	.182
	Within Groups	155.074	156	.994		
	Total	159.975	159			
Respect for Authority	Between Groups	13.989	3	4.663	3.749	.012**
	Within Groups	194.011	156	1.244		
	Total	208.000	159			
Self Control	Between Groups	13.892	3	4.631	3.282	.023*
	Within Groups	220.083	156	1.411		
	Total	233.975	159			

* Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

Table 20 displays the differences in the means by grade level for each of the factors shown to be significant: student grades, classroom behavior, respect for academic achievement, respect for authority and self control.

Table 20

Means and Standard Deviations for Significant Differences for Student Grades and Achievement and Non-Achievement Factors By Student Grade Level Rated by Teachers

Student Grade Level		Student Marking Period Grade	Classroom Behavior	Respect for Academic Achievement	Respect for Authority	Self Control
Grade 9	n	71	71	71	71	71
	M	1.58	2.45	1.99	2.73	2.59
	SD	1.20	1.18	1.27	1.18	1.26
Grade 10	N	26	26	26	26	26
	M	2.27	3.00	2.23	3.15	2.88
	SD	1.22	1.30	1.18	1.22	1.51
Grade 11	n	31	31	31	31	31
	M	2.13	3.19	2.36	3.51	3.32
	SD	1.15	1.25	.92	.89	1.01
Grade 12	n	32	32	32	32	32
	M	2.16	3.19	2.72	2.97	3.13
	SD	1.25	1.00	1.08	1.06	.83
Total	n	160	160	160	160	160
	M	1.91	2.83	2.24	3.00	2.89
	SD	1.23	1.22	1.18	1.14	1.21

The data in Table 20 supports the argument that grade nine students have lower grades and exhibit significantly lower ratings on all achievement and non-achievement factors. The means for grade nine students are the lowest in all of the categories: student marking period grade (M= 1.58), classroom behavior (M= 2.45), respect for academic achievement (M= 1.99), respect for authority (M= 2.73), and self control (M= 2.59). With the exception of respect for academic achievement and self control, the mean

differences between the highest and lowest means in each category in grades 10-12 do not appear to be significant. The student marking period grades range from means of 2.13 in grade 11 to 2.27 in grade 10, a difference of .14. Classroom behavior means range from 3.0 in grade 10 to 3.19 in grade 11, a difference of .19. Respect for academic achievement means range from 2.23 in grade 10 to 2.72 in grade 12, a difference of .49. Respect for authority means range from 2.97 in grade 12 to 3.15 in grade 12, a difference of .18. Finally, self control means range from 2.88 in grade 10 to 3.32 in grade 11, a difference of .50. In regard to respect for academic achievement (M= 2.23) and self control (M= 2.88), grade 10 appears to have the lowest ratings among grades 10-12, but the means are still higher than grade 9. The means for grade 9 were 1.99 in respect for academic achievement and 2.59 in self control. One can safely conclude that both grade 9 and grade 10 students are generally rated lower in these areas. Considering that these students are presumably younger and somewhat more immature than students in grades 11 and 12, it is not surprising that their means would support that they have less desirable attitudes as it pertains to these two factors.

Table 21 illustrates the significant mean differences for student grades and achievement and non-achievement factors between students in grade 9 and students in grades 10-12 combined.

Table 21

Independent T-Tests for Grade 9 and Grades 10-12 for Student Marking Period Grades and Achievement and Non-Achievement Factors Rated by Teachers

		Levene's Test for Equality of Variances		t-test for Equality of Means			
Variable		F	Sig.	t	df	Sig. (2-tailed	M Diff.
Student Grade	Equal variances assumed	.186	.667	3.256	158	.001**	.62
	Equal variances not assumed			3.264	156.720	.001**	.62
Academic Achievement	Equal variances assumed	3.427	.066	2.371	158	.019*	.42
	Equal variances not assumed			2.393	157.947	.018*	.42
Effort	Equal variances assumed	1.377	.242	3.028	158	.003**	.59
	Equal variances not assumed			3.048	157.910	.003**	.59
Classroom Behavior	Equal variances assumed	5.996	.015	1.920	158	.057	.37
	Equal variances not assumed			1.946	156.725	.053*	.37
Attendance	Equal variances assumed	2.811	.096	.744	158	.458	.15
	Equal variances not assumed			.746	157.207	.457	.15
Respect for Academic Achievement	Equal variances assumed	.006	.940	2.842	158	.005**	.52
	Equal variances not assumed			2.856	157.614	.005**	.52
Competitiveness	Equal variances assumed	2.379	.125	1.820	158	.071	.29
	Equal variances not assumed			1.829	157.723	.069	.29
Respect for Authority	Equal variances assumed	2.900	.091	1.530	158	.128	.28
	Equal variances not assumed			1.548	157.430	.124	.28
Self Control	Equal variances assumed	8.757	.004	3.145	158	.002**	.59
	Equal variances not assumed			3.195	155.422	.002**	.59

* Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

The data analysis supports that there are significant differences in means for ninth grade students when compared to students in grades 10-12 in their final grades and ratings related to academic achievement, effort, classroom behavior, respect for academic achievement, and self control. The significant mean differences range from .42 for

academic achievement to .62 for their marking period grades. Table 22 displays the means and standard deviations for significant differences for student grades and achievement and non-achievement factors for grade 9 and grade 10-12 students.

Table 22

Means and Standard Deviations for Significant Differences for Student Grades and Achievement and Non-Achievement Factors by Grade Level Rated by Teachers

Variable	Grade Levels	n	M	SD
Student Marking Period Grade	Grade 9	71	1.58	1.20
	Grades 10-12	89	2.18	1.19
Academic Achievement	Grade 9	71	1.72	1.22
	Grades 10-12	89	2.11	1.03
Effort	Grade 9	71	1.89	1.26
	Grades 10-12	89	2.29	1.24
Classroom Behavior	Grade 9	71	2.45	1.18
	Grades 10-12	89	3.13	1.17
Respect for Academic Achievement	Grade 9	71	1.99	1.27
	Grades 10-12	89	2.45	1.07
Self Control	Grade 9	71	2.59	1.26
	Grades 10-12	89	3.12	1.13

In reviewing the means presented in Table 22, one could confidently conclude that in all of these significant categories the 71 ninth grade students are rated almost a half grade lower than students in grades 10-12. For example, the mean for ninth graders' final grade is 1.58 while the mean for students in grades 10-12 is 2.18. Whether this is simply a matter of their younger age and immaturity or it reflects a general adjustment to their new high school settings is subject to conjecture. Their final grades and academic achievement ratings are lower, and they appear to have more problems with non-

achievement factors such as effort, classroom behavior, respect for academic achievement and self control than students in grades 10-12.

Finally, students in regular, special education, and limited English proficient classifications showed significant differences in means related to student grades ($p = .016$), respect for academic achievement ($p = .048$), competitiveness ($p = .020$) respect for authority ($p = .048$), and self control ($p = .012$). Table 23 provides the significant mean differences based on student classification.

Table 23

ANOVA for Student Grades and Achievement and Non-Achievement Factors by Student Classification Rated by Teachers

Teacher Ratings		SS	df	MS	F	Sig.
Student Marking Period Grade	Between Groups	12.328	2	6.164	4.236	.016*
	Within Groups	228.447	157	1.455		
	Total	240.775	159			
Academic Achievement	Between Groups	7.346	2	3.673	2.942	.056
	Within Groups	196.029	157	1.249		
	Total	203.375	159			
Effort	Between Groups	8.590	2	4.295	2.748	.067
	Within Groups	245.385	157	1.563		
	Total	253.975	159			
Classroom Behavior	Between Groups	5.197	2	2.598	1.764	.175
	Within Groups	231.247	157	1.473		
	Total	236.444	159			
Attendance	Between Groups	3.549	2	1.775	1.080	.342
	Within Groups	258.045	157	1.644		
	Total	261.594	159			
Respect for Academic Achievement	Between Groups	8.424	2	4.212	3.103	.048*
	Within Groups	213.070	157	1.357		
	Tota	221.494	159			
Competitiveness	Between Groups	7.819	2	3.910	4.034	.020*
	Within Groups	152.156	157	.969		
	Total	159.975	159			
Respect for Authority	Between Groups	7.876	2	3.938	3.089	.048*
	Within Groups	200.124	157	1.275		
	Total	208.000	159			
Self Control	Between Groups	12.792	2	6.396	4.540	.012**
	Within Groups	221.183	157	1.409		
	Total	233.975	159			

* Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

Table 24 displays the differences in the means by student classification for each of the factors shown to be significant: student grades, respect for academic achievement, competitiveness, respect for authority and self control.

