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Preferences for the Ideal Classroom Environment: A Comparison Between Gifted and Nongifted Students

John R. Adams
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To the Graduate Council:

I am submitting herewith a dissertation written by John R. Adams entitled "Preferences for the Ideal Classroom Environment: A Comparison Between Gifted and Nongifted Students." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Psychology.

William A. Poppen, Major Professor

We have read this dissertation and recommend its acceptance:

Charles Thompson, Ohmer Milton, Ken Newton

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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and recommend its acceptance:

Oliver Wilton

Kenneth Parker

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Accepted for the Council:

L. Evans Beck
Vice Chancellor
Graduate Studies and Research

PREFERENCES FOR THE IDEAL CLASSROOM ENVIRONMENT: A COMPARISON BETWEEN GIFTED AND NONGIFTED STUDENTS

A Dissertation

Presented for the

Doctor of Education

Degree

The University of Tennessee, Knoxville

John R. Adams

August 1982

DEDICATION

Dedicated to my special loves:

Mary and Benjamin Adams

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ABSTRACT

Two major questions were addressed in this study: 1) What is the ideal classroom environment most preferred by students in a gifted and talented program?, and 2) Do preferences for the ideal classroom environment differ between students enrolled in a gifted and talented program and a comparison group of nongifted students?

The subjects were 147 eighth grade students selected from three middle schools in a large suburban school system. Seventy-three subjects were actively enrolled in a gifted and talented program, with the remaining 74 students randomly selected from the general population for comparison purposes. Schools were chosen because they were most representative of the socioeconomic range in the school system.

Data were collected on all subjects via three instruments: 1) the California Achievement Test; 2) the Otis Lennon Mental Abilities Test; and 3) the Classroom Environment Scale (CES).

The results indicated the gifted students wanted an ideal classroom environment that places strong emphasis on developing and maintaining good interpersonal relationships with their peers and teachers. They would like a high level of Involvement, where substantial energy can be devoted to class activities and discussions. Only moderate emphasis was given to Task Orientation. Gifted students wanted

average emphasis on Competition, thus suggesting the ideal class would not stress the importance of grades. The ideal class for gifted students was further characterized by high levels of Innovation, Rule Clarity, and Organization. Finally, the gifted students wanted a teacher who is non-authoritarian and lenient in enforcing rules.

Student responses to the CES indicated that in most dimensions gifted and nongifted students would ideally prefer similar kinds of classes. However, results from the data analysis between groups indicated statistically significant differences in the level of emphasis placed on five of the nine CES dimensions. These findings suggest that student perceptions of the ideal classroom environment can have important consequences for planning and implementation of gifted education. Greater awareness of student perceptions and opinions could provide educators and policymakers with an enlightened perspective regarding an effective match between the student and the learning environment.

TABLE OF CONTENTS

LIST OF TABLES

TABLE PAGE

CHAPTER I

INTRODUCTION AND REVIEW OF LITERATURE

The research described in this study was concerned with gifted and talented students' perceptions of their ideal classroom; it also related to other issues of central importance in educational research. These issues center around the use of adequate comparison groups when examining the gifted and obtaining the phenomological views of students when conducting educational research.

Brief History of Gifted Research

Francis Galton's (1869) publication of Hereditary Genius: An Inquiry into Its Laws and Consequences was the first substantive psychological work on the nature of giftedness. Galton maintained that genius was inherited, basing this belief on case studies of eminent men who had achieved distinction in science and government. Since genius as an innate concept was accepted widely by academicians in the late 19th and early 20th century, it was a fairly easy step to other theories which held to a genetic connection between genius and insanity (Lombroso, 1895; Nisbet, 1891).

While there are still adherents on both sides of the nature/nurture controversy, modern thought about giftedness began with the publication 57 years ago of Lewis Terman's Genetic Studies of Genius (Terman, 1925). In that, and

other subsequent volumes, common stereotypes surrounding the academically gifted were vigorously debunked and demythed. In fact, Terman's work is considered today as the most "valuable longitudinal psychological study every undertaken" (Gowan, 1977). Terman summarized the most important results of his study in an address to the American Psychological Association through the Bingham Lectureship series:

> . . . Children of IQ of 140 or higher are, in general, appreciably superior to unselected children in physique, health, and social adjustment; markedly superior in moral attitudes as measured either by character tests or by trait ratings; and vastly superior in their mastery of school subjects as shown by a three-hour battery of achievement tests. In fact, the typical child of the group had mastered the school subjects to a point about two grades beyond the one in which he was enrolled, some of them three or four grades beyond. Moreover, his ability as evidenced by achievement in the different school subjects is so general as to refute completely the traditional belief that gifted children are usually one sided. I take some pride in the fact that not one of the major conclusions we drew in the early 1920's regarding the traits that are typical of gifted children has been overthrown in the three decades since then (Terman, 1954, p. 222).

It is indeed to Terman's and his follower's credit that later studies have generally supported his findings (Hollingworth, 1926; Terman and Oden, 1947; Barbe, 1955; Gallagher and Crowder, 1957). However, his research has been soundly criticized for following a biased sampling procedure in favor of middle and upper class urban caucasians, and for using IQ as the sole basis for identification (Witty, 1930; Getzels and Dillon, 1973). For example, several studies have found that personality as well as physical differences were

a result of socioeconomic class, rather than intelligence as Terman originally thought (Bonsall and Stefflre, 1955; Frierson, 1965). Even so, Getzels and Dillon (1973) have stated that early research on the characteristics of gifted children was essentially completed during the years 1925-30, and has not been added to substantially, despite numerous investigations.

There have been some conceptual changes since Terman, Hollingsworth, and others completed their early research. The first major shift was away from investigations of giftedness as defined by IQ to the study of intelligence as determined by creativity. Guilford's theory into a structure of the intellect and his 1950 presidential address to the American Psychological Association calling for study into the relationship between creativity and intelligence has been credited with stimulating much of creativity research (Getzels and Dillon, 1973). Getzel's and Jackson's (1962) now classic study is a good example of creativity research. They found that even though an identified group of creative children were 23 points lower than that of the average high IQ subject, academic achievement was the same for both groups. Wallach and Kogan (1965) also established that factors other than intelligence can be predictors of high academic achievement.

More recently, research emphases has shifted to investigations of multiple talents as proposed by McClelland,

Baldwin, Bronfenbrenner, and Strodtbeck (1958). Project Talent (Flanagan, Davis, Dailey, Shaycoft, Orr, Goldberg, and Neyman, 1964) is an attempt much like Terman's to relate measures of talent obtained in adolescence to later adult life. Renzulli (1981) has also proposed a new conception of giftedness which tries to integrate current educational models:

> Giftedness consists of an interaction among three basic clusters of human traits--these clusters being above average general abilities, high levels of task commitment, and high levels of creativity. Gifted and talented children are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance. Children who manifest or are capable of developing an interaction among the three clusters require a wide variety of educational opportunities and services that are not ordinarily provided through regular instructional programs (Renzulli, 1981, p. 63).

Comparison of the Gifted and Talented with Other Groups

Generally, research on characteristics of the gifted can be divided into three subdivisions: physical, academic, and personality characteristics. The literature in these three categories has been prolific. For example, Laubenfel's (1977) bibliography included over 1300 selective references, most covering the period since 1961. Gowan (1961) listed as many references for the period 1956 to 1961. Nonetheless, Getzels and Dillon (1973) have presented a view of gifted research shared by many: "The profusion of studies on giftedness was not matched by a profusion of findings; rather many studies appear redundant in light of the work of early investigators like Terman and Hollingworth" (p. 692). In addition few studies on the characteristics of gifted children have

comparison groups consisting of nongifted children. Kaplan and Lotsof (1968) reported that of fifty-five studies dealing with characteristics of gifted children, only eight made use of a nongifted comparative sample. The result is a body of literature that may not describe characteristics entirely unique to the gifted but of traits that may be true of the general population as well (Hino, 1981).

Physical characteristics. For many years giftedness was thought to be causally related to superior physical development. Terman and Oden (1959) selected a random group of 594 gifted children between the ages of seven and fourteen and compared their physical characteristics with a control group of 527 average subjects. They found the gifted group superior on birth weight, average beginning age of walking, general physical health, height and weight. Other studies generally concurred with these findings, although the range of heights and weights were found to overlap for the gifted and average (Hollingworth, 1926; Witty, 1930).

In an attempt to determine whether physical differences between gifted and nongifted were truly a result of mental functioning or of high socioeconomic status, Frierson (1965) compared two groups of gifted children from upper and lower socioeconomic classes with two matched groups of average intelligence children. No physical differences were found between subjects at the same socioeconomic level. Differences were found in physical development between

children with high socioeconomic status and those at lower socioeconomic status, regardless of IQ.

Academic and intellectual characteristics. In the original Terman study, consistent academic and intellectual differences were found between his average and gifted sample. This is a testament more to the validity of IQ tests, since they tend to predict academic success, rather than measure talent, creativity, or intellectual ability. Early precociousness was noted among many of the Terman subjects. Almost half of the children had learned to read before entering first grade (Terman and Oden, 1959). Other characteristics noted by parents were curiosity, understanding, general fund of information, good memory, extensive vocabulary, and reading interest. Contrary to current beliefs at the time, gifted subjects were found to have the same range of academic interests as average children. Other studies have found similar differences emphasizing the higher achievement level of children with above average IQ scores (Witty, 1930; Lightfoot, 1951; Gallagher and Crowder, 1957).

In order to further examine cognitive strengths and weaknesses of gifted children, several authors have compared performance on IQ tests between the gifted and other populations. Gallagher and Lucito (1961) found that in comparison with average and retarded children, gifted subjects excelled in verbal comprehension skills and the ability to

associate concepts. They scored lowest in factors relating to perceptual organization, but were still higher than the average and retarded sample. The average children performed relatively well on tasks requiring memory and sequencing skills, while scoring low on abstract reasoning and verbal comprehension.

Moore, Hahn, and Brentnall (1978) compared fifth, sixth, and seventh grade normal and gifted students in a very similar study. Analysis completed on eleven subtests of the Iowa Achievement Test indicated the best predictors of giftedness were high scores on the verbal, vocabulary, and reading subtests, as well as concrete, rote, and simple manipulation skills. Poor discriminators were capitalization, reading comprehension, arithmetic calculation, and grammar. In a slight twist from the above studies, Namy (1967) compared intellectual and academic characteristics of fourth grade gifted and "pseudogifted" students. The pseudogifted were identified as gifted by their teachers but only scored in the high average range on an intelligence test. The results indicated the pseudogifted group was similar to other average groups in that their relative strengths were in memory skills rather than reasoning skills.

