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A Study of First and Second Nine-Week Inter-Marking Period Grade Shifts in a Suburban Middle School

Rudolph J. Roethel
Old Dominion University

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A STUDY OF FIRST AND SECOND NINE-WEEK
INTER-MARKING PERIOD GRADE SHIFTS IN A SUBURBAN MIDDLE SCHOOL

A Research Paper
Presented to the Graduate Faculty
of the Department of Occupational and Technical Studies
at Old Dominion University

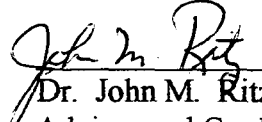
In Partial Fulfillment
of the Requirements for
the Master of Science in Education Degree

By
Rudolph J. Roethel
November 1998

APPROVAL PAGE

This research paper was prepared by Rudolph J. Roethel under the direction of Dr. John M. Ritz in OTED 636, Problems in Education. It was submitted to the Graduate program Director as partial fulfillment of the requirements for the Degree of Master of Science of Education.

APPROVAL BY:


Dr. John M. Ritz
Advisor and Graduate
Program Director

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Date

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CHAPTER I

INTRODUCTION

A recent review of one hundred and five report cards from an urban middle school provided an interesting and somewhat startling observation. It appears that for the majority of students, there is a decline in the core subject grades during the second nine-week period when compared to the first nine week grades. In fact, it appears that a majority of students seem to drop their grades in a number of classroom subjects during this period with perhaps the exception of physical education. This drop in grades possibly suggests that there may be a significant shift in student application to learning, increased subject matter difficulty or a change in academic capability. Additionally, it may be a reflection of the teacher's intrinsic biases and increased familiarity of the students. Both students and teachers may be achieving an academic and psychological norm for interaction. Furthermore it may also suggest that different teaching methodologies need to be employed for each nine-week term in order to compensate for the rapidly changing physiologic and psychological developmental changes adolescents undergo during these middle school years (Manning, 1993).

The nature of the learning environment changes dramatically during early adolescence and the middle school years (Anderman and Midgley, 1997). Rapid changes in physiological, psychological and social status as well as changes in achievement goal orientations, academic competence and grades are more likely to occur in the middle school years and may prove to have a negative influence on academic performance.

Early adolescence and the transition to middle school are difficult for most youngsters. It is the beginning of physical, emotional, social and intellectual growth which brings to the forefront a whole host of varying levels of excitement, anxiety, frustration and misunderstanding. The child, who in elementary school was obedient and academically motivated, suddenly changes and becomes disrespectful and academically lazy. This early adolescence begins the transition from full acceptance of adult authority and direction to challenging authority and moving toward greater self direction.

This transition is further developed and integrated within the school year itself. Students enter a completely new environment and with new expectations each year. They begin to seek their own identities and face the challenge of leaving behind much of their early childhood dependence on home and family. They strive to excel both academically as well as socially. However, as students begin the new school year, the desire for academic performance seems to be higher in the first nine-week grading period than during the second nine-week grading period. This initial desire to be productive may simply be a reaction to a new teacher, new friends and new environment. As students become increasingly comfortable with their teacher and the immediate school environment, this commitment to academic performance and learning may well decrease. In fact, as students become more socially and personally integrated within the school and classroom environment, increased peer pressure may cause students who normally maintain high grades to slip during this second nine-week grading period. This shift in academic performance seems to be suggestive of the rapid changes associated with adolescence especially in the eighth grade (12 - 14 year old) when these students are at

the peak of developing self-awareness. Unfortunately, this academic decline may force teachers to suggest to academic counselors, as well as to the administration, to reassess the academic placement of some of these students. They may end up being moved from more advanced classes back to core classes or even placed in remedial programs. However, understanding the psychological and social factors which influence this drop may provide teachers with the opportunity to increase their awareness and institute alternative learning strategies designed to maintain or increase student commitment to academic success.

STATEMENT OF THE PROBLEM

The problem of this study is to explore and determine if there is an academic and statistical relationship between first nine week marking period core course grades to second nine week marking period core course grades in academic subjects in eighth grade in a mid-sized suburban middle school.

RESEARCH GOALS

The primary goal of this research is to explore the statistical relationship, if any, in grade drops between the first and second nine week grading periods. Furthermore, the goal of this statistical analysis may provide:

1. A mechanism which may prove further the theoretical importance of social and psychological changes inherent in the adolescent as well as the teacher as accounting for such grade shifts.
2. A measurable indicator of possible changes in the intellectual, social, psychological and emotional climate of the classroom.

3. A subtle, valid observation which may allow teachers to adjust their teaching methods to enhance or suit student needs during this second marking period.

BACKGROUND AND SIGNIFICANCE

Culture has been variously defined as organized concepts learned and shared by man as a member of society (Richards, 1972; Wilson, 1975; Harris, 1979 and McCurdy and Spradley, 1979) and the purpose of education is to transmit the culture of a community to future generations (Azwell, 1995, p. 3). Educational systems have developed and attempt to transmit customs and mores to the young. Furthermore, in order to determine the effectiveness of such a transfer, societies developed varied assessment, evaluation, and reporting systems to provide feedback about the state of learning. Reporting systems must effectively transmit information to interested parties, and, as such, these assessment systems or “grades” are of great interest to a number of people including parents, teachers, administrators and of course students themselves. Although not an absolute measurement of intelligence, they do provide a relative quick measurement of how well students are performing academically (Ahmann, 1971; Brown, 1981). Grades provide parents with a concrete measurement of personal academic achievement of their children. For teachers, grades provide a measurement to gauge academic delivery and teaching methodologies (Brown, 1970). Administrators find grades a useful indicator of possible teacher performance as well as a standard on which to compare their schools with others in the district. Finally, for the students, grades may be a measure of their own personal achievements or as an avenue into more creative