Table 24

Means and Standard Deviations for Significant Differences for Student Grades and Achievement and Non-Achievement Factors by Student Classification Rated by Teachers

Student Classification		Student Marking Period Grade	Respect for Academic Achievement	Competitiveness	Respect for Authority	Self Control
Regular	n	124	124	124	124	124
	M	1.93	2.31	1.95	3.09	2.98
	SD	1.18	1.10	.96	1.04	1.07
Special Education	n	26	26	26	26	26
	M	1.50	1.77	1.42	2.50	2.27
	SD	1.30	1.37	.99	1.40	1.56
Limited English	n	10	10	10	10	10
	M	2.80	2.70	2.30	3.20	3.30
	SD	1.32	1.42	1.25	1.48	1.49
Total	n	160	160	160	160	160
	M	1.91	2.24	1.89	3.00	2.89
	SD	1.23	1.18	1.00	1.14	1.21

Even a cursory analysis of this data would suggest that students who are limited English proficient receive almost a letter grade higher (M= 2.80) than regular education students (M= 1.93), a difference of 0.87. The difference between them and special education students (M= 1.50) is even more significant at 1.3. Limited English students also demonstrate significantly higher means in all of the other rated non-achievement

factors: respect for academic achievement (M= 2.70), competitiveness (M= 2.30), respect for authority (M= 3.20) and self control (M= 3.30). Again, regular education students score lower in these areas: respect for academic achievement (M= 2.31), competitiveness (M= 1.95), respect for authority (M= 3.09), and self control (M= 2.98). Whereas the differences between limited English and regular education students appear to be most significant in regard to respect for academic achievement, a difference of .40; competitiveness, .35; and self control, .31, they appear to be rated the same in respect for authority with a difference of .1. However, special education students still trail limited English students and regular education students in all categories. Table 25 illustrates mean differences between the special education students and the totals for all groups.

Table 25

Comparison of Mean Differences for Special Education Students and All Student Classifications for Student Grades and Achievement and Non-Achievement Factors Rated by Teachers

Variable	All Classifications M	Special Education M	M Diff.
Self Control	2.89	2.27	.62
Respect for Authority	3.00	2.50	.50
Respect for Academic Achievement	2.24	1.77	.47
Competitiveness	1.89	1.42	.47
Student Grade	1.91	1.50	.41

The mean differences range from .41 for the student final grade factor to .62 for self control. One could confidently conclude that in all of these categories the 26 special education students are graded or rated somewhat lower in all of the aforementioned categories. Again, one can only speculate whether their lower ratings are in some way connected to the nature of their learning or behavioral disabilities. It is also important to note that all of these students were rated by regular education teachers, not special education teachers. All of these special education students are taught in the mainstream by regular education teachers with the in-class support services of special education teachers. It is possible that regular education teachers are less accepting of these mainstreamed special education students and perhaps less aware or sensitive to those individual issues that led to their classification in the first place. Considering that the limited English students received the highest ratings of all groups and are also mainstreamed for most of their day, one might conclude that the regular education teachers are more inclined to rate these students higher, perhaps, because these students are more docile and respectful because of their inability and/or reluctance to communicate in English.

Summary

The results of the data analysis can be summarized in relationship to the original research questions.

Question 1: What are teachers' perceptions regarding the relative importance of achievement and non-achievement factors influencing grading practices?

The most important grading criterion that teachers say that they use in determining grades is content mastery. This factor falls between the "extremely important" (5) and "very important" (4) rating on the Likert scale. As noted earlier this was the only factor rated that was related to academic achievement. Student effort fell between the "moderately important" and "very important" categories. Teachers say that this is the second most important grading criteria. Student improvement also fell into this range. Other non-achievement factors fell into the "somewhat important" to "moderately important" categories: self control, respect for learning, respect for authority, student values learning, student behavior, and competitiveness. Student attendance fell between the "moderately important" and "very important" range. Closely related to attendance, tardiness was considered "somewhat important" to "moderately important" as a factor.

The analysis also revealed that there were no significant differences in teacher responses based on gender, subject area taught, educational degree, or years of teaching experience. Race was not analyzed since all of the respondents were white. The data, however, did suggest that the youngest teachers (20-29 years old) considered competitiveness a very important grading factor, whereas teachers who were older (30-39 years old) considered this factor somewhat important. The oldest teachers (40 years and older) rated this factor between not important and somewhat important. However, since only two teachers were between the ages of 20-29, the researcher was reluctant to make any solid conclusions regarding this finding.

Question 2: How much numerical weight do teachers ascribe to achievement and non-achievement grading factors?

The teachers report that nearly 71% of their grades are based solely on student achievement. Teachers say that while 16% of their grades are based on effort, other non-achievement factors, such as classroom behavior and student character, play less significant roles in determining grades. Hence, they claim that less than 7% of their grades are based on these factors. Finally, teachers also say that 5% of their grades are based on student attendance. Even though they say that it is a more than "moderately important" factor, their weighing of the attendance factor seems to be rather minimal.

The data does show a significant difference in the weighing based on teacher gender. Female teachers report that 80% of their grades are based on achievement alone and that a little more than 10% are based on effort. Other non-achievement factors such as behavior, attendance, and character combine for the final 10%. Males report that about 50% of their grades are based on achievement and the other 50% are based on non-achievement factors followed by effort (26%) and behavior (11%). As noted earlier, considering that among the respondents, 11 were female and only 5 were male, one is cautious not to overstate the significance of this finding with such a small male sample.

Question 3: Is there a discrepancy between what teachers say ought to be the relative importance of achievement and non-achievement factors and the weight that is given in the actual assignment of grades?

The data was analyzed to determine if there were any differences in the grading factor correlations. This was accomplished by comparing those teachers who report that greater than 80% of their grades (n= 70) are based solely on academic achievement with those that report that less than 80% of their grade are based on this factor (n=90). The Spearman Rho correlations for both groups regarding academic achievement remained virtually the same. In Group A (>= 80%), the correlation coefficient was equal to .757, while in Group B (<80%) the correlation was equal to .741. Academic achievement still had a strong positive relationship with students' grades, in both groups, despite what teachers said about how much it was weighed in determining grades. However, for Group A, the strongest overall correlation was not academic achievement, but effort at .802. This would appear to be inconsistent with their reporting that academic achievement was given the strongest weight in grading. Also having a high positive correlation was respect for academic achievement and having moderate correlations were competitiveness and self control. Despite what Group A reports about the significant importance of academic achievement as a grading factor, other non-achievement factors were also playing a significant role in grading.

In analyzing the results for Group B, this same inconsistency regarding what wass said and what was actually done surfaces. Although Group B said that it de-emphasizes the importance of student achievement alone in weighing grades, the correlation between students grades and academic achievement suggests that it was the strongest factor and that the other non achievement factors such as effort, respect for academic achievement,

and competitiveness had moderate correlations. As suggested earlier, the data for Group B suggests that despite what this group says about the diminished weight of academic achievement, it was still the most significant factor, and that the other non achievement factors played a lesser role than these same factors played in Group A.

Question 4: To what extent do teachers reward students with grades who exhibit other non achievement factors closely related to middle class values such as effort, classroom behavior, attendance, respect for academic achievement, competitiveness, respect for authority and self control?

The data was analyzed on what teachers do in real grading situations. Academic achievement (r= .754) had the strongest Spearman Rho positive correlation with the teachers' assigned grades. When controlling for effort using Pearson r, the partial correlation between the grade and academic achievement was reduced from .769 to .476. In real grading situations, effort (r= .717) had the second strongest positive correlation with the teachers' assigned grades. When controlling for academic achievement, the partial correlation for the students' marking period grade and effort was reduced from .734 to .359. In actual grading situations, having moderate positive correlations were respect for academic achievement, competitiveness, self control, and classroom behavior. Having one of the lowest positive correlations was respect for authority. When controlling for academic achievement, the partial correlations for respect for academic achievement, competitiveness, self control, classroom behavior, and respect for authority were all reduced significantly.

When controlling for effort, the partial correlations for respect for academic achievement, competitiveness, self control, classroom behavior, and respect for authority again were all reduced significantly. Another low positive correlation was attendance. Again when controlling for academic achievement, the partial correlation coefficient between attendance and the student marking period grade fell from .437 to .158. However when controlling for effort, it rose slightly to .476.