Personality characteristics. Gifted and talented students have consistently been credited with superior emotional adjustment and social acceptance (Witty, 1948; Barbe, 1955). In his original study, Terman (1925) administered a

battery of seven "character tests" to over 1000 gifted and average children, ages seven to fourteen. The tests were designed to measure emotional stability, overstatement in reporting knowledge and experience, "wholesomeness" of preferences and attitudes, and one which purported to measure "cheating under circumstances that offered considerable temptation." The results were consistently in favor of the gifted group; they scored higher on every subtest from ages ten to fourteen. Adequate comparisons could not be made below the age of ten because the average group was unable to read the tests. It was recognized later that the answers could have been biased because the brighter subjects correctly interpreted the purposes of the testing (Terman, 1925). Terman cited other sources which indicated that less than 5% of subjects may have guessed correctly.

In a later report on the same data, ratings of both gifted and control groups were completed by parents and teachers on the following traits: intellectual, volitional, moral, emotional, aesthetic, physical, social, and mechanical ability (Terman and Oden, 1947). Parents and teachers answers were correlated fairly high (.70) in general ratings, but with individual children they were much lower (.30) since as Terman believed, the individual child's behavior is different at home than at school. The gifted subjects were rated higher in every category except in mechanical ingenuity. Terman felt the "teachers were in error here, for test scores in mechanical ability have been consistently found to yield

positive, not negative, correlations with intelligence scores," and because teachers had few opportunities to observe the ability (Terman, op. cit., p. 65). Later studies have reported consistently lower rates of suicide, mental illness and adjustment problems, as Terman originally indicated (Gallagher and Crowder, 1957; Hildreth, 1938; Mensh, 1950).

Lucito (1964) examined the more specific personality characteristics of "independence" and "conformity" with children of 120 or above IQ and those of 82 or below IQ. The subjects judged lines of varying lengths in ambiguous and nonambiguous settings. Under peer pressure the brighter students were more likely to trust their own perceptions and to be more independent in their judgments than the below average group. Whether or not the same results would have been obtained with an average group was not addressed.

When socioeconomic levels of students are matched, the results of personality studies have been interpreted differently. Smith (cited in Gallagher, 1975) compared gifted and average children matched for age sex, social class, religion, and nationality. Teacher and peer evaluations were completed as well as tests of personality attitude. Gifted students were found to be more independent and forceful than the average group but on other measures such as personality integration and self concept there were no differences. Other studies which controlled for socioeconomic levels have

found that gifted and average children from the same socioeconomic group do not differ in emotional adjustment (Bonsall and Stefflre, 1955; Frierson, 1965).

Research comparing the intellectual, emotional and physical characteristics of gifted and average children has indicated the superiority of the gifted child. However, the gifted child's superiority is clearly related to the socioeconomic level or the quality of their environments. In addition, while gifted children do score higher than the average child on an IQ test, this fact is not surprising since giftedness is redundantly defined by high scores on an IQ test. Early research on the gifted individual has done much to discount common folklore and superstitions such as "early ripe, early rot" but according to several authors (Newland, 1963; Kaplan and Lotsof, 1968; Gowan, 1977; Renzulli, 1980) an adequate theory to guide research and evaluation efforts is still forthcoming.

Ecological Assessments of the Gifted

As Ketcham (1964) has noted, there is little information on how gifted children learn. Part of the reason he suggests for this scarcity of learning research was the emphasis for many years on stimulus response theories of psychology which have been found to be inadequate to explain the full range of human learning. As a result, the social-psychological approach has gained some prominence recently as an arena for fertile research in education (Bronfrenbrenner,

1976; Magoon, 1977; McMillan, 1980).

Based on a psychosocial approach, Bronfrenbrenner (1976) suggested three basic changes in educational research methods. First, research must be conducted in a natural setting, rather than in the laboratory. Second, the process of learning in educational settings is a function of the relationship between the characteristics of the learner and his environments, and between the numerous environments themselves. Third, a systematic contrast between the student and the environment results in an "ecological experiment," if there is control of confounding variables.

Bronfrenbrenner listed fifteen other propositions for a theoretical model of research, but one in particular is pertinent to this review: Even when research is conducted in a natural setting, it lacks meaning unless participant views of the experimental situation are obtained. The failure to achieve phenomenological validity by collecting subject views of their environment has confounded numerous experiments according to Bronfrenbrenner. For example, teacher expectancy studies have been criticized for not obtaining crucial information regarding how teachers actually viewed their students or if other variables were operating such as familial influences.

What Bronfrenbrenner labeled phenomenological validity, Magoon (1977) calls "constructivist research" with a similar emphasis on the perceived world of the learner. According

to Magoon, the constructivist approach concentrates on how pupils construct and interpret their learning environment. Constructivist or phenomenological investigations are not a new phenomena as evidenced, for example, by Hartshorn and Mays (1928) classic study of environmental factors influencing student behavior, or by the philosophical writings of Kant, William James and Merleau-Ponty.

Some recent research on giftedness provides a few examples incorporating the guidelines outlined above. Rice and Banks (1967) interviewed 119 gifted junior and senior high school students to determine their preferences for different kinds of academic courses. He also compared responses between students of 130 to 154 IQ, and those over 155. He found that all students wanted more freedom in course selection, elimination of many physical education and home economics classes, and increased emphasis on literature, drama, art, music, and the social sciences. Gifted students also desired experiential classes that produce tangible products such as inventions, creative writing, and music composition.

In contrast to the moderately gifted, highly gifted students reported wanting complete segregation of classes from their less able peers. Regardless of whether the student was highly or moderately gifted, most students reported the need for a few separate classes in such courses as mathematics and foreign languages. Of acceleration, enrichment, and grouping, acceleration was ranked the most desired on a subject by

subject basis. In a similar study, Renzulli and Gable (1976) asked gifted high school students how satisfied they were with independent study under the guidance of a mentor. Students reported greater satisfaction with independent study over other educational methods because: career motivation was promoted through excitement about learning; study habits and cognitive processes were improved; individual responsibility was enhanced; teacher support was increased; and there was greater freedom to pursue a wide range and depth of interests.

In addition to student perception of academic programs, a few studies have assessed ideal teacher characteristics. Bishop (1976) asked academically talented high school seniors to identify their most successful teachers. One hundred and nine teachers were eventually identified by the gifted group and compared with a control group of ninety-seven teachers who had taught the same students but not selected by them. Through extensive interviews, surveys, and testing, Bishop found some significant differences between the two teacher groups. Successful teachers of the gifted were more likely to be mature, experienced teachers who were mentally gifted themselves. Effective teachers were also more enthusiastic, stimulating, and organized. They did not differ from the control group of teachers on such variables as sex, marital status, highest degree held, and amount of course work preparation.

In a further study of gifted student ratings of ideal teacher behavior, Milgram (1979) asked gifted and nongifted students in grades four through six to judge and rank the importance of intelligence, creativity, and personal-social characteristics in an ideal teacher. The results were at odds with educators who believe personality and creativity to be more associated with teacher effectiveness than intelligence. All subjects, regardless of IQ score, placed a high value on intelligent teacher behavior, as characterized by mastery of the material and a logical, orderly class presentation. Since ideal teacher studies prior to Milgram's research had failed to compare gifted student perceptions with the nongifted, it is no wonder some of the results were surprising.

Ecological Assessments of the Classroom

Rather than addressing separate, isolated aspects such as teacher characteristics or student behavior some researchers have developed ecological instruments for assessing the climate or total environment of the classroom (Anderson, 1973; Silbergeld, Koenig, and Manderscheid, 1975; and Moos, 1973; Judah and Keat, 1977). Ecological research has come about, in part, because of recent investigations which indicate that differences in overall school programs account for only a small part in the amount of academic material learned, and other studies which have shown student influences upon teacher behavior (Moos, 1979). In addition, a phenomenological

assessment of the classroom may result in a more accurate class description than what observers counting behaviors may report (Moos, 1979). For example, a class low in teacher authority statements may actually be perceived by students as high in authoritarianism. A few authoritarian statements or actions may be overridden by the intensity of these actions: "It may only take a moment to expel a student from class, but that moment has an intensity and salience that leaves a clear and enduring impression on students" (Kaye, Trickett, and Quinlan, 1976, p. 375).

While there are other measures of classroom environment, the Classroom Environment Scale developed by Trickett and Moos (1973) has received the most consistent attention in studies measuring classroom climate. The Classroom Environment Scale (CES) is a ninety item, nine subscale, forced choice measure of classroom climate for use with teachers and students, junior high through high school. It has three forms: Form R (real form) to assess the actual classroom; Form I to assess conceptions of an ideal classroom; and Form E to assess expectations about a new classroom.

Methodological and theoretical investigations of the CES have generally been supportive. In an attempt to provide empirical as well as construct validity to the CES scales, Schultz (1979) obtained importance ratings of 215 eleventh and twelfth grade students in two schools. He did find support for the CES, but could not say for certain that

CES dimensions were the only ones present in classrooms. For the dimensions of Goal Orientation, Relationship, and System Change, the Relationship dimensions (Involvement, Affiliation, Teacher Support) were found to be more important in characterizing climates of real and ideal classrooms. Schultz found evidence for a smaller number of subscales than the nine described by Moos (1973). Even though Innovation is grouped under the System Maintenance dimensions, it was found to be more related to the Relationship dimension of Involvement and Affiliation. In a factor analysis of the CES, Trickett and Quinlan (1979) presented some evidence for a smaller number of subscales but were generally favorable in their findings.

Kaye, Trickett, and Quinlan (1976) compared the CES with observer ratings and a content analysis of teacher-student verbal interactions. The authors concluded the CES measures what it purports to measure. In another study designed to determine whether a group versus an individual analysis of scores might be more appropriate, Trickett and Wilkinson (1979) found no significant differences between the two approaches.

Moos (1979) investigated the possibility that student personality characteristics might influence their perceptions of classes. Students were identified as either high or low in internal-external control and exploration characteristics. Neither personality nor sex was found to

be a significant variable in the way students viewed their classes. These results are similar to other studies which found personality and socioeconomic class to be unrelated to perceptions of real and ideal class settings (Moos and Trickett, 1974; Nielsen, 1977; Moos and Bromet, 1978).

