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# Student perceptions regarding classroom environments for learning.

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STUDENT PERCEPTIONS
REGARDING CLASSROOM ENVIRONMENTS FOR LEARNING


A Dissertation Presented

by

JEAN E. GREENWOOD


Submitted to the Graduate School of the University of Massachusetts Amherst
in partial fulfillment of the requirements for the degree of

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School of Education
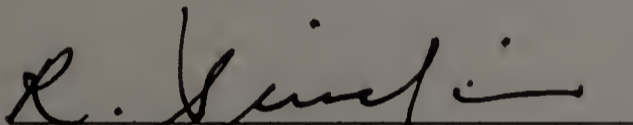
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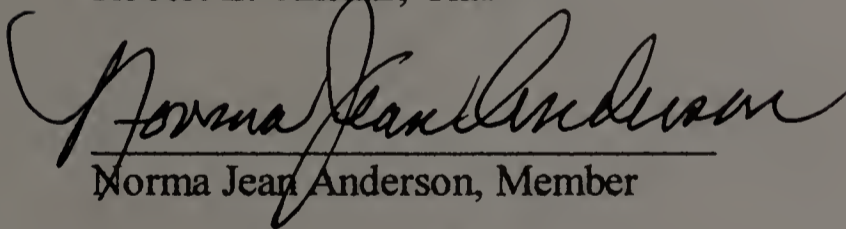
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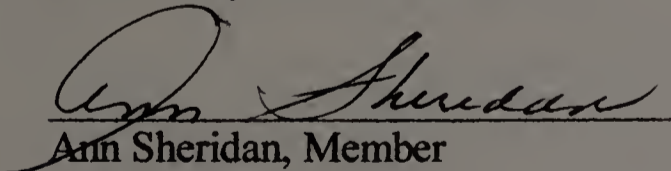
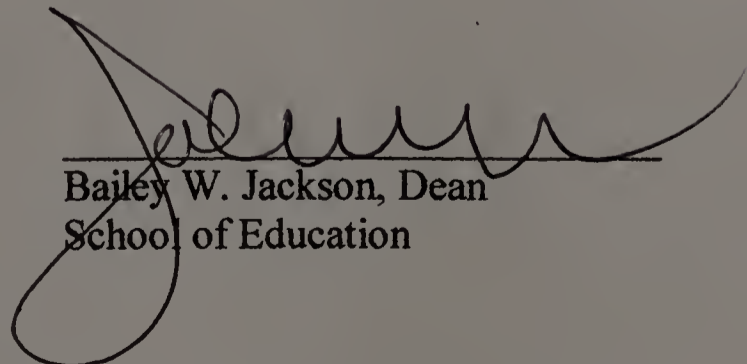Approved as to style and content by:

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# DEDICATION

In loving memory of

Ellen Butler Moseley

my mentor,

my friend.

Your kind encouragement

sustained me through several difficult places.

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ABSTRACT

STUDENT PERCEPTIONS
REGARDING CLASSROOM ENVIRONMENTS FOR LEARNING

MAY 2002

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The classroom environment has a powerful influence on learning, and children's perceptions of that environment influence their behavior. This study examines the perceptions of sixth grade students who are the most and least academically successful regarding how they perceive their classroom environment and those factors within it that enhance or inhibit learning. Data gathered in this research indicate that there are significant disparities in how the most and least successful students perceive their classroom learning environment. The most successful students perceived the classroom environment as more affiliative and task focused, perceived their teachers to be more trusting, caring, and supportive, and perceived that they had more choice in how they learned. In contrast, the least successful students perceived the class to be more teacher controlled and competitive.

In spite of the differences in friendship and support perceived by study participants, both groups of students were able to provide clear examples of teaching approaches and classroom conditions that they perceived increased or inhibited their learning. This study also includes students' suggestions for changes that would increase their learning. The findings in this study are consistent with the research and literature

reviewed from the fields of education, psychology, and business regarding conditions that are likely to enhance learning. The major implications of this study are that teachers need to: (a) be able to form caring, supportive relationships with all students, (b) create safe, non-threatening environments where learning is less competitive and students are encouraged to form supportive relationships with one another, (c) provide students with interesting, challenging work that engages them, while supporting and encouraging students' efforts, (d) develop a large repertoire of effective instructional approaches to meet the diverse learning needs of students, (e) keep current with the knowledge base, (f) ask, and listen to students to understand how they learn best, and (g) seek professional experiences that will help them reflect on how they can improve their practice. Finally, a number of recommendations are proposed for use by teachers, administrators, organizations that provide pre-service and in-service opportunities, educational policy makers, and other parties interested in assisting teachers and schools increase student learning.

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# CHAPTER ONE

## STATEMENT OF THE PROBLEM

In today's world it is imperative that people are successful learners capable of responding to rapid changes in society. A study on literacy released in 1995 by the Massachusetts Board of Education Adult Education Committee indicates that as many as fifty percent of Americans are functionally illiterate and are unable to read, write and speak in English and compute and solve problems at levels necessary to function on the job and in society. The report states that in Massachusetts forty-five percent of people eighteen and older can't read or write English well enough to hold more than a menial job (p. 3).

Those students who are unsuccessful in school are often less successful in later years. Some drop out of school, others become delinquent, and many have great difficulty in finding and keeping employment. This results in a waste of human potential. Clearly, it is important for students to succeed in school. It follows then, that the improvement of student learning be addressed initially in the early grades rather than wait until it becomes more complex and costly to society.

There is reason to believe that frequently teachers are experiencing difficulty in providing environments in which all students can learn effectively (Reynolds, et al., 1993, p. 295). Many writers emphasize the powerful influence the classroom environment has on learning (Dewey, 1938; Murray, 1938; Bloom, 1977; Marzano, 1992; Boyer, 1995a). Maslow (1970) states it clearly, to help "children reach their

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fullest potentialities... schools should be non-threatening ... This permits the child to express and to act, to experiment and even to make mistakes." (p.187).

It is important to increase knowledge about learning due to the fact that "our youth, by virtue of their place in human evolution, will be required to learn more rapidly and efficiently than any time in man's history" (Bradley, 1995). Amidst the cries for increasing "world-class standards" for America's schools (Costa, 1993), the literature on school reform is burgeoning with opinions of adults about the approaches to the most creative and motivating methods of increasing student learning. In contrast, there appears to be a paucity of research about children's opinions of what makes them enthusiastic about learning (van Manen, 1991; Stinson, 1993; Nicholls and Thorkildsen, 1995).

Children's perceptions are critical to learning because the way children see things influences their behavior. Perception is the art of linking what is sensed with some past experience to give the sensation meaning. Meanings are in men's minds rather than in the objects themselves. Thus, when looking at the same object, everyone does not "see" the same thing (Van Dalen, 1973). The lessons learned from recent efforts in school renewal illustrate that by including all the players in designing the needed changes, the likelihood of creating change that is appropriate and lasting will increase (Shedlin, 1990). It follows then, that students' perceptions should be sought out and considered.

## Purpose of the Study

The purpose of this study is to examine the perceptions of sixth grade students, regarding classroom learning conditions. Student perceptions influence their behavior and may contribute to or inhibit their learning. It is important that teachers understand how their students view their classroom environment. This will then enable teachers to make wiser decisions about conditions that need to be altered so students can learn more effectively.

Specifically, the research explores how sixth grade students perceive their classroom environment. The research identifies and compares the perceptions of selected students whom teachers identify as the most successful and the least successful academically, in an effort to determine similarities and differences regarding how they perceive their classroom environment. Selected variables including the relationship dimensions of involvement, affiliation, and teacher support; the personal growth or goal orientation dimensions of task orientation and competition; and the system maintenance and change dimensions of order and organization, rule clarity, teacher control, and innovation were used. This dissertation also addresses the implications of these findings for re-designing classroom learning experiences so that more students are able to learn and reach higher levels of accomplishment.

Hence, three interrelated questions guide this study.

- How do sixth grade students who are the most successful academically perceive selected variables of their classroom environment?

- How do students who are the least successful academically perceive their classroom environment on the same selected variables?

- What are the similarities and differences between the perceptions of the most academically successful students and the least academically successful students regarding their classroom environment?

## Definition of Terms

The definitions that follow clarify the key terms used in this study.

## Conditions in Classroom Environments

The conditions in classroom environments refers specifically to those psychological and social forces that influence the social environment, or climate, within classrooms as measured by the Classroom Environment Scale (Moos & Trickett, 1974, 1987, 1995). These social and psychological forces are seen as comprising three distinct but interacting dimensions which differ among classrooms: (1) relationship dimensions, (2) personal growth or goal orientation dimensions, and (3) system maintenance and change dimensions.

### Relationship Dimensions

Relationship dimensions include involvement, affiliation, and teacher support.

<u>Involvement</u>. Refers to the extent to which students are attentive and interested in class activities, participate in discussions, and do additional work on their own.

<u>Affiliation</u>. Affiliation is the friendship students feel for each other, as expressed by getting to know each other, helping each other work with homework, and enjoying working together.

Teacher Support. Teacher support is the help and friendship the teacher shows toward students; how much the teacher talks openly with students, trusts them, and is interested in their ideas.

## Personal Growth or Goal Orientation Dimensions

These dimensions of the classroom environment include task orientation and competition:

Task Orientation. This refers to the degree of emphasis on completing planned activities and staying on the subject matter.

Competition. This describes how much students compete with each other for grades and recognition and how hard it is to achieve good grades.

## System Maintenance and Change Dimensions

These dimensions include order and organization, rule clarity, teacher control, and innovation.

Order and Organization. These are the emphasis on students behaving in an orderly and polite manner and on the organization of assignments and activities.

Rule Clarity. This is an 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, and the extent to which the teacher is consistent in dealing with students who break rules.

Teacher Control.  This means how strict the teacher is in enforcing the rules, the severity of punishment for rule infractions, and how much students get into trouble in the classroom.

Innovation.  Innovation is how much students contribute to planning classroom activities, and the extent to which the teacher uses new techniques and encourages creative thinking (see Trickett & Moos, 1995).

## Least Successful Students

The least successful students are defined as the lower fifth of the sixth grade class based on teacher evaluation and report card grades.

## Most Successful Students

The most successful students are defined as the upper fifth of the sixth grade class based on teacher evaluation and report card grades.

## Perception

Perception is defined as the conscious awareness of objects and the conditions surrounding those objects and the meaning that the perceiver makes of these relationships.  Thus, perception is the art of linking what is sensed with some past experience to give the sensation meaning.

## Significance of the Study

This study has both theoretical and practical significance. The theoretical intention of this study is to advance our knowledge about classroom conditions that foster and inhibit learning by inquiring into the perceptions of the students themselves. It is important to understand how students perceive their classroom environment. Educators can gain needed information about the impact of classroom environments by examining the perceptions of their pupils. The study also looks at whether there is agreement or disparity among the ideas and perceptions of students at the most successful and least successful levels of accomplishment. If they see the environment differently, these differences as they are perceived may contribute to their academic performance. In particular, by comparing the views of learners who are the least successful to the views of learners who are the most successful, educators may gain needed information leading to the identification of conditions and events in the classroom environment which in part contribute to the problem of students being unsuccessful. Although the environment of the classroom is not likely to be the only factor which influences the behavior of unsuccessful learners, it is a powerful factor that educators can redesign to promote improved learning outcomes for students.

This study is also important because the "regular education initiative" movement has included more special education students in the regular classroom. These students are frequently the ones teachers find most challenging. The fact of their being the "least successful students" is often the criteria for admission to special education programs. Teachers frequently have misconceptions about the learning needs of special education students. Clarification of the similarities and differences of the perceptions of special

education students who may be among those identified as the least successful or most successful twenty percent of a class, with the perceptions of other students may yield additional information for helping to integrate them into the classroom successfully.

It is important to learn what enables all levels of learners to succeed so that they may, as early as possible, develop an effective pattern of study and frame of mind that enables them to succeed in learning throughout their lives. These habits and attitudes make it possible for students to have their questions answered in a timely manner and keep alive the curiosity that enables them to ask questions and have satisfaction in finding the answers. It is also important to consider the students opinions to avoid missing significant information which could help in designing more effective learning environments. The ideas generated will provide more depth of insight to educators regarding classroom conditions that impact students positively or negatively so that the first can be reinforced and more fully developed and the second can be avoided. Thus, the information generated by this research will enable educators to develop theories of approach which could then lead us to more practical applications of techniques and be used in designing programs that more effectively capture the child's interest and enthusiasm for learning. These ideas could ultimately be incorporated into program planning for staff development and teachers in training.

### Delimitations of the Study

There are seven delimitations to this study:

First, the influence of the classroom environment on learning is assumed to be central to the educational process in public schools. Second, students who are in the

middle range have been included in the initial assessment, but have been excluded from the analysis of data, because it is the least successful students and the most successful students that appear to be the most challenging to teachers (Reynolds et al, 1993, p.295). Students identified as most successful learners and least successful learners were in no way singled out for special treatment during survey administration and were treated anonymously throughout the research.

Third, the sample is limited to sixth grade students. Sixth graders were selected as subjects because they are more able to express their thoughts and feelings and have had more experience in school than younger students. It is possible that younger or older students might have different ideas. Although the primary assessment instrument, The Classroom Environment Scale (CES), was normed primarily on high school and some junior high school students, the CES has been successfully used in studies with fourth, fifth and sixth graders (Davidson, 1976; Wright & Cowen, 1985; Parker, 1982; Toro et al., 1985).

Another delimitation of this study is that the student subjects represent fourteen sixth grade classrooms from five elementary and middle schools, selected for their diversity in terms of size, demographics including social and cultural characteristics of students and varied racial mixes, and geographic locations throughout the state of Massachusetts. Due to this variation in location of the schools and the social and cultural characteristics of students, it is more likely that this sample will reflect the range of environmental conditions in sixth grades throughout the state of Massachusetts. The diversity and range of this sample improve the validity of the study.

In addition, no claim is made that the learning environment itself is being measured. Instead, this study is designed for the investigation of the interpretations of the classroom environment made by the subjects participating in the environment.

The sixth delimitation is in regard to the techniques for collecting data. It is recognized that the information received is subject to the accuracy of the perceptions of the students surveyed and their ability to assess and express them. Furthermore, many times survey instruments sample group feelings about what participants feel they ought to think and do. Therefore, since this study is focused on students' understanding of what it is like to be in the classroom, what their experience is, and what meaning they make out of that experience, follow-up interviews were conducted to inquire into this subjective understanding.

The final delimitation is that this study precludes variables related to the environment external to the classroom, such as home influence and the economic and historical determinants of a learner's success in a classroom setting, for the students participating in this study. It also precludes maturational variables (genetic and developmental) which influence the affective, cognitive, and psychomotor development in each individual, and which may have bearing on their perceptions. However, it does take into account the influence of gender.

### Chapter Outline

The present study consists of five chapters. The first chapter states the problem. Chapter 2 reviews the literature. Chapter 3 describes the research procedures. The fourth chapter includes the analysis and findings of the data collected. Chapter 5

summarizes the findings of the study, presents their implications, and offers recommendations for educators and future research.

## Chapter One: Statement of the Problem

This chapter introduces the study. It identifies the problem that will be investigated, describes how the problem will be addressed, defines key terms, discusses why the study is significant, delineates the boundaries of the study, and provides a chapter summary of the research document.

## Chapter Two: Review of the Literature

The three areas of literature and research reviewed include: (1) the theoretical and empirical foundation that guides the research approach used in this study to elicit, measure, and interpret student perceptions of classroom environments, (2) conditions that are likely to enhance learning, and (3) studies that have explored the perceptions of students about classroom conditions that encourage their success in learning.

## Chapter Three: Research Procedures

This chapter describes in detail the selection of participants and the data collection process. It includes a description of the instrumentation and methodology used to generate data to answer each of the three research questions. Specific steps taken to answer the research questions are outlined.

Chapter Four:  Data Analysis

This chapter includes the analysis and findings of the data obtained.  It is

divided into two parts: description of sample and perceptions of students.  Tables and

line graphs are often used to summarize data generated by the research questions.


Chapter Five: Summary, Implications, and Recommendations

This final chapter provides a summary of the study and its findings, includes a

discussion of the major implications of this study, and makes suggestions for classroom

practice and further research.

CHAPTER TWO

REVIEW OF THE LITERATURE

This review of literature is divided into three parts. The first part provides the theoretical and empirical foundation that guides the research approach used in this study to elicit, measure and interpret student perceptions of classroom environments. It addresses perception as a means for understanding human behavior. From this foundation the review considers the importance of perceptions influencing behavior and its relationship to classroom environments and learning. The second part of this literature review focuses on conditions that are likely to enhance learning. Research and theory are included from a variety of fields including psychology, business and education. In the third part, particular attention is given to those studies whose authors explored the perceptions of students regarding classroom conditions that encourage their success in learning.

Theoretical and Empirical Foundation

The purpose of this part of the review is to present the theoretical and empirical foundation that supports the research approach utilized in this study for eliciting, measuring, and interpreting student perceptions of classroom environments. First, the role of perception as a means for understanding behavior is explained. Second, the importance of understanding how individual perceptions influence behavior and its relationship to classroom environments and learning is presented. Third, a selection of instrumentation designed to explore student perceptions of classroom learning environments is reviewed. Fourth, research confirming the validity of using the

Classroom Environment Scale (CES) with 6th grade students is presented. Fifth, some findings of other studies using the CES, particularly those related to student achievement and motivation, are summarized. The first part of the literature and research review concludes with a brief summary.

Perception As a Means for Understanding Human Behavior

This section is a historical view of perception that reviews the role of perception in learning theory. It is widely accepted that the perceptions of individuals influence their behavior and their learning. According to Baller (1965), the essence of perception is

> the observation and identification of objects and happenings in one's world and the attaching of significance to them. Perception is an amazingly complex process. There is much about its explanation that challenges the best efforts of researchers; there is much about it that deserves the most thoughtful consideration of teachers and others who would try to understand the way individuals view their world and themselves. The way an individual's world looks to him - how he perceives the objects and events in it - furnishes much of the basis for his decisions and his actions. (p. 194)

To understand people's judgments, decisions and actions and the dynamics of perception, it is necessary to take a broad perspective which includes considering non-sensory components in perception as well as strictly sensory components. Strictly sensory components or determinants of perception are defined by Bruner and Goodman (1947) as the "characteristic electrochemical properties of sensory end organs and nervous tissue" (p.217). The non-sensory components of an individual's perception are labeled "behavioral determinants" by Bruner and Goodman and are defined as

> ... the adaptive functions of the organism which lead to the governance and control of all higher level functions, including perception: the laws of learning and motivation, and personality dynamics such as repression, ...

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introversion and extroversion, social needs and attitudes, and so on. (p. 217)

Therefore, what a person "sees" is a compromise between what is presented by the sensory process and what is selected by behavioral (non-sensory) ones . The selective process in perception can be described as a "perceptual hypothesis" denoting what Krechevsky (1932) calls a "systematic response tendency". When such an hypothesis is set into operation by a need, by the requirement of a learning task or by any externally or internally imposed demand on the organism, and if the perceptual hypothesis is rewarded by leading to the desired result, the perceptual hypothesis grows stronger and the organism will select and act on it more frequently.

Donald MacKinnon, in his chapter on motivation in Boring et al. (1939), also stresses the need for distinguishing the physical situation (the environment considered as having independent real existence) from the psychological field (the situation as it exists psychologically for the individual). The psychological field consists of not only what is consciously perceived or known, but also everything that at that moment determines the behavior of an individual (p. 159). MacLeod (1947) concurs that "purely fictitious objects, events and relationships can be just as truly determinants of our behavior as those which are anchored in physical reality" (p. 205).

The impact of non-sensory components on perception have been explored further. In his chapter on perception in Baller (1965), William Ittleson (1952) discusses the role of the individual's experience in the formulation of his perceptions and the related role of his expectations. He theorizes that perception is based on what each has learned through previous experiences with similar situations. People who have had similar experiences tend to see things the same. People who experience a given

situation differently "literally live in different worlds" (p. 201). Perception based on experience allows people to pick out of a myriad of conflicting possibilities those actions that have the highest probability of being successful based on the results of past actions. Ittleson contends that people never act in a vacuum, but always act for some purpose of greater or lesser value to them. Additionally, A. Irving Hallowell (1951) points out the influence of cultural factors such as traditional beliefs on perception and idiosyncratic or personal determinants (inner personal needs) on an individual's perceptual structuralization of a particular situation.

Maslow (1943) further expands on the concept of the influence of inner personal needs on perception. He theorizes that the organism is dominated and its behavior organized by unsatisfied needs. Once satisfied, the need becomes unimportant. He proposes a hierarchy of five basic individual needs. These needs in ascending order are (1) physiological needs (such as hunger, thirst, sleep, sex); (2) safety needs (threat or danger); (3) need for love and belonging (both giving and receiving affection); (4) esteem needs (self-respect and the esteem of others); and (5) self-actualization (self-fulfillment; to become everything that one is capable of becoming). Maslow theorizes that receptors, effectors, the intellect and the other capacities become primarily tools to seek need satisfaction.

In 1938, Murray presented his conceptualizations of the influence of environment on behavior by suggesting that to understand human behavior and personality, it is important to look not only at a subject's inner needs and traits, but also at the nature of the environment - to what circumstances an individual has been exposed. He concluded that it is advisable to classify an environment in terms of the

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kinds of benefits (facilitations, satisfactions) and the kinds of harms (obstructions, injuries, dissatisfactions) which it provides. Murray observed that if the environment or an object in the environment has a 'bad' effect on the study subject, in the vast majority of cases the subject tends to prevent its occurrence by avoiding it or defending himself against it. If it is a 'good' effect the subject will usually approach the object and attempt to get the most out of it. He further noted that a single object may be capable of numerous effects, both harms and benefits.

Murray selected the term *press* to designate a directional tendency in an object or situation. Each press has a qualitative aspect - the kind of effect which it has or might have upon the subject - as well as a quantitative aspect, since its power for harming or benefiting varies widely (p.118). Murray noted that an environment or a social group can be analyzed from the point of view of what press it applies or offers to the individuals that live within or belong to it. Additionally, human beings, in general or in particular, can be studied from the viewpoint of what beneficial press are available to them and what harmful press they customarily encounter. (p. 120)

Murray introduced two categories of environmental press which he called "Alpha Press" and "Beta Press". "Alpha Press" refers to environmental elements which affect individuals, as inferred by the judgments made by a disinterested trained observer. This is the "actual" press that exists as far as scientific inquiry can determine it. "Beta Press" refers to the interpretations of the school environment made by the subjects participating in the environment. (p. 122) A distinction can be made between consensual Beta Press (the shared perceptions of the participants in a social situation)

and private Beta Press (the highly idiosyncratic views of individuals within the situation). See Stern (1970, p. 7).

Various individuals with different conceptual structures and different needs might perceive the same environmental press in different ways. Their perceptions form a screening device which partially explains their different behavioral responses to a given environment. It is the investigation of Beta Press, the participant's own interpretation of the environmental events or conditions that he or she perceives, that has been chosen for this study because of its potential value for reflecting differences between the perceptions of learners who experience different degrees of academic success in a classroom environment.

The Importance of Perceptions Influencing Behavior and Its Relationship to
Classroom Environments and Learning

The work of Lewin during the 1940's addresses the power of the group to shape individual behavior. He originated the concept of involving group members in identifying and solving their own problems, understanding that "the process of diagnosis within an organization was not just a means of identifying problems, but a way to build commitment for action. He observed that psychic tension, a state of readiness for action, could flow from a desire, a goal, or an unfinished activity. Weisbord in Productive Workplaces describes Lewin's thinking,

> Positive group experiences, based on mutual tasks, could alter the attitudes
> and actions of all those in a particular social system more quickly than
> individual awareness exercises. There are solid reasons then, why groups,
> rather than individuals, become the focus for change strategies.

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Lewin's work underscored the importance of understanding individual perceptions of environments, and the attitudes, feelings, structures, values, goals, and behaviors of individuals within that environment, in order to successfully identify problems and work to improve the effectiveness of that environment. No two classrooms are alike and the above factors require careful examination to understand the unique "driving forces" and "restraining forces" that impact group and individual behavior and learning.

Lewin also pointed out:

- no two groups are alike, and each requires a careful diagnosis that promotes understanding of the unique "driving forces" and "restraining forces";

- values and principles should drive the change process;

- leaders must see themselves as both part of the problem and part of the solution;

- "moving" groups means changes in attitudes, values, structure, feelings, and behaviors that result from people discussing and planning new actions.

- when people are given tasks for individual learning, but have no say in the group's goals, policies, structures and procedures they can "...feel conned."

Bronfenbrenner (1977) proposed that

Lewinian theory - a bundle of paradoxes in which the perceived is viewed as more important than the actual, the unreal more valid than the real, motivation inheres in the environment, and the content of structures remains unspecified - was a set of ideas whose time was just arriving.

In Experience and Education, Dewey (1938) succinctly made the connection between perception, behavior, and learning when he pointed out that teachers do not

provide experiences for students; teachers provide conditions whereby each individual student undergoes his or her own experience.

The research approach of using the most academically successful 20% of students and the least academically successful 20% of students in each classroom is based on Reynolds, Zetlin, and Wang's (1993) "20/20 Analysis" - for evaluation and program planning (for schools and classrooms). The assumption behind this approach is that if a teacher can understand and meet the needs of these two most challenging groups within the classroom, the needs of the other 60% of the students in the classroom will also be addressed within this planning process.

Instrumentation Designed to Explore Students' Perceptions of
Classroom Learning Environments

There are several measures of classroom environment available. For example, The Minnesota School Attitude Survey (Ahlgren, 1983) was designed to assess "students' feelings toward many facets of their schooling experience". It surveys students' attitudes toward academic subjects, school personnel, self-expression, peers, and various learning modes and situations, as well as students' feelings of support, pressure, motivation, acceptance and exclusion, cooperation and competition, and self-worth within the school setting. It has two forms, one for grades 1 - 3 and one for grades 4 - 12. However, reliability and validity information is not available except for face validity, and no description of the norming population is given except one reference to an all-white suburban school, which brings into question its appropriateness for use with the diverse population in this study. Additionally, it is

designed for measurement of groups, not individuals, and does not appear to be based on any theoretical constructs.

The Learning Environment Inventory and My Class (Anderson & Walberg, 1974) are instruments with greater predictive validity than the instrument being used in this study and are, therefore, better measures of causality between outcomes and process, such as in instances where direct evaluation of the effects of intervention on classroom achievement is desired. However, since that is not the focus of this study, the Classroom Environment Scale (CES), described below, was determined to be a better choice for this application.

The Aspirations Survey (1996) includes demographic information such as parents' level of education, ethnicity, and students' self-evaluation of their academic performance level. The Aspirations Survey is designed to measure students' perception of the classroom climate as well as their perception of their level of inspiration and aspiration. The scoring provides classroom, grade level and school averages on the various subscales and specific survey items. Psychometric data are still being collected and subscales and survey items are in the process of revision to improve the construct validity of the instrument. The instrument is designed to provide information about students' perception of the school environment and their level of aspiration to initiate reflection and discussion among school personnel who are planning school improvement efforts. The lack of psychometric information, the substantial nature of current revisions to both the instrument and the underlying constructs, and the scoring limitations preclude the use of this instrument for the purposes of this study.