Setting aside the correlations between the teaching actual grades and the other grading factors, the strengths of the relationships among the strongest factors academic achievement and effort and the other weaker factors were also analyzed. Academic achievement had high positive correlations with effort and competitiveness; moderate positive correlations with respect for academic achievement; and low positive correlations with classroom behavior, self control, respect for authority, and attendance. Effort had high positive correlations with respect for academic achievement, academic achievement, competitiveness, and classroom behavior; moderate positive correlations with respect for authority and self control; and a low positive correlation with attendance. After a preliminary analysis, it would appear that final grade determinations were strongly related to academic achievement and effort. However, the analysis of these inter-correlations suggests that academic achievement was also closely associated with effort and competitiveness, and that effort was also closely associated with academic achievement, respect for academic achievement, competitiveness, and classroom behavior. Therefore, one suspects that there was more at work here that just academic

achievement and effort and that other factors may be more influential than originally suspected.

Question 5: To what extent do teachers grade differently based on student gender, race, grade level, family income, and classification (general education, special education, limited English proficient)?

An analysis was done to determine whether any of the differences between means for grading factors were significant based on student gender, race, grade level, family income, and classification (regular, special education, and limited English proficient). Again, t-tests and the Analysis of Variance (ANOVA) were applied. Based upon a pre-determined significance level of $p < .05$, differences related to gender, grade level, and student classification were significant. Males and females showed significant differences in the means in regard to the student's grade, academic achievement, effort, respect for academic achievement, and self control. The mean differences ranged from .42 for academic achievement to .62 for the student grade. In all of these categories, the 75 female students were graded or rated almost half a letter grade or half a point value higher than the 85 males.

In regard to grade level, students in grade 9 showed significant differences in their means when compared to students in 10-12. Grade 9 students had lower grades and exhibited significantly lower ratings than grades 10-12 on the following achievement and non-achievement factors: academic achievement, effort, classroom behavior, respect for academic achievement, and self control.

Finally, students in regular, special education, and limited English proficient classifications showed significant mean differences in regard to student grades, respect for academic achievement, competitiveness, respect for authority, and self control. Students who were limited English proficient receive almost a letter grade higher than regular education students and more than a letter higher than special education students. Limited English students also demonstrated significantly higher means in all of the other rated non-achievement factors: respect for academic achievement, competitiveness, respect for authority and self control. Conversely, special education students received the lowest final grades and were rated the lowest of all groups in all of the aforementioned achievement and non-achievement categories.

CHAPTER V

Discussion

Review of the Findings

The research hypothesis questioned whether there is an incongruity between what teachers say and do in regard to grading practices. It was also hypothesized that "hidden" non-achievement factors play a more important role in determining grades than reported by teachers in surveys or questionnaires. As the results in Chapter IV indicate, there is some incongruity between what teachers say and do and that the "hidden" achievement factors are influencing grading decisions, but one has to be cautious about overstating the case. By returning to the five research questions, one can begin to sort through and discuss what conclusions can be drawn from this study.

Question 1: What are teachers' perceptions regarding the relative importance of achievement and non-achievement factors influencing grading practices? The data analysis suggests that content mastery or what researchers call "knowledge gain" is what teachers still say is the most important grading criteria. This factor is followed by effort as the second most important criteria. These findings are consistent with the research described in the literature review where academic achievement was concluded to be the strongest factor reported by teachers in determining grades, followed by effort as the second strongest factor (Nava and Loyd, 1992; Robinson and Craver (1989); Austin and McCann (1992). Closely following these two factors were student improvement and

attendance in terms of importance. Still other non-achievement factors, rated moderately to somewhat important, were self control, respect for learning, respect for authority, student values learning, student behavior, competitiveness, and tardiness.

It should be noted that none of the achievement or non-achievement factors were considered unimportant. Although content mastery and effort are the strongest factors, all of the other factors appear to have some role in the grading process. Although various members of the educational measurement community have argued that grades should reflect only achievement at a particular point in time (Bigham Baron, 2000; Brookhart, 1993; Frary, Cross and Webber, 1993; Manke and Loyd, 1990, 1991), one can safely conclude from this study that teachers do say that other non-achievement factors influence their grading decisions to some degree. This finding is again consistent with the earlier studies cited in the literature review (Bigham Baron, 2000; Cizek, Fitzgerald, Shawn, and Rachor, 1996; Cizek et al., 1995; Manke and Loyd, 1990, 1991; Stiggins et al., 1989).

The analysis of this data did suggest that the youngest teachers (20-29 years old) considered competitiveness a very important grading factor, whereas teachers who are older (30-39 years old) considered this factor somewhat important (M= 2.3). The oldest teachers (40 years and older) rated this factor between not important and somewhat important. Although one might conclude that teachers apparently devalue the importance of competitiveness as a grading factor as they age, one is cautious about making a strong generalization regarding this finding considering that eleven of the sixteen teachers

(69%) in the sample were over 40 years old. There were only two teachers under thirty years old (13%) and four teachers between 30 and 39 years old (25%).

Question 2: How much numerical weight do teachers ascribe to achievement and non-achievement grading factors? Although teachers say that content mastery and effort are the most important factors in grading, they do not consider them equals in the weight they are given in determining grades. Teachers report that nearly 71% of their grades are based solely on student achievement, whereas 16% of their grades are based on effort. Other non-achievement factors such as classroom behavior and student character play even less significant roles in determining grades (7%).

In weighing student character, ten of the sixteen teachers (62.5%) did not assign it any weight in determining grades. Although teachers in this sample say it is a moderately important factor, they appear to assign it very little value in terms of weight. Although attendance was earlier reported as a relatively important factor, teachers only say that 5% of their grades are based on this factor. Seven of the sixteen teachers (43.8%) also did not assign it any weight at all. This does appear to be somewhat inconsistent in that they are not assigning more weight to what they consider an important grading factor. However, one might speculate that teachers recognize that if a student is absent too much then they will never master the content of the course. Hence, they may believe that there is then no need to assign the factor a greater weight. In addition, the school attendance policy in this district, which withdraws students from gaining credit in a course after 18

absences, whether excused or not, may take away any need for teachers to adjust grades for students who are frequently absent.

Finally, the data revealed that there appears to be a significant difference in how female and male teachers weigh achievement and non-achievement factors. Female teachers say that 80% of their grade are based on achievement, 10% on effort, and 10% on other non-achievement factors. Male teachers say that 50% of their grades are based on achievement and the other 50% are spread around other non-achievement factors. Although both genders say this, the evidence, later revealed in what they actually do, refutes this finding. Their responses to the way they have weighed grading factors appears only to be a "paper and pencil" exercise which is refuted in the "discrepancy" analysis conducted in the third research question regarding how they weigh grades in practice. On the surface, males say they are more "holistic" in the way they consider all factors in determining grades. In reality, they weigh grades just like their female counterparts. It is almost as if males have intentionally taken a softer, more sensitive, more typical "feminine" stance in saying how they weigh grades. Females take a harder, more intolerant, "masculine" viewpoint. However, these role reversals appear to be on paper only since they do not carry over into practice.

Question 3: Is there a discrepancy between what teachers say ought to be the relative importance of achievement and non-achievement factors and the weight that is given in the actual assignment of grades? The data was analyzed to determine if there were any differences in the grading factor correlations by comparing those teachers who

reported that greater than 80% of their grades (n= 70) was based solely on academic achievement with those that report that less than 80% of their grade was based on this factor (n=90). The correlations for both groups regarding academic achievement remained virtually the same. It should be noted that those more "sensitive and softer" males who reported that only 50% of their grades were based on achievement were in this less than 80% group. As reported, in Group A (>= 80%), the correlation coefficient was equal to .757 while in Group B (<80%) the correlation was equal to .741. Both are strong positive correlations. Apparently, despite what teachers, particularly male and female teachers, say about how the grading factors are weighed, they still view academic achievement or content mastery as the strongest influence on their decisions.

This result appears to be consistent with the research done by Nava and Loyd (1992) who assert that elementary and secondary teachers differ in their approach to grading. They argue that whereas elementary teachers use a more "global assessment" of achievement, particularly related to the factor involving student improvement from marking period to period, secondary teachers rely more on student assessments and products: tests, quizzes, projects, homework. Despite what both groups in this study say about the weight of various grading factors, they still rely on achievement results as the foremost decision-making tool. However, both groups to some degree still use non-achievement criteria such as effort, attitude, and behavior in grading. The answer to question of what degree these factors are used still remains illusive. At this point, one can only speculate. Do these non-achievement factors play more into grading when

students have borderline grades? If teachers say that effort is the second strongest grading factor, how do they measure effort? Is there an assumption that if students are doing well on tests, submitting quality classroom projects, and turning in their homework regularly that they are in fact demonstrating proper effort? However, how do they grade a student who tries hard but fails to achieve or master course content? Is that factored into a grade? Or do they intentionally or unintentionally assume that underachievers are simply not trying hard enough?