Some investigations have used the CES to determine the relationships between the classroom social environment and types of school settings. In one study, 409 classrooms in thirty high schools were contrasted among five types of public schools: suburban, urban, rural, vocational, and alternative schools (Trickett, 1978). This study was an attempt to produce further evidence that schools provide an important socialization setting in adolescence. Clearly, the results indicated the greatest differences between alternative and vocational schools.

True to their stated missions, alternative schools were significantly higher than the other four on the dimensions measuring interpersonal relations (Involvement, Affiliation, and Teacher Support). They scored significantly higher on classroom innovation in teaching practices, and surprisingly were among the highest on sticking to classwork, having classes well organized, and clarity of rules. Congruent with their emphasis on interpersonal relationships, alternative schools were lowest in Teacher Control and competition for grades.

In contrast, vocational schools had significantly higher Teacher Control, Competition, and Rule Clarity, but

were lowest in Innovation and Teacher Support. Rural, urban, and suburban schools were closer to the norm on all dimensions but to Trickett's surprise urban schools scored highest of all schools on Task Orientation.

In an attempt to relate professional climate to Holland's (1973) proposal that people's vocational choices are expressions of their personalities, Hearn and Moos (1978) administered the CES to 207 junior and senior high classes. A relationship was found between class climate and academic subject. For example, artistic classes had more Innovation but considerably less Competition, Rule Clarity, and Teacher Control. Math and physical science classes emphasized Task Orientation and Teacher Control but placed less emphasis on Involvement, Affiliation, and Innovation.

As predicted, conventional classes (office related) stressed Rule Clarity, Task Orientation, and Competition and they were high on Involvement and Affiliation. Social science classes were unpredictably low in Affiliation and Involvement. Realistic classes (vocational) placed high emphasis on Competition, Rule Clarity, and Teacher Control as expected but were unexpectedly high on Involvement, Affiliation, and Innovation. In addition, the lack of emphasis on Task Orientation in realistic classes was not predicted. The investigators hypothesized that realistic classes have "teachers who are what they teach." For example, printing classes are taught by a printer first, and a teacher second.

In contrast, sociology classes are taught by someone who identifies more with the teaching profession. Therefore, realistic classes may bring the excitement and challenge of a particular profession directly to the classroom. In summary, Hearn and Moos suggested that further research consider the ideal match between social climates and class subjects.

Hunt (1975) criticized education for failing to match student characteristics with an appropriate classroom environment. Cronback and Snow (cited in Hunt, 1975) described this approach as:

> to establish a spirit (or better, a 'grammar') within which educational researchers and planners think routinely of learner variables when designing or selecting instructional treatments, and of manipulative treatment conditions when defining school-relevant individual difference variables (p. 218).

Since the compatability (or lack of it) between student and classroom characteristics has been suggested as accounting for different levels of student behaviors, Moos (1978) attempted to correlate types of classrooms with measures of student satisfaction. A cluster analysis of 200 classes identified six types of classes: control oriented, innovation oriented, structured relationship oriented, supportive task oriented, supportive competition oriented, and unstructured competition oriented. By far, the most common classroom was the control oriented cluster characterized by a high emphasis on Teacher Control and the absence of any emphasis on other dimensions. This cluster was also the least liked by the students who reported

feeling alienated and unsatisfied with the teacher.

Innovation oriented classes were high in Innovation and all three Relationship dimensions, but low in Task Orientation, Teacher Control, and Rule Clarity. Structured relationship oriented classes were above average on Relationship dimensions with the highest emphasis on Rule Clarity and the lowest on Innovation. Supportive task oriented classes were characterized by their emphasis on Teacher Support, organization, and Task Orientation, but had below average stress on the maintenance dimensions of Rule Clarity, Teacher Control, and Innovation. Supportive competition classes were above average on all dimensions except Teacher Control and Innovation. In these classes students tend to be involved, friendly, and helpful to each other with homework. Students in unstructured competition oriented classes stressed goal orientation and had below average emphasis on all other dimensions.

In general, structured relationship, supportive task, and supportive competition classes fostered greater student satisfaction with learning, but only the latter two dimensions stressed the importance of friendships. Unstructured competition classes and Teacher Control classes were reported as having the least satisfaction with the teacher and class climate. Innovative classes reported greater student friendship, sense of comfort, and student satisfaction with the teacher but were less satisfied with student learning because of low goal orientation.

Several investigators have tried to determine the classroom environment factors affecting student academic performances. Moos and Moos (1978) specifically wanted to determine the relationship between student absenteeism rate, grade average, and class climate. Generally, they found absences were greater in classes where grades were difficult to obtain. In particular, classes having higher average grades had more emphasis on Involvement, Affiliation, Teacher Support, and Rule Clarity, but were lower on Teacher Control. Classes high in Competition, Teacher Control, and low in Teacher Support had higher absenteeism. As a result of these findings and previous studies, Moos and Moos described a "high risk" setting as low in support and Involvement, and high in Competition, Task Orientation, and Teacher Control. Moos and Moos further said:

> In this connection, there is evidence that the nature, strength, and availability of social supports are protective factors which buffer or cushion a person from the effects of various psychosocial life stress factors. Thus, an environment high in competition and support is likely to have a quite different impact from one high in competition but low in support (Moos and Moos, 1978, p. 638).

Moos and Moos recognized that achievement is enhanced in some children by competition, while it is a curse to others. They suggest that for students with different educational needs interventions should stress a student match with the teacher and curriculum or training provided to help the teacher change the climate.

This leads to the question "would a student/classroom match actually result in a happier student?" To investigate this problem, Nielson and Moos (1978) characterized students as either high or low in exploration preference (coping style). The results indicated that regardless of personal exploration preference, students in high exploration classrooms (more press for social exploration) were better adjusted and more satisfied. Using a different measure of student personality, Harpin and Sandler (1979) found that males with external locus of control had fewer behavior problems in high teacher control classrooms, as opposed to a low control classroom. Also, internal locus of control students in high control classrooms had significantly lower grades than internals in low control classrooms. They found no consistent effect for females.

In another study Trickett and Moos (1974) found that positive interpersonal relationships were highly correlated with student satisfaction. Student perception of the amount of learning was related to the CES scales of Competition, Involvement, Rule Clarity, and Teacher Support. Classrooms low in Order and Organization were directly correlated with feelings of student anger.

The research cited previously has concentrated on environmental characteristics of real classrooms. One study conducted by Moos and Trickett (1974) investigated teacher and student perceptions of the ideal classroom setting.

The study found that students and teachers generally agree on characteristics of the ideal class, except for the subscales of Task Orientation and Rule Clarity. Teachers would like more emphasis in these areas than students. In comparison to their real classes, teachers and students want less emphasis on Task Orientation, Teacher Control, Competition, and Order and Organization.

Moos (1979) cautions that even though student perceptions of the ideal class are very similar there is still considerable disagreement when one examines the individual student. The individual differences in ideal perceptions caused Moos to suggest: "different students want and presumably need different types of classroom environments" (Moos, 1979, p. 149). One would assume this to be true when planning educational environments for gifted children.

A review of the literature in gifted and classroom environment research has failed to locate any studies which examined gifted and talented student's perceptions of the ideal classroom environment. One study cited previously did ask for gifted student preferences regarding ideal teacher characteristics (Milgram, 1979) but their findings do not adequately assess other variables in the classroom environment. The present study proposes to ask eighth grade gifted and talented students for their perceptions of the ideal class setting in comparison with nongifted students of the same grade. Students at this age are just beginning high

school, and the results of such a study should be of interest to teachers and educational planners at the secondary level.

Therefore, the present study will address the following questions:

1. What is ideal classroom environment most preferred by students in a gifted and talented program?
2. Do preferences for the ideal classroom environment differ between students enrolled in a gifted and talented program and a comparison group of average students?

CHAPTER II

METHODS

Subjects

Subjects consisted of eighth grade students from three middle schools (hereafter designated as School A, School B, and School C) in the Knox County School System. These schools were nominated by a concensus of central office personnel as being most representative of the socio-economic range in Knox County. The schools were predominately white, low to upper middle class, and were located in both rural and suburban areas.

One hundred and fifty-one students eventually agreed to participate, but absences on the day of testing lowered the number of subjects to 147. The sample consisted of 73 students actively enrolled in a gifted and talented program (Group I), and 74 students selected from the same schools, but not enrolled in the gifted and talented program (Group II). The 73 subjects in Group I represented 49% of the enrolled eight grade gifted and talented students from the three schools. A frequency distribution of subjects by school and group presented in Table 1 shows that 53 students were obtained from School A, 49 from School B, and 45 from School C. The gifted and talented group was 53% female and 46% male, while the nongifted group had equal numbers of males

Table 1. Frequency Distribution of Subjects by Group and School.

School	Gifted/ Talented Group I (n = 73)	Non-gifted Group II (n = 74)	Total (n = 147)
A	23	30	53
B	24	25	49
C	26	19	45

and females. The frequency distribution of subjects by sex is presented in Table 2.

Selection for both groups was accomplished somewhat differently. After a series of meetings with the school principals, it was determined that the greatest percentage of gifted and talented students were grouped in reading classes across all three schools. Only those students enrolled in the Gifted and Talented Program were tested from reading classes. The comparison group, students not enrolled in the Talent Program, were taken from two randomly selected, heterogeneous homerooms at each school. Both procedures allowed testing to be accomplished in a group setting, with the least disruption during school hours.

To obtain student participation in the study each subject was given a permission letter (see Appendix A) distributed by either the reading or homeroom teacher. Students were instructed to take the letter to their parents and return the signed letter to their teacher within five days if permission was granted. Approximately 230 letters were distributed and, as mentioned previously, 151 were returned signed.

Setting

The Knox County school system has a student enrollment of over 27,000 in 33 rural and suburban schools. The average income of students' parents in the county is $14,000.00.

Table 2. Frequency Distribution of Students by Sex.

Sex	Gifted/ Talented Group I (n = 73)	Non-gifted Group II (n = 74)	Total (n = 147)
Males	34	37	71
Females	39	37	76

Note: Chi square tests comparing males and females between groups and within groups yielded no significant differences.

Residents are primarily white and middle class to upper middle class.