The <u>Classroom Environment Scale</u> (CES) is a reliable instrument grounded in theory and empirical criteria, the quality of which is a great improvement over the typical attitude and climate measures available (Eash, 1978). The CES was developed to measure social climates of environments where teaching occurs. It uses Murray's theory and work on environmental press and maintains a consistent construct validity with Murray's work. An underlying assumption is that the consensus of a group of individuals in characterizing their environment constitutes a measure of the social climate of that environment and the "press" of that climate to exert a directional influence on individual behavior.

The scale measures three dimensions of an environment to provide a framework for understanding the determinants and impacts of social climates. The first set of dimensions assesses personal relationships in a setting. These dimensions measure how involved people are in a setting, how much they help each other, how spontaneously they express feelings and the level of friendship and support between the leader and members of the group. The second set of dimensions taps ways in which an environment encourages or stifles personal growth. In the classroom this focuses on performing tasks and competing. The third dimension measures how orderly and organized the setting is, how clear it is in its expectations, how much control it maintains, and how responsive it is to change. By assessing these three sets of dimensions, the scale provides a reasonably complete picture of an individual's or group's perception of an environment.

The psychometric data for the CES is presented in Chapter Three, Design of the Study. The instrument has the additional feature that individual raw scores and group

mean raw scores can be converted to standard scores and plotted graphically on a profile to facilitate comparisons between individuals and between groups. This feature, combined with parametric statistical analyses, enriches the analysis and description of the data obtained, making the CES the preferred instrument for this study.

<p align="center">Research Confirming the Validity of Using the CES<br/>for 6th Grade Students</p>

The CES was normed using 382 high school and junior high classrooms representing a wide range of schools, for example, rural, suburban, inner-city, private, public, and alternative schools with equally diverse ethnic representation. Only 10% of the norming population were junior high classrooms which would be similar to the population sampled in this study. However, the scale only requires a sixth grade reading and comprehension level and, according to the scale manual, is considered appropriate for students age eleven and above. The manual also suggests administration options for use with subjects whose reading level is below sixth grade. These suggestions include reading the questions aloud to the children and providing clarification of test items.

The validity of using the CES for sixth grade students is also confirmed by research. Wright and Cowen (1982) used the CES with fifth and sixth grade children, and in 1985 used the CES to explore the effects of a social studies peer teaching classroom intervention for fifth grade students. Toro et al. (1985) successfully used the CES in elementary school classrooms to explore social environmental predictors of children's adjustment. The CES has also been used with sixth graders to examine student adjustment as a function of person-environment fit (Davidson, 1976). More

recently, Knight (1991) examined 6th, 7th, and 8th graders regarding the effects of students' perceptions of their classroom learning environment on their motivation to learn language arts, Raviv, et al. (1990) used the CES with 6th graders in Israel, and Madonna, et al. (1990) used the CES with 4th and 5th graders. Gulley (1980) also used the CES with 6th graders. This listing is not intended to be exhaustive, but rather, sufficient to provide support for using the CES with the sixth grade subjects in this study who range in age from 11 to 13.

Findings of Other Studies Using the CES, Particularly Those Related
to Achievement and Student Motivation

Findings of studies relating classroom climate to achievement and student motivation include Davidson's (1976) finding that achievement among the better-adjusted children rose as classroom structure increased, whereas achievement among the aggressive and anxious children declined with an increase in structure. Turpin (1982) found that supportive math classes tend to have a positive influence on student achievement. Gulley (1980) found that classroom task orientation, rule clarity, order and organization were moderately related to sixth-grade students' achievement. Students who want supportive and well-organized learning environments tend to do better in such classes (Fisher & Fraser, 1983). Similarly, Harpin and Sandler (1985) reported finding that, when people who believe in external control are in well-structured settings, they tend to adjust better. In contrast, internally oriented people are likely to do better in settings that are more flexibly organized. In the same way, people who want to explore and shape their environment and who strongly need independence tend to do well in less-structured settings (Perl & Trickett, 1988).

Regarding matching individuals and environments or looking at a person in context, findings suggest that settings with expressive relationships usually promote morale, but for very independent or introverted people, emphasis on interaction can be restrictive or over stimulating. Moderate emphasis on system maintenance promotes ego control among students who need or prefer a well-structured setting. However, a strong focus on these factors, especially among developmentally mature and internally oriented people, restricts individual growth and can foster passivity. In general, when the environment demands much more than the individual can manage, some personal dysfunction is likely to occur.

In a study exploring attitudes toward learning, Fisher & Fraser (1983) found that 8th and 9th grade science students who were in more involving, innovative, and better-organized classes developed a more positive interest in and attitude toward science and were better able to formulate scientific conclusions and generalizations and to understand the social implications of science. Fouts and Myers (1992) also found that science classes characterized by high levels of involvement, affiliation, teacher support, order and organization, and innovation yielded students with the most positive attitude toward science." Wright & Cowen (1985) found that, in general, problem students felt best in warm and structured classes. Fry and Coe (1980) also explored the connections between learning environment and academic motivation. They found that classes with high teacher support and involvement had students who enjoyed learning and who reported a high desire for self-improvement and motivation toward academic success. Whereas, classes with high teacher control and organization had students who reported significant negative feelings about school and less interest in learning and self-

improvement. Finally, students in task-oriented classes were task focused and career minded.

## Summary

The first part of this chapter has reviewed the role of perception in learning theory, instrumentation designed to explore student perceptions of classroom learning environments, as well as findings of related research studies using the CES. Learners' perceptions play a central role in how they respond to a classroom environment. These findings are reflective of the results of research and theories in the fields of education, psychology, and business addressing conditions that are likely to enhance learning.

## Conditions That are Likely to Enhance Learning

The objective of the second section of Chapter Two is to focus on conditions that are likely to enhance learning. Research and theory will be included from a variety of fields including psychology, business, and education.

## Psychology

Brain research has generated new understandings about the brain as an organ for the discovery and processing of meaning. The brain is constantly engaged in making sense out of experience by seeking patterns and relationships. Therefore, learning can be defined as the discovery of meaning and teaching becomes the facilitation of that process.

Hart (1983) discusses the negative effect of threat upon brain function. Hart states that when people feel threatened by experience, the brain 'downshifts' from higher thought processes in the cerebrum to avoidance or defensive postures characteristic of older portions of the brain. Hart suggests a number of alternatives in atmosphere, organization, expectations, curricula and teaching practices that are less likely to trigger the inhibitory effects of down shifting.

The view from the perceptual-experiential psychologies is that behavior is a symptom of what is happening internally to an individual. People behave according to how things seem to them. The causes of behavior, therefore, lie in people's meanings, generally known as perceptions, beliefs, feelings or attitudes about themselves and the world. Behavior is a function of the personal meaning an individual ascribes to a situation at the moment of action. People don't respond directly to the stimulus. They respond to the personal meaning of the stimulus. People do not behave according to the facts and information. They act in terms of what things mean to them -- what they think, feel or believe.

We know that what students believe about themselves has vital effects upon their abilities to learn. The person who believes he can't do something, avoids the experience and so does not improve. Then when he must perform, his weak performance only serves to prove what he felt in the beginning. Self concepts are learned from the way people are treated in the course of growing up. Beliefs about self are learned, especially from the interactions with the significant people in our lives.

Damon (1995) states his belief that "positive self-esteem is a result of positive developmental outcomes." He contrasts his view with those who believe that self-

esteem precedes healthy development and propose self-esteem building programs that coach students to say, "I'm terrific." He suggests that "we would do better to help children acquire the skills, values, and virtues on which a positive sense of self is properly built." (p.33)

Joyce et al. (1993) agree that William Butler Yeats is on target with his statement: " Happiness is neither virtue nor pleasure not this thing nor that but simply growth. We are happy when we are growing."

Van Manen (1991) suggests that "from a pedagogical perspective the most important question is always, 'How does the child experience this particular situation, relationship, or event?'" (p. 11). Indeed, "When we look at the world through someone else's eyes, we may be able to see a different world" (Stinson, 1993, p. 217).

## Business

Business literature abounds with the importance of the "learning organization" for economic success. For example, Wick and Leon (1993), state that the reason for differences in success between persons and companies of equal capabilities,

> boils down to the ability and passion to learn. They learn better and faster. They know their strengths and focus on diminishing their weaknesses; they take responsibility to set their own learning agenda and are curious, which leads them to delve deeper and longer and to ponder possibilities. (p. 12)

Barra (1983) identifies and describes characteristics of effective groups and the characteristics of ineffective groups. Regarding the climate of ineffective groups, he describes an atmosphere that is likely to reflect either indifference and boredom (people whispering to each other or carrying on side conversations, individuals who are

obviously not involved) or tension (undercurrents of hostility and antagonism, stiffness and undue formality). The group clearly is neither challenged by its task nor genuinely involved in it. In contrast, the characteristics of effective groups include a climate in which the atmosphere, which can be sensed in a few minutes of observation, tends to be informal, comfortable, and relaxed. There are no obvious tensions. It is a working atmosphere in which people are involved and interested. There are no signs of boredom (pp. 60-62).

Drucker (1999) discusses the role of leaders in successful, growing companies. He states,

A superior who works on his own development sets an almost irresistible example.

Every manager in a business has the opportunity to encourage self-development or to stifle it, to direct it, or to misdirect it. ... Indeed, no one learns as much as the man who is trying to help others to develop themselves.

The best way to learn is by giving people challenging jobs that stretch their abilities. ...where they know they are accountable and responsible; they make it their business to learn.

Senge (1994) notes that leaders

are responsible for building organizations where people continually expand their capabilities to understand complexity, clarify vision, and improve mental models - that is, they are responsible for learning. (p. 340)

People in a learning organization feel a deep sense of accomplishment for what their whole organization has been able to achieve and for the contribution their learning has made to the total effort. ...In a vibrant developmental culture, the norm is constant learning leading to continuous improvement.

Bolman and Deal (1994) echo these thoughts on individual perceptions and learning success when they state,

Individuals need to see their work as meaningful and worthwhile, to feel personally accountable for the consequences of their efforts, and to get feedback that lets them know the results.

In fact, the essence of Blanchard and Johnson's (1982) strategies for success includes clear and immediate feedback on performance - both positive and negative - and clear, positive expectations and goal setting. Peters and Waterman (1982) add

Tolerance for failure is a very specific part of the excellent company culture - and that lesson comes directly from the top. Champions have to make lots of tries and consequently suffer some failures or the organization won't learn.

Naisbitt and Aburdene (1985) warn that in the new information society where the only constant is change, we can no longer expect to get an education and be done with it. There is no one education, no one skill, that lasts a lifetime now. The information society has turned all of us into lifelong learners who must periodically upgrade our marketable skills and expand our capacity for knowledge. Furthermore, they assert that the ability to think and to reason logically and coherently is the new basic skill. They define thinking as

the ability to synthesize and make generalizations, to divide into categories, to draw inferences, to distinguish between fact and opinion, and to put facts in order to analyze a problem. It can be learned and developed. (p.126)

The consensus is clear about the importance of creating work environments conducive to learning and growth for all its members in order for all of us to successfully function in this age of more rapid expansion of knowledge. The role of leadership to promote such an inclusive and engaging environment is also clear.

Education

Stockard and Mayberry (1992) summarize the research on effective educational environments and indicate the importance of both cognitive and affective dimensions of the learning environment:

> In effective learning environments, students and teachers have positive feelings about their work setting. High morale appears to bolster the self-confidence of both teachers and students and promote positive attitudes and expectations about teaching and learning abilities...

Therefore, academic achievement is enhanced when the norms of the group combine high academic expectations with learning processes that emphasize interdependence, cooperation, and an orderly learning environment characterized by warmth, concern and respect for others. Stockard and Mayberry note that

> Many of the efforts to change the learning environment are attempts to achieve a better balance between these sometimes conflicting needs for order and warmth. The challenge is to create an environment in which all students feel valued and challenged simultaneously, where they enjoy being at school and also achieve academically. (p.165)

Stockard and Mayberry describe this as attempting to "achieve a balance between the expressive, or socioemotional, dimensions of classrooms and schools, and the instrumental, or task-related dimensions" (p. 166).

Dewey (1983) expressed his vision of conditions that enhance learning. He argued that students should be involved in shaping their reasons for learning when he stated,

> There is, I think, no point in the philosophy of progressive education which is sounder than its emphasis upon the importance of the participation of the learner in the formation of the purposes which direct his [or her] activities in the learning process. (p. 67)

Despite Dewey's influence, it appears that this kind of student participation, or voice, has not been widely accepted or practiced. However, Dodd (1995) indicates that she found through her years of teaching, that "understanding students' perspectives was the best way to foster engagement and learning". She noted that

> What teachers need most to know about students is hidden; unless they develop a trusting relationship with their students, teachers will not have access to the knowledge they need either to solve classroom problems or to motivate students. (p. 65)

Dodd believes that

> to become engaged, students must have a feeling of *ownership* ... and *personal power* - a belief that what they do will make a difference. To motivate and engage students, teachers must create a classroom environment in which every student comes to believe, "I count, I care, and I can." (p. 65)

As teachers learn more about how students think and feel, they will be able to create classes where students have fun because they are engaged in learning in diverse, purposeful, and meaningful ways.

Dodd formulates three principles about learning: (1) Learning is personal and idiosyncratic. Even when there is only one right answer, there are many ways students can misunderstand. Therefore, teachers need to find out how students individually make sense of any lesson or explanation. (2) Every student behavior - from the most outrageous classroom outburst to the more common failure to do homework - is a way of trying to communicate something the student cannot express any other way or doesn't consciously understand. Therefore, punishing a behavior without learning its possible cause may not solve a problem and may intensify the behavior, because the child may interpret the punishment as evidence that the teacher is uncaring. (3) Teachers should never assume, because too often they can be wrong.

Marzano, et al. (1992) have developed a model of learning, or instructional

framework, designed to improve instruction and assessment in the classroom. This

model, called Dimensions of Learning, emphasizes the centrality of understanding

perception for those who would create environments that enhance learning. The first of

their five dimensions is having "positive attitudes and perceptions about learning." The

other four dimensions are: "the kind of thinking involved in (1) acquiring and

integrating knowledge, (2) extending and refining knowledge, (3) using knowledge

meaningfully; and (4) productive habits of mind, which include being sensitive to

feedback, being accurate and seeking accuracy, and working at the edge rather than the

center of your competence." The model asserts that all learning takes place against the

backdrop of the learner's attitudes and perceptions and the learner's use, or lack of use,

of the "productive habits of mind."

Combs (1991) echoes many of the same ideas. He states that

People don't behave directly in terms of the forces exerted on them. They
behave according to their beliefs about what is happening. They behave
or misbehave according to their beliefs or perceptions about themselves
and the world. (p. 6)

Mirroring Maslow's *hierarchy of needs* theory, Combs notes

Personal identity and fulfillment - not self-indulgence - is a necessary step
to higher levels of motivation, achievement and responsible citizenship.
The fulfillment of personal needs frees people to work for higher
objectives. The genius of good teaching lies in helping students to fulfill
their personal needs and to discover needs they never knew they had. (p.
24)

Oates (1995), like Dodd, advances the idea that the two factors that enhance

student motivation can be summarized by the phrase "voice and choice". If children are

permitted to have a voice in the kinds of learning activities and classroom structures

available and have, as well, choices from several learning activities, their motivation and involvement in the learning process is markedly enhanced.

Research on "effective schools" identifies norms of school "culture" that foster student growth and development. Little (1992) examined instructionally effective schools and found that in the most successful schools teachers are more likely to discuss teaching and learning with one another, critique each others work, collaborate on the preparation of materials, and jointly design lessons. In their summary of research on effective cultures, Saphier and King (1985) added ten more "norms" to these qualities of collegiality and experimentation cited by Little. These additional qualities found in schools where student growth and development are more likely to occur are: high expectations; trust and confidence; tangible support; reaching out to the knowledge bases; appreciation and recognition; caring, celebration and humor; involvement in decision making; protection of what's important; traditions; and honest, open communication.

Strategies that teachers use in heterogeneously grouped classrooms can improve the learning outcomes of students from both non-disadvantaged and disadvantaged backgrounds. Wang et al. (1990, 1993) reported that they analyzed 179 selected research articles and 11,000 statistical findings to determine which variables were most likely to maximize learning. In general, they found that direct influences, including the amount of time teachers spend on a topic and the quality of the social interactions teachers have with their students have a greater impact on school learning than indirect influences such as school and state policies and organizational features. Specifically, when they ranked the relative influence of categories of variables on student learning

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they found that the top five (5) categories, starting with the most influential were: (1) Classroom management which includes group alerting, learner accountability, smooth transitions, and teacher "with-it-ness" including use of questioning and recitation strategies that maintain active participation of all students and awareness of classroom activity at all times. They found that effective classroom management increases student engagement, decreases disruptive behaviors, and makes good use of instructional time. (2) Student aptitude in terms of the student's metacognitive processes was the next most influential category. In fact, a student's metacognitive processes had the most powerful effect on his learning. Metacognition includes the "student's capacity to plan, monitor, and, if necessary, replan learning strategies". (3) Students' cognitive processes which include general intelligence, competency in math and reading and verbal knowledge ranked third. (4) Home environment or parental support is well documented in improving academic performance, attendance, and reducing dropping out and ranked fourth in their meta-analysis. (5) Constructive student-teacher social interactions ranked fifth out of their 28 categories of influence on school learning. They state

> It has been documented that the frequency and quality of [student-teacher] interactions contribute to a student's sense of self-esteem and foster a sense of membership in the class and school.

In summary, Wang et al. found that classroom management, students' cognitive and particularly metacognitive processes, and parent support were the most influential of their 28 categories of factors that influence student learning; however, the frequency and quality of student-teacher social interactions ranked fourth in influence and was statistically very close to the top three.

Tyler (1985) advanced the idea that there were seven conditions required for effective learning. These conditions were not confined to the classroom, but were required wherever conscious learning took place. These seven factors are: motivation, clear learning objectives, appropriate learning tasks, confidence that supports willingness to attempt the task, rewards and feedback, sequential practice, and transfer (p. 203). Tyler (1989) notes the increasing importance of educating all students to high levels of accomplishment and the slow progress schools are making in improving the learning of disadvantaged children. He attributes this slow progress to the "many difficulties arising from educational assumptions and principles developed when societal conditions were different and our knowledge of the conditions required for learning was very primitive". He states that the "attitudes of educators and the public have been slow to change" (p. 24) and supports the need for teachers to understand and appreciate the potential of children from poverty by citing the Urban Education Studies of Chase and his colleagues that

> show clearly that the teacher's attitudes toward disadvantaged children is a major factor in their learning. Where teachers clearly cared about their students, set high standards for their achievement, and encouraged them, the children were learning. Where teachers showed no evidence of personal concern for the students and did not expect much from them, the children were learning little. (p. 24)

The learning problems encountered by disadvantaged students often include grouping practices that restrict their access to the rich instructional practices of the best teachers who are usually assigned to teach the more advanced classes and students. Frequently, the least successful students' classes are taught by the less skilled teachers who compound students' challenge to maximize their learning by holding lowered expectations. Oakes (1985), an advocate for equal access to educational opportunities

for all learners, reminds us that all learners need to feel included and valued for their uniqueness. This is emphasized also by Kunc (1992), and Maslow (1970). Oakes suggests that tracking and sorting students promotes political ends, not optimal enhancement of individual student learning. She also reports that tracking in the early grades influences the child's perception of him or herself and further tracking tends to confirm these early impressions and shapes his attitudes toward school and the value of learning, thereby creating a certain inflexibility in the minds of both teachers and students and making the heterogeneous grouping in middle and high school grades extremely difficult.

The case for successful experiences during the earliest years of school is also made by Bloom (1977), who asserts that a person's academic self-concept is clearly defined by the end of primary school, particularly for the upper and lower fifth on academic achievement, where the relationship between academic self-concept and school achievement is unmistakably strong.

Pigford (1995) outlined the following effective strategies teachers can use to enhance student involvement: (1) move about the classroom to be able to interact physically with each student, conveying the message that each student matters and is important; (2) make learning meaningful and relevant to students' experiences; (3) create classrooms where students feel psychologically safe -- as free to be wrong as right; (4) create classrooms where success abounds because the teacher "adjusts the bar" to provide a realistic challenge for all students; (5) provide additional assistance when students are not successful; (6) show care and concern; (7) encourage all students to ask questions and participate; (8) use positive humor; (9) stay calm and in control when

faced with challenges and controversy. She notes that teachers who continually search for ways to improve, will make a difference.

The second section of this chapter has reviewed research and theory from the fields of psychology, business, and education about the conditions that are likely to enhance learning. The third section will review research exploring students' perceptions about classroom conditions that encourage them to learn.

<div align="center">
Studies Related to Students' Perceptions about Classroom Conditions
That Encourage Their Success in Learning
</div>

The literature repeatedly notes the absence of emphasis and studies that inquire into students' perception of their learning experiences in the classroom especially as they relate to factors that enhance or hinder their learning (Fullan, 1997; Rudduck, 1997). One study, done by Stinson (1993), focused on how students in one high school subject made sense of their experiences. Stinson interviewed students who chose to participate over a period of several months. She found that students were asking

> to be stimulated to learn; to have a sense of meaning in what they are
> being taught; to be treated with understanding - to be cared for; and to be
> able to be themselves. This involves conditions of both security (being
> accepted as they ought to be in their own family) and freedom (to express
> themselves).

In another study Wasserstein (1995) surveyed 7th and 8th grade students about their most memorable work - that which they found to be the most engaging. She found that students of all learning abilities in order to feel successful need to feel that what they are doing is valuable, important and has purpose. On the other hand, if the work was perceived as busywork or not important, it tended to destroy their motivation,

satisfaction and sense of personal worth. Furthermore, students equated hard work with success and satisfaction. They expressed a sense of power when they assumed the responsibility of challenging work and were successful.

In 1997, William Glasser reported the results of his study at the Schwab Middle School in Cincinnati. Students (N=170) who had failed at least one grade and attended school, but were disruptive, were enrolled in a special program with a different approach -- one that did not use coercion to motivate these non-working students. Glasser reported that

> when they asked the students why they were no longer disruptive and why they were beginning to work in school, over and over they said, "You care about us." And sometimes they added, "And now you give us choices and work that we like to do." (p. 601)

What the students liked was that they were allowed to go at their own pace; they were told they could not fail, but it was up to them to do the work; and the teachers would help them learn as much as they could.

The findings of these studies are reflective of the results of research and theories in the fields of education, psychology, and business that address conditions that enhance learning.

<center>Significance of This Study</center>

In our rapidly changing world, the need for successful learners becomes more critical daily, and school reform policies are in constant political debate. The current emphasis is on curriculum; the focusing mantra has become high expectations and achievement (Rudduck, 1997). However, based on literature reviewed in this chapter, it seems reasonable to postulate that direct practices in the classroom and more direct

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intervention in the psychological determinants of learning hold the promise of being effective avenues of school reform (Wang et al., 1993, p. 79). Too little attention has been given to classroom conditions of learning as experienced by young people (Fullan, 1997; Rudduck, 1997).

Therefore, this study is designed to add to the research base in at least three ways. First, it will contribute to the limited research base that explores student perceptions as a means to better understand the relationship between elements of the classroom environment and students' academic success. Second, it is expected that direct practices and specific classroom conditions will emerge as being perceived by students in this study as helping or hindering their learning. These findings will contribute to the research on effective teaching by validating effective approaches as well as illuminating practices and conditions that are counterproductive. Third, this study will compare and contrast the views of the most and least successful students to determine which environmental variables are experienced most differently by these two groups. These findings will add to understanding the experience of being a learner. Hopefully, this increased understanding of the classroom as experienced by the least successful students - and contrasted with views of the most successful students, will offer ideas for improving their learning.

In addition, the research method of surveying and interviewing students regarding their perceptions of the classroom learning environment offers the potential to not only confirm and extend the knowledge base, but also, add to the evidence of the usefulness of the approach. It is expected that this study will demonstrate and acknowledge children's capacity to reflect seriously on issues affecting their lives. This

study will also contribute to the validity and reliability of the use of the Classroom Environment Scale. It is hoped that the research method used to gather data in this study will prove to be a valuable tool for educators to use as they attempt to better define and understand the particular problems in student learning they encounter. Surely, the better we understand the problems, the more likely we are to design effective solutions.

Chapter Summary

The review of the literature provides the theoretical and empirical foundation that guides the direction of the study and supports and reinforces the importance of the research questions and the approach used. The review of the literature was presented in three parts. The first part included an explanation of the role of perception as a means for understanding behavior and its relationship to the classroom environment and learning. The discussion in this first section indicates that learners' perceptions play a central role in how they respond to a classroom environment. The second section of Chapter Two focused on conditions that are likely to enhance learning. In this section, research and theory reviewed from the fields of psychology, business and education show remarkable similarity and substantiate the importance of the perception of oneself and one's environment to one's ability to learn. This section of the review also suggests conditions that promote successful learning. The third section reviewed research exploring students' perceptions about classroom conditions that encourage them to learn. This final section indicates that few studies inquire into students' perceptions of their learning experiences, especially as they relate to factors that encourage or interfere

with their learning. Findings of existing studies infer that this lack of inquiry into students' perspectives fails to recognize students' ability to reflect on issues that are important to them. The implication is that this failure to consider students' perspectives hinders school improvement efforts.

The next chapter of this study includes the design of the study and methodology used to obtain the data necessary to answer each research question. The purpose of the chapter is to provide detailed information about the sample selection process, the instrumentation used, and the specific procedures used to gather and analyze the data.

# CHAPTER THREE

## RESEARCH PROCEDURES

This is a descriptive-exploratory study primarily because it is intended to collect data to address research questions concerning the status of the topic under investigation. Specifically, it involves using surveys and interviews to study pairs of variables. The study is designed to better understand relationships among and between important variables and to provide a rendering of how students of varying levels of academic success perceive and experience selected social aspects of their classroom learning environments. The design of this descriptive-exploratory study consists of three interrelated parts. The first two parts, sample selection and instrumentation, describe those general aspects of the design that are applicable to all three research questions. The third part describes the methodology used to generate data to answer each of the three research questions. In this third part, the specific steps taken to answer the research questions are outlined.

### Sample Selection

The first part of the design explains the selection of schools and students for participation in this research. The five public schools participating in this study were selected using a stratified random sampling procedure from lists of public schools in Massachusetts representing diverse demographic characteristics. Demographic characteristics include school size, geographic location, socio-economics, and racial mix. This procedure was selected to ensure that all diverse factors would be included in the final subject population. Principals of potential schools were contacted by telephone.

The purpose, goals and methodology of the study were explained. Permission was requested to perform the study and to meet with students in one, two, three or four heterogeneously grouped sixth grade classrooms depending on the size of the school. Demographic data was confirmed at that time and a list of the sixth grade teachers obtained from those principals who agree to participate in the study. A sample of the Demographic Data Sheet that was used for this initial contact with principals is included in Appendix A.