programs. Additionally, for students grades may also be a positive or negative social badge (Kirschenbaum, 1971) or they may also be indicators of increased social and psychological difficulties in the environment outside of school.(McGarvey, et al, 1996). Grades have been and are an important part of the education process. If there is a significant shift in the majority of student grades within a specific marking period there should be an element of concern on the part of the teacher. Furthermore, it is imperative that all levels of the educational hierarchy (administrators, counselors and special educators) develop an increased sensitivity and level of awareness when such grade shifts occur within specific subjects or classrooms.

This particular study arose when a random review of the second nine-week grading period grades by a team at a mid-sized middle school in Virginia Beach, Virginia, indicated a significant shift in academic performance across subjects during the second nine-week grading period. The apparent exceptions to this drop were the physical education and the exploratory classes. The most obvious questions were “Why the drop?” and “Is this actually significant?” It also sparked other questions in rapid succession such as: “What condition in their learning lives changed so dramatically that we would see such a drop in grades?” “Is this a natural phenomena in the learning process?” “Should this be an expected result once students have fully integrated into the school and are now more comfortable with their teachers?” or “Do teachers after that first nine weeks inadvertently reduce their expectations for their students and this is just a student response to their decreased expectations?” Admittedly there are many more questions which can be raised, however the purpose of this study will be to determine if

there is in fact a statistically significant change from the first nine-week grading period when compared to the second nine-week grading period.

If there is a significant decline in grades between marking periods, answers to these questions and numerous other ones become increasingly important as schools nationwide implement rigid academic standards. Across the board grade level inter-marking period changes such as these may be indicators of subtle underlying intellectual, psychological and social shifts within the classroom or may serve as an indicator of individual student social profile changes. Individually, such grade changes become increasingly important if we are going to ensure that each student is fully prepared to meet and maintain their upcoming academic year obligations. Furthermore, such grade changes, although suggestive that the academic information is not thoroughly being assimilated by the students, may also be an indication that teachers have inadvertently shifted their focus from a rigid academic climate to one less so. It may simply be, that during this second nine-week session, students and teachers have become increasingly and overly comfortable in their classrooms and that the initial academic expectations subtly decline. If these things are indeed going on in the classrooms, we as educators must reassess our own student expectations and also our own teaching methodologies.

The significance of such grade changes may represent indicators that something, whether on the student or teacher level, is beginning to shift. School performance and grade shifts because of changes in the personal physical environment such as moving of students has been well documented (Goebel, 1978; Benson, et al., 1979; Blane, 1985

and Dauber, 1996). Familial structural changes, financial strains, initiation of abuse (whether sexual, physical or emotional), pregnancy or self esteem shifts may be all manifested in a decline of academic performance. However, across-team or grade level, these changes may be symptomatic of an underlying concomitant social, intellectual and psychological phenomena which may require further investigation. Identification, understanding and appropriate intervention is an expected response if we are going to ensure that all our students are continuously academically stimulated. Determining the significance of such inter-marking period changes may provide increased understanding of how students learn throughout the year and further analysis of these grade changes may yield a clearer understanding of influences on student learning. Additionally, analysis of these changes may also stimulate increased emphasis of varying teaching strategies for student instruction.

LIMITATIONS

The limitations of this study were as follows:

1. This study will be limited to an eighth grade team of 105 students, in a mid-sized urban middle school.
2. Data is restricted to the first two nine week grading periods gathered during the 1997/98 school year.
3. The team studied consisted of core classes in English, Mathematics, Social Studies (Civics) and Science. Data was collected only from core courses and Exploratory classes such as Spanish, Art, Chorus and Band were not included. These courses are elective courses in which student have a specific interest or a high level of

competency at the onset.

4. Those classes indicated on report cards as advanced classes in English, Mathematics (Algebra) and Science were also analyzed and further subdivided into Advanced versus basic if applicable. There were, however no advanced social studies or civics classes, although by virtue of student class composition, students in two bells of the social studies classes may be classified as advanced; they were not analyzed.

The students in this study ranged from the lower to mid socio-economic class. Parental structure varies with students and no attempt has been made to determine family structure at present.

ASSUMPTIONS

Based on a cursory review of one hundred and five report cards it is readily apparent that students seem to experience a drop in their grades during the second nine-week marking period when compared to the first nine week marking period. However, there is no statistical proof that such a change in academic performance is, in fact, statistically significant nor is it indicative of the intellectual, social, physical, psychological or emotional changes associated with adolescence nor is it indicative of changes in teacher methodology or the classroom environment. Nonetheless, this apparent grade shift has yet to be explored and warrants further analysis. Such an analysis, if significant, may suggest that new and specific interventions must be developed to ensure that continued academic quality and interest is maintained throughout all marking periods. Finally, it may suggest and it may be reasonable to assume that as students become increasingly familiar with their academic environment,

this perceivable decline in grades may simply be a normal flow in academic attainment.