While Knox County Schools has one of the largest systems in the state of Tennessee, it does not adhere to State Department of Education guidelines concerning identification of gifted students, i.e. a child achieves an intelligence quotient "at least two standard deviations above the norm" (Rules, Regulations and Minimum Standards, 1978-79). To be eligible for state monies, school systems must adhere to the following definition of giftedness:

> (X) Intellectually Gifted
>
> (I) Definition.-A child whose intellectual abilities and potential for accomplishment are so outstanding that they require a variety of special provisions to meet the established educational needs and who has an intelligence quotient at least two standard deviations above the norm as measured by an individual intelligence test is considered intellectually gifted.
>
> (II) Criteria for Eligibility for Special Education Services.-A child must have one or more of the following characteristics:
>
> (I). Capabilities that exceed those of most children of the same chronological age range.
>
> (II). Abilities considered consistently remarkable.
>
> (III). Regular school curriculum barely approximates the demands of either learning capacity or the anticipated social roles of a child with this ability.
>
> (IV). Advanced interests and psychological maturity.
>
> (III) Certification by specialists.-Intellectual giftedness must be certified by licensed psychologist, certified school psychologist or certified psychological examiner. Documentation must be in writing (p. 81).

Knox County Schools received a small grant in the 1980-1981 school year to train teachers to use a different model to identify and educate gifted students. Based on the "Enrichment Triad Model" developed by Renzulli and Smith (1978), gifted and talented students were selected on the basis of: above average ability, task commitment, and creativity. Students were nominated to enter the program by trained coordinators on staff at each school and classroom teachers trained in the identification process.

Considering the above three characteristics, Renzulli, Reis, and Smith (1981) state that people display "gifted behavior" according to situational constraints and interests. The authors suggest a "revolving door model" which permits students to move in and out of programs as student needs demand it. Additionally, they propose that the program is designed to accommodate substantial increases in the number of gifted students served by special education and the regular classroom teacher (Renzulli, Reis, and Smith, et al., 1981). They also suggest that the number of gifted children being served should amount to at least 25% of the school population. Knox County has decreased this number to 15% of the school population. Final identification is usually accomplished by teacher completion of the Strength-A-Lyzer (Renzulli and Smith, 1979), which summarizes information regarding the student's abilities, strengths, interests, and preferred learning styles.

Basically, this model has three learning levels, each

with its own goals and objectives. The first two levels, General Exploratory Activities and Group Training Activities, are considered to be appropriate for all students. Goals are to expand student interests and develop thinking and feeling processes. According to Renzulli (1976), these two types of enrichment activities are important steps leading to the third type, appropriate primarily for gifted students. Type III enrichment, also called Individual and Small Group Investigations of Real Problems, should account for at least one-half the time gifted students spend in enrichment activities.

In Type III enrichment, the student focuses on real problems and becomes an investigator much like any researcher. The success of the student in this phase, Renzulli contends, is dependent on his/her task commitment or motivation brought to the investigation. Since task commitment is also a function of the student's awareness of their interests, the teacher plays a major role in helping to identify specific areas to research. Other responsibilities of the teacher include providing students with: inquiry training, advanced library skills, identifying and locating important resources, and the skills needed to communicate the investigative work effectively (Renzulli and Smith, 1978).

Procedure

Data were collected in two phases. The Classroom Environment Scale was administered to each subject during the first phase. Instructions to the subjects were uniform

across all groups (see Appendix A). The investigator informed each group that they were taking part in a study which asked for their honest and sincere opinions about what an ideal class should be like, as opposed to their actual or real classrooms. Several examples were provided to make sure all understood the differences between real and ideal, and the subjects were instructed to read along with the investigator in their individual test booklets. Time was also provided for subject questions, if any.

In the second phase of data collection, the investigator reviewed each subject's cumulative record and recorded his/her most recent achievement test scores in reading and math (percentile scores); these were later converted to normal curve equivalent scores for statistical comparisons. The California Achievement Test (CAT) was administered approximately two months previous to data collection, the results arriving while the research was being conducted. In addition, scores were recorded from the Otis Lennon Mental Abilities Test. The Otis Lennon was administered when the subjects were enrolled in the fifth grade. Unfortunately, cumulative records were sometimes incomplete for both the Otis Lennon and CAT. A total of 140 subjects had complete achievement test scores and 122 had scores recorded for the Otis Lennon scores.

Instrumentation. Student data were collected using three instruments: the Ideal Form of the Classroom Environment Scale, the California Achievement Test, and the Otis Lennon Mental Abilities Test. The Classroom Environment Scale (Trickett and Moos, 1973) provides student derived scores on nine dimensions of classroom environment: Student Involvement, Affiliation, Teacher Support, Task Orientation, Competition, Order and Organization, Rule Clarity, Teacher Control, and Innovation. The CES items are easily understood, answered true or false, and can be scored quickly. (See Appendix A for a copy of the CES survey items and a description of CES dimensions.)

The California Achievement Test is administered in Knox County Schools to obtain some measure of student learning. According to Womer (cited in Buros, 1978), the tests are designed for "measuring, evaluating, and analyzing student performance in the basic curriculum context areas of reading, mathematics, and language." It has been standardized from a sample of 203,000 students in 36 states, including Tennessee. Validity and reliability coefficients are acceptable, ranging from .75 to .96. While the CAT has been criticized for not measuring science or social studies, and for not differentiating adequately between students at the upper levels of the test, it is still widely used across the United States.

Routinely administered to Knox County students in the

third and fifth grades, the Otis Lennon Mental Abilities Test is another measure of student performance. The theoretical rationale for the Otis Lennon originates from Vernon's description of the structure of mental abilities, which include two divisions integrated into Spearman's g: verbal educational and practical mechanical (Milholland, J. cited in Buros, 1972). The Otis Lennon only covers the part of the structure to include the verbal educational half. The scores are presented in deviation IQ's, and as age and grade percentile ranks and stanines. The standard error of measurement for IQ scores vary from 3.9 to 7.0 depending upon the alternate form used. Alternate form reliability beyond grade four are reported to be .90 or better. It is, according to Milholland (op. cit.), more a measure of scholastic ability rather than mental ability and therefore correlates well with other measures of general scholastic aptitude.

Data analysis. Data generated by the CES resulted in nine separate scores which range from 0 to 10 for each subject. These raw scores were combined for Groups I and II and means computed. The nine group means, corresponding to the nine subscales of the CES, were compared between groups using an analysis of variance for unequal groups. Since variables associated with the sex of the subject might account for some differences found, an analysis of variance was computed to

test for significant differences by sex and group on achievement test scores, intelligence test scores, and CES scores. A comparison by sex was also made within both groups on CES scores. To ascertain whether qualitative differences between schools might account for any significant results, between group and within group means were compared by school on all data collected using an analysis of variance.

CHAPTER III

RESULTS

This study explored the perceptions of middle-school gifted and talented students toward their ideal classroom environment. To accomplish the specific goals of the investigation, their responses were contrasted with students not eligible for enrollment in a gifted and talented program.

In scoring each student's responses on the Ideal Form of the Classroom Environment Scale (CES), a possible one to ten score was obtained for each of the nine subscales, yielding nine scores per student. Students were then grouped according to whether they were actively enrolled or not enrolled in the Gifted and Talented Program, and scores were averaged. A score of ten would represent very high emphasis or desire, a score of five moderate or average emphasis, and a score of one would indicate low emphasis on any given subscale.

Four analyses were eventually completed and are presented in this chapter. First, the two groups were compared on measures of academic functioning to verify academic differences between groups. Secondly, the nine CES subscale means were computed for both groups and compared for similarities and differences. Third, male and female responses were contrasted to determine if any significant findings might have been affected by sex differences. Fourth, all

students were combined by school to determine if differences in school climate or programs might have contributed to the results. In all analyses, the significance level was at the .01 level or beyond in order to reject the null hypothesis. The source tables and the exact significance levels found for all analyses are presented in Appendix B.

Comparisons Between Gifted and Nongifted Students

Academic functioning. Students enrolled in the Gifted and Talented Program differed from the comparison group in their understanding of basic reading and mathematics skills. The two groups' mean achievement test scores are presented in Table 3. The gifted group achieved a significantly higher average score in both reading ($F(1, 138) = 69.62$, $p < .0001$), and mathematics ($F(1, 138 = 100.93$, $p < .0001$) normal curve equivalent scores. Converted into percentile ranks (California Achievement Test, 1977), the gifted and talented group scored at the 93rd percentile in reading, while the comparison group scored at the 71th percentile. In mathematics, Group I scored at the 92nd percentile and Group II scored at the 63rd percentile.

Similar results were found between groups on the Otis Lennon Mental Abilities Test. Group I achieved a significantly higher mean IQ score than did Group II ($F(1, 120) = 74.45$, $p < .0001$). Mean scores for both the talented and comparison groups are presented in Table 4.

Table 3. Comparison Between Mean Scores of Group I and Group II on the California Achievement Test.

	Gifted/ Talented Group I	Non-gifted Group II	SD	F
Reading	80.95	61.85	13.54	69.62*
Math	78.86	56.73	13.02	100.93*

*$p < .0001$.

Table 4. Comparison Between Mean Scores of Group I and Group II on the Otis Lennon Mental Abilities Test.

	IQ Score	SD	F
Group I (Gifted/Talented)	123.15	10.82	74.45*
Group II (Nongifted)	106.19		

*$p < .0001$.

Perceptions of the ideal classroom environment: relationship dimensions. All three relationship dimensions may be understood as measuring relatedness to some extent (Trickett, 1978). Involvement can be viewed as relating to the class as a whole, Affiliation as relating to one's peers, and relatedness to one's teacher as Teacher Support. Groups I and II differed significantly on all three Relationship dimensions, as presented in Table 5. A single comparison analysis of variance found significance beyond the .01 level (Involvement: $F(1, 145) = 14.97$, $p < .001$; Affiliation: $F(1, 145) = 21.55$, $p < .0001$; Teacher Support: $F(1, 145) = 22.37$, $p < .0001$). The results indicated that the gifted and talented group are more likely to mark true to items measuring involvement, such as "Students will put a lot of energy into what they do here" or to disagree with the statement, "Students will daydream a lot in this class." Group I students also rated Affiliation variables very highly. They want an ideal class in which "students will get to know each other really well" and friendships are important. They are also more likely to mark false such items as "some students in this class won't like each other."

On the variables measuring Teacher Support, the gifted and talented students perceived the ideal classroom to have a teacher who is more trusting, friendly and helpful than does the comparison group. Students in Group I typically marked true such items as "the teacher will take a personal interest

Table 5. Comparison Between Mean Scores of Group I and Group II on CES Relationship Dimensions.

CES	Gifted/ Talented Group I	Non-gifted Group II	SD	F
Involvement	9.52	8.50	1.60	14.97*
Affiliation	9.36	8.26	1.44	21.55**
Teacher Support	9.37	8.09	1.63	22.37**

*$p < .001$.

**$p < .0001$.

in students," or "the teacher will go out of his way to help students." They are less likely to endorse such items as "sometimes the teacher will embarrass students for not knowing the right answer," and "students will have to watch what they say in this class."