A letter confirming the content of the telephone calls was sent to the various principals who agreed to participate in the study. The letter also promised the anonymity of the school and the students and explained how it would be done. A draft of the follow-up letter to the principals is in Appendix B. A summary of the research proposal, a sample of the letter of consent to be sent to the parents of all students in the participating classrooms, and a sample of the letter of consent for those students with whom the researcher would be doing follow up interviews were enclosed for the principal to review. The letters of consent explained how the human subjects in this study would be protected and were approved by the Human Subjects Review Committee (see Appendices C and D for drafts of the letters of consent). Self-addressed envelopes were also enclosed for copies of class lists for classes that would be selected to take part in the research. A follow-up telephone call or visit was made to further clarify the research goals and methodology.

Sixth grade classrooms were then randomly selected within these schools for a total of fourteen (14) heterogeneously grouped classrooms and approximately three hundred fifty (350) students. When the participating classrooms were selected, the classroom teachers were contacted in order to explain the research goals and

methodology, to request an alphabetical class list, and to ascertain the most convenient time to meet with the students in each classroom. The teachers were also asked to identify the twenty percent of the students who were the most academically successful and the twenty percent who were the least academically successful using the alphabetical class list. In addition, the teachers were asked to identify the special education students and mail the list to the researcher using the self-addressed envelopes provided to the principal. Letters confirming these conversations were sent. (See Appendix E.) Each classroom was scheduled individually. Letters of consent to be sent to the parents of all students in the participating classrooms were delivered to the classroom teachers. The letters explained the purpose of the study and gave examples of the kinds of questions that would be asked. The letters asked parents to sign and return the form to school by a specified date, if they did not want their child to participate. The parents were assured that in no way would non-participation affect their child's grades or standing in school.

Prior to meeting with the participating students, a pilot survey was conducted with a sixth grade classroom not to be included in the research to test the instruments and procedures. Based on the results of the pilot assessment and suggestions from the students and teacher, changes were not made to the survey instruments, but to procedures.

In each participating classroom, introductions took place, the research objectives were explained, and students were informed that their participation in this study would help determine how to improve classroom environments. The students were reminded that their participation was entirely voluntary, that the questionnaire would take about 20 minutes to complete and were assured of anonymity. All of the students in the fourteen classrooms whose parents had consented to have their child participate, completed the

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Classroom Environment Scale surveys individually during class time. The researcher was present to answer any questions that arose and to read the survey items aloud to a small group of students who were identified by teachers as having difficulty reading. The surveys were numbered in advance to correspond with an alphabetical class list. Student survey forms were collected by the researcher.

Student surveys selected for analysis and comparison were those of the most academically successful twenty percent of the students in each sixth grade classroom. The surveys of the least academically successful twenty percent of the students in each grade six classroom were also analyzed, making a total of one hundred thirty-six (136) questionnaires. Selection of the students in both groups (the most academically successful and the least academically successful) was determined by two criteria: the ranking by their teachers and report card grades when permitted and available. Two of the schools (S 2 and S 3) had policies prohibiting access to student report cards in order to maintain students' privacy. Thus, in two schools student selection was based on teacher recommendation alone. Students in the classroom with profound difficulties in learning, who were unable to understand or respond to the questions, were not included in the final sample selection for analysis. For purposes of anonymity each school and classroom was designated by a code. The schools were referred to as S 1, S 2, S 3, S 4, and S 5. The fourteen classrooms were referred to as S1 A; S2 A, S2 B; S3 A, S3 B, S3 C; S4 A, S4 B, S4 C, S4 D; S5 A, S5 B, S5 C, and S5 D respectively. In addition to this identification, each of the final one hundred thirty-six (136) student participants were numbered, with an "L" affixed to the number signifying least academically successful or an "M" affixed to the number signifying most academically successful.

Their genders were distinguished by an "m" for male participant or "f" for female participant. Students enrolled in special education programs were noted by an asterisk (*).

## Instrumentation

The second part of the design describes the instrumentation. The <u>Classroom Environment Scale</u> was the instrument used to collect data in this study. In addition, data were collected anecdotally on a tape recorder using selected steps of an "in-depth interviewing" technique described by Seidman (1991). A description of the instrument and the techniques of the in-depth interviewing model follows.

### Classroom Environment Scale

The <u>Classroom Environment Scale</u> (CES) was developed by Trickett and Moos in 1974 to measure the social climate of environments where teaching occurs and was updated in 1987 and 1995. The 1995 edition was used for this research. The CES uses Murray's (1938) theory and work on environmental influence (press) and maintains consistent construct validity with Murray's work. "The basic assumption is that the consensus of individuals when characterizing their environment constitutes a measure of environmental climate and that this climate exerts a directional influence ("press") on behavior." The instrument has use for building awareness of social climate and its influence on learning. The scale consists of nine aspects or dimensions of classroom climate which fall into three broader areas. The first of these is called Relationship Dimensions which assesses the extent to which students perceive the environment to be friendly, supportive, and able to generate a sense of group involvement in the classroom

activities. It consists of the subscales labeled *involvement, affiliation,* and *teacher support.* The second area is called Personal Development Dimensions. These are measured by the subscales labeled *task orientation* and *competition.* The third area is called System Maintenance and System Change Dimensions, measured by the subscales labeled *order and organization, rule clarity, teacher control,* and *innovation.* Each of the nine dimensions is measured by a set of 10 items on "Form R".

The statements used to measure students' involvement in the class are:

- Students put a lot of energy into what they do here.
- Students daydream a lot in this class.
- Students are often clockwatching in this class.
- Most students in this class really pay attention to what the teacher is saying.
- Very few students take part in class discussions or activities.
- A lot of students "doodle" or pass notes.
- Students sometimes present something they've worked on to the class.
- A lot of students seem to be only half awake during this class.
- Students sometimes do extra work on their own in this class.
- Student really enjoy this class.

Statements designed to measure students' feelings of affiliation in a class:

- Students in this class get to know each other really well.
- Students in this class aren't very interested in getting to know other students.
- A lot of friendships have been made in this class.
- It's easy to get a group together for a project.
- Students enjoy working together on projects in this class.
- Students enjoy helping each other with homework.
- Students don't have much of a chance to get to know each other in this class.
- It takes a long time to get to know everybody by his first name in this class.
- There are groups of students who don't get along in class.
- Some students in this class don't like each other.

Statements used to assess the degree of teacher support students experience in the class are:

- This teacher spends very little time just talking with students.
- The teacher takes a personal interest in students.
- The teacher is more like a friend than an authority.
- The teacher goes out of his way to help students.

- Sometimes the teacher embarrasses students for not knowing the right answer.
- This teacher "talks down" to students.
- If students want to talk about something this teacher will find time to do it.
- This teacher wants to know what students themselves want to learn about.
- This teacher does not trust students.
- Students have to watch what they say in this class.

Statements on the CES used to measure how task oriented the class is include:

- Almost all class time is spent on the lesson for the day.
- Students are expected to stick to classwork in this class.
- We often spend more time discussing outside students activities than class-related material.
- Getting a certain amount of classwork done is very important in this class.
- Students don't do much work in this class.
- We usually do as much as we set out to do.
- If a student misses class for a couple of days, it takes some effort to catch up.
- This teacher often takes time out from the lesson plan to talk about other things.
- This class is more a social hour than a place to learn something.
- The teacher sticks to classwork and doesn't get sidetracked.

The following statements are used to assess how competitive a class is:

- Students don't feel pressured to compete here.
- Students try hard to get the best grade.
- Some students always try to see who can answer questions first.
- Students don't compete with each other here.
- A student's grade is lowered if he gets homework in late.
- Grades are not very important in this class.
- Students here don't care about what grades the other students are getting.
- Students have to work for a good grade in this class.
- Sometimes the class breaks up into groups to compete with each other.
- Students usually pass even if they don't do much.

Statements used to assess how orderly and organized a class is include:

- This is a well-organized class.
- Students are almost always quiet in this class.
- Students fool around a lot in this class.
- This class is often in an uproar.
- The teacher hardly ever has to tell students to get back in their seats.
- The teacher often has to tell students to calm down.
- Assignments are usually clear so everyone knows what to do.
- This class hardly ever starts on time.
- Activities in this class are clearly and carefully planned.
- Students don't interrupt the teacher when he's talking.

Statements used to determine the clarity of class rules and the consistency of consequences for breaking those rules are:

- There is a clear set of rules for students to follow.
- Rules in this class seem to change a lot.
- The teacher explains what the rules are.
- The teacher makes a point of sticking to the rules he's made.
- Whether or not students can get away with something depends on how the teacher is feeling that day.
- There are set ways of working on things.
- In the first few weeks the teacher explained the rules about what students could and could not do in this class.
- Students aren't always sure if something is against the rules or not.
- The teacher is consistent in dealing with students who break the rules.

These CES statements are used to assess the teacher's control, or strictness, in enforcing the rules:

- There are very few rules to follow.
- If a student breaks a rule in this class, he's sure to get into trouble.
- The teacher is not very strict.
- Students can get in trouble with the teacher for talking when they are not supposed to.
- Students don't always have to stick to the rules in this class.
- Students get in trouble if they're not in their seats when the class is supposed to start.
- It's easier to get in trouble here than in a lot of other classes.
- The teacher will put up with a good deal.
- The teacher will kick a student out of class if he acts up.
- When the teacher makes a rule, he means it.

The following CES statements are used to determine the innovativeness of the class:

- New ideas are always being tried out here.
- What students do in class is very different on different days.
- New and different ways of teaching are not tried very often in this class.
- The teacher likes students to try unusual projects.
- Students have very little to say about how class time is spent.
- The teacher thinks up unusual projects for students to do.
- Students are expected to follow set rules in doing their work.
- Students can choose where they sit.

- Students do the same kind of homework almost every day.
- In this class, students are allowed to make up their own projects.

The statements which constitute the item content for each of the nine subscales are simple, straightforward, easy to read and understand, and obviously relevant to classroom experience. Students respond to the statements by marking them generally true of their classroom or generally false. One reviewer noted, "There are benefits to administering the scale in a classroom simply from the item level alone to build awareness of social climate and its influence on learning, with or without the benefit of scores and norms " (Pace, 1978). Thus, the CES was used in the present study for collecting the initial classroom data.

This instrument was also selected for its high rating in internal consistency, discriminant validity, and ability to differentiate between the perceptions of students in different classrooms or groups. Six week test-retest subscale reliabilities range from .72 to .90 with a mean of .82. There is high profile stability (subscale raw scores may be converted into standard scores and profiled) as indicated by retests at two, four, and six week intervals, which resulted in average correlations of .94, .85, and .95, respectively. Subscale internal consistencies, calculated using Kuder-Richardson Formula 20 and average within classroom variance for items are all acceptable, ranging from .67 to .86. The average subscale intercorrelation of about .27 shows that the nine subscales measure distinct though somewhat related aspects of classroom learning environments. The CES also has a sufficient number of items to make comparisons among individuals (Fisher & Fraser, 1983; Byrne, Hattie & Fraser, 1986; Fraser, Malone & Neale, 1989; Pace, 1978; Eash, 1978). The predictive validity of the CES is still an open question as there are no

concrete results at this time to tie the climate score to a predicted outcome. A sample of the Classroom Environment Scale is included in Appendix E.

## In-depth Interviewing

In-depth interviewing is a qualitative research method. In his book <u>Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences</u> (1991), Seidman explains that in-depth interviewing is useful for those who have "an interest in understanding the experience of other people and the meaning they make of that experience" (p. 3). "The method of interviewing allows participants to reconstruct their experience, put it in the context of their lives, and reflect on its meaning" (p. 13). In other words, a basic assumption in in-depth interviewing research is that the meaning people make of their experience affects the way they carry out that experience. Therefore, the term "participants" is used in this study to refer to the people interviewed because it implies active involvement and a sense of equity. In-depth interviewing seems to be an appropriate avenue of inquiry since this study is interested in learning more about students' subjective understanding: i.e., what it is like for students to be in the classroom, what their experience is, and what meaning they make out of that experience.

The interviewer made every effort to actively involve the participants in the interviewing relationship. To accomplish this, the interviewer used, primarily, open-ended questions. The questions parallel items on the CES that showed the most statistical difference between the responses of the most and least successful students. The major task was to build upon and explore the participants' responses to those questions. The interviewer was aware of the need to maintain a delicate balance between providing enough openness for the participants to tell their stories and enough focus to

allow the interview structure to work. Examples of interview questions used include:
(1) "Describe the noise level in this class. Does it help or hinder your learning?
Explain." and (2) "Does the teacher take a personal interest in Students? Give some
examples." (A draft of the question format that was used to guide the follow-up
interview is included in Appendix G.)

## Methodology

The third part of the design of this study explains the approaches used to obtain
the data to answer each research question. The methodology is presented according to
the three research questions that guide the study. The research question is stated and the
steps taken to answer each question are delineated.

## Research Question 1

How do sixth grade students who are highly successful academically perceive
their classroom environment on selected variables? The selected variables are the
Relationship Dimensions of involvement, affiliation, and teacher support; the Personal
Growth or Goal Orientation Dimensions of task orientation and competition; and the
System Maintenance and Change Dimensions of order and organization, rule clarity,
teacher control, and innovation. Seven steps were involved in collecting data to answer
this question:

1. All of the students in the fourteen classrooms, selected according to the
random sampling techniques and criteria described above, completed the Classroom
Environment Scale (CES) surveys individually during class time. The researcher was
present to read instructions, answer any questions that arose and, on request, give simple

clarification of word meanings, being careful not to influence the direction of the person's response. The researcher also read survey items aloud to a small group of students identified by the teacher as students who may need questions read aloud, with the exception of one classroom in which a classroom aide translated the questions in Russian to a group of students whose primary language was Russian. The surveys were numbered in advance to correspond with an alphabetical class list. Each school and classroom was designated by a code.

2. Student survey forms were collected by the researcher. At the end of each classroom session, the researcher thanked the participants and gave the teacher and students a small gift as a token of appreciation.

3. The researcher secured copies of report cards or percentage rankings, when available, for participating students before leaving the school.

4. When data were collected from all of the students in all fourteen participating classrooms, the surveys of the most academically successful twenty percent of the students in each participating sixth grade classroom were selected for analysis and comparison, making a total of seventy (70) questionnaires. Selection of the students in this group (the most academically successful) was determined by two criteria: the ranking by their teachers and report card grades. An "M", signifying most academically successful, was affixed to the identifying numbers on these selected surveys. Their genders were also distinguished by an "m" for male participant or "f" for female participant.

5. Individual and group mean scores were determined for each participating individual, classroom, school, and for the aggregate of the fourteen classrooms. Using the CES Manual, raw scores (mean scores) were converted to standard score equivalents

for each subscale and for each item to develop individual and group profiles to compare to the average standard score of 50 obtained by the students in the normative sample for the CES.

6. Within and between these groups (aggregate, school, and classroom) comparisons were made of the students' responses on the nine dimensions of classroom climate, the three broader areas, and on individual test items. Analysis of variance (ANOVA) statistical procedures were used to determine the nature and significance of differences in scores across the variables measured. These comparisons were also made by gender.

7. Mean scores, standard deviations, standard scores, percentages, graphic profiles (graphs comparing the perceptions of groups across the dependent variables), tables, and descriptive text were used to identify patterns. These data were also used to present and interpret how the most academically successful students perceived their classroom learning environment at the time of assessment on the three broad variables of Relationship Dimensions; Personal Development Dimensions; and System Maintenance and System Change Dimensions; as well as on the nine subscale variables of involvement, affiliation, teacher support, task orientation, competition, order and organization, rule clarity, teacher control, and innovation.

## Research Question 2

How do students who are the least successful academically perceive their classroom environment on selected variables? Seven steps were involved in obtaining the data to answer this question:

1. All of the students in the fourteen classrooms, selected according to the random sampling techniques and criteria described above, completed the Classroom Environment Scale (CES) surveys individually during class time. The researcher was present to read instructions, answer any questions that arose and, on request, give simple clarification of word meanings, being careful not to influence the direction of the person's response. The researcher also read survey items aloud to a small group of students identified by the teacher as students who may need questions read aloud, with the exception of one classroom in which a classroom aide translated the questions in Russian to a group of students whose primary language was Russian. The surveys were numbered in advance to correspond with an alphabetical class list. Each school and classroom was designated by a code.

2. Student survey forms were collected by the researcher. At the end of each classroom session, the researcher thanked the participants and gave the teacher and students a small gift as a token of appreciation.

3. The researcher secured copies of report cards or percentage rankings, when available, for participating students before leaving the school.

4. Student surveys selected for analysis and comparison were those of the least academically successful twenty percent of the students in each participating sixth grade classroom, making a total of sixty-six (66) questionnaires. Selection of the students in this group (the least academically successful) was determined by two criteria: the ranking by their teachers and report card grades. An "L" was affixed to the identifying numbers on these selected surveys signifying least academically successful. Their genders were also distinguished by an "m" for male participant or "f" for female participant.

5. Individual and group mean scores were determined for each participating individual, classroom, school, and for the aggregate of the fourteen classrooms. Using the CES Manual, raw scores (mean scores) were converted to standard score equivalents for each subscale and for each item to develop individual and group profiles to compare to the average standard score of 50 obtained by the students in the normative sample for the CES.

6. Within and between these groups (aggregate, school, and classroom) comparisons were made of the students' responses on the nine dimensions of classroom climate, the three broader areas, and on individual test items. Analysis of variance (ANOVA) statistical procedures were used to determine the nature and significance of differences in scores across the variables measured. These comparisons were also made by gender.

7. Mean scores, standard deviations, percentages, graphic profiles (graphs comparing the perceptions of groups across the dependent variables), tables, and descriptive text were used to identify patterns and to present and interpret how the students included in this study who are the least successful academically perceive their classroom learning environment at the time of assessment on the three broad variables of Relationship Dimensions, Personal Development Dimensions, and System Maintenance and System Change Dimensions as well as on the nine subscale variables of involvement, affiliation, teacher support, task orientation, competition, order and organization, rule clarity, teacher control, and innovation.

What are the similarities and differences between the perceptions of the most academically successful students and the least academically successful students regarding their classroom environment on these selected variables? To obtain data to determine the answer to this question, sixteen additional steps were involved:

1. The data derived from the procedures and analyses accomplished to answer the first two research questions were compared and contrasted to determine the similarities and differences in the perceptions of the most academically successful and the least academically successful students in terms of selected conditions in their classroom environment.

2. Comparisons were made of the similarities and differences between the profiles of the responses of the students within these two aggregate groups (the most academically successful and the least academically successful) on the nine dimensions of classroom climate, the three broader areas, as well as on individual test items using T-test statistical procedures to identify and determine the significance of any differences found. These comparisons were also made by gender.

3. Comparisons were made at the school level, of the similarities and differences between the profiles of the responses of the students within these two groups (the most academically successful and the least academically successful) on the nine dimensions of classroom climate and the three broader areas, using T-test statistical procedures to identify and determine the significance of any differences found. These comparisons were also made by gender.

4. For each participating classroom comparisons were made of the similarities and differences between the profiles of the responses of the students within these two

groups (the most academically successful and the least academically successful) on the nine dimensions of classroom climate and the three broader areas, using T-test statistical procedures to identify and determine the significance of any differences found. These comparisons were also made by gender.

5. Comparisons were made of the similarities and differences between the individual profiles of the responses of students within these two groups (the most academically successful and the least academically successful) on the nine dimensions of classroom climate, the three broader areas, as well as on individual test items, using descriptive procedures to identify and determine the significance of any differences found. These comparisons were also made by gender.

6. Mean scores, standard deviations, standard scores, percentages, graphic profiles, tables, and descriptive text were used to identify patterns and to present and interpret the similarities and differences between how the students included in this study who are the least successful academically and the most academically successful perceive their classroom learning environment on selected variables at the time of assessment.

7. Using a table of random numbers, a sample of students was randomly selected as potential subjects for follow-up interviews. Two students were randomly selected from each school - one from the group of most academically successful students and one from the group of least academically successful students.

8. The principals at the schools of these identified students were contacted to make arrangements for securing parent consent to conduct follow-up individual interviews to gain a richer and more complete description of how these students perceive their classroom environment.

9. At that time arrangements were also made for a room to interview students without interruptions.

10. Parents of the identified students were telephoned to request consent for follow-up interviews with their child. The research goals and methodology and the student's rights were explained to parents.

11. Letters of consent were mailed for signatures to those parents who verbally consented to have their child participate in this phase of the research. Self-addressed envelopes were enclosed to encourage a prompt response.

12. When the consent forms were in hand, follow-up interviews of no more than thirty minutes were conducted to clarify student responses. The purpose of the interviews was to encourage student elaboration to gain a clearer, richer picture of the student's perceptions of his/her classroom environment.

13. The interviewer used prepared questions based on students' responses on their CES survey to guide the follow-up interview (see Appendix F). The questions were open-ended to provide participants with the greatest possible opportunity to present their subjective understanding: what it is like for students to be in the classroom, what their experience is and what meaning they make out of that experience.

14. If permission was granted by the parents and the student was willing, the interview was audio-taped.

15. Notes detailing the substance of the interview were also made.

16. The tapes were transcribed and the data generated from the interviews were analyzed to identify patterns or information that might clarify and enrich understanding of the similarities and differences between the perceptions of the most academically

successful students and the least academically successful students in terms of selected

conditions in their classroom environment.

## Chapter Summary

The design of this descriptive-exploratory study consisted of three interrelated

parts. First, the selection of participants was explained. Second, the instrumentation

used was described. Third, the methodology, including the specific steps taken to obtain

data to answer the three research questions, was presented. In the next chapter, the data

collected will be presented, and the findings will be analyzed and organized by the three

research questions that guide this study.

# CHAPTER FOUR

## DATA ANALYSIS

This chapter will present and analyze findings from data collected for each of the research questions. The chapter is divided into two major parts: description of sample and perceptions of students. Examination of demographic data will provide a contextual framework for further exploration of the information collected. Demographic data include the total number of students participating in this study accounted for by school, by classroom, by gender, by age, and by whether or not they are enrolled in a special education program. Information will also be presented regarding the location of the school and the nature of the population it encompasses.

The second part of the chapter will present student perceptions and analyze the findings from the data collected. The three research questions that guide this study will be used as the organizational framework. The findings presented are those that were statistically significant, $p = 0.05$ or less, and those that were highly suggestive, $p$ above 0.05 to 0.1. Tables and line graphs are used to summarize data. Comparisons between groups, genders, schools, and classes within schools will be made. A summary of the findings concludes the chapter.

## Demographics

Of the one hundred thirty-six (136) sixth grade students who participated in this study, 70 students (51.5%) were in the most academically successful group and 66 (48.5%) were in the least academically successful group. Sixty-three (63) students (46.3%) were male and 73 students (53.7%) were female. The number and percentage

of subjects in this study represented by each of the five participating schools were as follows: School #1: 7 students, 5.1% of the study participants; School #2: 20 students, 14.7%; School #3: 29 students, 21.3%; School #4: 40 students, 29.4%; School #5: 40 students, 29.4%. Table 1 summarizes the numbers

Table 1

Numbers and Percentages of Study Participants by Group, Gender and School

|  | Number | Percentage of Participants |
|---|---|---|
| Most Successful Students | 70 | 51.5% |
| Least Successful Students | 66 | 48.5% |
| Males | 63 | 46.3% |
| Females | 73 | 53.7% |
| School #1 | 7 | 5.1% |
| School #2 | 20 | 14.7% |
| School #3 | 29 | 21.3% |
| School #4 | 40 | 29.4% |
| School #5 | 40 | 29.4% |

and percentages of participants in the various comparison groups, including successfulness, gender, and school.

Description of Schools

Three of the five participating schools were located in northern Massachusetts (Schools #1, 4, and 5). Two of these (Schools #4 and #5) were in the north central area and one school (School #1) was located in northwestern Massachusetts. The other two schools (Schools #2 and #3) were located in the eastern and southwestern portions of Massachusetts, respectively. School #1 served a small, rural, all-white, mostly middle to upper class community encompassing grades kindergarten through

six with a total student population of sixty-nine students and a single sixth grade

classroom with eight students and a male teacher (see Table 2).

School #2 was located in a middle to upper-class suburban community in

eastern Massachusetts. It included grades six through eight with a total population of

764 students (397 male and 367 female), and ten sixth grade classes with about

twenty-five students in each. The classes of one male and one female teacher were

Table 2

Summary of Demographics of Participating Schools

| School | #1 | #2 | #3 | #4 | #5 |
|---|---|---|---|---|---|
| Location | | | | | |
| West | X | | X | | |
| Central | | | | X | X |
| East | | X | | | |
| Urban | | | X | | |
| Suburban | | X | | X | X |
| Rural | X | | | X | X |
| School Size | | | | | |
| Large | | X | | | |
| Medium | | | X | X | X |
| Small | X | | | | |
| Grade Levels | K-6 | 6-8 | K-8 | 6-8 | 6-8 |
| No. of Students | | | | | |
| In school | 69 | 764 | 599 | 605 | 602 |
| In grade 6 | 8 | 238 | 95 | 215 | 194 |
| No. of Grade 6 classes | 1 | 10 | 4 | 8 | 8 |
| Class Size | 8 | 23-25 | 30 | 28 | 24 |
| Ethnicity | | | | | |
| White | 68 | 691 | 160 | 589 | 592 |
| Afr. Amer. | 0 | 31 | 209 | 3 | 5 |
| Hispanic | 1 | 8 | 213 | 10 | 3 |
| Native American | 0 | 0 | 0 | 0 | 1 |
| Asian | 0 | 30 | 17 | 3 | 1 |
| Diverse | | X* | X | | |
| Not Diverse | X | | | X | X |
| No. Students on Free Lunch | Information confidential and not available | | | | |

*10% non-white (more diverse than "not diverse" schools, but less diverse than
School #3)

part of this study. The school participated in the METCO (Metropolitan Council for Equal Opportunity) program through which twenty-eight African American students were transported from Boston each day. Eight METCO students were in grade six, twelve in grade seven, and eight in grade eight. This increased the school's ethnic diversity, which included 691 White, 31 African American, 8 Hispanic, and 30 Asian students. Grade six consisted of 238 students (124 males and 114 females) 214 of whom were White, 10 were African American, 6 Hispanic, and 8 Asian (Table 2).

School #3 was located in a large city in southwestern Massachusetts. It served as a magnet school for math and science. It included grades K-6 with a total student population of 599 (325 male and 274 female). The 95 students in sixth grade were divided among four classrooms. Each of the four teachers was responsible for teaching one subject area to all 95 sixth grade students. The classes of one male and two female teachers participated in this study. The magnet school was located in a mostly black and Hispanic neighborhood and attracted a large group of students whose parents had recently immigrated from Russia. The principal described them as "new immigrants" and "very hard driven". They made up about 20% of the student population. The ethnic composition of the school was 209 African American, 160 White (119 of whom were Russian), 17 Asian, and 213 Hispanic students (Table 2).

Schools #4 and #5 were similar to each other in that they were both middle schools serving grades six to eight, in suburban-rural areas with little ethnic diversity. Both schools served populations described by the principals as a combination of middle class and lower middle class families with a mean income of about $40,000. School #4 had a total student population of 605 students, including 589 White, 3 Black, 10 Hispanic and 3 Asian students. School #5 had a total student population of

602 students, including 592 White, 5 Black, 3 Hispanic, 1 Asian, and 1 American Indian student. Both schools had 8 classes at each grade level. School #4 had a total of 215 sixth graders; school #5 had 194 sixth graders (Table 2). The classes of two male and two female teachers from School #4 and the classes of four female teachers from School #5 were part of this study. In all, the classes of nine female and five male teachers were involved in this study.