Question 4: To what extent do teachers reward students with grades who exhibit other non achievement factors closely related to middle class values such as effort, classroom behavior, attendance, respect for academic achievement, competitiveness, respect for authority and self control? In analyzing what teachers do in real grading situations, academic achievement had the strongest positive correlation with the teachers' assigned grades. Fifty two percent of the variance was explained by academic achievement. However, when controlling for effort, the partial correlation between the grade and academic achievement was reduced from a high positive correlation to a low-moderate correlation. Again in real grading situations, effort had the second strongest positive correlation with the teachers' assigned grades. Fifty one percent of the variance was explained by effort. However, when controlling for academic achievement, the partial correlation for the students' marking period grade and effort was also reduced from high positive to low-moderate. It would appear from the partial correlations that when looked at individually achievement and effort are removed as variables, they

significantly affect the strength of each other's relationship with the final grade variable. It appears that two factors need to work together to be strong. One might conclude that the data suggests that achievement and effort are the same variable. Those who achieve, demonstrate effort, and those that demonstrate effort, achieve. Achievement and effort work hand in hand. Since the general ability students in this sample are not considered the so-called "better students", do teachers look to "effort" in these classes as an equal partner with academic achievement in grading students? Since they do not expect them in general to exhibit high achievement levels, do they consider that student effort is an indicator of at least their trying to achieve? One might conclude that this "effort" factor then plays into a grading decision on a stronger level than it would with other higher achieving ability groups.

In actual grading situations, having moderate positive correlations were respect for academic achievement, competitiveness, self control, and classroom behavior. Despite what the teachers say about the relative importance that these non-achievement factors have in their weight, they still in some manner influence grading decisions. Respect for authority had the lowest correlation. However, when controlling for academic achievement, the partial correlations for respect for academic achievement, competitiveness, self control, classroom behavior, and respect for authority were all reduced to a low significance level. When controlling for effort, the partial correlations for respect for academic achievement , competitiveness, self control, classroom behavior, and respect for authority ($r=.032$) again had the same result. One might argue that with

the exception of effort, the other non-achievement factors play a less significant role in grading, despite what teachers say about their moderate importance as a grading factor. Another low positive correlation was attendance. Again when controlling for academic achievement and effort, the partial correlation coefficient between attendance and the student marking period grade fell to indicate little, if any, correlation. However when controlling for effort, it rose slightly to low-moderate positive correlation. Again one could speculate that if effort is removed as a factor, attendance slightly replaces it as a minor indication of hard work or effort.

However, one still should be cautious about dismissing the other non-achievement factors entirely or even stating that they have less significance. Setting aside how strongly the achievement and non-achievement factors correlated with the final grades, the researcher identified there still were strong relationships between several of these other factors. Academic achievement had high positive correlations with effort and competitiveness; moderate positive correlations with respect for academic achievement; and low positive correlations with classroom behavior, self control, respect for authority, and attendance. Effort had high positive correlations with respect for academic achievement and academic achievement, competitiveness, and classroom behavior; moderate positive correlations with respect for authority and self control; and a low positive correlation with attendance. As asserted earlier, it would appear that final grade determinations are strongly related to academic achievement and effort. However, the analysis of these inter-correlations suggests that academic achievement is also closely

associated with effort and competitiveness and that effort is also closely associated with academic achievement, respect for academic achievement, competitiveness, and classroom behavior. Therefore, one suspects that there is more at work here than just academic achievement and effort and other factors may be more influential than originally suspected. This analysis has reinforced the assertion that grading is a complex process and all factors in some manner are playing into the final grading determinations. It is an understatement to say that grading is all about academic achievement and effort when confronted with the evidence that many of the other factors have positive associations with these primary ones.

Question 5: To what extent do teachers grade differently based on student gender, race, grade level, family income, and classification (general education, special education, limited English proficient)? The analysis was done to determine whether any of the differences between means for grading factors were significant based on student gender, race, grade level, family income, and classification (regular, special education, and limited English proficient). The data suggests that differences related to gender, grade level, and student classification were significant. Males and females showed significant differences in the means in regard to the student's grade, academic achievement, effort, respect for academic achievement, and self control. As reported, the mean differences ranged from .42 for academic achievement to .62 for the student grade. In all of these categories, the 75 females were graded or rated almost half a letter grade or half a point value higher than the 85 males.

These results are consistent with the research done by George Farkas et al. (1990), at least as it pertains to gender bias. In Farkas' analysis of teacher judgments of student work habits, the results showed a large and significant negative effect for males. In looking at the behavioral factor related to student disruptiveness, the results indicated that males are more disruptive than females. Although the research instrument in this present study was not directly designed to address issues of gender basis, the data does support that teachers do not rate males as high as females in most achievement and non-achievement categories. They achieve less, try less, respect academic achievement less, and exhibit less self control. This is profoundly reflected in the mean difference in their final grades was .62. This reflects final grades for females that are half a grade higher than males. The difference may be explained by noting that the average female received a final grade of 2.24 that is slightly above a C. The average male received a grade of 1.6 that falls almost midway between a C and a D. One is not surprised by the overall average C-D grades of all of these students since these are general ability students in lower ability classes. What is surprising is that within this sub-group there are significant differences in so many categories based on gender.

It was also noted that students in different grade levels showed significant differences in the means in regard to the student's grade, classroom behavior, respect for academic achievement, respect for authority, and self control. Grade 9 students have lower grades and exhibit significantly lower ratings than grades 10-12 on all achievement and non-achievement factors: student marking period grade, classroom behavior, respect

for academic achievement, respect for authority, and self control. Given that grade 9 students are younger and arguably more immature, this finding is not surprising. This may reflect a strong attempt by teachers to indoctrinate these younger students into the high school program by reinforcing their mutually accepted standards of appropriate learning behaviors.

Finally, students in regular, special education, and limited English proficient classifications showed significant mean differences in regard to student grades, respect for academic achievement, competitiveness, respect for authority, and self control. Students who are limited English proficient receive almost a letter grade higher than regular education students and more than a letter higher than special education students. Limited English students also demonstrate significantly higher means in all of the other rated non-achievement factors: respect for academic achievement, competitiveness, respect for authority and self control. Conversely, special education students receive the lowest final grades and are rated the lowest of all groups in all of the aforementioned achievement and non-achievement categories. It would appear that teachers are more tolerant and sensitive to the needs of students with language barriers, but are less tolerant of behaviors presented by special education students. One can only speculate on the reasons why. Are teachers more accepting of the mainstreamed limited English proficiency students simply because they are more docile and attentive because of their difficulties in communicating in English? Do they believe that special education students present learning and behavior issues that cannot be addressed in mainstream settings? Or

is it simply a matter that special education students because of the nature of their disability do not often present those acceptable learning behaviors that are desired in the classroom?

Limitations

As articulated in Chapter I, a study of this nature included a relatively small sample of high school teachers and their grading practices. Sixteen of 29 teachers responded to this survey. Although a 55% response rate is considered very good in sample research, questions still linger regarding what the other thirteen teachers are saying and doing about grading. As noted, the voluntary nature of teacher participation in this study may have indeed skewed the results since these volunteers are more willing to share their practices with others. Although one is somewhat comforted with the knowledge that the results, particularly in regard to academic achievement and effort being the strongest grading factors, are in line with studies cited in the literature review that involved much larger samples. For example, Nava and Loyd (1992) surveyed 827 elementary and high school teachers from 18 school districts. Robinson et al. Craver (1989), Austin and McCann (1992), and Agnew (1985) are also examples of studies that had significantly larger samples with multiple school districts whose results were consistent with the data presented in this study. One can only speculate on why the other 13 teachers did not respond. Was it simply a task that they did not want to do? Was it forgetfulness? Or did the study target on a private and hidden process of grading that they were not willing to reveal? Many teachers often resist any inquiries in their

classroom practices where for the most part they are in control of decisions they make from lesson planning to grading. Perhaps with the exception of new teachers, there is virtually little administrative oversight in these areas. Grading issues are often only addressed if students and parents complain. These complaints are typically the exception, not the rule.

Another limitation involves the demographic make up of the 16 teachers who responded. Although teacher descriptives such as subject area taught, advanced degrees, teaching experience, and age were fairly well distributed, all of the participants were white and nearly 70% were female. The question rises whether these results would be the same if the teachers were non-white and reflected a more balanced male viewpoint.