Perceptions of the ideal classroom environment: personal growth or goal orientation dimensions. Within the Goal Orientation dimension, Task Orientation concerns the perseverance one brings to classwork and related activities, while the Competition subscale involves the amount of emphasis placed on competing for grades and recognition. The talented and gifted group and the comparison group did not differ on variables measuring Task Orientation and Competition as presented in Table 6. The congruence between mean scores on Task Orientation indicates that both groups want slightly above average emphasis upon the entire class time being spent on the lesson for the day and a class where the teacher seldom gets sidetracked. Both groups would be likely to rate false such items as "this teacher will often take time out from the lesson plan to talk about other things," or "this class will be more a social hour than a place to learn something."

Students in both groups report wanting equivalent, but average interest in variables relating to Competition. Students were asked to respond to items such as "sometimes the class will break up into groups to compete with each

Table 6. Comparison Between Mean Scores of Group I and Group II on CES Personal Growth or Goal Orientation Dimensions.

CES	Gifted/ Talented Group I	Non-gifted Group II	SD	F*
Task Orientation	6.38	6.23	1.91	.24
Competition	5.58	5.93	1.86	1.35

*None significant at the .01 level (two tailed).

other," and "students will pass even if they don't do much." While not significant, Group II students rated Competition variables slightly higher and thus were more likely to agree "students will try hard to get the best grade."

Perceptions of the ideal classroom environment: system maintenance or change. System Maintenance dimensions involve the amount of restraints placed upon the classroom structure. As presented in Table 7, significant differences were found on two of the System Maintenance dimensions. The two groups differed on Order and Organization ($F(1, 145) = 17.73$, $p < .0001$) and Innovation ($F(1, 145) = 20.68$, $p < .0001$. They did not differ on Rule Clarity or Teacher Control.

Group I students rated very highly a class which would be well organized, mostly quiet, and without the need for teacher reprimands. In contrast, mean scores from Group II students indicated they would be less likely to agree with such items as "activities in this class will be clearly and carefully planned" and the teacher will hardly ever have to tell students to "get back in their seats."

The gifted and talented students perceived the ideal class to be more creative and different than the comparison group. They wanted a class where "new ideas are always tried out" and students do not have to follow set rules in doing their work. In contrast, Group II students wanted significantly less Innovation. They were more likely to disagree with statements like "in this class, students

Table 7. Comparison Between Mean Scores of Group I and Group II on Order and Organization, Rule Clarity, Teacher Control, and Innovation.

CES	Gifted/ Talented Group I	Non-gifted Group II	SD	F
Order and Organization	8.78	7.62	1.67	17.73*
Rule Clarity	7.96	7.45	1.67	3.46
Teacher Control	4.55	4.91	2.41	.80
Innovation	8.90	7.62	1.71	20.68*

*$p < .0001$.

will be allowed to make up their own projects," and "the teacher will think up unusual projects for students to do."

Within the Rule Clarity and Teacher Control variables, both groups reported wanting moderate emphasis on the importance of establishing and following rules, with Group I stressing the need for a teacher to "explain what will happen if a student breaks a rule" slightly more than the comparison group. While Group II expressed the desire for more Teacher Control than did Group I, both groups had below average emphasis on this subscale. According to these results, students from both groups would select a teacher who does not enforce rules in a strict manner.

Comparisons Between Groups by Sex

Total group. Since significant differences were found on five of the nine CES subscales, further analyses were conducted to determine if variables associated with sex influenced the scores. Males and females were combined into groups according to sex and a single comparison analysis of variance was computed for each group's mean score on the nine subscales. The results indicated a difference between male and female scores on both Affiliation ($F(1, 145) = 12.82$, $p < .001$) and Competition ($F(1, 145) = 7.54$, $p < .01$). The females wanted a class high in Affiliation and helping relationships with other students, while the males wanted more

competition and working for grades. The mean scores for sex are presented in all CES subscales in Table 8.

Comparison by Sex Within Groups

A further analysis was conducted to determine how sex as a variable within the talented and gifted group and within the comparison group might have further contributed to the initial findings. The CES means are presented for Group I males and females in Table 9. Within the talented group, male and female responses were similar on eight of the subscales, including Affiliation and Competition which accounted for differences found when the total group of males and females were compared. The males and females within Group I did differ on Innovation, with females wanting an ideal class which offers more responsibility for developing their own projects and where "new ideas are always being tried out" ($F(1, 71) = 9.25$, $p < .01$). In contrast with this analysis, the Innovation subscale was not significant at the .01 level when the males and females were combined from both groups.

The results of within group comparisons from Group II male and female CES means are presented in Table 10. Males and females were similar on eight of the subscales and different on one subscale. Within the comparison group, the females wanted significantly higher affiliative relationships than did males ($F(1, 72) = 17.54$, $p < .01$. Males in Group II were less likely to endorse items such as "Students will enjoy helping each other with homework" and "Students in this class will

Table 8. Comparison Between Male and Female Mean Scores on the Classroom Environment Scale.

CES	Male	Female	SD	F
Involvement	8.70	9.29	1.65	4.60
Affiliation	8.35	9.22	1.47	12.82**
Teacher Support	8.47	8.97	1.73	3.15
Task Orientation	6.37	6.25	1.91	.14
Competition	6.18	5.36	1.82	7.54*
Order and Organization	8.03	8.36	1.76	1.27
Rule Clarity	7.66	7.74	1.69	.07
Teacher Control	4.83	4.63	2.42	.25
Innovation	7.87	8.62	1.79	6.37

*$p < .01$.

**$p < .001$.

Table 9. Comparison Between Male and Female Mean Scores Within Group I (Gifted/Talented) on the Classroom Environment Scale.

CES	Male	Female	SD	F
Involvement	9.47	9.56	.77	.27
Affiliation	9.32	9.39	.91	.08
Teacher Support	9.21	9.51	1.00	1.70
Task Orientation	6.74	6.08	1.74	2.60
Competition	6.06	5.15	1.74	4.87
Order and Organization	8.74	8.82	1.21	.09
Rule Clarity	8.18	7.77	1.54	1.27
Teacher Control	4.94	7.21	2.39	1.72
Innovation	8.44	9.31	1.21	9.25*

*$p < .01$.

Table 10. Comparison Between Male and Female Mean Scores Within Group II (Nongifted) on the Classroom Environment Scale.

CES	Male	Female	SD	F
Involvement	8.00	9.00	2.08	4.30
Affiliation	7.45	9.05	1.54	17.54*
Teacher Support	7.78	8.41	2.07	1.68
Task Orientation	6.03	6.43	2.06	.72
Competition	6.28	5.57	1.91	2.70
Order and Organization	7.38	7.87	2.02	1.07
Rule Clarity	7.19	7.70	1.79	1.53
Teacher Control	4.73	5.08	2.44	.38
Innovation	7.35	7.89	2.04	1.30

*$p < .01$.

get to know each other really well."

In summary, between group and within group comparison by sex indicate that males within Group II wanted significantly less affiliative relationships than Group II females, thus contributing to overall sex differences when Groups I and II were combined by sex. Also, Group I within group comparisons indicate females wanted more innovation than males, but Group I males still scored higher than both sexes within Group II.

Comparisons Among Schools

Academic functioning. The combined subject population did not differ by school on measures of academic knowledge as presented in Table 11. The three schools' mean achievement test scores in math and reading were similar. Also, mean IQ scores did not differ by school at the .01 level. School A, however, was consistently higher (though not significantly so) on all measures of academic knowledge.

Perceptions of the ideal classroom environment among schools. Again comparing the total subject population among schools as presented in Table 12, the mean CES scores indicate no difference in student preference toward the ideal classroom. School B has slightly lower scores in some subscales but this is not consistent. Discernible trends were not found, thus confirming that at least when CES scores are

Table 11. Comparison of Mean Scores on the California Achievement Test and the Otis Lennon Mental Abilities Test Among Schools for the Combined Subject Population.

	School			SD	F*
	A	B	C		
Reading	75.85	67.48	71.57	16.28	3.23
Math	72.12	62.79	69.74	16.70	4.04
Otis Lennon	120.48	112.29	113.50	13.34	4.45

*None significant at the .01 level (two tailed).

Table 12. Comparison of Mean Classroom Environment Scale Scores Among Schools for the Combined Subject Population.

	School				
	A	B	C	SD	F*
Involvement	9.09	8.82	9.11	1.68	.47
Affiliation	8.83	8.37	9.24	1.50	4.01
Teacher Support	8.98	8.71	8.44	1.75	1.15
Task Orientation	6.51	5.96	6.44	1.90	1.23
Competition	5.74	5.49	6.07	1.87	1.13
Order and Organization	8.25	7.80	8.58	1.75	2.38
Rule Clarity	7.51	7.71	7.91	1.69	.69
Teacher Control	4.43	4.78	5.02	2.42	.73
Innovation	8.45	8.14	8.16	1.83	.47

*None significant at the .01 level (two tailed).

averaged by school, differences did not occur.

Within group comparisons of scores among schools. The talented and gifted group did not differ by school in their perceptions of the ideal classroom environment as presented in Table 13. Mean scores were consistently high in positive affiliative relationships, while only slightly above average on Task Orientation and Competition. In addition, they all placed high emphasis on "activities in this class will be clearly and carefully planned" (Order and Organization), while not preferring a class where the teacher has high control.

As presented in Table 14, Group II (nongifted) subjects did not differ by school on any subscale of the CES. In addition, no discernible trends were found. Like Group I students, Group II students varied their responses in the same direction but did not place as much emphasis on each dimension.

Table 13. Comparison of Group I (Gifted/Talented) Mean Scores on the Classroom Environment Scale by School.

	School				
	A	B	C	SD	F*
Involvement	9.65	9.58	9.35	.77	1.10
Affiliation	9.39	9.00	9.65	.87	3.53
Teacher Support	9.57	9.46	9.11	1.00	1.37
Task Orientation	6.87	5.71	6.58	1.72	2.95
Competition	5.65	5.04	6.00	1.77	1.85
Order and Organization	8.96	8.29	9.08	1.17	3.19
Rule Clarity	7.65	7.83	8.35	1.53	1.37
Teacher Control	4.09	4.42	5.08	2.40	1.09
Innovation	9.30	8.79	8.65	1.27	1.74

*None significant at the .01 level (two tailed)

Table 14. Comparison of Group II (Nongifted) Mean Scores on the Classroom Environment Scale by School.