## Gender within Groups

Among the 136 sixth graders, there were more girls in the most successful group, 48 girls compared to 22 boys, and more boys in the least successful group, 41 boys compared to 25 girls, indicating a gender difference (Table 3). This is not totally unexpected, as girls mature more quickly than boys, and more boys have trouble with reading and writing than do girls (Brandt & Sylvester, 1997), although boys tend to catch up in the later grades.

Table 3

Gender Comparison

|  | Male | Female |
|---|---|---|
| Most Successful | 22 | 48 |
| Least Successful | 41 | 25 |

## Participants Enrolled in Special Education Programs

Of the 136 participating students, 35 students (25.7%) were enrolled in special education programs. Thirty-three (33) of these 35 students were in the least successful group and the other two special education students (one male and one

female) were in the most successful group. Of the 33 special education students in the least successful group, 22 were male and 11 were female. Of the 70 most successful students, 2 students were enrolled in special education programs, and the other 68 students were not. Of the 66 least successful students in this study, 33 students (exactly half) were enrolled in special education programs, the other 33 students (19 male, 14 female) were not. Table 4 presents a summary of participants enrolled in Special Education programs.

Table 4

Participants Enrolled in Special Education Programs

|  | Total | In Special Education | Not in Special Education |
|---|---|---|---|
| All Participants | 136 | 35 (25.7%) | 101 (74.3%) |
| Most Successful | 70 | 2 (2.9%) | 68 (97.1%) |
| Least Successful | 66 | 33 (50%) | 33 (50%) (19 male) (14 female) |

| Participants in Special Education | Total Number | Male | Female |
|---|---|---|---|
| Least Successful | 33 | 22 | 11 |
| Most Successful | 2 | 1 | 1 |

Age Comparisons between Groups

Comparison of the aggregate of the 70 most successful and 66 least successful students, yielded a difference between the mean ages of these two groups that was statistically significant at the 0.011 level using a 2-tailed test of significance. The age range for both groups was 11 to 13 years, and the mean age for the most successful

students was 11.81 years while the mean for the least successful students was 12.08 years (Table 5). In fact, in all schools the mean age of the most academically successful students was lower than the mean age of the least academically successful students. This difference was statistically significant at the <0.05 level for the comparison of the entire study sample and for schools #3 and #4. The range of student ages was greater for the least successful students at the aggregate level and for each of the schools, except School #3.

Table 5

Age Comparison between Most and Least Successful Students

|  | Number of Students | Age Range | Mean Age |
|---|---|---|---|
| Most Successful | 70 | 11 - 13 | 11.81 |
| Least Successful | 66 | 11 - 13 | 12.08 |
|  |  |  | Stat.Sig.p = 0.011 |

Consecutive Years of Attendance

The mean number of consecutive years students attended their present school was greater for the most successful students compared to the least successful students for each of the five schools in this study. This difference was not statistically significant (p = .132) for the total study sample, however, it was significant (p = .037) for School #5. Also, the range of variation in the number of years students had attended the school was greater for the least successful students in three of the schools and the same in Schools 4 and 5.

The age and attendance differences were important findings. The implications will be further discussed in Chapter 5.

## Student Perceptions of Dimensions of the Environment

In this second section of Chapter 4 the findings from the data collected will be presented and analyzed and will be organized by the three research questions that guide this study.

### Research Question #1

How do sixth grade students who are highly successful academically perceive their classroom environment on selected variables? The selected variables are the Relationship Dimensions of involvement, affiliation, and teacher support; the Personal Growth or Goal Orientation Dimensions of task orientation and competition; and the System Maintenance and Change Dimensions of order and organization, rule clarity, teacher control, and innovation.

The perceptions of the seventy (70) most successful students in this study on the three underlying sets of dimensions of classroom climate measured by the Classroom Environment Scale (CES) indicate that they reported their classes as strongest on the Relationship Dimensions. The Personal Growth and Goal Orientation Dimensions were seen as the next strongest, with the System Maintenance and Change Dimensions ranking third.

The CES profile reveals how a student views the classroom and his or her place in it. Group profiles indicate the perceptions of particular groups of students about their classroom climate as measured by the nine subscales of the CES. Figure 1

shows the CES Form profile for the seventy most successful students in this study (males and females combined) compared to the average standard score of 50 obtained by the students in the normative sample. As Figure 1 indicates, the most

**Perceptions of the Most Successful Students at the Aggregate Level**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 56 | 54 | 51 | 58 | 54 | 50 | 60 | 59 | 52 |
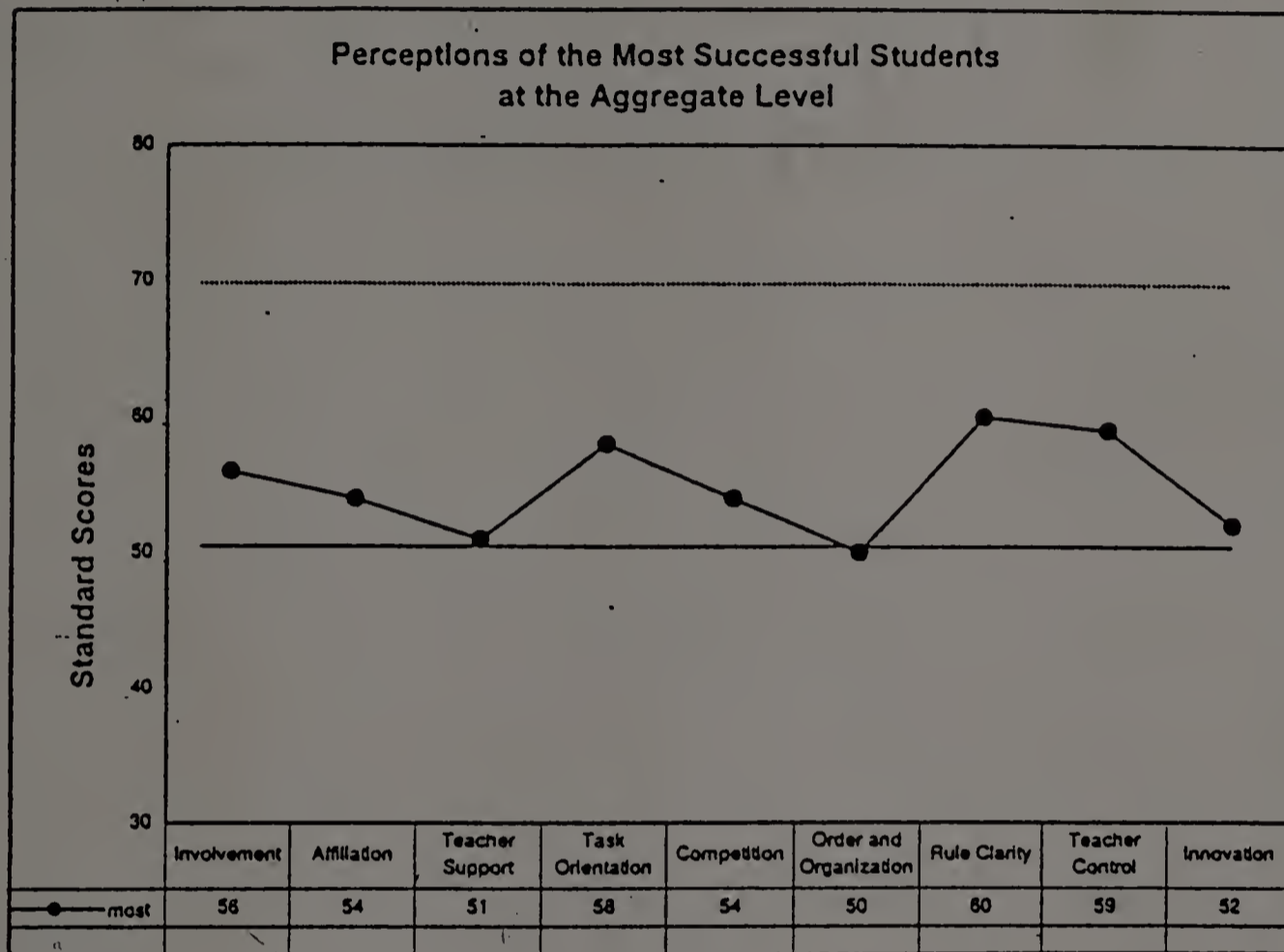
Figure 1. The Perceptions of the Most Successful Students Regarding the Classroom and Their Place in It, Explored by Research Question #1

successful students in this study saw their classes as clear and relatively high on teacher control. They reported their classes were moderately involving, affiliative, task focused, and competitive, and about average in providing a supportive, innovative, organized structure.

Comparing the most successful males with the most successful females in this study the following data emerged. By simple inspection, it was seen that the greatest difference in the means of these two groups in their perceptions of their classroom environments was on the set of Relationship Dimensions. The most successful females perceived and rated the existing relationships within the classroom much higher than the most successful males did. This difference persisted across all three subscales of this dimension. The greatest difference in their perceptions was on the degree of friendship students felt for each other and their enjoyment in working together (Figure 2). The next greatest difference was in their perceptions of the degree of support the teacher gave, especially the help, friendship, and trust the teacher showed toward the students and how much the teacher talked openly and was interested in their ideas. The least difference between the males and females of the most successful group on these Relationship Dimensions was on the degree of involvement they reported. However, females still rated students' involvement in terms of attentiveness, interest, and participation higher than the males did.

Figure 2 shows the CES Form profiles for the males and females in the most successful group in this study on the nine subscales. Overall, the males and females agreed that their classrooms were relatively task focused and teacher controlled and about average on providing an organized structure, although the males saw their classes as less clear, less involving, and more competitive than the females did.

A Comparison of the Perceptions of the
Most Successful Males and Females
at the Aggregate Level

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| —●— males | 54 | 47 | 47 | 57 | 56 | 51 | 56 | 59 | 45 |
| ‑▲‑ females | 58 | 55 | 53 | 57 | 52 | 50 | 61 | 56 | 55 |
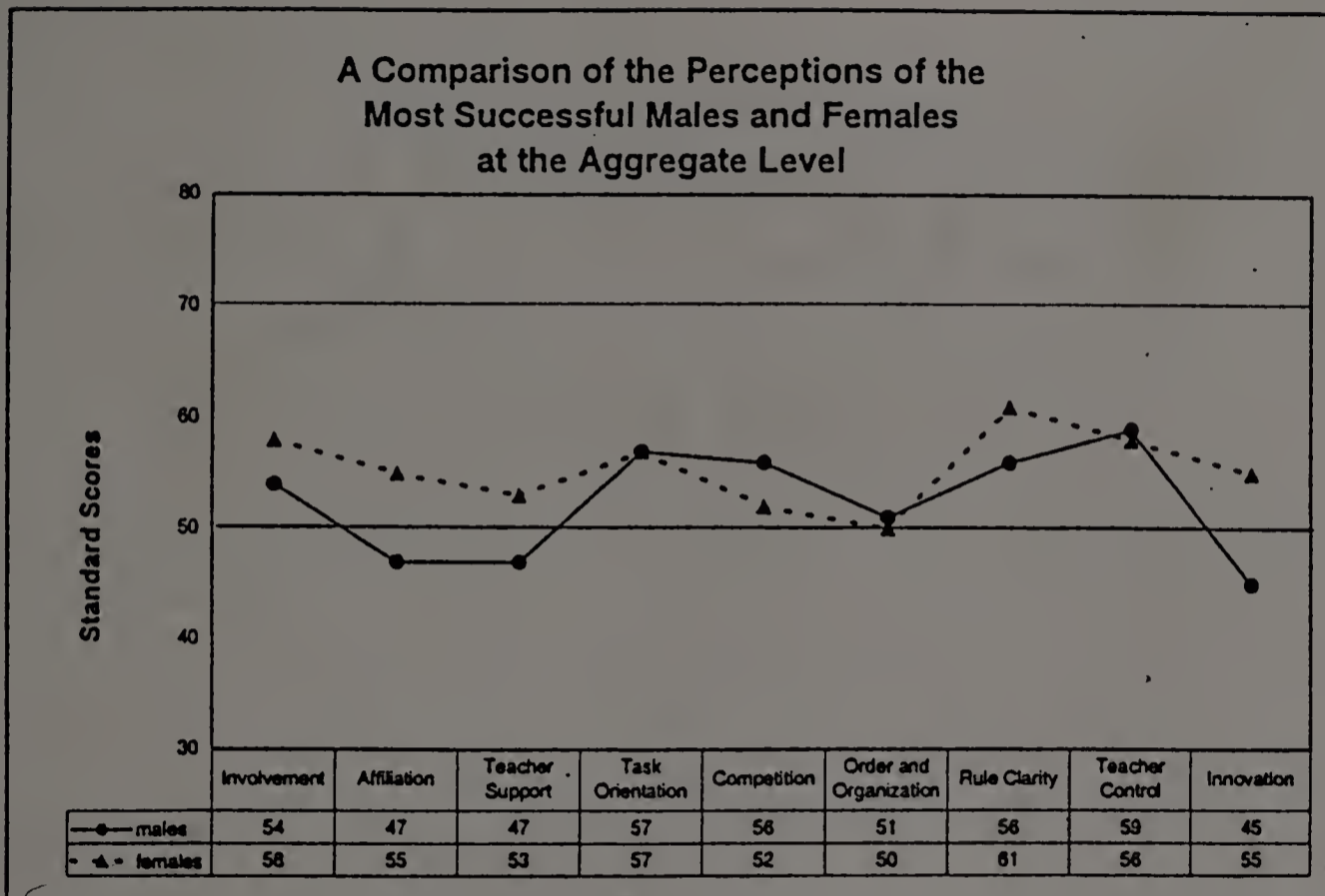
Figure 2. A Comparison of the Perceptions of the Most Successful Males with the Perceptions of the Most Successful Females Regarding the Classroom Environment and Their Place in It, Explored by Research Question #1

However, the greatest differences in their perceptions were that the most successful males saw their learning environments as less innovative, supportive and affiliative than the most successful females did.

Comparisons between Schools

Figure 3 shows the CES Form profiles for the group mean raw scores converted to standard scores of the most successful students (males and females combined) in each of the five schools. The most successful students in School # 1 (four females) saw their class as extremely involving, very clear, well organized, task oriented and their teacher as very supportive. According to these students, the class was moderately affiliative and innovative, average on teacher control and low on competition. As previously mentioned, School #1 had only one sixth grade class of eight students. One student was absent the day the research data was gathered. Of the seven participating students, four females were in the most successful group, and one female and two males were in the least successful category.

The most successful students in suburban School #2 saw their classes as very task focused, involving and affiliative. They described their classes as about average on organization, clarity of rules, and competition, and their teachers as about average on providing support, innovation, and control (Figure 3).

In School #3 the most successful students in this inner-city school saw their classes as highly teacher controlled and strongly task focused with clear rules and consistent consequences. While they described their classes as somewhat competitive and about average on involving students and providing innovative practices, they reported that their classes were below average on organization, feelings of affiliation and teacher support (Figure 3).
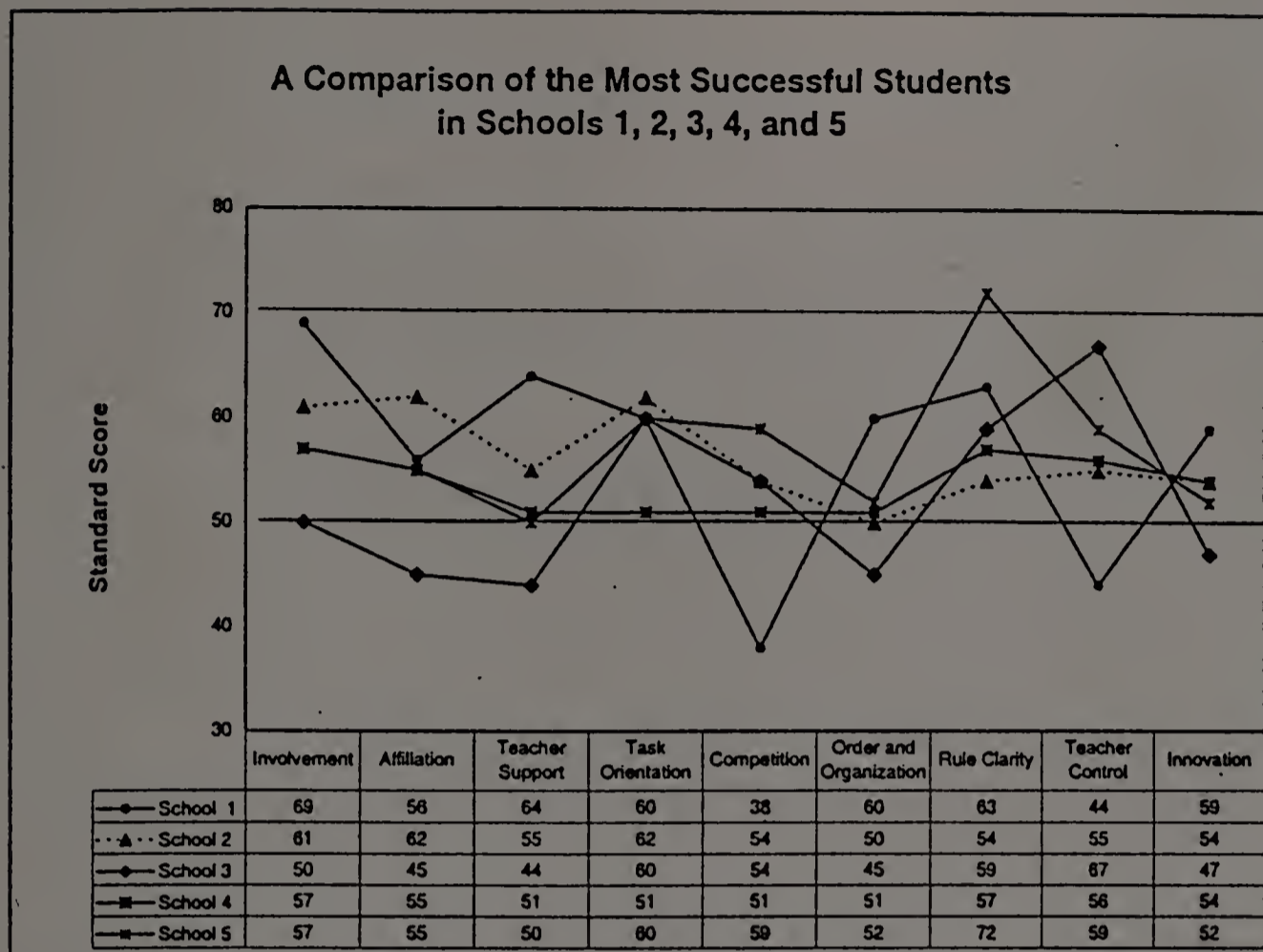
A Comparison of the Most Successful Students
in Schools 1, 2, 3, 4, and 5

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| School 1 | 69 | 56 | 64 | 60 | 38 | 60 | 63 | 44 | 59 |
| School 2 | 61 | 62 | 55 | 62 | 54 | 50 | 54 | 55 | 54 |
| School 3 | 50 | 45 | 44 | 60 | 54 | 45 | 59 | 67 | 47 |
| School 4 | 57 | 55 | 51 | 51 | 51 | 51 | 57 | 56 | 54 |
| School 5 | 57 | 55 | 50 | 60 | 59 | 52 | 72 | 59 | 52 |

Figure 3. A Comparison of the Perceptions of the Most Successful Students in the Five Participating Schools Regarding Aspects of the Classroom and Their Place in It, Explored by Research Question #1

The most successful students in the suburban-rural School #4 perceived their classes to be moderately involving, clear, affiliative, innovative and teacher controlled. They further reported their classes to be about average on teacher support, task orientation, competition and organizational structure (Figure 3).

In School #5, which is similar demographically to School #4, the most successful students perceived their classes as extremely clear and moderately task-focused, teacher controlled, competitive, involving and affiliative. They also saw their classes as about average on providing teacher support, organizational structure and innovation (Figure 3).

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Overall, the most successful students in all of the schools except School #4 reported that their classes were very task-oriented. The students in the small rural School #1 reported the highest degree of student involvement, teacher support, organization, and innovation, and the lowest degree of competition and teacher strictness. Students in the affluent, suburban School #2 reported the highest degree of affiliation in their classes and the lowest degree of clarity and consistency of rules and consequences, while their perceptions of the other seven variables ranked consistently midway among the perceptions of the students in the other four schools. Students in the inner-city School #3, on average, reported their classes to be the most teacher controlled (strict) and the least involving, affiliative, organized, innovative and teacher supported. However, they saw their classes as equally task focused, and their perception of the clarity and competitiveness of their classes ranked in the middle of the reports of the students in the other four schools. Although the most successful students in School #4 and School #5 perceived their classes to be midway among the rankings of the other four schools on eight of the nine dimensions measured, the students in School #4 perceived their classes to be less goal focused than the most successful students in the other four schools, and students in School #5 saw their classes as the most clear.

Comparison of Classes within Schools

School #1. Since School #1 had only one sixth grade class, it was excluded from this comparison.

School #2.  The most successful students in both participating classes in suburban School #2 perceived their classes to be about average on the degree of teacher support, organization and innovativeness they experienced and highly task oriented and affiliative (Figure 4).  However, while the most successful students in Class #2 saw their class as average, also, with respect to involvement and

### A Comparison of the Perceptions of the Most Successful Students in Classrooms 1 and 2 in School #2

|  | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| class #1 | 69 | 60 | 56 | 62 | 66 | 55 | 46 | 52 | 55 |
| class #2 | 53 | 64 | 56 | 62 | 45 | 44 | 62 | 58 | 54 |

Figure 4.  A  Comparison of the Perceptions of the Most Successful Students in the Two Participating Classes in School #2 Regarding Aspects of the Classroom and Their Place in It, Explored by Research Question #1

competition, the students in Class #1 saw their class as highly involving, and competition.  In contrast, students in Class #2 saw their class as having very clear rules.  They knew exactly what to expect; whereas, students in Class #1 did not feel

that rules were that clearly stated and enforced. In fact, one student in this class stated, "Our teacher doesn't have set rules, but you still have to behave."

School #3. The most successful students in the three classes sampled in the inner city School #3 agreed that their classes were highly teacher controlled and task oriented (Figure 5). Students in Class #3 rated their class very high on eight of the nine subscales measured and average with regard to the teacher's organization. In fact, they rated their class higher on all measures except teacher strictness. In contrast, students in Classes # 1 and #2 saw their classes as very low on teacher

A Comparison of the Most Successful Students
in Classes 1, 2, and 3, in School #3

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| Class 1 | 45 | 40 | 36 | 57 | 42 | 41 | 52 | 64 | 34 |
| Class 2 | 45 | 31 | 38 | 58 | 61 | 41 | 59 | 75 | 49 |
| Class 3 | 62 | 65 | 62 | 66 | 61 | 54 | 67 | 62 | 61 |

Figure 5. A Comparison of the Perceptions of the Most Successful Students in the Three Participating Classes in School #3 Regarding Aspects of the Classroom and Their Place in It, Explored by Research Question #1

support, organization, involvement, and friendships between students and between

students and teacher, yet average or above on clarity of rules and consequences.

While students in Class #1 reported low competition and extremely low

innovativeness, students in Class #2 reported high competitiveness and average

innovativeness (Figure 5).

School #4. In School #4, a suburban-rural school, the most successful students

in the four participating classes demonstrated a diversity of opinions regarding the

elements of class climate that were measured (Figure 6). Students in Class #1 and

Class #2 saw their classes as average or above average on all subscales, and

particularly strong on involvement, affiliation, rule clarity and innovativeness. In fact,

students in Class #1, a science class with a female teacher, rated their class

**A Comparison of the Most Successful Students in Classes 1, 2, 3, and 4, in School #4**

|  | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| Class 1 | 65 | 59 | 62 | 52 | 53 | 57 | 65 | 53 | 63 |
| Class 2 | 68 | 67 | 57 | 52 | 58 | 61 | 62 | 62 | 69 |
| Class 3 | 52 | 48 | 38 | 58 | 48 | 49 | 55 | 55 | 37 |
| Class 4 | 40 | 46 | 44 | 42 | 45 | 34 | 43 | 53 | 44 |

Figure 6. A Comparison of the Perceptions of the Most Successful Students in the Four Participating Classes in School #4 Regarding Aspects of Their Classroom and Their Place in It, Explored by Research Question #1

higher than the other three classes on teacher support and rule clarity, while students in Class #2, a social studies class with a female teacher, rated their class highest of the four classes on involvement, affiliation, competitiveness, organization, teacher strictness and innovation. Students in Class #3, an English class with a male teacher, saw their class as average on all subscales, except they rated their class higher than the other three classes on being task focused and lower than the other three on teacher support and innovation. Students in Class #4 , a science class with a male teacher, perceived their class as below average on all measures except teacher strictness which they rated average. Moreover, they reported that the organization and structure of their class was significantly below average. This class was perceived to be the lowest on all dimensions, except teacher support and innovation.

School #5. Comparing the profiles of the most successful students in the four classes in School #5, which was in a mainly middle class, non-ethnically diverse, suburban-rural community, the greatest agreement was on the degree of pleasure and closeness the students felt in working together within the class (Figure 7). The greatest disparity was on the degree of interest and participation in classroom activities the students reported. The next greatest difference between the classes was on students' measures of their teacher's supportiveness, followed by the innovativeness of the lessons and student involvement in designing the lessons. The fourth greatest difference was on the competitiveness students reported (Figure 7).

Looking at the classes in School #5 individually, the most successful students in Class #1, an English class with a female teacher, rated their class highest on competitiveness, teacher control and innovation, and rated their class lowest on involvement, teacher support, organization and clarity of rules and consequences.