PROCEDURES

Based on a cursory review of report cards from a mid-sized urban middle school, which indicated a significant shift in grades between the first and second nine week marking periods, report cards from one hundred and five eighth-grade students for the first semester of the 1997/8 school year will be compared to determine if there is a statistical difference in grades between the nine-week grading periods. Report cards issued by the district list, in addition to student identifying factors, each course, course number, absences and grade as well as an area which allows for comments by the teacher regarding the students individual academic performance. However, since grades reported by the school are recorded in alpha characters, they were converted into a numeric scale for statistical analysis, therefore, the following numeric scale was utilized: A = 4, B = 3, C = 2, D = 1 and E = 0. This simple conversion provides for concrete manipulation of data points.

Individual grades will be matched with the individually specific course grouping as represented on the report card and then compared using the appropriate statistical methodology. In the present phase of the study, no attempt was made to include the number of absences per student per nine week period nor will individual teacher comments regarding student performance be included in this particular analysis.

DEFINITION OF TERMS

For explanation, the following terms are presented:

Mid-sized suburban School - For the purpose of this research, the term "mid-sized

suburban school” is defined as a school in whose aggregate city population is greater than 250,000 residents.

Middle School - A school which stands, academically, between elementary and high school, is housed separately, and offers at least three years of schooling beginning with either grade five or six and ending with grade eight.

Transescence - Is the stage of development which begins prior to the onset of puberty and extends through the early stages of adolescence.

OVERVIEW OF CHAPTERS

This study seeks to explore and determine if there is an academic and statistical relationship between the first nine week marking period core course grades to second nine week marking period core course grades in academic subjects in eighth grade in a mid-sized suburban middle school. Chapter I, Introduction, delineates research goals, background and significance as well as providing limitations and assumptions of the study. Chapter II provides a thorough review of available literature as well as encompassing a historical overview of Middle School education. Additionally, the chapter will present the social and cultural considerations relevant to understanding the “early adolescence.” Chapter III discusses the methods, procedures and statistical analysis of the current study. Chapter IV relates the available findings and Chapter V provides recommendations for further studies.

CHAPTER II

REVIEW OF LITERATURE

In the second chapter of this study, a review of the current literature addressing inter-marking period grade shifts was conducted. There was, unfortunately, very little information in the literature regarding specific inter-marking grade shifts, however, a review of the historical development of Middle School education provides a basic understanding of how and why such grade shifts may occur. Additionally, the literature was reviewed for the social and cultural considerations of the Middle School development and philosophy as this also lends itself directly to explaining such grade shifts.

HISTORICAL OVERVIEW OF MIDDLE SCHOOL EDUCATION

Much like human cultural transmission, the evolution of the middle school has no specific or single ancestral beginning. Although it cannot be simply traced to a single place, person or event, the idea of separate schooling for young adolescents can be found as far back as the Greeks and the Romans when Quintilian (A.D., 35-95), for example, advocated schooling on three separate levels, with one level geared towards children 7 - 14 (Ornstein and Levine, 1993). School reorganization debates have occurred routinely throughout the history of education and any understanding of the current questions raised by this paper must include a review of the historical development of the middle school concept. To understand the present, we must look at the past development and influences.

The onset of the modern school reorganization debates has been credited to

Charles W. Elliot, president of Harvard University in 1888 (Brough, 1995, p. 28). He was not concerned so much with the general reorganization of schools as he was concerned with the increasing age of boys at their time of admission to college (Brough, 1995, p. 28). The average age of college admission had increased to 18 years, 10 months and this effectively meant that young men by the time that they finished their professional studies were not entering the job market until the ripe old age of 27 (Bough, 1995, p. 28). Rather than adjusting the university curriculum, he and many others suggested that the secondary program be adjusted. The dominant educational organization at this time, with some regional variation, was essentially eight years of elementary schooling and four years of secondary schooling. His criticisms sparked a national debate, although strictly on a collegiate level, and over the next two decades, numerous reports were commissioned by the National Education Association to address these problems. Although it never solved the problem, it did stimulate and subsequently initiate the development of the junior high school concept and organizational structure.

The junior high school concept (separating out the early adolescent) was recognized early this century. In fact, there were a number of schools developed specifically as junior high schools before the call went out to separate junior and senior high school divisions. Junior high schools were established in Columbus, Ohio, in 1909 and in Berkeley, California, in 1910 (Brough, 1995, p. 32). It was, however, not until the early part of the 1920s that genuine efforts were made to develop a school organization designed specifically for students in and around the early adolescent age group. Thomas Briggs was among one of earliest leaders of the junior high school development (Briggs,

1920). A distinguished professor at Teachers College of Columbia University, Briggs furnished first hand observations on the 7 - 9 grade structure after visiting over sixty junior high schools. His observations were extremely influential in the development of the junior high school organization and subsequent formation. Leonard Koos was another of the first leaders to promote the cause of the junior high school. His text helped to understand the early efforts at what was viewed as the reorganization of secondary education. Along with focusing on the curriculum, he placed considerable emphasis on the purpose of the junior high school (Koos, 1920). These authors, as well as other studies, in the 1920s and 1930s relied heavily on the reorganization of secondary education as well as identifying selective as well as effective techniques which may be incorporated into the junior high school model (Bennett, 1926; Davis, 1926; Touton and Struthers, 1926; Proctor and Ricciardi, 1930).