	School				
	A	B	C	SD	F*
Involvement	8.66	8.08	8.78	2.13	.75
Affiliation	8.40	7.76	8.68	1.80	1.58
Teacher Support	8.53	8.00	7.53	2.06	1.43
Task Orientation	6.23	6.20	6.26	2.08	.01
Competition	5.80	5.92	6.16	1.95	.20
Order and Organization	7.70	7.32	7.90	2.04	.47
Rule Clarity	7.40	7.60	7.32	1.81	.15
Teacher Control	4.70	5.12	4.95	2.46	.20
Innovation	7.80	7.52	7.47	2.07	.19

*None significant at the .01 level (two tailed).

CHAPTER IV

REVIEW OF FINDINGS, DISCUSSION, AND RECOMMENDATIONS

This study's primary purpose was to present a social-ecological portrait of the ideal classroom desired by eighth grade gifted and talented students. A second but important purpose was to determine if the perceptions of gifted and talented students differed from a random sample of nongifted children.

Review of Findings

The gifted subjects described a distinct set of ideal classroom characteristics. The quality of interpersonal relationships was paramount; student involvement and organizational qualities of classrooms were also important. On the three Classroom Environment Scale (CES) relationship dimensions, gifted students nearly exceeded the limits of the scale with means almost equal to the uppermost score of 10. Gifted students desire a class in which they can devote substantial energy to class activities and discussions, and be highly involved. Gifted students wanted an innovative class where new teaching methods are tried, and students are given responsibility for some of their learning activities. The value of friendships with fellow classmates was considered very important. Gifted students wanted classes that offer the opportunity to cultivate close friendships, to help each

other with homework, and to work on class projects together. The teachers' support and interest in students was felt to be equally important in that teachers should know each student personally, not be condescending and be "more like a friend than an authority."

Only slightly above average emphasis was placed on the importance of completing a prescribed amount of work during a set period or spending the entire class time on a certain lesson. While this finding may be surprising, the lack of emphasis in this area may be interpreted in light of the high emphasis placed on the affiliation subscales. Gifted students may feel a lack of opportunity to pursue teacher-student and student relationships if the class is highly task oriented. This is not to say they want a class in which little work is accomplished, but that a class should offer flexibility and not be at either extreme. On the related dimensions of competition, gifted students in this sample would probably not be very interested in attempting to win the highest grade or in having strict grading policies.

The gifted population placed high emphasis on three out of the four dimensions which assess how classroom order is maintained. They want a well organized class where students are industrious, diligent, and know what is required of them. These classes would be characterized by beginning on time, clearly planned lessons and activities, and attentive students.

Gifted students place a high value on the clarity of

rules where the consequences of their actions are spelled out and their teachers are consistent in enforcement of rules. This preference is closely akin to the gifted's emphasis on a class being well run and organized, but having rules enforced fairly does not indicate a desire for an authoritarian teacher or excessive rulemaking. Gifted students in this study want an understandable set of rules they can live with that are not dictatorially enforced. Some proof for this contention is the low rating given to the dimension of Teacher Control. In fact, it was the least preferred of all nine dimensions. Students want a teacher who is somewhat lenient, nonauthoritarian, and does not punish excessively.

Another interest was whether gifted student preferences were different from those of the general student population. A comparison was particularly important since much prior research failed to contrast the gifted with other populations. The present data suggest significant differences between groups on five of the nine subscales. The gifted student placed more emphasis on innovative teaching practices, the importance of students behaving, and on the clear, orderly presentation of lessons by the teacher. By far the most striking finding was the lower emphasis placed on the affiliation dimensions by the nongifted group. While the nongifted students desire a class above average in affiliation, gifted students placed more stress on the importance of interpersonal relationships. Both groups shared approximately

equal emphasis on Competition, Task Orientation, Rule Clarity, and Teacher Control, although the gifted sample wanted slightly lower emphasis on Competition and Teacher Control variables.

The well known observation that boys and girls perceive school differently was only partially confirmed in the present study. Consistent with previous findings, differences were found in the nongifted group with girls placing more emphasis on affiliation than the boys. Within the gifted group these differences were not found; boys and girls placed equal emphasis on affiliative relationships. Surprisingly, gifted girls wanted more innovation in teaching practices than the gifted boys, suggesting that the girls desired greater independence and responsibility for their own learning.

Discussion and Recommendations

The gifted students high rating of classroom order, organization, and innovation is generally congruent with previous research which indicates gifted and talented students select teachers who are intelligent, well organized, and intellectually stimulating (Bishop, 1976; Milgram, 1979). The low emphasis placed on Teacher Control and Task Orientation provides further support for the subject's perceptions. Contrary to what some educators may believe, an inverse relationship may exist between these two dimensions and learning. As Task Orientation and Teacher Control increase, academic

material learned seems to decrease (Trickett and Moos, 1974).

Schultz's (1979) contention that the CES Relationship and Innovation dimensions were more important descriptions than other dimensions was partially supported by the present findings. These subscales provided four of the five significant differences found between both groups. The importance placed on these subscales by gifted subjects in this study is also congruent with the findings of Moos and Moos (1978). They found classes characterized by higher average grades had greater emphasis on Involvement, Affiliation, Teacher Support, and Rule Clarity but were lower in Teacher Control. Likewise, classes high in Competition and Teacher Control and low in Teacher Support had higher absenteeism levels. Competition was seen as a negative variable only when accompanied by low teacher and student affiliation.

Gifted students' perceptions of the ideal classroom are remarkably consistent with Trickett's (1978) findings regarding alternative school climates. Alternative schools ("schools without walls") were higher than rural, urban, and suburban schools in all three relationship dimensions, plus innovative teaching practices. Also, they were among the highest on Task Orientation, Order and Organization, and Clarity of rules, while lowest in Teacher Control and Competition for grades. Since Trickett included only public schools in his study, it would be interesting to contrast his findings with other school settings such as private

Christian schools. Christian schools might emphasize many of the same dimensions as alternative schools but be higher on Teacher Control and Competition.

The present gifted subjects resembled the cluster of innovative oriented classes suggested by Moos (1978) in that Innovation and Relationship dimensions were stressed, while Teacher Control was deemphasized. However, this study's gifted sample wanted slightly more emphasis on Rule Clarity, Order and Organization, and Task Orientation than Moos found for the innovative cluster. For those educators who believe the gifted student's high emphasis on affiliative relationships would interfere with classroom productivity, the current finding that the present subjects want classes which stress Order and Organization should be reassuring.

In sum, the findings to this point have emphasized the social climate most desired by the present sample of gifted students. It has been shown that significant differences were found between the gifted and nongifted groups on relationship dimensions, order and organization, and innovative teaching practices. There are several issues in interpreting these results.

One of the most obvious is that differences between groups are primarily in the level of emphasis the groups placed on each dimension. The nongifted group varied their preferences in the same general direction as the gifted students, but differed in their relatively lower emphasis on

organizational and relationship dimensions. This leads to the assumption that too much stress on relationship dimensions for the general student population, especially for boys, may create a dissatisfied student. The practical use of these findings presents a thorny problem since the concepts of high and low student affiliation, for example, is based on population means. Although it is possible to differentiate between an ideal rating of seven or a rating of ten, actually they both represent above average emphasis. More information is needed about the upper ranges of the CES.

Another problem is deciding whether what a student prefers is actually what he needs. Some critics argue that students might choose an educational environment less taxing, challenging, or structured than what is desirable for maximum learning. There is evidence from prior research to suggest this issue may be less important with the gifted than with the general population. For instance, high conceptual level students (defined as capable of generating new concepts and showing independence) tend to be less effected by either high or low classroom structure (Hunt, 1975). Low conceptual level and low achievement students were found to perform better academically in settings where the teacher determined the classroom structure and the student had little responsibility for learning. High conceptual level students performed adequately in such a setting, but tended to be more satisfied and learn better with low classroom structure. Similar

results have been found when students have been characterized by internal/external locus of control or by high/low social interaction preferences (Harpin and Sandler, 1979). While these findings present general guidelines, further research is needed concerning the correlations between learning style and preference for classroom climate.

An additional issue concerns the stability of student preferences over time. It must be emphasized that the present study consisted of eighth graders only, so the results may be applicable just to the junior high population. The wider range of experiences for high school seniors, for example, might cause their perceptions to be different from younger students. One study has indicated that student attitudes about competition (defined as liking to do better than other students) become more positive as students enter the later high school grades (Johnson and Ahlgren, 1976). Future research assessing gifted students at different age levels, eighth through twelveth grade, should help clarify whether perceptions of the ideal classroom environment change over time.

Another concern is the lack of control for socio-economic status. As cited previously, several studies (Moos and Trickett, 1974; Nielson, 1977; Moos and Bromet, 1978) have indicated that student personality characteristics and socioeconomic level is unrelated to perceptions of real and ideal classrooms, otherwise the CES would be more a measure of personality or socioeconomic status than a climate scale.

The absence of significant differences among schools in the present study seem to support the view that socioeconomic level is unrelated to perceptions of the ideal class.

Regardless of the present limitations, student perceptions of the ideal classroom environment remain a fertile ground for further research. Current trends in education for the gifted use a variety of methods including mainstreaming, ability grouping, and special schools. Regardless of one's preferences for gifted education, the results from this study indicate that the ideal classroom for the gifted student should have high levels of involvement, stress innovative teaching methods, have clear organization and direction, and promote warm supportive, friendly relationships. Highly structured classrooms which place too much stress on competition, dependence on grades, and have a lack of supportive interpersonal interactions would likely create a highly dissatisfied gifted student. Obviously, the ideal class for gifted students might well be the ideal class for all students. Educators must be careful in the simplistic assumption that a "return to the basics" through a structured classroom setting would likewise result in a better educated student. Schools provide extremely important socialization experiences for children, as well as academic functions. Recent research argues that at least in preschool settings highly structured classes stifle creativity, the development of social skills, and independence (Huston-Stein, Friedrich-Cofer, and Susman, 1977).

This author believes that a student match with the classroom offers an effective, sound educational strategy. Current models for gifted education such as Renzulli's (1976) enrichment triad model reasonably approximate such a match, but a more adequate model would go further and include assessments of the total learning environment of the classroom. The stress that gifted students place on innovation and independence suggests that other alternative models such as the use of a mentor might be an effective way to individualize learning, although school systems have so far been reluctant to adopt this strategy.

We are currently experiencing a crisis period in the education of the gifted and talented. Educational policymakers are deciding now what the emphasis in gifted education will be over the next five to ten years. Clearly, the opinions of students as experienced consumers of the educational process can help guide the way.