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**A Comparison of the Most Successful Students
in Classes 1, 2, 3, and 4, in School #5**

Standard Score

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| Class 1 | 48 | 56 | 43 | 56 | 67 | 48 | 60 | 63 | 60 |
| Class 2 | 68 | 58 | 53 | 63 | 61 | 55 | 70 | 59 | 54 |
| Class 3 | 53 | 57 | 59 | 66 | 53 | 57 | 70 | 59 | 51 |
| Class 4 | 61 | 51 | 53 | 55 | 54 | 51 | 63 | 50 | 45 |
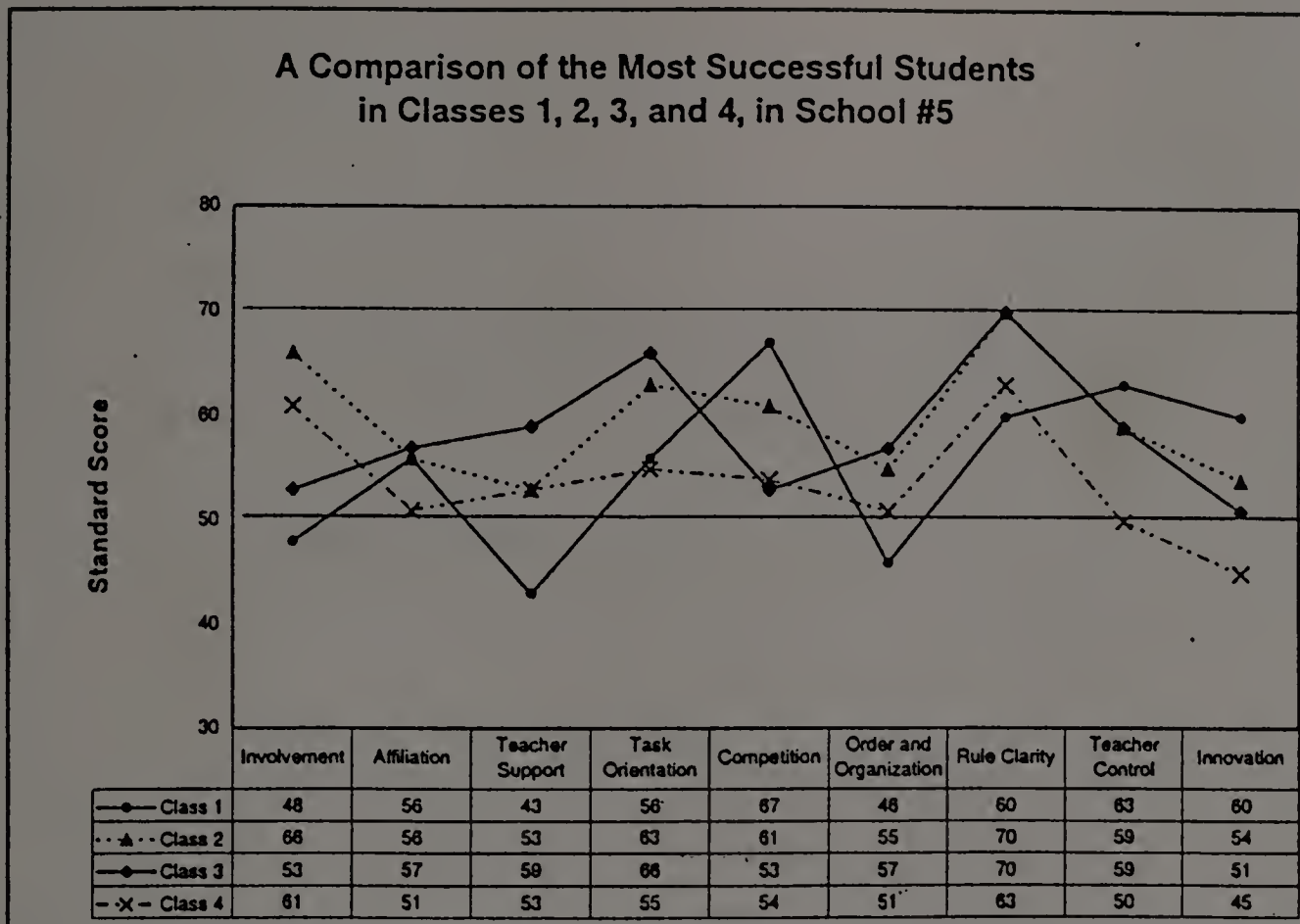
Figure 7. A Comparison of the Most Successful Students in the Four Participating Classes in School #5 Regarding Aspects of the Classroom and Their Place in It, Explored by Research Question #1

Class #2 was a math class with a female teacher in which students rated their class as the most involving, tied for top ranking with Class #3 on clarity and consistency of rules and consequences, and second to the highest on all other subscales measured. The most successful students in Class #3, a reading class with a female teacher, reported the lowest emphasis on competition, and, on the other hand, reported the highest feelings of affiliation, teacher support, goal orientation, organization, and clarity of rules with consistent consequences. The most successful students in Class #4, another math class with a female teacher, in which the sixth grade students with the most serious behavior problems happened to be present at the time of data collection, reported their class as the lowest on innovativeness, teacher strictness, the

severity of punishment and how much students got into trouble, the friendship students felt for one another and their enjoyment in working together, as well as the degree of goal orientation - the emphasis on completing planned activities and staying on the subject matter (Figure 7).

Taking it more in its entirety, the most successful students in these four classes in School #5 reported their classes to be average or above average on all subscales, except Class #1 on the teacher support dimension. Furthermore, the mean of all four classes was very high on clarity of rules and consistency of consequences.

In summary, the reported perceptions of the most successful students in the fourteen participating classes in this study presented unique and varied profiles for each class regarding the elements of class climate measured. However, students in all of the classes perceived that their classes were teacher controlled and, with the exception of one class, reported that their classes were very task focused.

Research Question #2

How do sixth grade students who are the least successful academically perceive their classroom environment on the same selected variables: the Relationship Dimensions of involvement, affiliation, and teacher support; the Personal Growth or Goal Orientation Dimensions of task orientation and competition; and the System Maintenance and Change Dimensions of order and organization, rule clarity, teacher control, and innovation?

Of the three underlying dimensions measured by the CES subscales, the sixty-six least successful students in this study (males and females combined) reported their classes to be highest on the Personal Growth and Goal Orientation Dimensions, which

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measured their views on how goal focused and competitive their classes were. The Relationship Dimensions, including affiliation, teacher support, and involvement were reported second highest, with the System Maintenance and Change dimensions (rule clarity, order and organization, teacher control, and innovation) rated lowest of the three.

The CES Form profile for the sixty-six least successful students in this study (males and females combined) compared to the average standard score of 50 obtained by the students in the normative sample indicates that the least successful students in this study saw their classes as clear on rules and consequences, fairly competitive, and high on teacher control. They reported that their classes were moderately task focused, about average on providing an involving, innovative, organized structure, and slightly below average on affiliation and teacher support (Figure 8).



**Perceptions of the Least Successful Students at the Aggregate Level Regarding Their Classroom**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| - - least | 53 | 48 | 47 | 54 | 57 | 50 | 58 | 62 | 49 |
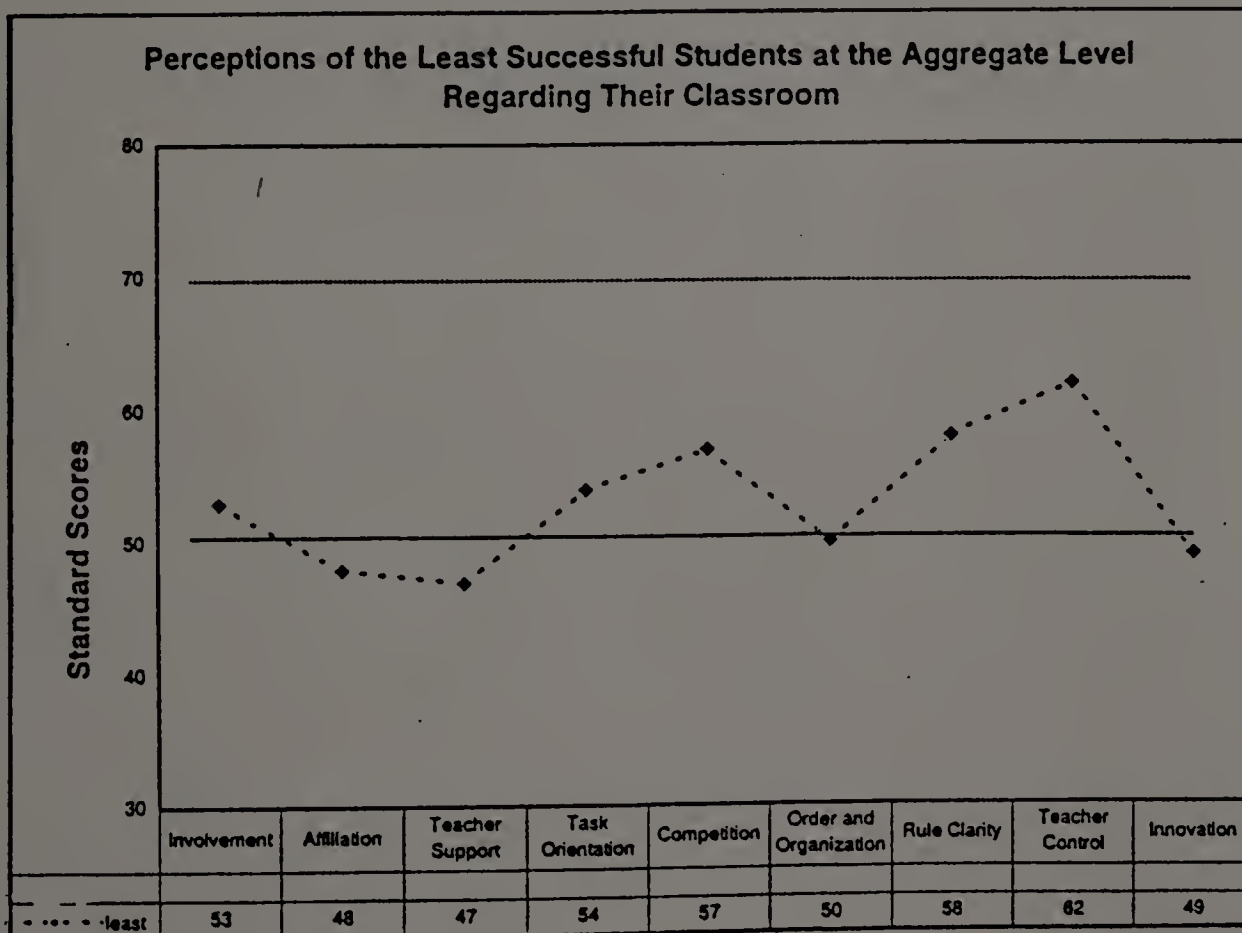
Figure 8. The Perceptions of the Least Successful Students, Males and Females Combined, Regarding the Classroom Environment and their Place in It, Explored by Research Question #2.

## Gender Comparisons

A comparison of the aggregate mean scores of the least successful males with the least successful females in this study revealed a remarkable similarity of view on seven of the nine subscales (Figure 9). Although the females' ratings were slightly higher than the males, they agreed that their classes were teacher controlled, with clear rules and consistent consequences, and with a fair amount of competition. They also agreed that their classes were about average on innovation, organization, task orientation, and student interest and involvement in the class activities. However, there was a great difference in their views on their teacher's supportiveness and the friendship, helpfulness and enjoyment students felt in working together. The least successful females rated their classes as about average in these two areas, while the least successful males perceived their classes to be below average on affiliation and teacher support.



A Comparison of the Perceptions of the Least Successful Males and Females Regarding Their Classroom

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| males | 52 | 46 | 44 | 53 | 55 | 49 | 56 | 61 | 49 |
| females | 54 | 52 | 51 | 54 | 58 | 49 | 59 | 63 | 51 |
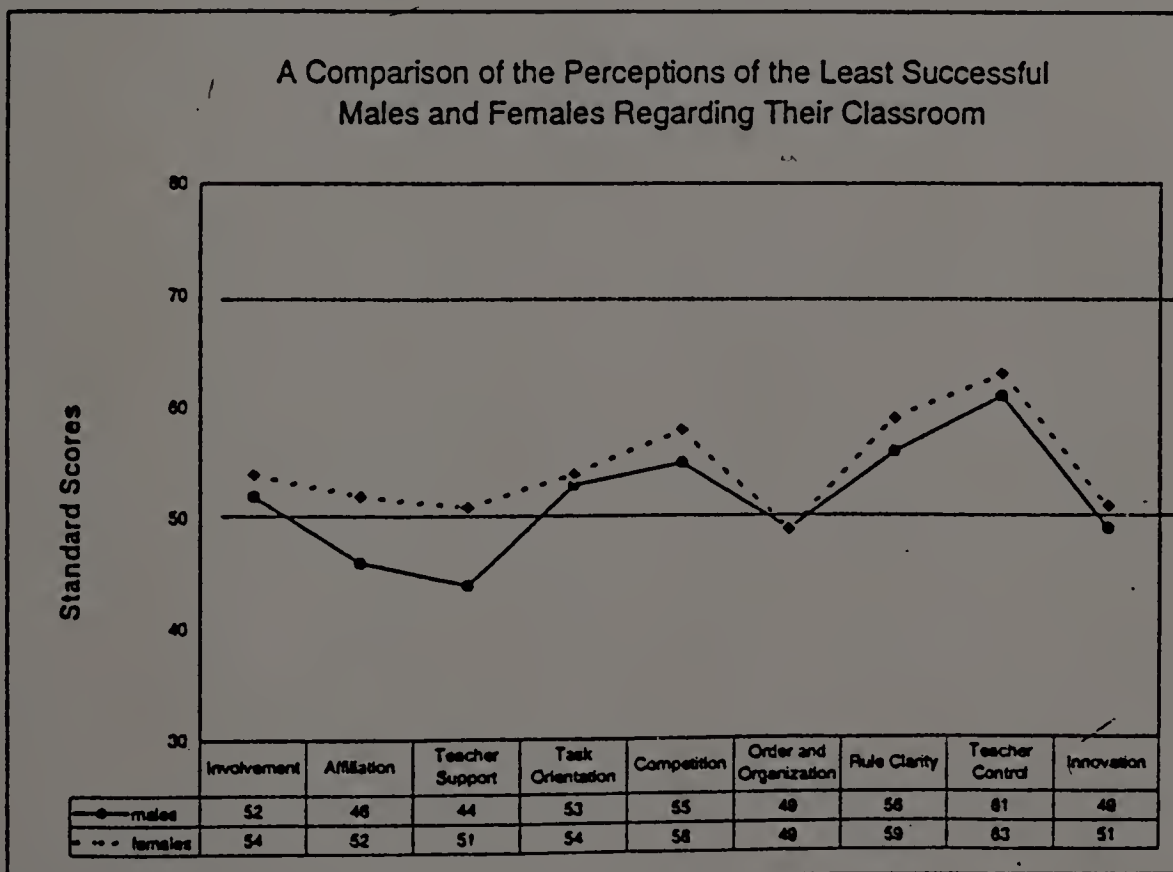
Figure 9. A Comparison of the Perceptions of the Least Successful Males with the Perceptions of the Least Successful Females Regarding the Classroom Environment and Their Place in It, Explored by Research Question #2

Interestingly, the least successful females saw their classes as more competitive than the least successful males; the opposite was true of the most successful males and females. In addition, the difference in most subscale ratings was slightly less between the least successful males and females compared to the most successful.

Comparisons Between Schools

When data from the least successful students in the five schools were compared, there was a similarity in their views of their classes and teachers (Figure 10). The inner city school (School #3), which had a diverse population, was at



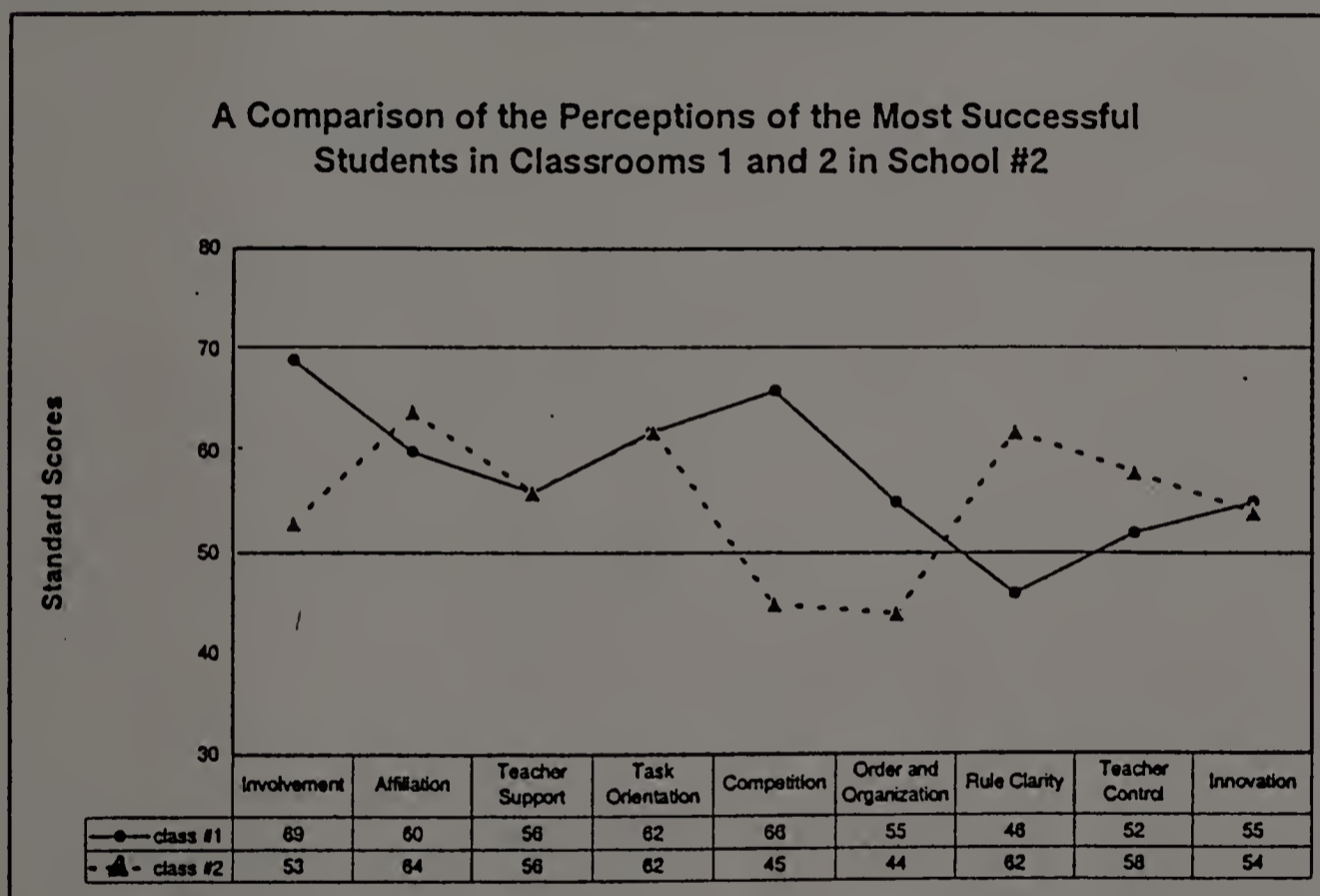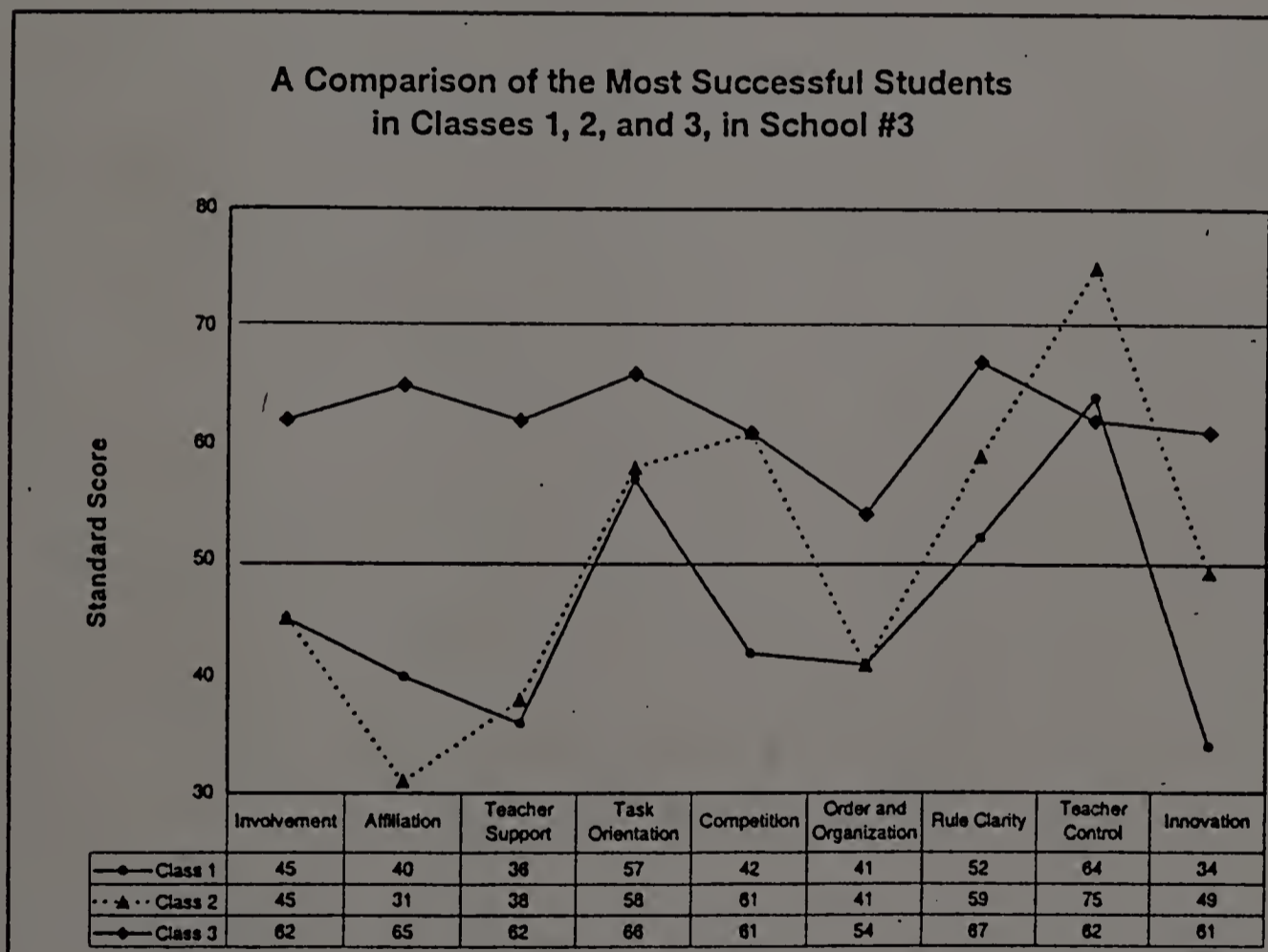| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| School 1 | 60 | 44 | 50 | 52 | 56 | 52 | 63 | 56 | 62 |
| School 2 | 56 | 54 | 49 | 58 | 56 | 46 | 56 | 60 | 45 |
| School 3 | 41 | 48 | 34 | 47 | 54 | 39 | 52 | 60 | 50 |
| School 4 | 53 | 48 | 50 | 54 | 58 | 51 | 58 | 62 | 51 |
| School 5 | 59 | 47 | 51 | 57 | 58 | 55 | 60 | 60 | 48 |
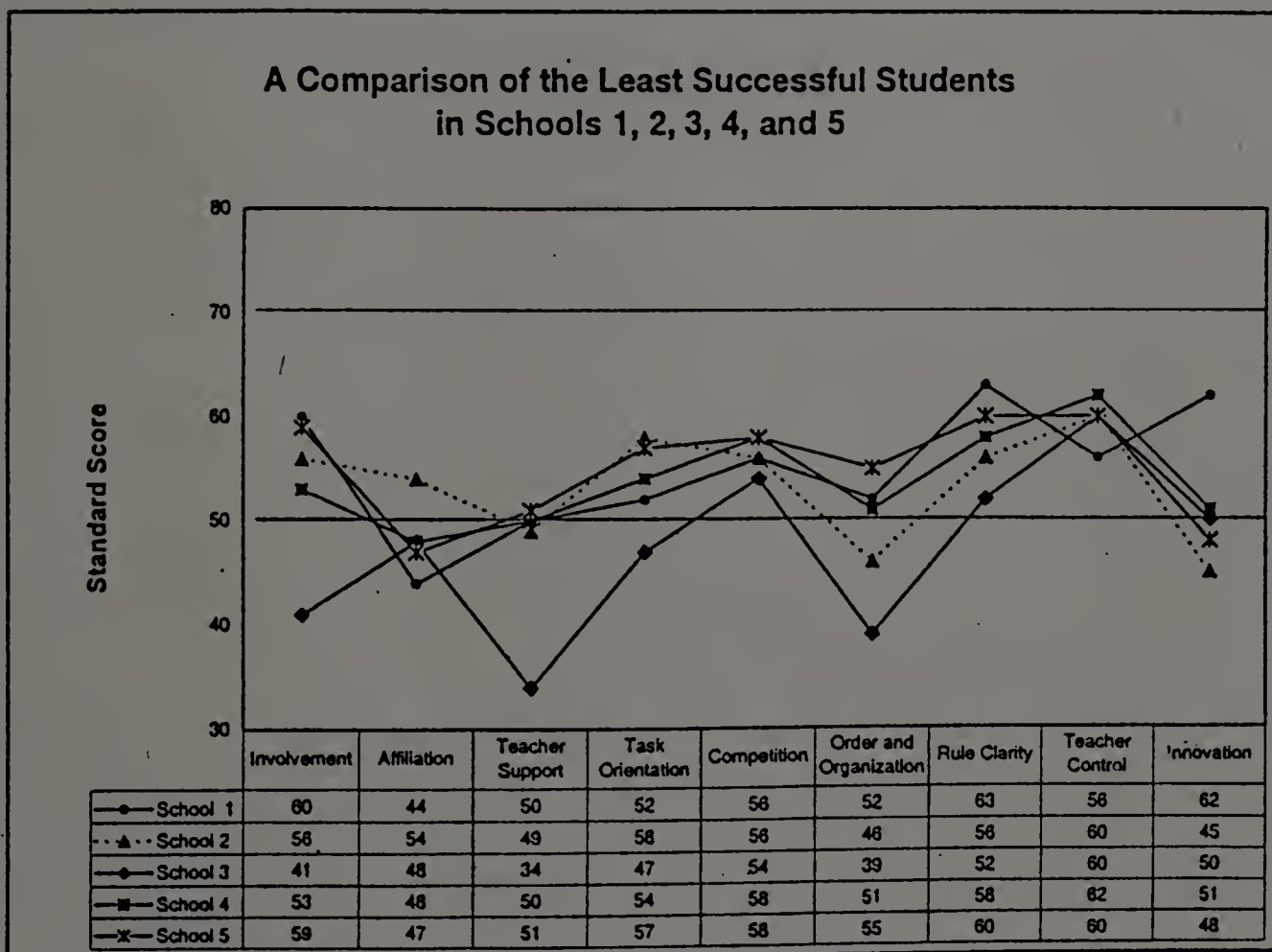
Figure 10. A Comparison of the Perceptions of the Least Successful Students in the Five Participating Schools Regarding the Classroom Environment and their Place in It, Explored by Research Question #2.

variance with the other schools on at least four of the measures. The greatest range of difference between the schools was on classroom organization. While four of the was schools spanned the average range, School #3 reported their classes to be below average on organization. The greatest amount of agreement between the schools on the competitiveness within their classes, which was perceived to be about average or slightly above. Another area of consensus was the supportiveness of the teachers. The least successful students in four of the schools reported solidly average support from the teachers, however School #3 reported very low teacher support. In addition, while the other four schools reported fairly strong student interest and involvement in class activities, School #3 again rated their classes low on this measure. In fact, School #3 perceived their classes lowest on involvement, teacher support, task orientation, competition, organization, and clarity of rules and consistency of consequences. In contrast, while the other four schools described their classes as having moderately strong teacher control, School #3 rated their classes as very high on teacher control, or strictness. This school had a very mixed group of students, including new immigrants who had interpreters in the classroom.