Studies in the 1930s also began reflecting the increased concern and claims that junior high schools were not spending enough time on the fundamentals of reading, language and arithmetic (Beatley, 1932). Additionally, authors such as Pringle (1937) provided the education community with an early psychological treatment for the need to adapt materials and methods to the developmental characteristics of junior high school age students. His approach became the essential thrust of middle school education and this served as the background for further research in the late 1940s and the 1950s. Smith, Standley and Hughes (1942) in their work entitled The Junior High School Education: Its Principles and Procedures defined far reaching visions of guidance, counseling, and other support needs of young adolescents. It examined adjustment concerns facing handicap

youth during their middle-level school years. The authors described issues critical for physically handicapped, mentally disturbed, and socially maladjusted youth and framed junior high school program concerns to deal with these special issues.

The late 1940s and the 1950s saw an increased emphasis towards viewing adolescents as a separate group which required a unique learning methodology. Gruhn and Douglass (1947) was the dominant book in the field for many years and became the most widely cited book and was still used in the 1980s. Blair and Burton (1951) were among the first to identify the special needs of learners between their primary and high school years. They examined the changing social insights of this “neglected group” and examined the conflicts arising from their changing relationships with parents and peers. Loomis (1958) focused upon the need for 5th and 6th grade school programs to articulate with those in grades 7 and 8. He examined the growing commonality of development and the educational needs of 10-to-14 year-olds and detailed school practices which facilitated this transition and her work predates the middle school movement’s position that earlier maturation of young adolescents meant that they increasingly needed school programs dealing with their developing maturity.

But in 1956, even as Gruhn and Douglass published the second edition of their book, The Modern Junior High School, criticisms of the junior high were mounting and the 1960s provided the backdrop for increased dissatisfaction with our nations schools, specifically with the junior high school. Repeated surveys and studies suggested that junior high schools were essentially nothing more than miniature high schools, imitating the latter’s curriculums, pedagogy, and schedule. The junior high school was no longer

fulfilling the functions proposed by Briggs (1920), Koos (1927), and Gruhn and Douglass (1956); it was no longer meeting the unique needs of its students. The junior high no longer served as a transitional phase to the senior high school but rather operated much like a senior high with its emphasis on content rather than exploration and departmentalization rather than integration. By 1965 there was clearly a need for educational reform of the junior high school. The middle school concept was beginning to take hold, not just an improved junior high but rather a whole new format.

Donald Eichorn's, 1966 book, The Middle School, was the first full treatise on the middle school. Now a classic, it continues to be the basic source for those studying the effort to improve the educational system for 10-15 year-old students and provides the model for the middle school concept. Eichorn's book reflects the rapid social changes which were occurring in the mid 1960s and prophetically anticipated further social changes subsequently associated in the early 1970s. Industrialization was adapting to an emphasis on more advanced technology. Generalized knowledge inherent in the educational systems of the previous decades was giving way and becoming less important than specialized knowledge and skills. Innovation became a valued item and concern. The Civil Rights Movement which had begun in earnest in 1965 rocked the established educational traditions and school systems throughout the country responded with plans for reorganization. Additionally, a population shift was occurring and secondary schools, which saw a population explosion in the 1950s and early 1960s, were suddenly facing declining enrollments while at the same time more students were entering our elementary schools (George, Stevenson, Thomason, and Beane, 1992).

Increased emphasis on the younger learner was clearly preeminent, as well as an increasing shift towards social, cultural and educational relevancy and responsibility. Samuel Popper in his 1967 book, The American Middle School: An Organizational Analysis, provided the social science sources of the concepts which formed the basis of middle school education in the late 1960s. Popper examined general theories of social systems, United States social history (since 1865), cultural anthropology and social psychology. Authors, such as Grooms (1967), Van Til, Gordon and Lounsbury, (1967), Howard (1968), Moss (1969). Hertling and Getz, (1971) and Overly, Kinghorn and Preston (1972), served as early guides in dealing with middle school organizations differing from traditional grade patterning and curriculums. Grooms (1967) covered middle school background rationale, staffing, programs, physical features as well as a look to the future. Van Til, Gordon and Lounsbury (1967) explored and developed concepts of team teaching. Howard (1968) discussed working with emerging adolescents as well as suggestions in methodology and attitudes for teachers in general. Moss (1969) clarified some of the claims for the middle school. Although he did this primarily for college student teachers and experienced educators and laymen, he nevertheless balanced historical and theoretical views with practical application and served as an excellent template for the middle school concept. Hertling and Getz (1971) on the other hand took on the growing interest in the junior high/middle school controversy as a way of giving a diversity of viewpoints by authoritative writers. Finally, Overly, Kinghorn and Preston (1972) postulated that education should be humanizing and furthered the emphasis of involving parents and the community more directly in planning and implementing the

middle school program.

By the mid 1970s and the early 1980s, the movement to establish middle schools was here to stay and by the end of the 1980s all doubt was gone. Authors such as Curtis and Bidwell (1977), and Lounsbury and Vars (1978) offered curriculum plans whose central focus was on the core curriculum organization; others placed increasing emphasis and focus on the essential role of the teacher (Sale, 1979, Alexander and George, 1981 and Merenbloom, 1983). Still others, Van Hoose and Strahan (1988) examined the nature of the transescent and the match between the transescent nature and the school environment. Student comments, gained from interviews, were highlighted as symbols which identify practices which are and are not in harmony with student environment. The view that the preadolescent constitutes a distinctly significant separate learning group has again sparked recent research. The emphasis now was not only on curriculum development and implementation, but also adolescent physical, social and cultural requirements (Manning, 1993).