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APPENDICES

APPENDIX A

THE UNIVERSITY OF TENNESSEE
KNOXVILLE 37996-3400
COLLEGE OF EDUCATION

DEPARTMENT OF
EDUCATIONAL AND COUNSELING PSYCHOLOGY

TELEPHONE
615) 974-5131

Dear Parent:

Your child has been selected to complete a brief questionnaire which asks for student ideas about their ideal classroom environment. This questionhaire will be part of a study which seeks to learn more about student preferences for different kinds of learning climates, as well as matching student needs to particular kinds of classrooms.

If you agree for your child to participate: 1) I will give him/her a short (30 minutes) survey test to be administered in a group setting; 2) Later on, a small portion of students who participate in this study will be interviewed to determine their range of interests and activities; 3) Your child's academic records will be reviewed to obtain information about his/her individual educational experiences. In particular, his/her achievement test scores and group IQ scores will be obtained if available.

The test administration and interview will be scheduled at a time that does not interfere with an important class topic, classroom test or their lunch. Please note that your child's participation in this project is completely voluntary and he/she may withdraw from the project at any time without penalty. I will be working closely with teachers and principals to insure that your child's best interests are considered at all times.*

To protect your child's privacy, he/she will be assigned an identification number early in the research, and his/her name will be removed from all research records. The master list containing the names and numbers will be kept confidential. It is also understood that if you give permission the data gained from this project may be used for possible publication. If you have any questions about this research, please contact me. My address is: John R. Adams, Department of Educational Psychology, Claxton Education Building, University of Tennessee, Knoxville, TN 37916 (phone 974-5131) or 7301 Twin Creek Road, Knoxville, TN 37920 (phone 577-7271). Thank you for your help on this project.

Sincerely,

John R. Adams

John R. Adams
Graduate Student in Educational Psychology
The University of Tennessee, Knoxville

I give permission for my child/guardian, _____
to participate in this study.

_____ _____
signature relationship to child

*This study is being done with the approval and encouragement of the principal and staff.

INSTRUCTIONS TO SUBJECTS

The following explanation was given to students about the research:

> My name is John Adams, and I'm a graduate student at the University of Tennessee. We are very interested in learning more about what students think an ideal classroom should be like, as opposed to your actual classroom. You have all probably spent some time thinking about what you would like an ideal class to be. Look at your test booklets now and read along with me. There are no right or wrong answers, so answer as honestly and thoughtfully as you can. And, of course, all of your answers will be kept confidential. Are there any questions? If you have any questions during the questionnaire, I will be happy to help. Let's begin.

BRIEF CLASSROOM ENVIRONMENT SCALE SUBSCALE DESCRIPTIONS

Affiliation Dimensions

1.	Involvement	measures the extent to which students have attentive interest in class activities and participate in discussions. The extent to which students do additional work on their own and enjoy the class is considered.
2.	Affiliation	assesses the level of friendship students feel for each other, i.e., the extent to which they help each other with homework, get to know each other easily, and enjoy working together.
3.	Teacher Support	measures the amount of help, concern, and friendship the teacher directs towards the students. The extent to which the teacher talks openly with students, trusts them, and is interested in their ideas is considered.

Personal Development Dimensions

4.	Task Orientation	measures the extent to which it is important to complete the activities that have been planned. The emphasis the teacher placed on staying on the subject matter is assessed.
5.	Competition	assesses the emphasis placed on student's competing with each other for grades and recognition. An assessment of the difficulty of achieving good grades is included.

System Maintenance Dimensions

6.	Order and Organization	assesses the emphasis on students behaving in an orderly and polite manner and on the overall organization of assignments and classroom activities. The degree to which students tend to remain calm and quiet is considered.
7.	Rule Clarity	assesses the emphasis on establishing and following a clear set of rules, and on students knowing what the consequences will be if they do not follow them. An important focus of this subscale is the extent to which the teacher is consistent in dealing with students who break rules.

8.	Teacher Control	measures how strict the teacher is in enforcing the rules, and the severity of the punishment for rule infractions. The number of rules and the ease of students getting in trouble is considered.

System Change Dimension

9.	Innovation	measures how much students contribute to planning classroom activities, and the amount of unusual and varying activities and assignments planned by the teacher. The extent to which the teacher attempts to use new techniques and encourages creative thinking in the students is considered.

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CLASSROOM ENVIRONMENT SCALE (FORM I)

Edison J. Trickett and Rudolf H. Moos

Instructions

There are 90 statements in this booklet. They are statements about high school and junior high school classrooms. They ask you what you think an *Ideal Classroom* would be like. You are to decide which of these statements are true of an *Ideal Classroom* and which are false.

True – Mark beside T when you think the statement is *True* or mostly *True* of an ideal classroom.

False – Mark beside F when you think the statement is *False* or mostly *False* of an ideal classroom.

Please be sure to answer every statement and make all your marks on the separate answer sheet.

1. Students will put a lot of energy into what they do here.
2. Students in this class will get to know each other really well.
3. This teacher will spend very little time just talking with students.
4. Almost all class time will be spent on the lesson for the day.
5. Students won't feel pressured to compete here.
6. This will be a well-organized class.
7. There will be a clear set of rules for students to follow.
8. There will be very few rules to follow.
9. New ideas will always be tried out here.
10. Students will daydream a lot in this class.
11. Students in this class won't be very interested in getting to know other students.
12. The teacher will take a personal interest in students.
13. Students will be expected to stick to classwork in this class.
14. Students will try hard to get the best grade.
15. Students will almost always be quiet in this class.
16. Rules in this class will seem to change a lot.
17. If a student breaks a rule in this class, he will be sure to get in trouble.
18. What students do in class will be very different on different days.
19. Students will often be "clock-watching" in this class.
20. A lot of friendships will be made in this class.
21. The teacher will be more like a friend than an authority.
22. We will often spend more time discussing outside student activities than class-related material.
23. Some students will always try to see who can answer questions first.
24. Students will fool around a lot in this class.
25. The teacher will explain what will happen if a student breaks a rule.
26. The teacher will not be very strict.
27. New and different ways of teaching will not be tried very often in this class.
28. Most students in this class will really pay attention to what the teacher is saying.
29. It will be easy to get a group together for a project.
30. The teacher will go out of his way to help students.
31. Getting a certain amount of classwork done will be very important in this class.
32. Students won't compete with each other here.
33. This class will often be in an uproar.
34. The teacher will explain what the rules are.
35. Students will be in trouble with the teacher for talking when they're not supposed to.
36. The teacher will like students to try unusual projects.
37. Very few students will take part in class discussions or activities.
38. Students will enjoy working together on projects in this class.
39. Sometimes the teacher will embarrass students for not knowing the right answer.
40. Students won't do much work in this class.
41. A student's grade will be lowered if he gets homework in late.
42. The teacher will hardly ever have to tell students to get back in their seats.
43. The teacher will make a point of sticking to the rules he's made.
44. Students won't always have to stick to the rules in this class.
45. Students will have very little to say about how class time is spent.
46. A lot of students will "doodle" or pass notes.
47. Students will enjoy helping each other with homework

48. This teacher will "talk down" to students.
49. We usually will do as much as we set out to do.
50. Grades will not be very important in this class.
51. The teacher will often have to tell students to calm down.
52. Whether or not students can get away with something will depend on how the teacher is feeling that day.
53. Students will get in trouble if they're not in their seats when the class is supposed to start.
54. The teacher will think up unusual projects for students to do.
55. Students will sometimes present something they've worked on to the class.
56. Students will not have much of a chance to get to know each other in this class.
57. If students want to talk about something this teacher will find time to do it.
58. If a student misses class for a couple of days, it will take some effort to catch up.
59. Students here won't care about what grades the other students are getting.
60. Assignments will usually be clear so everyone knows what to do.
61. There will be set ways of working on things.
62. It will be easier to get in trouble here than in a lot of other classes.
63. Students will be expected to follow set rules in doing their work.
64. A lot of students will seem to be only half awake during this class.
65. It will take a long time to get to know everybody by his first name in this class.
66. This teacher will want to know what students themselves want to learn about.
67. This teacher will often take time out from the lesson plan to talk about other things.
68. Students will have to work for a good grade in this class.
69. This class will hardly ever start on time.
70. In the first few weeks the teacher will explain the rules about what students can and cannot do in this class.
71. The teacher will put up with a good deal.
72. Students will be able to choose where they sit.
73. Students will sometimes do extra work on their own in the class.
74. There are groups of students who won't get along in class.
75. This teacher will not trust students.
76. This class will be more a social hour than a place to learn something.
77. Sometimes the class will break up into groups to compete with each other.
78. Activities in this class will be clearly and carefully planned.
79. Students won't always be sure if something is against the rules or not.
80. The teacher will kick a student out of class if he acts up.
81. Students will do the same kind of homework almost every day.
82. Students will really enjoy this class.
83. Some students in this class won't like each other.
84. Students will have to watch what they say in this class.
85. The teacher will stick to classwork and won't get sidetracked.
86. Students will usually pass even if they don't do much.
87. Students won't interrupt the teacher when he's talking.
88. The teacher will be consistent in dealing with students who break the rules.
89. When the teacher makes a rule, he will mean it.
90. In this class, students will be allowed to make up their own projects.

APPENDIX B

Table A-1. Source Table: Comparisons Between Gifted and Nongifted Subjects.

Source	df	ss	ms	F	PR > F
California Achievement Test: Reading Normal Curve Equivalent Scores					
bg	1	12755.79	12755.79	69.62	0.0001
wg	138	25283.38	183.21		
tot	139	38039.17			
California Achievement Test: Mathematics Normal Curve Equivalent Scores					
bg	1	17111.89	17111.89	100.93	0.0001
wg	138	23395.79	169.53		
tot	139	40507.69			
Otis Lennon Mental Abilities Test:					
bg	1	8709.08	8709.68	74.45	0.0001
wg	120	14037.32	116.98		
tot	121	22746.40			
CES Relationship Dimension: Involvement					
bg	1	38.27	38.27	14.97	0.0002
wg	145	370.72	2.55		
tot	146	408.99			

Table A-1 (Continued).

Source	df	ss	ms	F	PR > F
CES Relationship Dimension: Affiliation					
bg	1	44.42	44.42	21.55	0.0001
wg	145	298.86	2.06		
tot	146	343.28			
CES Relationship Dimension: Teacher Support					
bg	1	59.76	59.76	22.37	0.0001
wg	145	387.35	2.67		
tot	146	447.12			
CES Personal Growth or Goal Orientation Dimension: Task Orientation					
bg	1	0.87	0.87	0.24	0.6266
wg	145	530.35	3.66		
tot	146	531.22			
CES Personal Growth or Goal Orientation Dimension: Competition					
bg	1	4.69	4.69	1.35	0.2477
wg	145	504.50	3.48		
tot	146	509.18			

Table A-1 (Continued).