Comparisons of Classes within Schools

School #1. The least successful students (N = 3: 2 males and 1 female) in the one class in School #1 saw their class as very clear with regard to rules and consequences, and very involving and innovative (Figure 11). In addition they

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The Perceptions of the Least Successful Students
in School #1

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | | | | | | | | | |
| least | 60 | 44 | 50 | 52 | 56 | 52 | 63 | 56 | 62 |
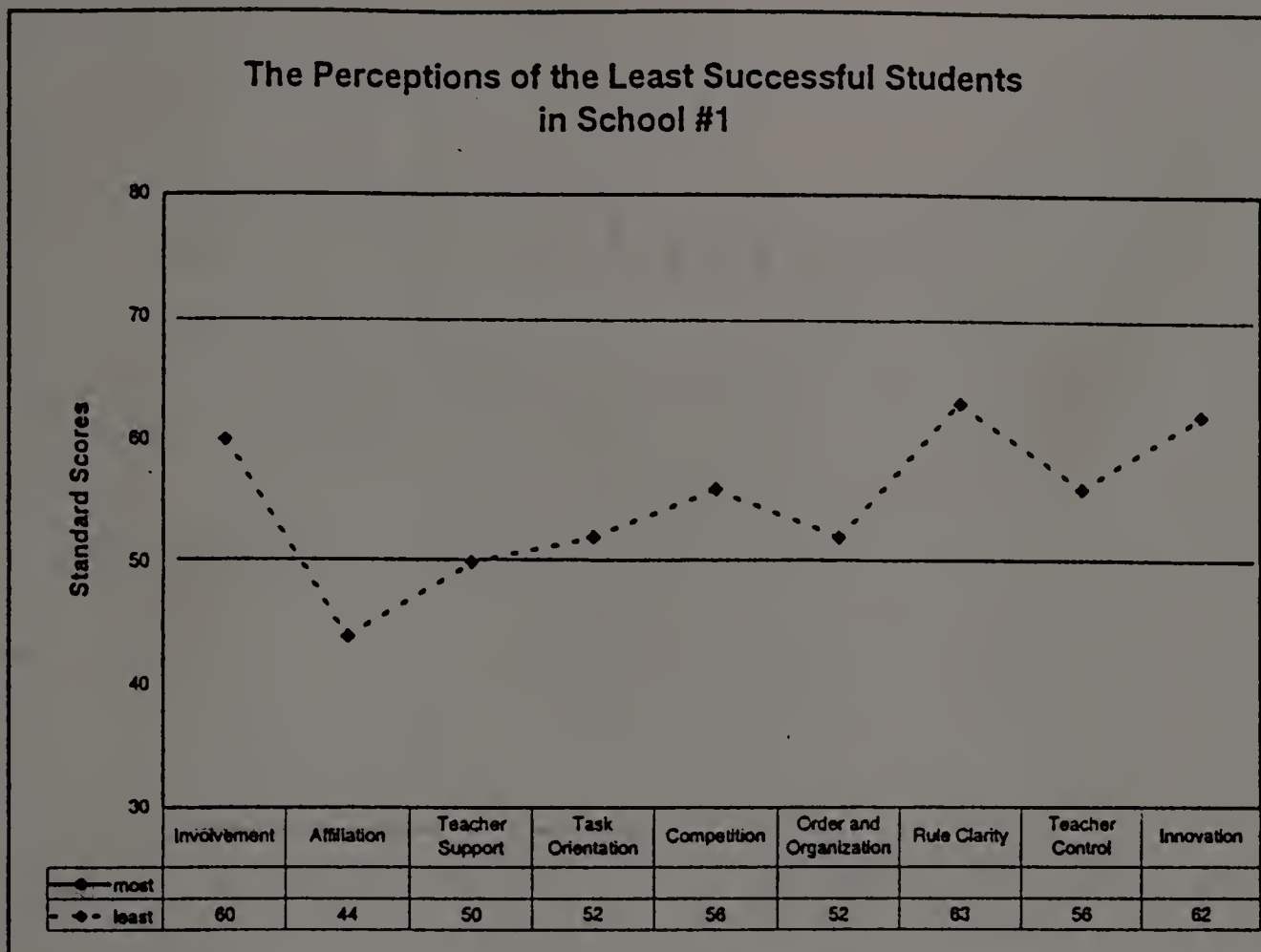
Figure 11. The Perceptions of the Least Successful Students in School #1 Regarding the Classroom and Their Place in It, Explored by Research Question #2

reported a moderate amount of competition and teacher strictness, an average amount of teacher support and organized structure, and slightly below average task focus and affiliativeness in their class.

School #2. In School #2, two classes were involved in this study. Class #1 had a male teacher and Class #2 had a female teacher who described the class as her "most challenging class". Both teachers were half of a two-teacher team that shared the responsibility for teaching the four main academic subjects: math, English, social studies, and science. The two teachers in the study did not teach on the same team. As illustrated in Figure 12, a comparison of the least successful students in the two classes indicates that students in Class #1 saw the class as competitive and moderately
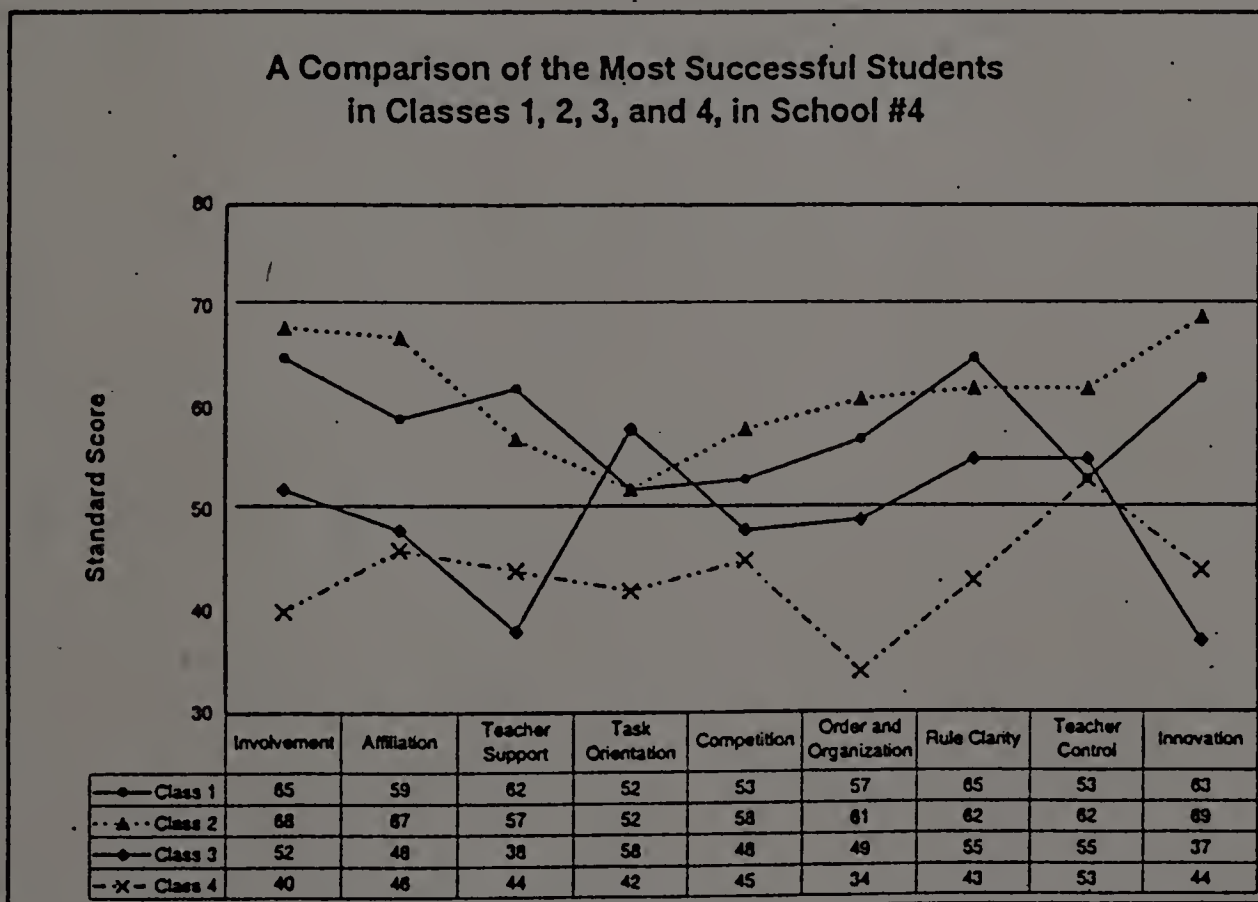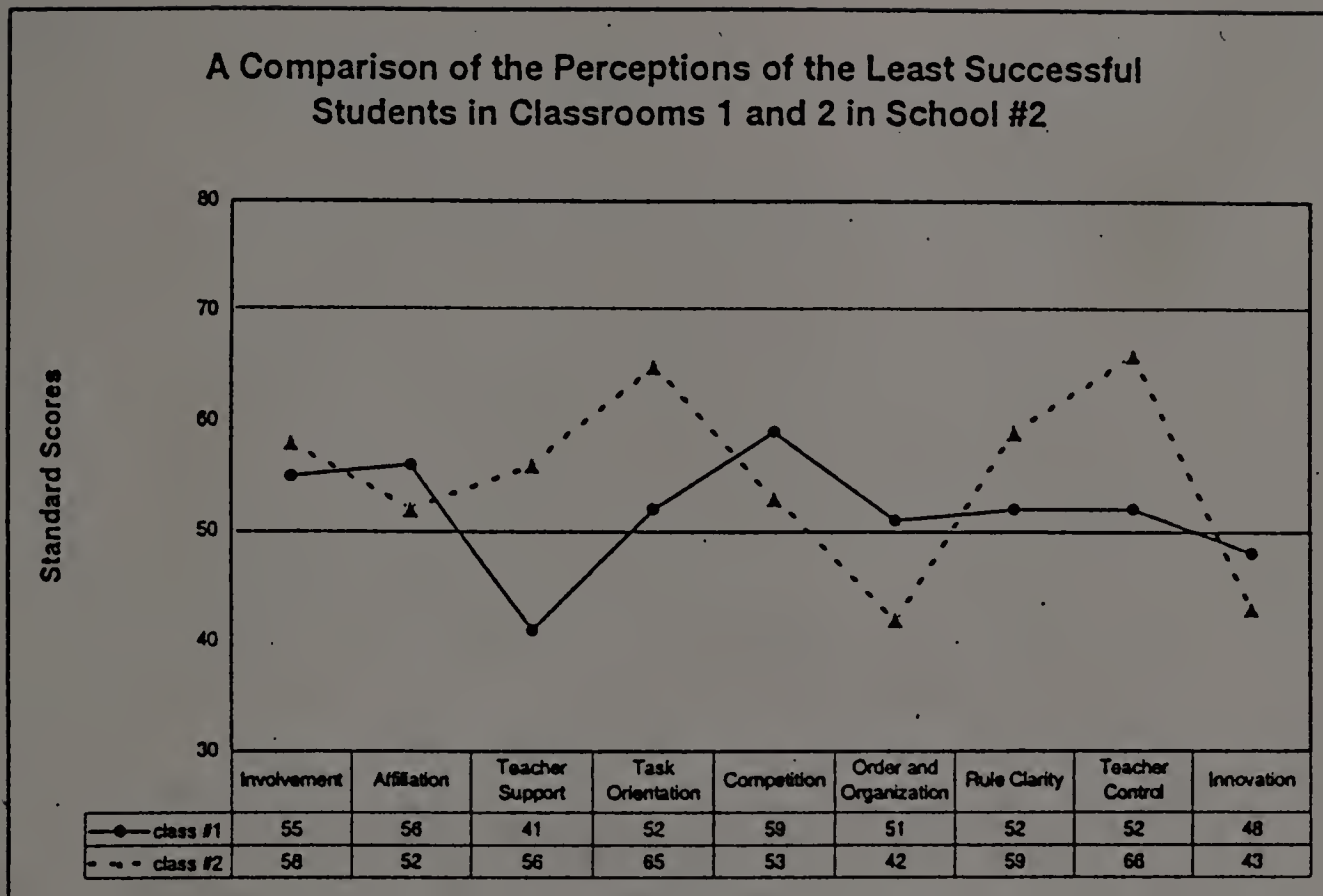
Figure 12. A Comparison of the Perceptions of the Least Successful Students in the Two Participating Classes in School #2 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #2

affiliative and involving; about average with regard to being task focused, organized, clear on rules and consequences, teacher controlled and innovative; and relatively low on teacher support (Figure 12). Whereas the least successful students in Class #2 saw their class as very task oriented and teacher controlled; moderately involving, teacher supported and clear; about average on affiliation and competition; and low on instructional organization and innovation. The greatest areas of agreement between the least successful students in the two classes were with regard to the degree of involvement, affiliation, and innovation they perceived in their classes. The greatest disparities were on the amount of teacher support and teacher control they

experienced and the degree of task orientation they perceived in their classes. The students in Class #2 rated their class higher on the latter three subscales than did students in Class #1 (Figure 12).

School #3. The participating classes in School #3, besides being the most diversified, were probably the most unique classes in the study. Yet, a comparison of the least successful students in these three classes, indicated that they saw their classes very similarly with regard to six of the nine subscales measured (Figure 13). Thus, they reported their classes to be about average on competitiveness, innovation, affiliation, and task orientation; and somewhat below average on student interest and involvement, and structure and organization. There was less agreement between the three classes regarding rule clarity, teacher support and teacher strictness. Class #1 and Class #2 reported average clarity, while the two least successful students (out of the nine math students remaining in Class #3 at the time of the survey, which was just after the others had been "pulled out" to receive Chapter One services) perceived their class rules as much less clear, but their teacher only moderately strict compared to the other two classes who reported their classes to be very strict.

Interestingly, the least successful students in Class #2, an English class which had three ESL support staff in the classroom in addition to the classroom teacher, rated their class strictest, with the *least* teacher support. "Teacher support" includes not only help, but also showing friendship, trust, and interest in students and talking openly with them. In actuality, the ESL staff were supporting seven Russian students, all of whom were achieving within the top 50% of the class. None of the least

## A Comparison of the Least Successful Students in Classes 1, 2, and 3, in School #3

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| Class 1 | 42 | 50 | 38 | 47 | 54 | 40 | 54 | 67 | 54 |
| Class 2 | 39 | 48 | 27 | 44 | 54 | 38 | 52 | 78 | 46 |
| Class 3 | 44 | 42 | 42 | 45 | 52 | 43 | 43 | 58 | 47 |
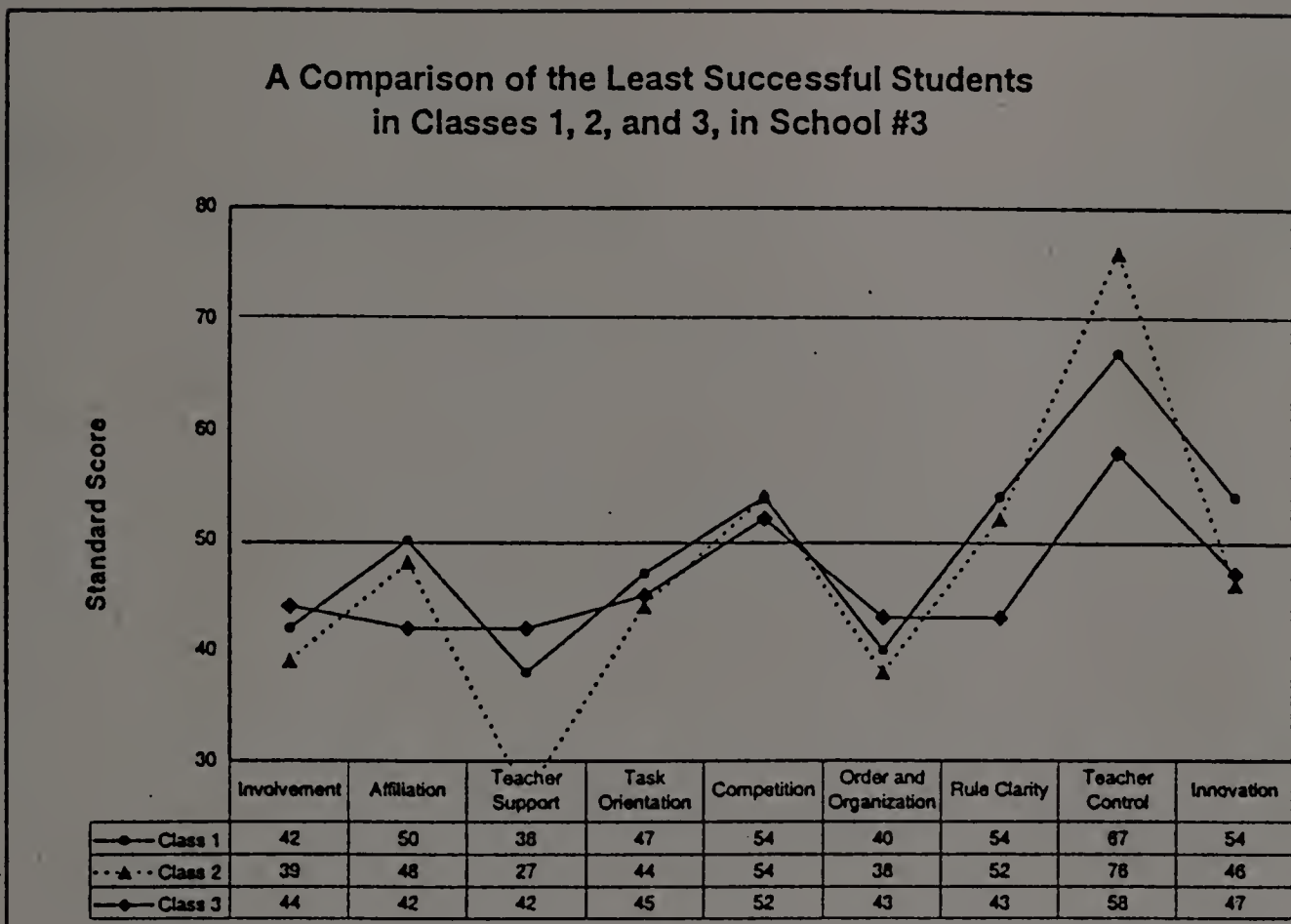
Figure 13. A Comparison of the Perceptions of the Least Successful Students in the Three Participating Classes in School #3 Regarding the Classroom Environment and their Place in It, Explored by Research Question #2.

successful students in this class received special education support and, as a group, they perceived teacher support and interest lower than any group of students in the study.

Another interesting finding was that in Class #1 (described apologetically by this social studies teacher as his "worst class" and which consisted of sixteen students packed into a tiny, strangely cut up space that was more like a large closet between two other classrooms - with a protruding wall which blocked some students' view of parts of the classroom and each other) the least successful students saw their teacher as very strict, and the class as slightly more innovative, clear, and affiliative than did the least successful students in the other two classes. They also rated their class

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equally task focused, competitive, organized and involving as the other two classes and nearly as supportive as the two least successful students in class #3. The subscales with the greatest variability between the classes in School #3 were teacher strictness, and teacher support, which were the same two subscales with the greatest difference reported by the least successful students in the two classes in School #2.

School #4. A comparison of the least successful students in the four participating classes from the rural-suburban School #4 indicates that, in contrast to Schools #2 and #3, the greatest amount of agreement was on their teacher's strictness in enforcing the rules. Students in all four classes saw their teachers as very strict. They also agreed that their classes were about average on innovation and supportiveness. The greatest difference of opinion was about the degree of competitiveness and orientation toward the subject matter students experienced in their classes (Figure 14).

Looking at each class individually, the least successful students in Class #1 (a science class with a female teacher) reported their class to be very task focused and teacher controlled, very clear about expectations and consequences, very organized and involving. In fact, this class was rated highest of the four classes on these five subscales. They also saw their class as competitive, and about average on teacher support, innovation and affiliation.

Class #2 in School #4, a social studies class with a female teacher, was reported to be clear, teacher controlled, and affiliative, about average on teacher support, innovation, task orientation, and involvement and slightly below average on competition and organization. In fact, the least successful students in this class rated it

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**A Comparison of the Least Successful Students in Classes 1, 2, 3, and 4, in School #4**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| Class 1 | 61 | 48 | 52 | 65 | 59 | 59 | 66 | 65 | 50 |
| Class 2 | 54 | 57 | 56 | 52 | 45 | 46 | 59 | 60 | 56 |
| Class 3 | 50 | 41 | 44 | 55 | 75 | 54 | 55 | 63 | 45 |
| Class 4 | 47 | 44 | 46 | 44 | 53 | 45 | 52 | 58 | 52 |
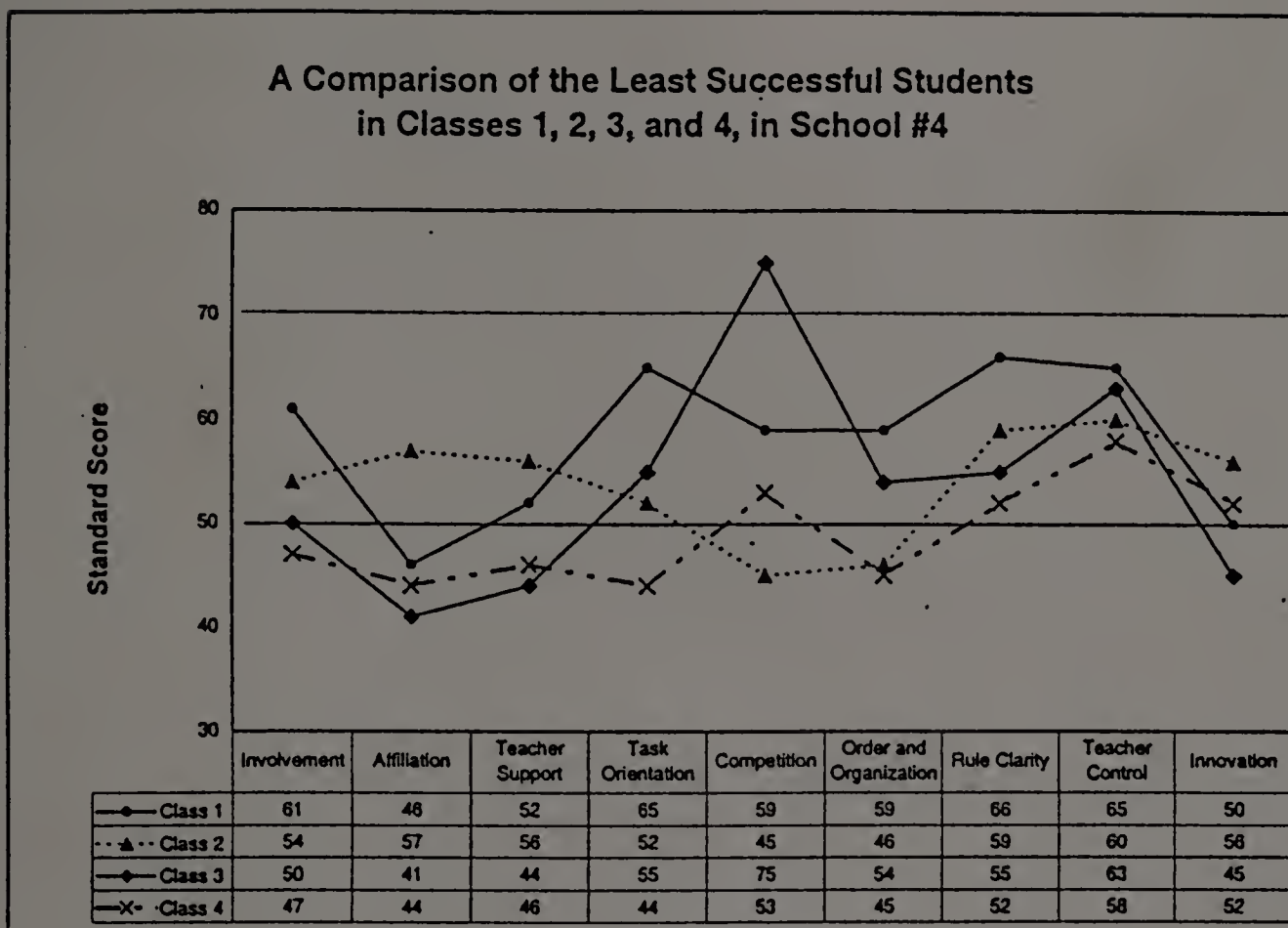
Figure 14. A Comparison of the Perceptions of the Least Successful Students in the Four Participating Classes in School #4 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #2

highest of the four classes on affiliation, teacher support, and innovation and lowest on competition.

The least successful students in Class #3, an English class with a male teacher, saw their class as extremely competitive, in fact the highest of all fourteen classes in this study. They also saw their class as very teacher controlled, about average on task orientation, involvement, clarity, organization, innovation, and teacher control, and somewhat low on affiliation. This class was seen as the lowest of the four classes in

their school on three measures: friendship and enjoyment in working together, teacher support, and innovation.

Class #4, also a science class, but with a male teacher, was viewed by the least successful students as moderately teacher controlled, and about average on all other measures, except slightly below average on affiliation, organization and task directedness. This class was perceived as slightly lower than the other three classes in this school on involvement, organization, teacher control, and clarity and consistency of rules. It was also lowest on task orientation. (Figure 14.)

School #5. The least successful students in the four classes participating in School #5 generally reported average to above average ratings on all nine subscales, with the exception of Class #4, a math class with a strong concentration of students with behavioral problems. Not surprisingly, the least successful students in this class regarded their class to be very low on affiliation (feelings of friendship and enjoyment in working together and helping each other). The other three classes reported a consensus of being solidly average on affiliation (Figure 15).