THE SOCIAL AND CULTURAL CONSIDERATIONS

Increasingly, within the last decade, educators and researchers have shifted away from solely dealing with middle level organizational development, curriculum development and teaching strategies to struggle again with varying perspectives on the social functions of education. Social education again has reached the forefront and educators and communities must grapple with multiculturalism and diversity, the teaching of values, and conflict resolution. Concerns about middle level education which began early in this century and the controversy surrounding its philosophy, development

and implementation may well be discussed into the next century and beyond. It is through the study of and attention to the needs and characteristics of the clients, the young adolescents themselves, that this argument hinges.

Early adolescence, sometimes called transescence, was described by Eichorn as the “stage of development which begins prior to the onset of puberty and extends through the early stages of adolescence” (Eichorn, 1966, pp 3-4). It is a difficult time for most youngsters and is a time for challenging one’s self and the ideas brought from childhood. It is, as previously mentioned, the beginning of physical, emotional, social and intellectual growth which brings along with it extreme ranges of emotional, psychological and social mixtures (Manning, 1993, Walker and Lirgg, 1995 and Bowers, 1995). The emotional, psychological and social confusion that reigns in early adolescence creates a challenging climate for the young person and for all of those trying to help the youngster manage their lives.

The early adolescent’s academic success/failure is important with respect to his or her psychological development and marks the passage from primary to secondary education, the latter being the final stage for a large majority of students. Therefore, it becomes increasingly important to delineate factors which may be predictive of success in the academic setting, such as academic achievement, classroom behavior, self-concept, motivation to learn, and pupil-teacher relationships which all play an important role in adolescent development. However, while over the last decade, there has been increasing emphasis on delineating various factors such as psychological and physiological changes inherent in the young adolescent, there has been little research

examining the relation between academic achievement motivation and social constructs for the middle school adolescent.

Research examining achievement goals have routinely excluded social constructs. Guerin, et al, (1994) has shown, for example, that individual differences in temperament (either self or teacher perceived), especially in the dimensions of persistence and distractibility, are related to how well students handle academic demands. As the authors suggest, their findings may have important ramifications for school practice. Teachers may be particularly influenced by the temperamental characteristics of students and this may subtly influence the teachers' estimate of student capabilities. They further suggest that "teachers need to be aware that students' behavioral styles are generally unrelated to intellectual ability but may be related to academic achievement because of teachers' judgements and instructional decisions" (Guerin, et al, 1994, p. 221). Therefore, the predictive grade shift, as hypothesized, may be a function of teacher perceptions of behavior, and although not necessarily a predictor of academic capability, it may be manifested in grade shifts.

Research has established a link between peer relationships and children's academic achievement. Children who are not well accepted by their classmates tended to do poorer academically than more popular children (Austin and Draper, 1984) and may be at higher risk levels for dropping out in high school (Coie, Dodge, and Kupersmidt, 1990, Parker and Asher, 1993). Peer friendship and orientation toward academic achievement, whether positive or negative, also have a significant influence in achievement and effort in school (Urdu, 1997). Students associating with positively

oriented friends were strong predictors of task goals, whereas students associating with negatively oriented friends were strongly related to pursuing extrinsic and effort avoidance goals (Urda, 1997, p. 165). Thus, in adolescence, friends appear to influence general levels of involvement in school as well as decisions to spend time pursuing academic rather than social activities.

The underlying process that might explain significant links between peer relationships and achievement is not well understood, however, it may be reasonable to expect that students have a direct impact on each others academic performance. It is also possible that the pathway is indirect, with underlying social and emotional factors predicting both positive social and academic competencies. Wentzel and Caldwell (1997) examined the extent to which students' relationships with peers when they enter middle school may predict academic performance in later years utilizing prosocial, antisocial and emotional distress as student characteristics. Their results indicate that the peer relationships of young adolescents are indeed related to academic achievement in complex ways. Although group membership was the most consistent predictor of sixth and eighth grade point averages, the effects of peer relationships on grade point averages over time appears to be indirect. Nevertheless, their findings were consistent with the conclusion that peer relationships serve varied functions in the academic lives of the young adolescent (Wentzel and Caldwell, 1997, p. 1206).

Cognitive changes in young adolescents have generally lead to an increased capacity for abstract and conceptual thought beyond the egocentricity of childhood. This heightened sense of awareness which accompanies cognitive development (Eklind, 1967;

Wavering, 1995) may have significant implications because it increases the sense of public exposure and thus the potential for increased public embarrassment and shame within the classroom. Indeed, several research studies have found an increased guardedness in the classroom behavior of early adolescents. Good, et al., (1987) noted an increase in student passivity and a decrease in student-initiated questions over the grade levels. Emotional riskiness of class participation may increase for virtually all students in this age group and subsequently reduce teacher student interaction with an attendant negative grade shift.

The teacher-student relationship, which in the beginning of the school year may be highly personalized may become less personalized. Research has noted a drop in students' reports of supportive interpersonal relations with teachers after the transition into junior high (Feldlaufer, Midgley, and Eccles, 1988, Hirsch and Rapkin, 1987). At a time of increased awareness and at the stage when early adolescents begin to look outside the family as sources of support, they may experience greater depersonalization on the teachers' part. This decline in perceived support from teachers may be associated with lower intrinsic interest and lower belief in the value of schoolwork and again contribute to a overall reduction in grades. Classroom acceptance, perceived student-teacher support and a sense of overall sense of belonging play a large role in academic achievement, expectancies, values and effort (Goodenow, 1993).