Another limitation surfaces regarding the student sample that consisted of 160 students placed in lower ability classes (general ability classes). The question here is whether or not teachers unintentionally or intentionally consider non-achievement factors such as effort and classroom behavior more when grading because these students typically do not achieve well in their subject area. In short, they have more difficulty in mastering course content. The fact that students are placed in these lower level classes is an indication that their grades in previous years have been low to average. One can assume that many of these students have not performed well on those assessments and products that teachers normally use to measure achievement such as tests, quizzes, projects and homework. Hence, do teachers then use more of what Nava and Loyd call a "global assessment" of achievement and consider other non-achievement factors such as

effort, attitude, and behavior in reaching their final grading determinations? Although Nava and Loyd suggest that this behavior is found more with elementary teachers, do secondary teachers assume the same "holistic" attitude when dealing with lower ability students? Since this sub group is typically not college bound, are teachers more willing to relax their achievement standards in these classes, recognizing that these students for the most part will not be competing for college placements? Is there a self-fulfilling prophecy at work here? Is it that teachers just do not expect these students to achieve, so they will reward them if they at least try and behave? Would the results of the data analysis be the same for the entire school population, particularly those in advanced placement and honors classes? Would teachers in other higher achieving classes be firmer and less flexible in grading students since these students who have to compete with other students beyond high school? Might teachers expect these students simply to master content and be less inclined to dismiss other attitudes and behaviors in determining grades? E. John Agnew (1985) cautiously concluded in his study that teachers in schools which had the most minority students and lowest levels of parent education, placed the least amount of emphasis on learning and achievement and the most on non-achievement factors i.e. behavior, attendance, and effort to award grades. Can one assume that teachers in lower ability classes in this study are behaving the same way here?

Educational Implications and Future Research

As asserted in Chapter I, by accepting the notion that letter grades are here to stay, one needs to continue to research how these grades are determined. The data analysis in

this study suggests that there are many variables that are considered in the grading process. Although grades primarily reflect individual academic progress and achievement and to a secondary degree effort, this study does support that other non-achievement factors also influence grading in a more complex and hidden way. Although members of the educational measurement community have argued that grades should only reflect achievement at a particular point in time, this study suggests, whether right or wrong, that grading is a much more complicated process and non-achievement factors are at work. Equally important is that grading practices may indeed vary from teacher to teacher, perhaps based not only on their own individual preferences but also based on student gender, grade level, and student classification i.e. regular, limited English proficient, and special education.

Considering the limitations of this study, additional research needs to be replicated with a much larger teacher and student sample. Although this research supports what teachers say about the relative importance of various grading factors in the literature, there is still a need to examine on a larger scale what teachers are doing in practice. In conducting additional research, one needs to also look at all ability levels, not just lower ability groups, to see if there are any differences in grading practices for students based on teacher expectations on what they can achieve. The research also needs to have a more diverse sample of teachers that are not predominately white and female.

Perhaps there is also a stronger need to move into the qualitative research domain, to conduct more in-depth research through focus groups and interviews, to delve into the

mindset of teachers as they make grading decisions. How do they determine a final grade? Do they look at test, quiz, and project grades first? How do they assess effort? A study in itself can be designed just to deal with this effort issue alone. Does completing homework, seeking extra help, or paying attention in class demonstrate effort? Or is there an assumption that if students are passing tests and completing projects, they must be working hard and trying? One needs also to examine some of the other non-achievement factors involving attitudes and behaviors, and how they play into teachers' decision-making processes? What about the student who cuts class, talks back, and lacks respect? How do these behaviors influence the grading process? What about the student who turns in all homework, seeks tutoring, gets along with all of his teachers and peers, but still can not pass a test? How are these students graded? Do these attitudinal factors come into play when their grades are borderline? Would such behaviors raise or lower grade? Would a student trying hard receive passing grades, even if he or she fails all indicators of content mastery? What about the question of gender bias? Why do males have lower grades and lower ratings on all achievement and non-achievement factors? Why are there also differences in ratings related to grade level and student classification? Perhaps, there is also a need to talk to parents and students themselves regarding their knowledge and perception of how grades, they believe, are determined. Do teachers communicate openly about how their grades are determined? Do teachers discuss how non-achievement factors such as effort, classroom behavior, and attendance are used in the grading process? These are just a few research questions that need exploration.

Given the complexity of the grading process, there obviously are many more directions that one could begin to research related to this issue.

Summary and Conclusions

It was hypothesized that there is an incongruity between what teachers say and do in regard to grading practices. It was further hypothesized that "hidden" non-achievement factors play a more important role in determining grades than reported by teachers in surveys or questionnaires. What has been learned? Are teachers consistent in what they say and do in grading situations? The answer is as clouded as it is complex. This research has only begun to examine what teachers say and what they do in actual grading situations. The results regarding what teachers say they do is consistent with the body of research outlined in the literature review, particularly in regard to academic achievement and effort as the strongest influences on grading practices. However, this research has only begun to shed some light on how some of the other non-achievement factors play into the grading process. This is the "what they do" aspect of grading.

In actual grading situations, respect for academic achievement, competitiveness, self control, and classroom behavior had moderate positive correlations with final grades. This is consistent with what teachers say when they are asked to rate these factors on their relative importance. Nevertheless, when teachers are asked to assign percentages based on the weight of these factors in determining grades, these non-achievement factors at first have little weight in determining final grades. This is supported by the evidence that when one partially controls for either academic achievement or effort, the partial

correlations for respect for academic achievement, competitiveness, self control, classroom behavior, and respect for authority were all reduced to a low significance level. Perhaps the real incongruity lies in what they say is the relative importance of these factors and what they say is the weight of these factors. One could argue that with the exception of effort, the other non-achievement factors, on the surface, play a less significant role in grading despite what teachers say about their moderate importance as a grading factor. However as cited earlier, the analysis of these inter-correlations suggests that academic achievement is also closely associated with effort and competitiveness and that effort is also closely associated with academic achievement, respect for academic achievement, competitiveness, and classroom behavior. Therefore, one suspects that there is more at work here than just academic achievement and effort and that other factors may be more influential that originally suspected.

All of these hidden non-achievement factors are attitudes or characteristics that represent middle class values. In a holistic manner, it is suspected that teachers are informally evaluating students, intentionally or unintentionally, on these non-achievement middle class factors to reach conclusions about what might be called student effort. Although the more objective criteria academic achievement appears to be given more weight in determining grades, it is filtered through this complex effort factor in making the final grading decision. How much it affects that final grading determination may vary from teacher to teacher. Does it slightly or more significantly raise or lower a

grade? One cannot confidently answer that question. However, it is safe to conclude that it is influencing grading decisions more than teachers know or say.

As noted in Chapter I, the results certainly can direct future discussion on teacher grading practices so that students and their parents have a better understanding of how these decisions are made. Perhaps only then can parents, teachers, administrators and policymakers begin to reach some agreement on what factors should be reasonably and explicitly considered in assigning grades. Most importantly, perhaps, teachers will reflect more on what they say and really do in grading so that they can at least openly communicate their philosophies and standards to students, parents, and members of the school community. However, one is still skeptical regarding how open many teachers may be considering that these decisions have never been subject to any sustained public scrutiny. Perhaps, discussions of grading practices should become a focus of professional development activities in school districts. The quest must continue to examine and seek understanding of this very complex and still "hidden dimension" of schooling.

References

Agnew, E. J. (1985, April). *The grading policies and practices of high school teachers.* Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Allington, R. L. (1983). The reading provided readers of different abilities. *Elementary School Journal, 83*, 548-549.

Apple, M. W. (1995). The curriculum as the larger environment. *ASCD Curriculum Handbook*, Retrieved June 25, 1999, from http://classlink.ascd.org/curriculum/apple.htm

Apple, M. W. (1998). The hidden curriculum and the nature of conflict. In F. Schultz (Ed.), *Sources* (pp. 53-62). Guilford, Connecticut: Dushkin/McGraw-Hill.

Austin, S. & McCann, R. (1992, April). *Here's another arbitrary grade for your collection: A statewide study of grading practices.* Paper presented at the Annual meeting of the American Educational Research Association, San Francisco, CA.

Ayers, W. & Schubert, W. H. (1993). The normative and the possible: values in the curriculum. In G. Hass & F. W. Parkay, *Curriculum planning: a new approach*, (pp. 15-18). Needham Heights, Massachusetts: Allyn and Bacon.

Bigelow, A. (1990). Inside the classroom: Social vision and critical pedagogy. *Teachers College Record, 91(3)*, 435-447.

Bigham Baron, P. A. (2000, April). *Consequential validity for high school grades: What is the meaning of graders for senders and receivers?* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Blount, H. P. (1997). The Keepers of Numbers: Teachers' Perspectives on Grades. *The Educational Forum, 61*, 329-334.

Brookhart, S.M. (1993). Teachers' grading practices: Meaning and values. *Journal of Educational Measurement, 30(2)*, 123-142.

Burton, F. (1983, April). *A study of the letter grade system and its effect on the curriculum.* Paper presented at the annual meeting of the American Educational Research Association, Quebec, Canada.