Looking at the classes in School #5 individually, the least successful students in Class #1, an English class with a female teacher, regarded their class as strongly teacher controlled and about average on all other measures. They rated their class lowest of the four classes on teacher support, task orientation, organization, clarity, and innovation. The least successful students in Class #2, a math class with a female teacher, reported their class to be involving, task focused, organized, innovative, and very clear and competitive, with strong teacher control. Affiliativeness and teacher support were seen as average. Compared to the other three classes, these students reported their class to be the most competitive, clear, teacher controlled, and

**A Comparison of the Least Successful Students in Classes 1, 2, 3, and 4, in School #5**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| Class 1 | 55 | 51 | 46 | 49 | 56 | 51 | 53 | 62 | 44 |
| Class 2 | 58 | 51 | 50 | 59 | 64 | 55 | 65 | 63 | 54 |
| Class 3 | 65 | 49 | 60 | 62 | 53 | 60 | 59 | 53 | 45 |
| Class 4 | 56 | 36 | 48 | 58 | 56 | 55 | 65 | 59 | 48 |
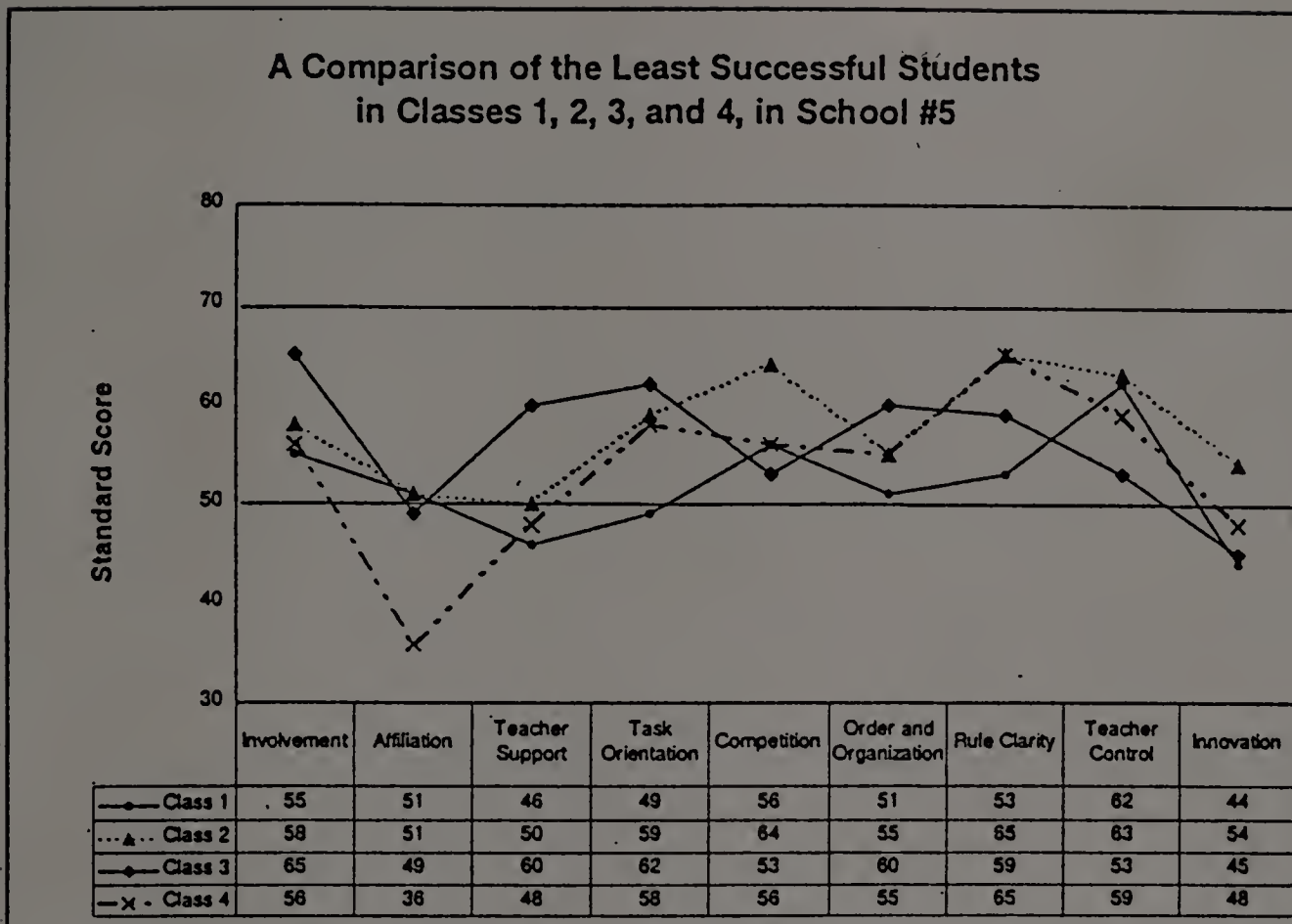
Figure 15. A Comparison of the Perceptions of the Least Successful Students in the Four Participating Classes in School #5 Regarding Their Classroom Environment and Their Place in It, Explored by Research Question #2

innovative. Class #3 was a reading class with a female teacher, and unlike the other three classes, there were no special education students included. The least successful students reported Class #3 to be slightly below average on innovation; average on affiliation, competition, and teacher control; and highly involving, task focused, organized, clear, and teacher supported. When compared to the other three classes, these students, on average, saw their class as the most involving, teacher supported, task oriented, and organized, while being the least competitive and strict (Figure 15).

The least successful students in Class #4, a math class with a female teacher, (mentioned previously as including a number of students with behavioral issues - many

of whom were included in this least successful group of participants), reported their class to be very clear about rules and the consistency of consequences. They also saw their class as moderately involving, strict, task focused, organized and competitive, while being average on teacher support, and innovation. As mentioned, these students reported their class to be very low on affiliation, in fact, significantly lower than the reports of the least successful students in the other three classes participating from this school (Figure 15).

In sum, although the least successful students reported perceptions that presented unique and varied profiles for each class, students in all of the classes perceived that their classes were very teacher controlled and competitive, and with the exception of two classes, reported that their classes were low on affiliation.

Research Question #3

What are the similarities and differences between the perceptions of the most academically successful students and the least academically successful students regarding the classroom environment on these selected variables: the Relationship Dimensions of involvement, affiliation, and teacher support; the Personal Growth or Goal Orientation Dimensions of task orientation and competition; and the System Maintenance and Change Dimensions of order and organization, rule clarity, teacher control, and innovation?

At the aggregate level, that is, comparing the responses of the 70 most successful students and the 66 least successful students in this study, the most significant difference between the responses of the two groups on the three underlying sets of dimensions of classroom climate measured by the Classroom Environment

Scale, was on the Relationship Dimensions. The most successful students rated their classrooms higher on these Relationship Dimensions which measure how involved people are in the setting, how much they help each other, and the level of friendship and support between the leader and the members of the group. This difference was statistically significant at the 0.034 level (Table 6, page 103). As mentioned previously, statistical significance is $p < 0.05$, but findings equal to or greater than 0.05 to 0.10 are educationally promising because they approach statistical significance and are suggestive of findings that deserve further study and consideration. The difference between the most successful and the least successful groups on the Personal Growth and Goal Orientation set of dimensions was greater than the difference between the two groups on the System Maintenance and Change Dimensions, however, the difference between their perceptions on these two sets of dimensions was not statistically significant. Again, at the aggregate level on both of these underlying sets of dimensions the most successful students rated their classrooms higher.

On the nine subscales, the difference between the perceptions of the most successful and the least successful students at the aggregate level, was greatest on the dimension called affiliation (the friendship students feel for each other). This difference was statistically significant at the 0.036 level (Figure 16). The most successful students perceived a friendlier atmosphere in the classroom than the least successful students. The second greatest difference was in their perceptions of the degree of task orientation that prevailed in the class ($p = 0.059$). Again, the most successful students reported a greater emphasis on staying on task and completing the assigned classwork than did the least successful students. The difference between the

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 56 | 54 | 51 | 58 | 54 | 50 | 60 | 59 | 52 |
| least | 53 | 48 | 47 | 54 | 57 | 50 | 58 | 62 | 49 |
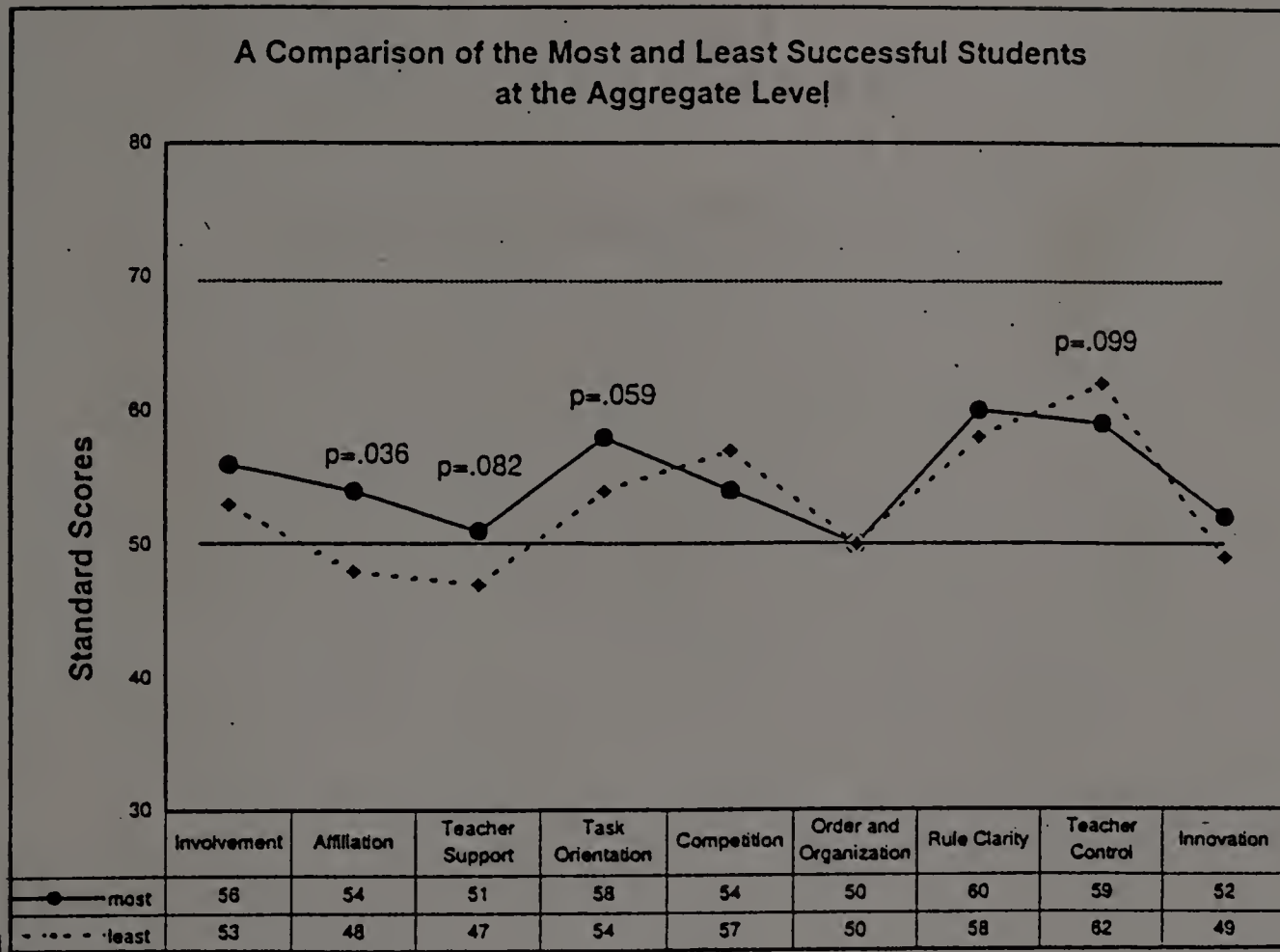
Figure 16. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students at the Aggregate Level Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

two groups that ranked third largest was the degree of help, interest, and trust shown by the teacher toward students. Although not statistically significant on difference, the most successful students ranked teacher support higher than the least successful students (p = 0.082).

The fourth greatest difference was not statistically significant, but was with regard to the degree of control the teacher exerted over the classroom (p = 0.099). In contrast to the other dimensions described, the least successful students reported their classes to be more teacher controlled. They perceived their teacher as being stricter in

enforcing the rules, perceived a greater severity of punishment for rule infractions, and a higher incidence of students getting into trouble in the class.

In general, the most successful students rated all subscale characteristics of the classroom climate higher than the least successful, except for two dimensions. These were the degree of teacher control (how strict the teacher is and the severity of the punishments) and the degree of competition (how much students compete for recognition and how hard it is to get good grades). Thus, the least successful students see their classroom as stricter, with more severe punishments for infractions of the rules, that students are more competitive for grades and recognition, and that they have to work harder to get good grades than the most successful students. In sum, the most successful students, overall, see their class as more involving, affiliative, supportive, goal focused, clear and innovative, while the least successful students, on average, see their classes as more competitive and more teacher controlled.

The subscale on which there was the strongest relationship (0.792) between the least successful and most successful students in this study, was order and organization -the emphasis on students behaving in an orderly and polite manner and on the organization of assignments and activities. See Figure 16 for the profile of the differences between the most successful and the least successful students in this study on all nine of the classroom climate variables measured.

Gender Comparisons

It was most interesting to find remarkable similarity between the perceptions of the most successful and the least successful male students at the aggregate level in this study. The greatest degree of agreement was that both groups, on average, reported

that class rules were clear and their teacher was consistent about applying

consequences for breaking those rules (Figure 17). They also agreed that

## A Comparison of the Perceptions of the Most and Least Successful Males at the Aggregate Level

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 54 | 47 | 47 | 58 | 56 | 50 | 56 | 59 | 45 |
| least | 52 | 46 | 44 | 53 | 55 | 49 | 56 | 62 | 49 |
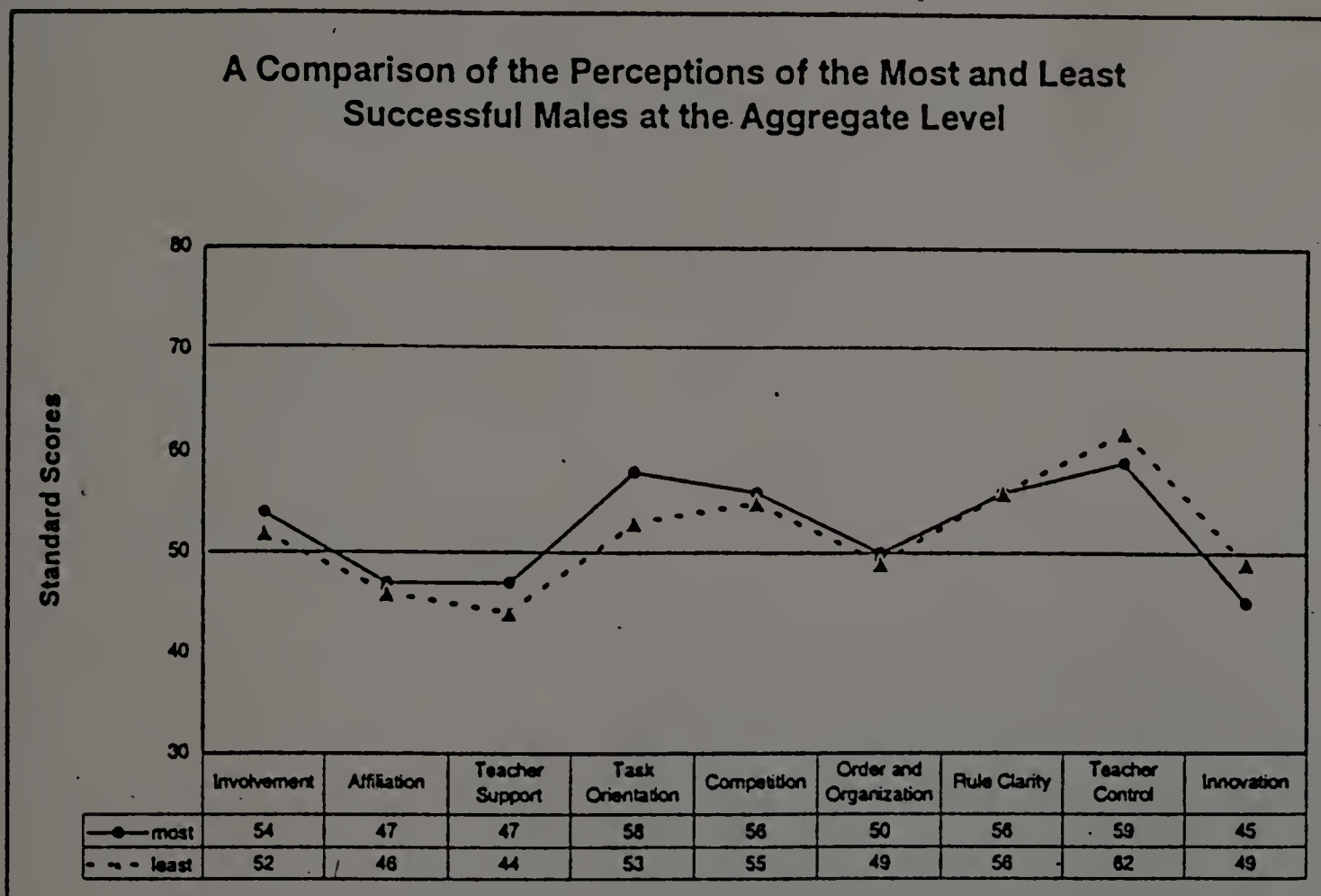
Figure 17. A Comparison of the Perceptions of the Most Successful Males and the Least Successful Males at the Aggregate Level Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

competition for grades and recognition, and the difficulty level of getting good grades

was slightly above average in their classes. Both groups reported average emphasis on

behaving in an orderly and polite manner and on the organization of classroom

materials and activities, as well as average interest in class activities. They also

reported that their classes were slightly below average on feelings of friendship and

enjoyment in working together, on their teacher's support and interest in their ideas, and on the use of new techniques and encouragement of creative thinking. In addition, both groups reported that their teachers were strict in enforcing the rules, that the punishments were fairly severe and that students got into trouble fairly frequently. Although the most successful male students rated their classes slightly higher than the least successful male students on seven of the dimensions measured, the least successful male students saw their classes as stricter, yet more innovative, than the most successsful males did.

There was a difference between these two groups on their perception of the emphasis placed on completing planned activities and staying on task. The most successful males reported their classes to be fairly strongly task focused, while the least successful males saw them as about average (Figure 17). This difference was not significant, however.

In contrast to the males who rated three dimensions below average, a comparison of the most successful and least successful female students in this study shows a profile on which all nine dimensions measured were reported to be average or above by both groups (Figure 18). Like the males in this study, the most successful females perceived their classes to be stronger on six of the dimensions measured than the least successful females did. The most successful female participants reported their classes to be more involving, in terms of student participation, interest and attentiveness; they reported more friendship and enjoyment in working together, more teacher support, more emphasis on staying on task and completing work, clearer rules and more consistent consequences, and more innovativeness on the part of the teacher. The most successful and least successful females agreed that their classes were solidly

**A Comparison of the Most and Least Successful Females at the Aggregate Level**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 58 | 56 | 53 | 57 | 53 | 50 | 61 | 58 | 55 |
| least | 54 | 52 | 51 | 54 | 58 | 50 | 59 | 63 | 51 |

Standard Scores (y-axis: 30, 40, 50, 60, 70, 80)

p=.076    p=.091
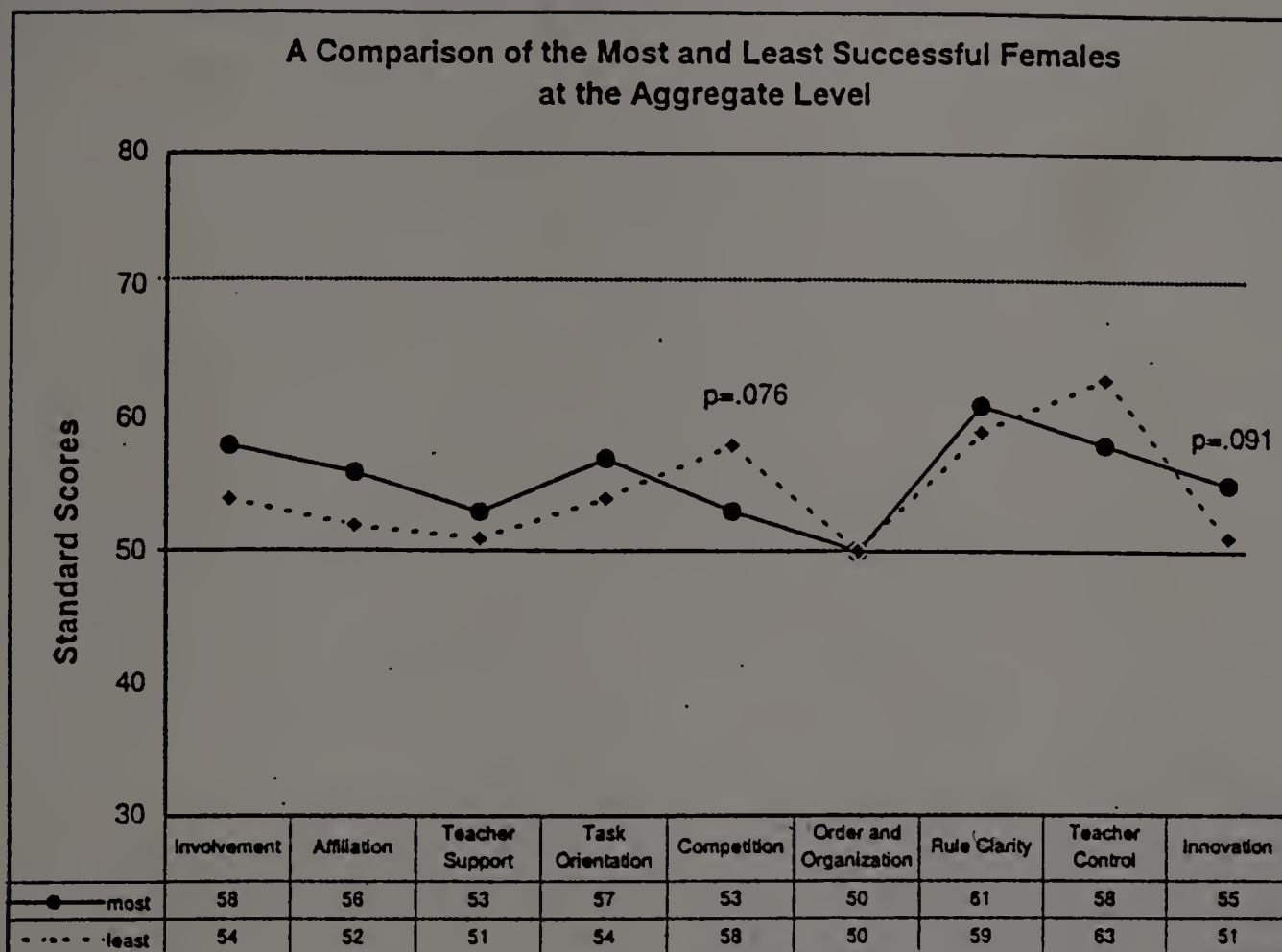
Figure 18. A Comparison of the Perceptions of the Most Successful Females and the Least Successful Females at the Aggregate Level Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

average on providing a well organized structure within which to work and that the teacher was about average on being open, helping, trusting, and interested in the students.

There were two dimensions on which the least successful female students rated their class higher than the most successful females did. Like the least successful males in this study, the least successful females perceived their teacher as stricter, with more severe punishments and more students getting into trouble than the most successful females did. However, in contrast with the males who were in strong agreement with

each other on this dimension, the least successful females saw their class as much more competitive than the most successful girls (p = 0.076). They reported more emphasis on competition for grades and recognition, and greater difficulty in achieving good grades (Figure 18). In fact, the least successful females reported their classes to be more competitive than both groups of males in this study did.

In summary, there was remarkable similarity between the most and least successful students within the genders and even between the genders on their appraisals of most of the dimensions of the learning environment. However, both groups of females reported more friendship and enjoyment in working together and more teacher support than both groups of males did. Both groups of females also saw their classes as clearer about rules and consequences than the males did. Notable differences within the genders included the finding that the most successful males reported a greater emphasis on staying on task and completing work than the least successful males did. There were two findings within the female population which are of interest, though not statistically significant. The first finding was that the most successful females saw the class as more innovative (that students contributed to planning activities and that the teacher used new techniques and encouraged creative thinking) than the least successful females did. The other, perhaps surprising, finding was that the least successful females perceived more emphasis on competition for grades and recognition than the most successful females and both groups of male students did.

## Comparisons between Schools

When comparing the five individual schools on the three underlying sets of dimensions, some interesting results emerged. In two of the schools the greatest difference between the perceptions of the most successful students and the least successful was on the Relationship Dimensions which include feelings of involvement, affiliation and teacher supportiveness (Table 6). Surprisingly, one of these two schools was School #1 which had only one sixth grade class with seven students in it. In fact, this school had the greatest degree of difference on this variable when compared with the other four schools. The other was School #2, a wealthy suburban school that had been involved in a program of busing inner city African American students to the school for 21 years. In both of these schools, the most successful students rated their classes higher on these Personal Relationship variables than did the least successful students. The other three schools (#3, 4, and 5) indicated the greatest difference between the perceptions of the most successful and least successful students was on the Personal Growth and Goal Orientation Dimensions which included the degree to which they felt the classroom was focused on academic tasks and the amount of competition students felt existed in the class. In Schools #3 and #5, the most successful students rated their classes higher on these variables, while in School #4, the least successful students rated their classes higher on these variables of academic focus and competition. In School #3 the difference was statistically significant (p = 0.033).

Table 6

Comparison of the Mean Scores and the Statistical Significance of the Difference
between the Mean Scores of the Most and Least Successful Students
on the Three Underlying Sets of Dimensions on the CES

| School | CES Dimension | Most Successful | Least Successful | Significance Level |
|---|---|---|---|---|
| Aggregate | | | | |
| | Personal Relationships | 6.75 | 6.08 | p = 0.034* |
| | Personal Growth/ Goal Orientation | 6.63 | 6.50 | p = 0.610 |
| | System Maintenance/ Change | 5.91 | 5.82 | p = 0.671 |
| School #1 | | | | |
| | Personal Relationships | 8.33 | 6.44 | p = 0.098 |
| | Personal Growth/ Goal Orientation | 5.88 | 6.33 | p = 0.302 |
| | System Maintenance/ Change | 6.19 | 6.42 | p = 0.767 |
| School #2 | | | | |
| | Personal Relationships | 7.63 | 6.63 | p = 0.111 |
| | Personal Growth/ Goal Orientation | 7.00 | 6.80 | p = 0.742 |
| | System Maintenance/ Change | 5.65 | 5.35 | p = 0.493 |
| School #3 | | | | |
| | Personal Relationships | 6.75 | 6.08 | p = 0.155 |
| | Personal Growth/ Goal Orientation | 6.63 | 6.50 | p = 0.033* |
| | System Maintenance/ Change | 5.91 | 5.82 | p = 0.580 |
| School #4 | | | | |
| | Personal Relationships | 6.75 | 6.08 | p = 0.353 |
| | Personal Growth/ Goal Orientation | 6.63 | 6.50 | p = 0.153 |
| | System Maintenance/ Change | 5.91 | 5.82 | p = 0.648 |
| School #5 | | | | |
| | Personal Relationships | 6.75 | 6.08 | p = 0.567 |
| | Personal Growth/ Goal Orientation | 6.63 | 6.50 | p = 0.367 |
| | System Maintenance/ Change | 5.91 | 5.82 | p = 0.499 |

* statistically significant

## Comparisons of Groups within Schools

School #1. As mentioned previously, the greatest difference between the most successful and the least successful students in the one sixth grade class in this school was on the Relationship Dimensions. The most successful students perceived better personal relationships in the class than those students who were not doing as well. While this difference is great, it is partially because the most successful students in this school, on average, perceived that they had more satisfying relationships with their classmates and teacher than the most successful students in any other of the schools. However, the mean rating of this set of variables by the least successful students in School #1 ranked third highest among the ratings of the least successful students in the five schools. In actuality, they were within a few hundredths of a point from the ratings of the least successful students in the top two schools on this set of dimensions.