SUMMARY AND OVERVIEW

The transition from the junior high school to the middle school concept and its historical development has in recent years increasingly become a focal point for

educational researches. Education of this highly volatile group utilizing the middle school concept of “whole student” education has raised new and interesting questions on adolescent achievement. This shift towards the middle school concept has personalized the young adolescent. However, it is readily apparent that additional methods and research must be developed to further identify the subtle yet profound changes that adolescents experience in the course of the learning. As we have seen in previous literature there are numerous factors which influence and cause changes in student achievement. Cultural, social, emotional, psychological, physiological, peer relationships, classroom belonging needs, teacher-student interactions etc., all play a significant role in the development and academic achievements of the young adolescent. What is not evident from the literature are critical indicators which may suggest that learning or some change in the direction of learning is taking place. Variability within this age group and the need of specialized teaching methodologies is not being questioned nor raised. However, what is being raised and the intrinsic purpose of this study is to determine if grade shifts may serve as an indicator of the adolescent dynamic and as a response to underlying social constructs.

Traditionally, student achievement has been measured by a variety of grading and marking systems. The question of the validity of utilizing comparative marking or mastery marking systems has sparked intense debates over the last two centuries and still shows no signs of consensus (Laska and Juarez, 1992). Linking student effort and learning to specific grades has been the focus as well as the standard for learning success (Natriello and Dornbusch, 1984). Recent research over the last ten years has also

focused on developing alternative methods of assessment such as portfolios (Fontana, 1995, Engel, 1994), to determine true levels of learning as well as exploring various other methods (Azwell and Schmar, 1995). Furthermore, within the last five years there has been the additional push towards authentic assessment while incorporating all levels of student intelligences (Gardner, 1997; Greenhawk, 1997 and Sternberg, 1994). Yet conspicuously absent from the literature reviewed are research studies delineating individual changes within the marking periods themselves and their significance. This does not suggest that the current research on developing new assessment techniques is invalid. On the contrary, the movement away from comparative marking is in the interest of the student if educators are going to determine the full level of learning achievement. It is merely suggested, that given the current constraints and the variability of the young adolescent, that utilizing intra-semester grades may prove to be an indicator of underlying conditions and would serve as a rapid method for teacher analyzation.

CHAPTER III

METHODS AND PROCEDURES

The use of grades as an assessment tool is the standard practice in the majority of school systems and as such they are readily accessible and may serve as a significant indicator of social, psychological and academic commitment shifts in student populations. The purpose of this study is to determine if there is a significant statistical difference between first nine-week marking period core grades when compared to second nine-week marking period core grades. A positive statistical correlation (a drop in grades) would suggest that there is some significant change occurring during these marking periods in the students' lives.

POPULATION

The population for this study consisted of an eighth grade team (N=105) in a mid-sized suburban school. The team was divided into specific home rooms and each core subject teacher had a home room. Students were fairly evenly distributed across the home rooms, 23 in home room 143, 26 in home room 137, 28 in home room 103 and 28 in home room 104. No distinction was made regarding gender, age or socioeconomic status.

METHODS OF DATA COLLECTION

First and second nine week report cards during the 1997/98 school year were collected and utilized in this study. Each report card consisted of the student's name, homeroom number, reporting period, advisor, course, description of the course, teacher and the first nine-week marking period grade, the second nine-week marking period

grade, semester grade, examination and the number of days absent. For the purpose of this study only core course grades, as well as physical education course grades, for the first and second nine-week periods were analyzed. Exploratory classes such as Spanish, Choir, Teen Living and Band were excluded.

STATISTICAL ANALYSIS

Statistical analysis was accomplished with the Minitab statistical program (Student Version), Release 9, (Minitab, Inc., 1995). Since only letter grades are recorded on the report cards, they were converted to numeric equivalents using the following scale: A = 4, B = 3, C = 2, D = 1 and E = 0. The four core classes were English (basic and advanced), Mathematics (basic and algebra), Science (physical science and advanced science) and Social Studies. Each nine-week marking period included all of the preceding courses and were designated P1-C (first nine-week marking period) and P-2C (second nine-week marking period). Number of data points for each nine-week grading period were 410. Grades were posted only for those students which had one or more of the classes listed. Those special education students which had grades for the core courses were included although they may not have had all four courses. A Student t-test was conducted to determine if there was a significant shift in core grades (at the 0.05 level of confidence) between the two nine-week marking periods. Additionally, individual courses were also analyzed to determine significant differences, thereby possibly suggesting inter-classroom academic shifts. This was done primarily to determine if there was a specific course which may have a significant shift in grades, thereby suggesting increased changes classroom in dynamics. Courses were divided as

follows: Basic English: P-1E and P-2E (n = 55), Advanced English: P-1E(A) and P-2E(A)(n = 48), Mathematics 8, P-1M and P-2M (n = 56); Algebra: P-1M(A) and P-2M(A), (n = 47); Physical Sciences; P-1S(PS) and P-2S(PS), (n = 50); Advanced Science; P-1S(AD) and P-2S(AD), (n = 53) and Social Studies; P-1SS and P-2SS, (n = 102). Although physical education is not a core course, it is a required course at the eighth grade level and represents a significant statistical population (n = 94). Physical education was designated as P-1PE and P-2PE.

SUMMARY

The first nine-week marking period core courses were compared with the second nine-week marking period core courses to determine if there was a significant statistical relationship in grades. Additionally and regardless of the overall significance, individual courses were also analyzed to determine course specific changes between the two marking periods. Courses were grouped according to classified levels, i.e., Advanced English versus Basic English. Each course was individually analyzed. There was no specific advanced Social Studies honors class and results reported are from the whole team (or all the students taking the course).