Cizek, G. J., et al. (1995, April). *Further investigation of teachers' assessment practices.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Cizek, G. J., Fitzgerald, S., Shawn, M. & Rachor, R. E. (1996). Teachers' assessment practices: Preparation, isolation, and the kitchen sink. *Educational Assessment, 3(2)*, 159-179.

Crooks, T. J. (1988). The impact of classroom evaluation practices on students. *Review of Educational Research, 58(4)*, 438-481.

Cross, L. H. & Frary, R. B. (1999). Hodgepodge grading: Endorsed by students and teachers alike. *Applied Measurement in Education, 12(1)*, 53-72.

Darling, D. R. (1998). Dealing with the hidden curriculum the easy way. Retrieved June 25, 1999, from http://www.suite101.com/article.cfm/

Durm, M. E. (1993). An A is not an A is not an A: A history of grading. *The Educational Forum, 57*, 294-297.

Ernst, E. (1993). A multicultural curriculum for the 21st Century. In G. Hass & F. W. Parkay, *Curriculum planning: a new approach*, (pp. 84-90). Needham Heights, Massachusetts: Allyn and Bacon.

Farkas, G., Grobe, R. P., Sheehan, D., & Shuan, Y. (1990). Cultural resources and school success: Gender, ethnicity, and poverty groups within an urban school district. *American Sociological Review, 55*, 127-142.

Frary, R. B., Cross, L. H., & Weber, L. J. (1993). Testing and grading practices and opinions of secondary teachers of academic subjects: Implications for instruction in measurement. *Educational Measurement: Issues and Practice, 2*, 23-30.

Guskey, T. R. (1994). Making the grade: What benefits students? *Educational Leadership, 52(2)*, 15-20.

Jussim, L. (1986). Self-fulfilling prophecies: A theoretical and integrative review. *Psychological Review, 93(4)*, 429-445.

Kunder, L. H. & Porwoll, P. J. (1977). Reporting pupil progress: policies, procedures, and systems. *ERS, Educational Research Service Report.* Arlington, VA: Educational Research Service, Inc.

Manke, M. P. & Loyd, B. H. (1990, April). *An investigation of non-achievement-related factors influencing teachers' grading practices.* Paper presented at the annual meeting of the National Council on Measurement in Education, Boston, MA.

Manke, M. P. & Loyd, B. H. (1991, April). *A study of teachers' understanding of their grading practices.* Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.

Marzano, R. J. (2000). *Transforming classroom grading.* Alexandria, VA: Association for Supervision and Curriculum Development.

National Center for Education Statistics. (1997). Trends in the teaching profession. Retrieved January 6, 2001, from http://nces.ed.gov/fastfacts/display.asp?id=28

Nava, F. J. & Loyd, B. H. (1992, April). *An investigation of achievement and nonachievement criteria in elementary and secondary school grading.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

New Jersey Department of Education. (2001). District Factor Groups. Retrieved April 13, 2001, from http://www.state.nj.us/njded/schools/achievement/dfg.htm.

Ortiz, F. I. (1988). Hispanic-American children's experience in classrooms: A comparison between Hispanic and non-Hispanic children. In L. Weiss (Ed.), *Race, Class and Gender in American education*, (pp. 63-87). Albany, New York: State University of New York Press.

Portelli, J. P. (1993). Exposing the Hidden Curriculum. *Journal of Curriculum Studies, 25(4)*, 343-358.

Procunier, R. W. (1975, April). *Effective student grading and progress reporting.* Paper presented at the annual meeting of the National School Boards Association, Miami Beach, FL.

Quiroz, B., Greenfield, P. M. & Altchech, M. (1999). Bridging cultures with a parent-teacher conference. *Educational Leadership, 56(7)*, 68-70.

Rich, J. M. (1993). Education and family values. *The Educational Forum, 57(*2),162-167.

Robinson, G. & Craver, J. M. (1989). Assessing and grading student achievement. *ERS, Educational Research Service Report.* Arlington, VA: Educational Research Service, Inc.

Rothstein-Fisch, C., Greenfield, P. M. & Trumbull, E. (1999). Bridging cultures with classroom strategies. *Educational Leadership, 56(7)*, 64-67.

Stiggins, R. J., Frisbie, D. A., and Griswold, P. A. (1989). Inside high school grading practices: building a research agenda. *Educational Measurement :Issues and Practice, 8*, 5-15.

Vallance, E. (1977). Hiding the hidden curriculum: An interpretation of the language of justification in the nineteenth-century educational reform. In A. A. Bellack & H. M. Kliebard (Eds.), *Curriculum and evaluation*, (pp. 590-607). Berkeley, California: McCutchan Publishing Corporation.

Wiggins, G. (1994). Toward better report cards. *Educational Leadership, 52(2)*, 28-37.

Appendix A

Study Instruments

Survey of Teacher Grading Practices

Thank you for participating in this research project. Research suggests that teachers commonly include many and various factors in assigning grades including academic achievement, effort, behavior, and attendance. One of the purposes of this study is to gather additional information regarding those factors that teachers consider in determining student grades.

Your participation in this study will remain entirely confidential, and you at any time may withdraw from the study. All data will be recorded anonymously and all identifying information will be deleted at the end of the study. Neither individuals nor the school district will be identified in the final research report. All teacher responses will be analyzed as a group and reported in aggregate form.

When you complete the survey, please seal it in the self-addressed, stamped envelope and mail it to the following address:

Robert H. Rich

35 Dogwood Road

West Orange, NJ 07052

The completion and return of your survey will serve as notice of your consent to participate in this study.

Thank you again for your participation

Teacher Questionnaire Items

Part IA:

Directions: In determining student grades, teachers often view different factors as being more important than others. Using the following key, rate the importance of each of the following factors in your grading of students:

Key:	**1 = Not Important**
	2 = Somewhat Important
	3 = Moderately Important
	4 = Very Important
	5 = Extremely Important

A. How the student's work compares with that of classmates.

1 2 3 4 5

B. Whether a student masters the content taught in the course.

1 2 3 4 5

C. How much a student improves during the marking period.

1 2 3 4 5

D. How much effort the student exhibits during a marking period.

1 2 3 4 5

E. How well the student behaves in class.

1 2 3 4 5

F. Whether the student attends class regularly.

1 2 3 4 5

G. Whether the student arrives to class on time.

1 2 3 4 5

H. Whether a student values learning and achievement.

1 2 3 4 5

Part IB:

Directions: In determining student grades, teachers often weigh factors differently. In this section, you are asked to indicate the relative importance of several grading factors. You will enter a percentage from 0 to 100 for each factor. All of the numbers entered for each grading factor should add up to 100 percent.

Example:	
A. Academic Achievement	**60%**
B. Effort/Hard Work	**10%**
C. General Classroom Behavior	**10%**
D. Attendance	**10%**
E. Overall Character	**10%**
Total:	**100%**

Please indicate the approximate percentage weight that you would assign for each of the following factors:

Academic Achievement _____

Effort/ Hard Work _____

General Classroom Behavior _____

Attendance _____

Overall Character _____

TOTAL _____ (100 Percent)

Part IC:

Directions: Students often demonstrate personal values and/or attitudes that may be considered by teachers when assigning grades. Using the following key, rate the relative importance of each of the following factors you use in determining grades for your students:

Key:	**1 = Not Important**
	2 = Somewhat Important
	3 = Moderately Important
	4 = Very Important
	5 = Extremely Important

A Student's Respect for Academic Achievement & Learning

1 2 3 4 5

B Student's Effort/Hard Work

1 2 3 4 5

C Student's Competitiveness

1 2 3 4 5

D Student's Respect for Authority

1 2 3 4 5

E Student's Self Control

1 2 3 4 5

Part II:

Directions: In this section, you are asked to assign grades for several of your students on several different factors. Please take the following steps before completing this task on the roster on the next page:

Step 1: Using your grade or record book, select the first general ability class in your daily schedule. Do not select any honors or advanced placement classes where students need to meet any special criteria for enrollment such as previous academic record, test results, or teacher recommendations.

Step 2: Examining your student roster in that class, randomly select every other student until you reach a total of ten (10) students.

Step 3: Write down the district's student identification number for each of the ten (10) students selected. Do not write down any student names, initials, or any other identifying information.