Source	df	ss	ms	F	PR > F
CES System Maintenance Dimension: Order and Organization					
bg	1	49.38	49.38	17.73	0.0001
wg	145	403.90	2.79		
tot	146	453.28			
CES System Maintenance Dimension: Rule Clarity					
bg	1	9.67	9.67	3.46	0.0649
wg	145	405.16	2.79		
tot	146	414.83			
CES System Maintenance Dimension: Teacher Control					
bg	1	4.70	4.70	0.80	0.3713
wg	145	846.42	5.84		
tot	146	851.12			
CES System Maintenance Dimension: Innovation					
bg	1	60.44	60.44	20.68	0.0001
wg	145	423.73	2.92		
tot	146	484.18			

Note: bg = between groups; wg = within groups; tot = total.

Table A-2. Source Table: Comparison Between Male and Female Subjects--Total Group.

Source	df	ss	ms	F	PR > F
California Achievement Test: Reading Normal Curve Equivalent Scores					
bg	1	186.88	186.88	0.68	0.4106
wg	138	37852.29	274.29		
tot	139	38039.17			
California Achievement Test: Mathematics Normal Curve Equivalent Scores					
bg	1	120.79	120.79	0.41	0.5217
wg	138	40386.90	292.66		
tot	139	40507.69			
Otis Lennon Mental Abilities Test:					
bg	1	33.31	33.31	0.18	0.6756
wg	120	22713.09	189.28		
tot	121	22746.40			
CES Relationship Dimension: Involvement					
bg	1	12.57	12.57	4.60	0.0337
wg	145	396.42	396.42	2.73	
tot	146	408.99	408.99		

Table A-2 (Continued).

Source	df	ss	ms	F	PR > F
CES Relationship Dimension: Affiliation					
bg	1	27.88	27.88	12.82	0.0005
wg	145	315.39	2.17		
tot	146	343.28			
CES Relationship Dimension: Teacher Support					
bg	1	9.51	9.51	3.15	0.0780
wg	145	437.61	3.02		
tot	146	447.12			
CES Personal Growth or Goal Orientation Dimension: Task Orientation					
bg	1	0.50	0.50	0.14	0.7134
wg	145	430.73	3.66		
tot	146	531.22			
CES Personal Growth or Goal Orientation Dimension: Competition					
bg	1	25.16	25.16	7.54	0.0068
wg	145	484.03	3.33		
tot	146	509.18			

Table A-2 (Continued).

Source	df	ss	ms	F	PR > F
CES System Maintenance Dimension: Order and Organization					
bg	1	3.93	3.93	1.27	0.2621
wg	145	449.35	3.10		
tot	146	453.28			
CES System Maintenance Dimension: Rule Clarity					
bg	1	0.21	0.21	0.07	0.7889
wg	145	414.62	2.86		
tot	146	414.83			
CES System Maintenance Dimension: Teacher Control					
bg	1	1.46	1.46	0.25	0.6185
wg	145	849.66	5.86		
tot	146	851.12			
CES System Maintenance Dimension: Innovation					
bg	1	20.38	20.38	6.37	0.0127
wg	145	463.79	3.20		
tot	146	484.18			

Note: bg = between groups; wg = within groups; tot = total.

Table A-3. Source Table: Comparison Among Schools.

Source	df	ss	ms	F	PR > F
California Achievement Test: Reading Normal Curve Equivalent Scores					
bg	2	1712.64	856.32	3.23	0.0426
wg	137	36326.53	265.16		
tot	139	38039.17			
California Achievement Test: Mathematics Normal Curve Equivalent Scores					
bg	2	2258.40	1129.20	4.04	0.0197
wg	137	38249.29	279.19		
tot	139	40507.69			
Otis Lennon Mental Abilities Test:					
bg	2	1581.86	790.93	4.45	0.0137
wg	119	211164.55	177.85		
tot	121	22746.40			
CES Relationship Dimension: Involvement					
bg	2	2.67	1.34	0.47	0.6236
wg	144	406.32	2.82		
tot	146	408.99			

Table A-3 (Continued).

Source	df	ss	ms	F	PR > F
CES Relationship Dimension: Affiliation					
bg	1	18.10	9.05	4.01	0.0202
wg	144	325.17	2.26		
tot	146	343.28			
CES Relationship Dimension: Teacher Support					
bg	2	7.02	3.57	1.15	0.3198
wg	144	440.09	3.06		
tot	146	447.12			
CES Personal Growth or Goal Orientation Dimension: Task Orientation					
bg	2	8.98	4.47	1.23	0.2942
wg	144	522.27	3.63		
tot	146	531.22			
CES Personal Growth or Goal Orientation Dimension: Competition					
bg	2	7.84	3.92	1.13	0.3273
wg	144	501.35	3.48		
tot	146	509.18			

Table A-3 (Continued).

Source	df	ss	ms	F	PR > F
CES System Maintenance Dimension: Order and Organization					
bg	2	14.53	7.27	2.38	0.0958
wg	144	438.75	3.05		
tot	146	453.28			
CES System Maintenance Dimension: Rule Clarity					
bg	2	3.94	1.97	0.69	0.5030
wg	144	410.89	2.85		
tot	146	414.83			
CES System Maintenance Dimension: Teacher Control					
bg	2	8.59	4.29	0.73	0.4818
wg	144	842.53	5.85		
tot	146	851.12			
CES System Maintenance Dimension: Innovation					
bg	2	3.13	1.57	0.47	0.6266
wg	144	481.04	3.34		
tot	146	484.18			

Note: bg = between groups; wg = within groups; tot = total.

Table A-4. Source Table: Comparison Between Gifted Male and Female Subjects.

Source	df	ss	ms	f	PR > F
CES Relationship Dimension: Involvement					
bg	1	0.16	0.16	0.27	0.6062
wg	71	42.06	0.59		
tot	72	42.22			
CES Relationship Dimension: Affiliation					
bg	1	0.07	0.07	0.08	0.7754
wg	71	58.67	0.83		
tot	72	58.74			
CES Relationship Dimension: Teacher Support					
bg	1	1.71	1.71	1.70	0.1960
wg	71	71.30	1.00		
tot	72	73.01			
CES Personal Growth or Goal Orientation Dimension: Task Orientation					
bg	1	7.87	7.87	2.60	0.1116
wg	71	215.39	3.03		
tot	72	223.26			

Table A-4 (Continued).

Source	df	ss	ms	f	PR > F
CES Personal Growth or Goal Orientation Dimension: Competition					
bg	1	14.88	14.88	4.87	0.0306
wg	71	216.96	3.06		
tot	72	231.84			
CES System Maintenance Dimension: Order and Organization					
bg	1	0.13	0.13	0.09	0.7654
wg	71	104.36	1.47		
tot	72	104.49			
CES System Maintenance Dimension: Rule Clarity					
bg	1	3.01	3.01	1.27	0.2628
wg	71	167.86	2.36		
tot	72	170.88			
CES System Maintenance Dimension: Teacher Control					
bg	1	9.84	9.84	1.72	0.1939
wg	71	406.24	5.72		
tot	72	416.08			

Table A-4 (Continued).

Source	df	ss	ms	f	PR > F
CES System Maintenance Dimension: Innovation					
bg	1	13.64	13.64	9.25	0.0033
wg	71	104.69	1.47		
tot	72	118.33			

Note: bg = between groups; wg = within groups; tot = total.

Table A-5. Source Table: Comparison Between Nongifted Male and Female Subjects.

Source	df	ss	ms	F	PR > F
CES Relationship Dimension: Involvement					
bg	1	18.50	18.50	4.30	0.0418
wg	72	310.00	4.30		
tot	73	328.50			
CES Relationship Dimension: Affiliation					
bg	1	47.04	47.04	17.54	0.0001
wg	72	193.08	2.68		
tot	73	240.12			
CES Relationship Dimension: Teacher Support					
bg	1	7.14	7.15	1.68	0.1997
wg	72	307.19	4.27		
tot	73	314.34			
CES Personal Growth or Goal Orientation Dimension: Task Orientation					
bg	1	3.04	3.04	0.72	0.3990
wg	72	304.05	4.22		
tot	73	307.09			

Table A-5 (Continued).

Source	df	ss	ms	F	PR > F
CES Personal Growth or Goal Orientation Dimension: Competition					
bg	1	9.85	9.85	2.70	0.1048
wg	72	262.81	3.65		
tot	73	272.66			
CES System Maintenance Dimension: Order and Organization					
bg	1	4.38	4.38	1.07	0.3047
wg	72	295.03	4.10		
tot	73	299.41			
CES System Maintenance Dimension: Rule Clarity					
bg	1	4.88	4.88	1.53	0.2200
wg	72	229.41	3.19		
tot	73	234.28			
CES System Maintenance Dimension: Teacher Control					
bg	1	2.28	2.28	0.38	0.5374
wg	72	428.05	5.95		
tot	73	430.33			

Table A-5 (Continued).

Source	df	ss	ms	F	PR > F
CES System Maintenance Dimension: Innovation					
bg	1	5.41	5.41	1.30	0.2585
wg	72	300.00	4.17		
tot	73	305.41			

Note: bg = between groups; wg = within groups; tot = total.

VITA

John R. Adams was born in Marion, Virginia on March 11, 1948. In January 1971 he received a Bachelor of Arts degree with majors in Psychology and English from Murray State University, Murray, Kentucky. Immediately after graduation he entered the U. S. Army and served for two and one-half years as a Clinical Psychology Specialist at Ft. Bragg, North Carolina. During that time he worked in a variety of settings, to include an adult mental health center, child psychology clinic, and an inpatient psychiatric facility.

In 1975, Mr. Adams was employed as a consultant in group processes with the American Medical Student Association Foundation (AMSA). During the four years with AMSA, he conducted numerous workshops on process consultation, team building, and communication skills for health science students and staff. In 1979, Mr. Adams began employment with the Little Tennessee Valley Educational Cooperative as a project coordinator for an environmental planning program until returning to graduate school full time in 1981.

Mr. Adams was admitted to Graduate School in 1973 and received the Doctor of Education degree from the University of Tennessee, Knoxville, in August 1982. During this time he learned the true meaning of the phrase "task commitment."