CHAPTER IV

FINDINGS

A cursory review of report cards from the first semester of the 1997/98 school year at a mid-sized suburban middle school indicated that there was a drop in core grades from the first nine-week marking period when compared to the second nine-week grading period. In order to determine if there was a significant statistical shift in grades between the two nine-week marking periods, report card data were analyzed using the student t-test of significance. The four core courses of English (basic and advanced), Mathematics (basic and algebra), Science (physical science and advanced) and Social Studies for each nine-week marking period were considered together to determine a statistical relationship. Moreover, to determine course specific significant differences each of the four courses were further delineated and designated either basic or advanced and individually analyzed. The only exception to this was the Social Studies course which did not have what would be considered an advanced level. Additionally, the physical education course was also considered in the analyzation, although not in the initial determination. Physical education is a required course in middle school but is not considered a core course and as such was analyzed independently.

STATISTICAL ANALYSIS

Results of the first nine-week marking period core course grades (P-1C) and the second nine-week marking period core course grades (P-2C) are provided as in Table 1.

Table 1
Core Courses Combined

Sample	N	Mean	Stdev	SE Mean	t	p
P-1C	410	2.32	1.29	0.064	3.85	0.05
P-2C	410	1.97	1.34	0.066		

As noted in Table 1, P-1C represents the first nine-week marking period and includes all four core courses regardless of the individual course level, P-2C represents the second nine-week marking period. Neither marking period included the physical education course. The comparison of the means ($p = 0.05, >1.645$) shows that the grade shifts between the first nine-week period core grades and the second nine-week period core grades are statistically significant. However, in order to determine if this grade shift is consistent for individual courses, t-tests were run for each course and the results are indicated in Table 2. Results of the two sample t-test, based on $p = 0.05$ level of significance would suggest that there is no statistical differences between the first nine-week Basic English (P-1E) and second nine-week Basic English (P2E) as well as the first nine-week Advanced English (P-1E(A) and second nine-week Advanced English (P-2E(A)). Utilizing the same level of significance, there is no statistical difference in Mathematics (P-1M) in the first nine-weeks and Mathematics (P-2M) in the second nine-weeks. There was also no statistical significance when comparing the Physical Sciences (P-1S(PS) and P-2S(PS) for the first and second nine-week grading periods respectfully. The first nine-week Advanced Physical Science (P-1S(AD) course also displayed no significant statistical difference when compared to the second nine-week Advanced Physical Science (P-2S(AD) course. Finally, Physical Education (P-1PE and P-2PE)

courses between the first nine-week marking period and the second nine-week marking periods were also not statistically significant. However, the results do note that there is a significant statistical difference when looking at Algebra (P-1M(A) in the first nine-weeks when compared to Algebra (P-2M(A) in the second nine-weeks. Social Studies (Civics) (P-1SS) in the first nine-weeks also indicated a statistical difference when compared to the second nine-week marking period (P-2SS).

**Table 2
Individual Courses**

Sample	N	Mean	Stdev	SE Mean	t	p
P-1E	55	1.75	1.09	0.15	0.61	0.54
P-2E	55	1.62	1.10	0.15		
P-1E(A)	48	2.875	0.703	0.10	1.93	0.057
P-2E(A)	48	2.562	0.873	0.13		
P-1M	56	2.18	1.24	0.17	1.03	0.31
P-2M	56	1.93	1.33	0.18		
P-1M(A)	47	2.638	0.819	0.12	2.10	0.039
P-2M(A)	47	2.21	1.12	0.16		
P-1S(PS)	50	1.28	1.41	0.20	0.51	0.61
P-2S(PS)	50	1.14	1.31	0.19		
P-1S(AD)	53	2.66	1.25	0.17	1.30	0.20
P-2S(AD)	53	2.32	1.42	0.20		
P-1SS	102	2.62	1.35	0.13	3.31	0.0011
P-2SS	102	1.95	1.52	0.15		
P-1PE	94	2.52	1.17	0.12	0.64	0.52
P-2PE	94	2.40	1.32	0.14		

SUMMARY

A mid-sized suburban middle school's grades were analyzed to determine if there was a statistical significance between first nine-week core grades and second nine-week core grades. Findings were determined by a utilizing student t-test comparison between first nine-week marking period core subject grades and second nine-week core subject grades. Additionally, core courses were further divided into specific types such as Advanced English, Advanced Physical Science or in the case of mathematics, Basic Mathematics or Algebra. Elective or Exploratory subjects were excluded from the study. Table I provides the statistical summary for first and second nine-week comparison and Table II represents individual course comparisons.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY

The problem of this study was to explore and determine if there was an academic statistical relationship between the first nine-week marking period core course grades when compared to the second nine-week marking period core course grades in a mid-sized suburban middle school. The primary goal was to determine if there is a statistical relationship between these two marking periods. Additionally, the research goals of this analysis included the validation of and support of the theoretical importance of social and psychological changes inherent in the adolescent as well as the teacher accounting for such grade shifts. Furthermore, the results from this research in grade shifts may also provide a measurable indicator of possible changes in the intellectual, social, psychological and emotional climate of the classroom. Finally, the research may provide a subtle, statistically valid method of observation which may allow teachers to adjust their teaching methods to enhance or suit student needs during the second marking period.