Step 4: Using the following key, give each of the ten (10) students a letter grade in each of the following eight (8) categories:

- Academic Achievement
- Effort/Hard Work
- Classroom Behavior
- Attendance
- Respect for Academic Achievement
- Competitiveness
- Respect for Authority
- Self Control

Key:	**A = Excellent**
	B = Good
	C = Average
	D = Passing
	F = Failing

Note: Please select one letter grade only. Your need to select the one grade which best reflects the student even if you believe that student may be borderline. Do not give any students combination grades such as A/B or D/F. Do not use plusses or minuses such as A- or B+. Please give a student a grade in each category even if you do not consider any of these factors in your grading

STUDENT ROSTER

Key: **A = Excellent** **B = Good** **C = Average** **D = Passing** **F = Failing**

Student ID #	Academic Achievement	Effort/ Hard Work	Classroom Behavior	Attendance	Respect for Academic Achievement	Competitiveness	Respect for Authority	Self Control
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

Appendix B

T- Test and ANOVA Tables for Teacher Ratings of Importance of Grading Factors According to Teacher Demographics

Table 26

Independent T-tests for Teacher Ratings of Importance of Achievement and Non-Achievement Factors by Teacher Gender

Variable		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Student Work Comparison	Equal variances assumed	3.314	.090	.688	14	.503
	Equal variances not assumed			.810	11.775	.434
Content Mastery	Equal variances assumed	3.314	.090	.688	14	.503
	Equal variances not assumed			.810	11.775	.434
Student Improvement	Equal variances assumed	3.128	.099	.089	14	.930
	Equal variances not assumed			.118	13.999	.907
Student Effort	Equal variances assumed	7.399	.017	-1.258	14	.229
	Equal variances not assumed			-1.665	14.000	.118
Student Behavior	Equal variances assumed	3.258	.093	-.936	14	.365
	Equal variances not assumed			-1.142	12.764	.274
Student Attendance	Equal variances assumed	6.139	.027	-1.018	14	.326
	Equal variances not assumed			-1.297	13.691	.216
Student Tardiness	Equal variances assumed	4.016	.065	.069	14	.946
	Equal variances not assumed			.086	13.198	.933
Student Values Learning	Equal variances assumed	8.039	.013	.273	14	.789
	Equal variances not assumed			.380	13.301	.710
Respect for Learning	Equal variances assumed	3.705	.075	.139	14	.892
	Equal variances not assumed			.176	13.592	.863
Effort	Equal variances assumed	11.967	.004	-1.235	14	.237
	Equal variances not assumed			-1.701	13.600	.112
Competitiveness	Equal variances assumed	.151	.703	-.456	14	.655
	Equal variances not assumed			-.481	8.886	.642
Respect for Authority	Equal variances assumed	17.392	.001	-.677	14	.509
	Equal variances not assumed			-.973	12.324	.349
Self Control	Equal variances assumed	14.067	.002	-1.151	14	.269
	Equal variances not assumed			-1.615	13.118	.130

Table 27

ANOVA for Teacher Ratings of Importance of Achievement and Non-Achievement Factors by Subject Area Taught

Teacher Ratings		SS	df	MS	F	Sig.
Student Work Comparison	Between Groups	1.167	3	.389	.248	.861
	Within Groups	18.833	12	1.569		
	Total	20.000	15			
Content Mastery	Between Groups	1.438	3	.479	1.278	.326
	Within Groups	4.500	12	.375		
	Total	5.938	15			
Student Improvement	Between Groups	.854	3	.285	.200	.894
	Within Groups	17.083	12	1.424		
	Total	17.938	15			
Student Effort	Between Groups	2.167	3	.722	.493	.694
	Within Groups	17.583	12	1.465		
	Total	19.750	15			
Student Behavior	Between Groups	.750	3	.250	.124	.944
	Within Groups	24.250	12	2.021		
	Total	25.000	15			
Student Attendance	Between Groups	3.750	3	1.250	.438	.730
	Within Groups	34.250	12	2.854		
	Total	38.000	15			
Student Tardiness	Between Groups	.854	3	.285	.117	.948
	Within Groups	29.083	12	2.424		
	Total	29.938	15			
Student Values Learning	Between Groups	.667	3	.222	.088	.965
	Within Groups	30.333	12	2.528		
	Total	31.000	15			
Respect for Learning	Between Groups	6.250	3	2.083	1.064	.401
	Within Groups	23.500	12	1.958		
	Total	29.750	15			
Effort	Between Groups	4.354	3	1.451	1.155	.367
	Within Groups	15.083	12	1.257		
	Total	19.438	15			
Competitiveness	Between Groups	3.104	3	1.035	.642	.602
	Within Groups	19.333	12	1.611		
	Total	22.438	15			
Respect for Authority	Between Groups	1.438	3	.479	.174	.912
	Within Groups	33.000	12	2.750		
	Total	34.438	15			
Self Control	Between Groups	1.854	3	.618	.211	.887
	Within Groups	35.083	12	2.924		
	Total	36.938	15			

Table 28

ANOVA for Teacher Ratings of Importance of Achievement and Non-Achievement Factors by Educational Degree

Teacher Ratings		SS	df	MS	F	Sig.
Student Work Comparison	Between Groups	1.000	1	1.000	.737	.405
	Within Groups	19.000	14	1.357		
	Total	20.000	15			
Content Mastery	Between Groups	6.250E-02	1	6.250	.149	.705
	Within Groups	5.875	14	.420		
	Total	5.938	15			
Student Improvement	Between Groups	6.250	1	6.250	.049	.828
	Within Groups	17.875	14	1.277		
	Total	17.938	15			
Student Effort	Between Groups	.250	1	.250	.179	.678
	Within Groups	19.500	14	1.393		
	Total	19.750	15			
Student Behavior	Between Groups	.250	1	.250	.141	.713
	Within Groups	24.750	14	1.768		
	Total	25.000	15			
Student Attendance	Between Groups	.000	1	.000	.000	1.000
	Within Groups	38.000	14	2.714		
	Total	38.000	15			
Student Tardiness	Between Groups	.563	1	.563	.268	.613
	Within Groups	29.375	14	2.098		
	Total	29.938	15			
Student Values Learning	Between Groups	.250	1	.250	.114	.741
	Within Groups	30.750	14	2.196		
	Total	31.000	15			
Respect for Learning	Between Groups	.250	1	.250	.119	.736
	Within Groups	29.500	14	2.107		
	Total	29.750	15			
Effort	Between Groups	6.250E-02	1	6.250	.045	.835
	Within Groups	19.375	14	1.384		
	Total	19.438	15			
Competitiveness	Between Groups	5.063	1	5.063	4.079	.063
	Within Groups	17.375	14	1.241		
	Total	22.438	15			
Respect for Authority	Between Groups	6.250	1	6.250	.025	.876
	Within Groups	34.375	14	2.455		
	Total	34.438	15			
Self Control	Between Groups	6.250	1	6.250	.024	.880
	Within Groups	36.875	14	2.634		
	Total	36.938	15			

Table 29

ANOVA for Teacher Ratings of Importance of Achievement and Non-Achievement Factors by Years of Teaching Experience

Teacher Ratings		SS	df	MS	F	Sig.
Student Work Comparison	Between Groups	2.929	2	1.464	1.115	.357
	Within Groups	17.071	13	1.313		
	Total	20.000	15			
Content Mastery	Between Groups	2.009	2	1.004	3.324	.068
	Within Groups	3.929	13	.302		
	Total	5.938	15			
Student Improvement	Between Groups	.509	2	.254	.190	.829
	Within Groups	17.429	13	1.341		
	Total	17.938	15			
Student Effort	Between Groups	.393	2	.196	.132	.878
	Within Groups	19.357	13	1.489		
	Total	19.750	15			
Student Behavior	Between Groups	.786	2	.393	.211	.813
	Within Groups	24.214	13	1.863		
	Total	25.000	15			
Student Attendance	Between Groups	.643	2	.321	.112	.895
	Within Groups	37.357	13	2.874		
	Total	38.000	15			
Student Tardiness	Between Groups	6.509	2	3.254	1.806	.203
	Within Groups	23.429	13	1.802		
	Total	29.938	15			
Student Values Learning	Between Groups	2.429	2	1.214	.552	.588
	Within Groups	28.571	13	2.198		
	Total	31.000	15			
Respect for Learning	Between Groups	.393	2	.196	.087	.917
	Within Groups	29.357	13	2.258		
	Total	29.750	15			
Effort	Between Groups	8.036E-02	2	4.018	.027	.973
	Within Groups	19.357	13	1.489		
	Total	19.437	15			
Competitiveness	Between Groups	3.652	2	1.826	1.264	.315
	Within Groups	18.786	13	1.445		
	Total	22.438	15			
Respect for Authority	Between Groups	1.366	2	.683	.268	.769
	Within Groups	33.071	13	2.544		
	Total	34.438	15			
Self Control	Between Groups	1.580	2	.790	.291	.753
	Within Groups	35.357	13	2.720		
	Total	36.938	15			

Table 30

ANOVA for Teacher Ratings of Importance of Achievement and Non-Achievement Factors by Teacher Age