Reporting systems or “grades” are of great interest to a number of people including parents, teachers, administrators and of course the students themselves. For the parents, they provide a quick measurement of students’ personal academic achievement. Teachers may find these grades as a measurement to gauge academic delivery and teaching methods. Administrators utilize grades to gauge the teaching effectiveness of their teachers as well as a standard on which to compare their schools with others in the

district. For students, grades may be a measure of their own personal achievement, as an avenue to more creative programs or as a reflection of increased social and psychological difficulties in the environment outside the school. Grades may also be a distinct positive or negative social badge. Regardless of the reason grades have been and still continue to be an important part of the educational system and if there is what appears to be a significant shift in student grades during the marking period and between marking periods it becomes incumbent on all levels of the educational hierarchy to develop a heightened sense of concern. A significant drop in grades during inter-marking periods may further reflect or serve as observable indicators of not only student social profile changes, but may also be an indicator of classroom climate changes or teacher-student personal interaction shifts.

A cursory evaluation of the first nine-week marking period compared to the second nine marking period of an eighth grade team at a mid-sized suburban middle school indicated that there was indeed a significant observable grade shift in the core subjects. This study was limited to a single eighth grade team and the data collected was restricted to two nine-week grading periods during the 1997/98 school year. Core courses were identified as being English (both basic and advanced), Mathematics (basic and algebra), Science (physical science and advanced) and Social Studies. Exploratory courses such as Spanish, Band, Choral, etc. were not considered during this study. Physical education, although not a core course per se was considered because it is a required course within the district at grade level. It, however, was not considered during the core course computation and analysis but rather separately.

The population of the study consisted of 105 eighth grade middle school students. Student socioeconomic status ranged from lower to mid status. Parental status varies with students and no attempt was made to determine individual family structure. Report cards for each of the students assigned to the team were collected and core course grades (n = 410) were analyzed using the two-sample t-test ($p = 0.05$) to determine statistical significance between the first nine-week marking period and the second nine-week marking period. The four core courses were clustered together and compared between the first and second nine-week marking periods. Additionally, each core course was analyzed separately and was divided into either basic or advanced based on course description. For example, English was separated out into basic (n = 55) and advanced (n = 48), mathematics was divided into basic mathematics (n = 56) and algebra (n = 47) and science was classified as either physical science (n = 50) or advanced science (n = 53). The Social Studies course did not have either basic or advanced segments and was treated as a single course (n = 102). Physical education (n = 94) was also treated as a single course. Students, who on their report cards did not take a course, were not included in the analysis. However, they were included if they took a single course and the results for the grading period were included in the analysis. Determination of statistical significance was accomplished through the commercial statistics program Minitab. Student t-tests were run on all samples indicated.

CONCLUSIONS

The problem of this study was to explore and determine if there is an academic and statistical relationship between first nine-week marking period core course grades to

second nine-week marking period core course grades in academic subjects in an eighth grade mid-sized suburban middle school. The primary goal of this study was to explore and determine if there is a statistical relationship in grade drops between the first and second nine-week marking periods. Overall, the comparison of the two nine-week marking periods indicate that there is a statistically significant shift between the two nine-week marking periods and that there are some causative factors at work. This overall finding confirms the original thought that there is a grade shift between marking periods. The findings, however, suggest that although there does exist a statistically significant grade shift between the first and second nine-week marking periods, when individual courses are analyzed such a shift has proven not to be statistically significant.

The data analysis and review suggest that this is not indicative of a general trend. Rather, when individual courses were separated out and analyzed, both mathematics and social studies showed increased shifts. The grade shifts in algebra (P-1M(A)/P-2M(A) and in social studies (P-1SS/P-2SS) demonstrate statistical significance and may suggest a confirmation of the research goals. As previously indicated in the research goals, these grade shifts may confirm an intellectual, social, psychological and emotional climate change within the classroom. Additionally, they suggest a change in the student-teacher interaction within the classroom and would further suggest that a different methodology may be need in subsequent marking periods.

Conversely, these shifts may also indicate an increase in content difficulty. Had the grade shift been truly across the board and not just a reflection of significant individual course drops the assumption that underlying causes would be valid. At

present, such an assumption is not warranted based on the available data. However, the assumption that subtle shifts in grades within a class can alert a teacher to teaching methodology problems remains valid as does the need for classroom teachers to enhance and shift instruction when such changes occur. The results, although suggestive, do not fully provide a concrete view of the social, intellectual, emotional and cultural interactions of the adolescent. However, they do indicate that shifts occur on various levels, in this case, in two classes which may have resulted in an overall perception of inter-period grade drops. It is incumbent on the classroom teacher to periodically evaluate classroom grades so as to ensure optimum instruction. Review of individual test grades provide a single snapshot of a very limited scope and may yield individual student problems, however, grading period evaluation ensures a wider scope and greater information of classroom climate.

RECOMMENDATIONS

Further evaluation of grade changes remains to be done. A key element missing in this study was the lack of direct student input. Direct input from the student covering such topics as amount of time studied for each class, amount of time spent with friends and other information related to the social, psychological and emotional framework of the adolescent may yield causative reasons for this grade shift. Additional instruments reflecting the teacher's evaluation and perception of the student would also be beneficial in order to assess the total classroom climate. The additional information derived from the instruments previously mentioned would validate the social construct development of adolescence. Student self perception of the classroom environment, teaching and their

own social roles within the classroom as well as teacher perception may yet yield results which will or would provide the basis for increased understanding of the volatile thing we call the “early adolescent”.

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