Teacher Ratings		SS	df	MS	F	Sig.
Student Work Comparison	Between Groups	2.652	2	1.326	.993	.397
	Within Groups	17.348	13	1.334		
	Total	20.000	15			
Content Mastery	Between Groups	.225	2	.113	.256	.778
	Within Groups	5.712	13	.439		
	Total	5.938	15			
Student Improvement	Between Groups	2.589	2	1.295	1.096	.363
	Within Groups	15.348	13	1.181		
	Total	17.938	15			
Student Effort	Between Groups	.947	2	.473	.327	.727
	Within Groups	18.803	13	1.446		
	Total	19.750	15			
Student Behavior	Between Groups	1.652	2	.826	.460	.641
	Within Groups	23.348	13	1.796		
	Total	25.000	15			
Student Attendance	Between Groups	3.333	2	1.667	.625	.551
	Within Groups	34.667	13	2.667		
	Total	38.000	15			
Student Tardiness	Between Groups	4.044	2	2.022	1.015	.389
	Within Groups	25.894	13	1.992		
	Total	29.938	15			
Student Values Learning	Between Groups	4.818	2	2.409	1.196	.334
	Within Groups	26.182	13	2.014		
	Total	31.000	15			
Respect for Learning	Between Groups	4.841	2	2.420	1.263	.315
	Within Groups	24.909	13	1.916		
	Total	29.750	15			
Effort	Between Groups	2.756	2	1.378	1.074	.370
	Within Groups	16.682	13	1.283		
	Total	19.437	15			
Competitiveness	Between Groups	8.134	2	4.067	3.697	.054*
	Within Groups	14.303	13	1.100		
	Total	22.438	15			
Respect for Authority	Between Groups	4.801	2	2.401	1.053	.377
	Within Groups	29.636	13	2.280		
	Total	34.438	15			
Self Control	Between Groups	3.362	2	1.681	.651	.538
	Within Groups	33.576	13	2.583		
	Total	36.937	15			

* Correlation is significant at the .05 level (2-tailed)

Appendix C

ANOVA Tables for Teacher Weighing of Grading Factors According to Teacher Demographics

Table 31

ANOVA for Teacher Weighing of Achievement and Non-Achievement Factors by Subject Area Taught

Teacher Ratings		SS	df	MS	F	Sig.
Student Achievement	Between Groups	1762.500	3	587.500	1.889	.185
	Within Groups	3731.250	12	310.938		
	Total	5493.750	15			
Student Effort	Between Groups	506.104	3	168.701	2.858	.081
	Within Groups	708.333	12	59.028		
	Total	1214.438	15			
Student Classroom Behavior	Between Groups	44.917	3	14.972	.392	.761
	Within Groups	458.833	12	38.236		
	Total	503.750	15			
Student Attendance	Between Groups	110.417	3	36.806	1.525	.258
	Within Groups	289.583	12	24.132		
	Total	400.000	15			
Student Character	Between Groups	21.750	3	7.250	.502	.688
	Within Groups	173.250	12	14.438		
	Total	195.000	15			

Table 32

ANOVA for Teacher Weighing of Achievement and Non-Achievement Factors by Educational Degree

Teacher Ratings		SS	df	MS	F	Sig.
Student Achievement	Between Groups	25.000	1	25.000	.064	.804
	Within Groups	5468.750	14	390.625		
	Total	5493.750	15			
Student Effort	Between Groups	52.563	1	52.563	.633	.439
	Within Groups	1161.875	14	82.991		
	Total	1214.438	15			
Student Classroom Behavior	Between Groups	.250	1	.250	.007	.935
	Within Groups	503.500	14	35.964		
	Total	503.750	15			
Student Attendance	Between Groups	.000	1	.000	.000	1.000
	Within Groups	400.000	14	28.571		
	Total	400.000	15			
Student Character	Between Groups	2.250	1	2.250	.163	.692
	Within Groups	192.750	14	13.768		
	Total	195.000	15			

Table 33

ANOVA for Teacher Weighing of Achievement and Non-Achievement Factors by Years of Teaching Experience

Teacher Ratings		SS	df	MS	F	Sig.
Student Achievement	Between Groups	24.107	2	12.054	.029	.972
	Within Groups	5469.643	13	420.742		
	Total	5493.750	15			
Student Effort	Between Groups	5.009	2	2.504	.027	.973
	Within Groups	1209.429	13	93.033		
	Total	1214.438	15			
Student Classroom Behavior	Between Groups	8.893	2	4.446	.117	.891
	Within Groups	494.857	13	38.066		
	Total	503.750	15			
Student Attendance	Between Groups	16.071	2	8.036	.272	.766
	Within Groups	383.929	13	29.533		
	Total	400.000	15			
Student Character	Between Groups	18.429	2	9.214	.678	.525
	Within Groups	176.571	13	13.582		
	Total	195.000	15			

Table 34

ANOVA for Teacher Weighing of Achievement and Non-Achievement Factors by Teacher Age

Teacher Ratings		SS	df	MS	F	Sig.
Student Achievement	Between Groups	314.583	2	157.292	.395	.682
	Within Groups	5179.167	13	398.397		
	Total	5493.750	15			
Student Effort	Between Groups	98.362	2	49.181	.573	.578
	Within Groups	1116.076	13	85.852		
	Total	1214.438	15			
Student Classroom Behavior	Between Groups	4.038	2	2.019	.053	.949
	Within Groups	499.712	13	38.439		
	Total	503.750	15			
Student Attendance	Between Groups	60.606	2	30.303	1.161	.344
	Within Groups	339.394	13	26.107		
	Total	400.000	15			
Student Character	Between Groups	.318	2	.159	.011	.989
	Within Groups	194.682	13	14.976		
	Total	195.000	15			

Appendix D

ANOVA Tables for Student Grades and Achievement and Non-Achievement Factors by Student Demographics Rated by Teachers

Table 35

ANOVA for Student Grades and Achievement and Non-Achievement Factors by Race Rated by Teachers

Teacher Ratings		SS	df	MS	F	Sig.
Student Marking Period Grade	Between Groups	2.668	3	.889	.583	.627
	Within Groups	238.107	156	1.526		
	Total	240.775	159			
Academic Achievement	Between Groups	1.054	3	.351	.271	.846
	Within Groups	202.321	156	1.297		
	Total	203.375	159			
Effort	Between Groups	5.752	3	1.917	1.205	.310
	Within Groups	248.223	156	1.591		
	Total	253.975	159			
Classroom Behavior	Between Groups	3.228	3	1.076	.720	.542
	Within Groups	233.216	156	1.495		
	Total	236.444	159			
Attendance	Between Groups	3.459	3	1.153	.697	.555
	Within Groups	258.134	156	1.655		
	Total	261.594	159			
Respect for Academic Achievement	Between Groups	3.636	3	1.212	.868	.459
	Within Groups	217.858	156	1.397		
	Total	221.494	159			
Competitiveness	Between Groups	1.678	3	.559	.551	.648
	Within Groups	158.297	156	1.015		
	Total	159.975	159			
Respect for Authority	Between Groups	1.886	3	.629	.476	.699
	Within Groups	206.114	156	1.321		
	Total	208.000	159			
Self Control	Between Groups	3.225	3	1.075	.727	.537
	Within Groups	230.750	156	1.479		
	Total	233.975	159			

Table 36

ANOVA for Student Grades and Achievement and Non-Achievement Factors by Family Income Rated by Teachers

Teacher Ratings		SS	df	MS	F	Sig.
Student Marking Period Grade	Between Groups	6.803	2	3.401	2.282	.105
	Within Groups	233.972	157	1.490		
	Total	240.775	159			
Academic Achievement	Between Groups	6.411	2	3.206	2.555	.081
	Within Groups	196.964	157	1.255		
	Total	203.375	159			
Effort	Between Groups	5.304	2	2.652	1.674	.191
	Within Groups	248.671	157	1.584		
	Total	253.975	159			
Classroom Behavior	Between Groups	2.305	2	1.153	.773	.463
	Within Groups	234.138	157	1.491		
	Total	236.444	159			
Attendance	Between Groups	3.973	2	1.986	1.211	.301
	Within Groups	257.621	157	1.641		
	Total	261.594	159			
Respect for Academic Achievement	Between Groups	3.137	2	1.568	1.128	.326
	Within Groups	218.357	157	1.391		
	Total	221.494	159			
Competitiveness	Between Groups	1.589	2	.795	.788	.457
	Within Groups	158.386	157	1.009		
	Total	159.975	159			
Respect for Authority	Between Groups	1.370	2	.685	.521	.595
	Within Groups	206.630	157	1.316		
	Total	208.000	159			
Self Control	Between Groups	1.589	2	.795	.537	.586
	Within Groups	232.386	157	1.480		
	Total	233.975	159			