The Dimension (or subscale) on which there was the greatest difference between the least and most successful students in School #1 was competition. The least successful students saw the classroom as much more competitive than did the most successful (Figure 19). The second greatest difference was in their perception of the degree of control the teacher exerted over the class. Again, the least successful students perceived the teacher as being stricter, the punishments more severe, and the degree of student misbehavior greater. The third greatest difference was in their sense of involvement in the classroom. As might have been anticipated, the most successful students perceived greater interest, attentiveness, and participation in discussions within the classroom. The agreed on their perceptions of the clarity of classroom rules and the consistency with which the teacher dealt with students who broke the rules.

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**A Comparison of the Perceptions of the Most and Least Successful Students in School #1**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 64 | 56 | 64 | 60 | 38 | 60 | 63 | 44 | 59 |
| least | 60 | 44 | 50 | 46 | 56 | 52 | 63 | 56 | 62 |

Figure 19. A Comparison of the Perceptions of the Most and Least Successful Students in School #1 Regarding The Classroom Environment and Their Place in It, Explored by Research Question #3

However, the least successful students in this school (and in two other schools) perceived their class as more innovative than did the most successful students. They saw the teacher as using new techniques, encouraging creative thinking, and students having more say in the planning of classroom activities. For a complete ranking of the variables by students in School #1, see Figure 19.

School #2. Figure 20 shows the comparative profiles of the responses of the most successful and least successful students in School #2 on the nine dimensions of classroom climate measured in this study. The most successful students, as a group,

**A Comparison of the Perceptions of the Most and Least Successful Students in School #2**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 61 | 62 | 56 | 62 | 54 | 50 | 54 | 55 | 54 |
| least | 56 | 54 | 49 | 58 | 56 | 48 | 56 | 60 | 45 |

Figure 20. A Comparison of the Perceptions of the Most Successful and Least Successful Students in School #2 Regarding The Classroom Environment and Their Place in It, Explored by Research Question #3

perceived their classes to be about average on providing an organized structure for learning, on competitiveness, on the clarity of rules and consequences, and on the teacher's innovativeness, strictness in enforcing the rules, and on how much help, trust, and interest in the students' ideas the teacher shows. However, they rated their classes as quite strong on feelings of friendship and enjoyment of working together, on staying on task and completing the planned activities, and on the extent to which students participate and are interested and attentive to class activities. The least successful students in this school who participated in the study also saw the classroom as about

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average on most dimensions and fairly strong on being task focused. However, they reported the teacher as stricter, the emphasis on rules and the consistency of consequences as being a little greater, and the existence of a little more competitiveness than the most successful students reported.

There were two statistically significant differences between the most and least successful students from the two sixth grade classes sampled in this suburban school. The first significant difference ($p = 0.021$) was in the reported feelings of friendship and enjoyment in working together. Once again, the most successful students saw their classes as more affiliative than the least successful students did. A second significant difference ($p = 0.025$) occurred in students' perceptions of the innovativeness of their class. Once more, the most successful students reported more student involvement in planning the classroom activities, a greater use of new techniques, and more encouragement of creative thinking than did the least successful students in School #2.

School #3. A comparison of the most successful and least successful participants from three sixth grade classes in this inner city school is shown in Figure 21. There was considerable agreement between the two groups regarding their perceptions of the relative strengths and weakness of their classes on the nine classroom climate dimensions measured in this study. They both agreed that their classes were about average on competitiveness, feelings of friendship and enjoyment in working together, and innovation. They both also reported that their classes were slightly below average on providing an orderly, organized learning environment and, yet, were very highly teacher controlled.

**A Comparison of the Perceptions of the Most and Least Successful Students in School #3**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 50 | 45 | 45 | 59 | 54 | 45 | 59 | 66 | 46 |
| least | 41 | 48 | 34 | 47 | 54 | 39 | 52 | 69 | 50 |
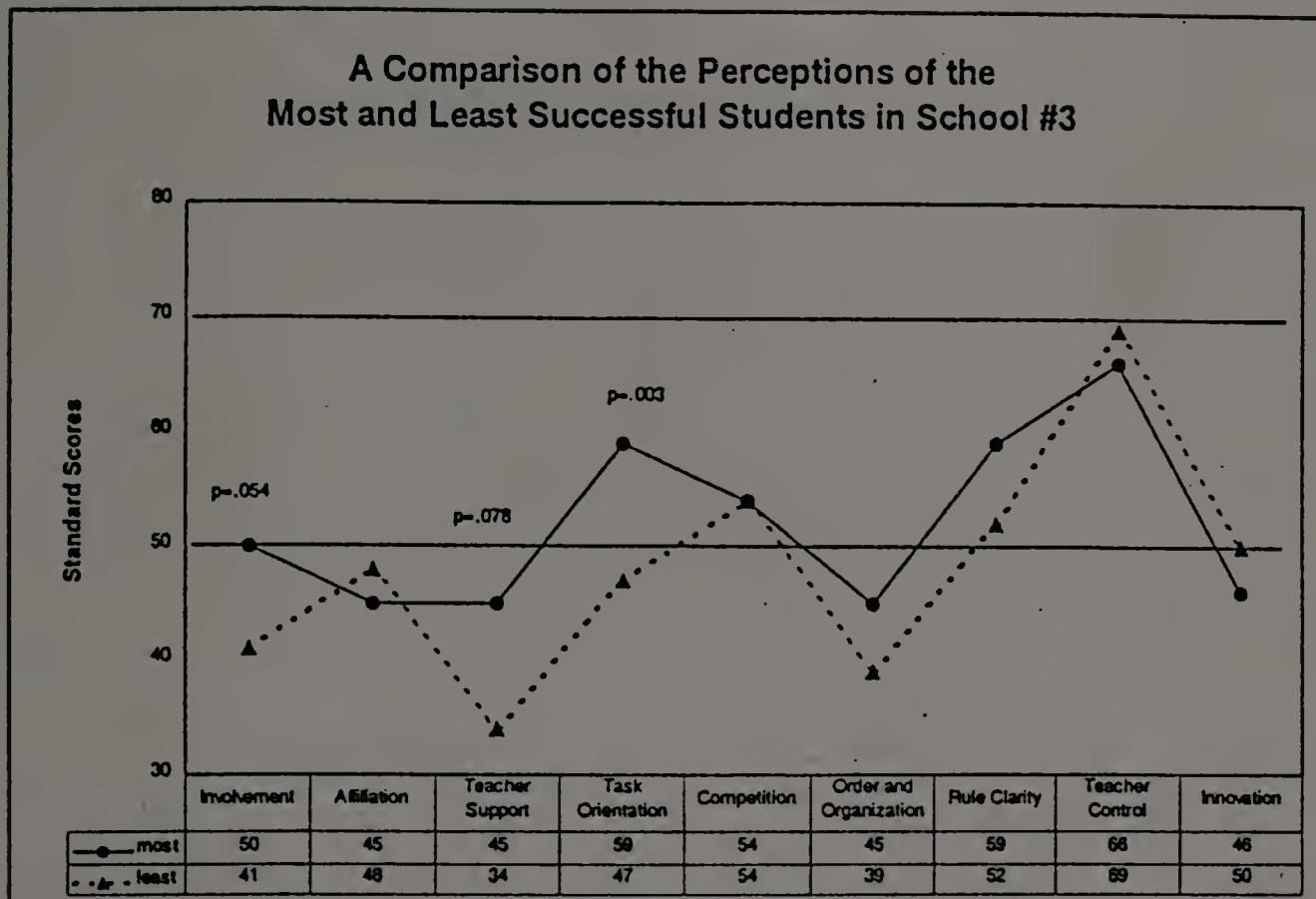
Figure 21. A Comparison of the Perceptions of the Most Successful and Least Successful Students in School #3 Regarding The Classroom Environment and Their Place in It, Explored by Research Question #3

Overall, the most successful students perceived their classes to be about average on six variables, and fairly strong on the other three variables: the focus on completing assigned work, the clarity of rules and consistency of consequences, and their teacher's control of the class. Although the least successful students also saw five of the dimensions of their classes in the average range, and rated their classes high on teacher control, they reported that their classes were somewhat low on organization, involvement and teacher support, but agreed on degree of competition.

One of the dimensions showed a statistically significant difference between the responses of the most and least successful students in School #3 and two other

dimensions were nearly statistically significant. The greatest difference (p = 0.003) was on the measure of task orientation. The most successful students saw their classes as well focused on completing planned activities, whereas the least successful students saw their classes as low average on this dimension of staying on the subject matter. The second greatest difference was that the most successful students perceived that students in their classes showed average interest, attentiveness and participation in class activities, whereas the least successful students reported below average interest, attentiveness and participation (p = 0.054). Third, although even the most successful students rated their teacher's support, trust and interest in them as low-average, the least successful students rated their teacher's support, trust, and caring even lower (Figure 21). In fact, teacher support was the dimension rated lowest by the least successful students in School #3.



**A Comparison of the Perceptions of the Most and Least Successful Students in School #4**

Standard Scores

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 56 | 55 | 51 | 51 | 51 | 50 | 56 | 56 | 54 |
| least | 53 | 48 | 50 | 54 | 56 | 51 | 57 | 62 | 51 |

Figure 22. A Comparison of the Perceptions of the Most Successful and Least Successful Students in School #4 Regarding The Classroom Environment and Their Place in It, Explored by Research Question #3

School #4. The most and least successful sixth grade student participants in the suburban-rural middle School #4, on average, saw their classes very similarly. As Figure 22 indicates, they reported their classes as generally over standard and about average on all variables with the following exceptions: the most successful students saw their classes as more affiliative and the least successful students saw their classes as much more competitive for grades, attention and recognition, and more teacher controlled. These three differences were not statistically significant.

School #5. In this suburban-rural school, the most and least successful students also saw their classes similarly with regard to the relative strengths and weaknesses of these nine dimensions of class climate. Both groups reported that their classes were involving, task focused, fairly competitive and strict, with clear rules and consistent consequences for breaking those rules (Figure 23). However, the



A Comparison of the Perceptions of the
Most and Least Successful Students in School #5

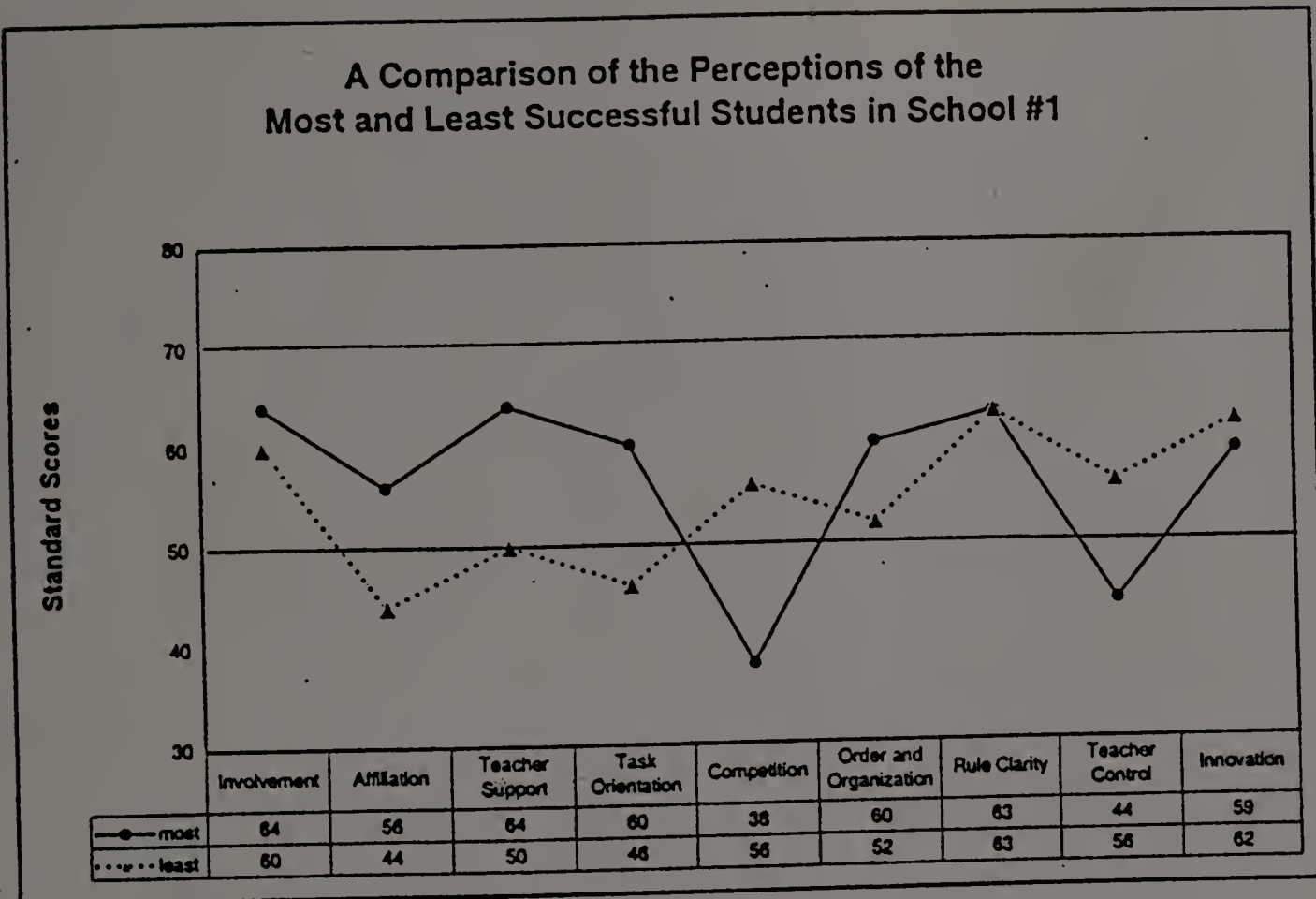| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 57 | 55 | 53 | 60 | 59 | 52 | 71 | 59 | 52 |
| least | 59 | 47 | 51 | 57 | 58 | 55 | 60 | 60 | 48 |

Figure 23. A Comparison of the Perceptions of the Most Successful and Least Successful Students in School #5 Regarding The Classroom Environment and Their Place in It, Explored by Research Question #3

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most successful students as a group, saw their classes as much more clear about rules and consequences, much more affiliative and more innovative. Yet, the least successful students, as a whole, reported their classes as somewhat more involving, organized and strict.

## Gender Comparisons in Schools

Comparison of the Most and Least Successful Males in School #1. There were no males in the most successful group in the nine-student sixth grade classroom in School #1. Therefore, the two males in the least successful group in this class have no cohorts with which to compare them. Figure 24 shows their combined responses in standard scores in relation to the standard scores of the most and least successful females in that class.

**A Comparison of the Most and Least Successful Females and the Least Successful Males in School #1**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| Least Male | 54 | 50 | 39 | 45 | 60 | 43 | 65 | 61 | 59 |
| Most Female | 69 | 56 | 64 | 60 | 38 | 60 | 63 | 44 | 59 |
| Least Female | 70 | 29 | 70 | 67 | 48 | 72 | 58 | 45 | 67 |

Figure 24. A Comparison of the Perceptions of the Least Successful Males with the Most Successful Females and the Least Successful Females in School #1 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

Comparison of the Most and Least Successful Females in School #1. Although there were four females in the most successful group in this class, there was only one female in the least successful category, and, therefore, no statistical comparison could be made. However, the average standard scores of the most successful females as a group and the standard scores of the single least successful female were profiled to provide a visual comparison (Figure 25). This visual inspection reveals general agreement regarding the relative strengths and weaknesses of the dimensions of the class climate measured. The least successful



A Comparison of the Perceptions of the
Most and Least Successful Females in School #1

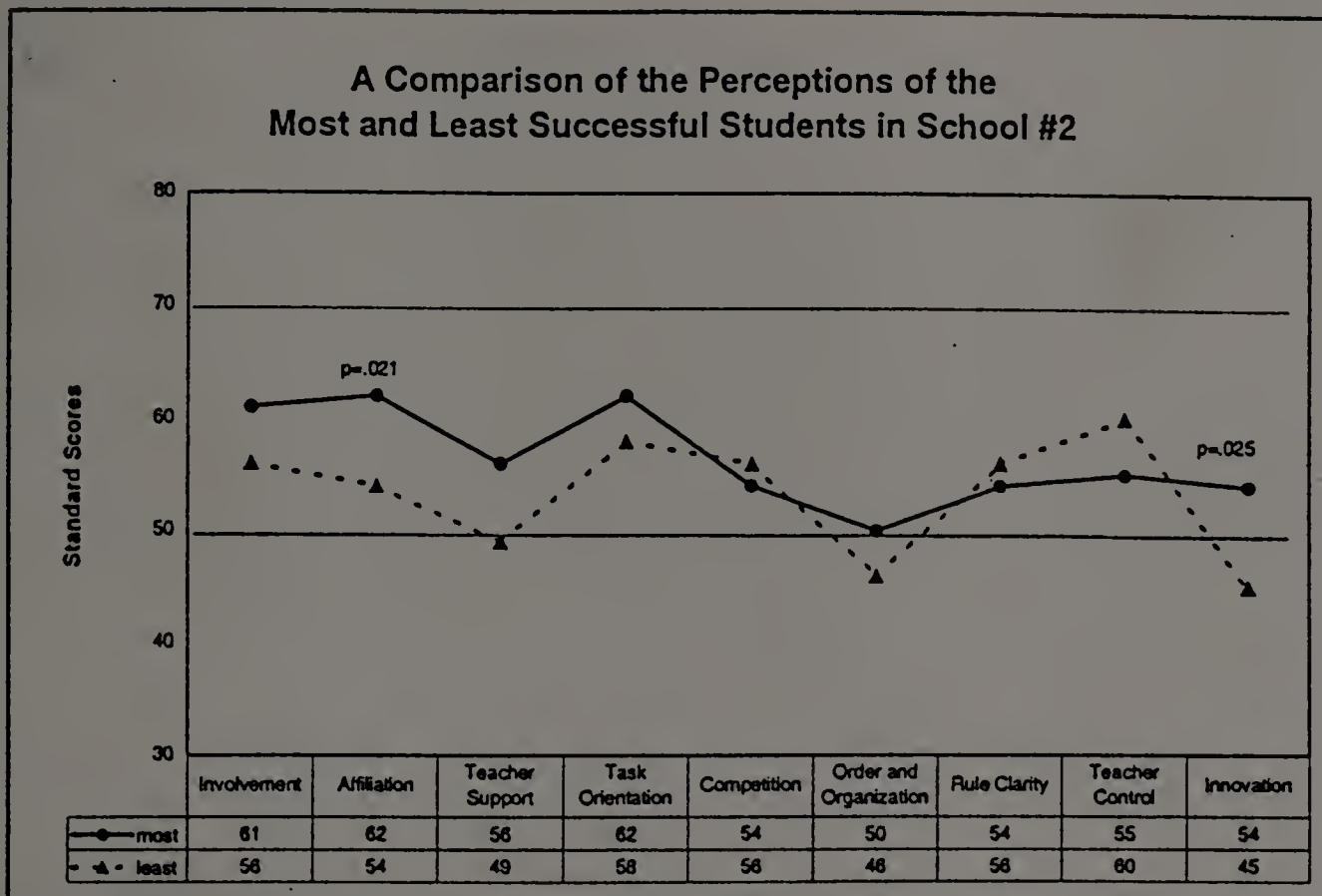| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 69 | 56 | 64 | 60 | 38 | 60 | 63 | 44 | 59 |
| least | 70 | 29 | 70 | 67 | 48 | 72 | 58 | 45 | 67 |

Figure 25. A Comparison of the Perceptions of the Most Successful Females and the Least Successful Females in School #1 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

female agreed with the four most successful females on average that the class is highly involving and task oriented, with strong teacher support, clear rules and consequences, and innovativeness, and is well organized to support instruction. They

also agreed that the class was about average on teacher control and competitiveness for attention and grades. In fact, the least successful female reported the class to be slightly higher on teacher support, task orientation, competition, order and organization, and innovation than the most successful females did. The greatest agreement was on the degree of involvement, teacher control, and rule clarity the most and least successful females experienced.

In contrast, there was a twenty-seven (27) point spread on the standard scores of these two groups on their perceptions of the affiliativeness of the class. The most successful females as a group rated the class about average on affiliativeness, while the lone least successful female rated the class very low on this measure of friendship and enjoyment in working together. In fact, the lone least successful female reported the class to be much lower on affiliation than did the two least successful males (who were the only males in this class). These same two males, however, in contrast to all of the females (even the least successful female), saw the class as low on teacher support, organization, and task orientation and, at the same time, high on teacher strictness and competitiveness for grades and recognition (Figure 25).

Comparison of the Most and Least Successful Males in School #2. The most successful males in School #2 described their classes as about average on all measures, except somewhat low on clearness of rules and consequences, fairly high on involvement and affiliation, and very high on task orientation. The least successful males described these same classes as about average in all areas except fairly low on organization and fairly highly teacher controlled and task focused. Both groups rated their classes highest on being task-focused, although the least successful males saw these classes as equally highly teacher controlled. Overall, both described their classes

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as equally competitive. The greatest differences, although not statistically

significantly, were their perceptions of the degree of affiliation and structure in their

classes. The most successful male students saw their classes as more involving,

friendly, teacher supported, organized and innovative, while the least successful males

in School #2 saw their classes as stricter, with more clearly defined rules and

consequences (Figure 26).



**A Comparison of the Perceptions of the Most and Least Successful Males in School #2**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 60 | 60 | 52 | 69 | 56 | 52 | 38 | 51 | 50 |
| least | 48 | 52 | 44 | 58 | 54 | 39 | 49 | 58 | 46 |

Figure 26. A Comparison of the Perceptions of the Most Successful Males and the Least Successful Males in School #2 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

Comparison of the Most and Least Successful Females in School #2. The

most and least successful female students participating from School #2 reported their

classes to be about average on most aspects of class climate measured. They reported

the greatest agreement on their perception of how involving and how competitive their

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classes were. Their ratings of the other aspects of class climate were very similar, with two exceptions. One of these two differences was statistically significant. The most successful females reported more student participation in planning activities and the use of more innovative techniques and creative thinking in their classes ($p = 0.037$), as well as more friendliness and enjoyment in working together (Figure 27).

**A Comparison of the Perceptions of the Most and Least Successful Females in School #2**

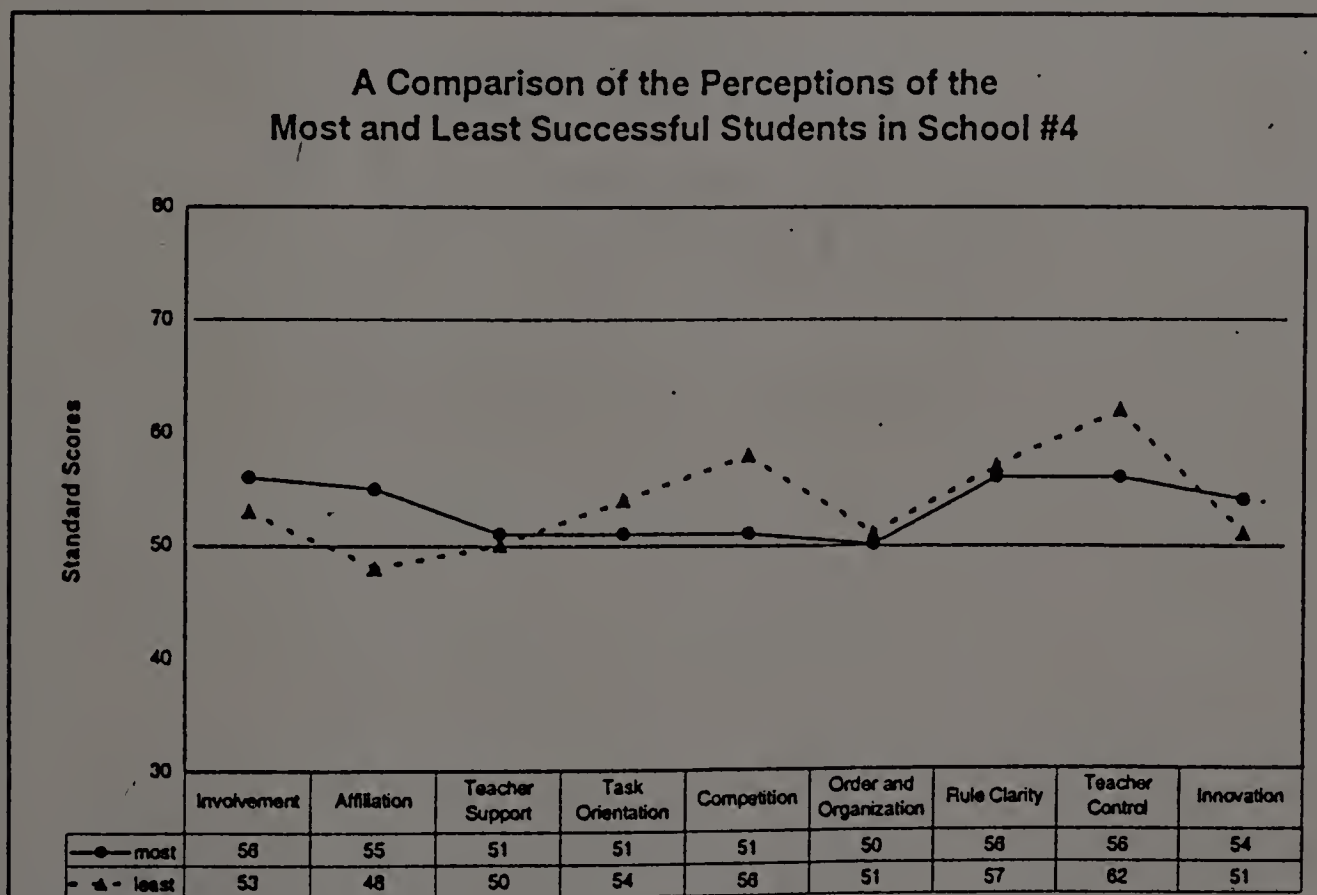| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 62 | 64 | 57 | 58 | 54 | 48 | 60 | 57 | 56 |
| least | 62 | 54 | 54 | 54 | 54 | 51 | 58 | 61 | 47 |

Figure 27. A Comparison of the Perceptions of the Most Successful Females and the Least Successful Females in School #2 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

Comparison of the Most and Least Successful Males in School #3. By visual inspection of the profiles of the most and least successful male students in School #3 , it is clear that the relative strengths and weaknesses of the indicators of class climate measured were similar (Figure 28). Their greatest agreement was on the emphasis on competition they experienced in their classes, which they both described as solidly

average. There were two statistically significant differences between the groups' perceptions. The greatest difference was regarding how goal focused their classes were, and the next greatest difference was the degree of teacher control they perceived in their classes. The most successful male students reported significantly more emphasis on staying on the subject matter and completing planned activities (p = 0.033), while the least successful students described their classes as highly teacher controlled, in fact, much more strict than the most successful students did. Additionally, the least successful male students rated their classes lowest on teacher support, which includes teachers' interest, trust, friendship, openness, and help shown toward students. The difference between the least and most successful male students' ratings of their teachers' supportiveness was not quite significant statistically.

### A Comparison of the Perceptions of the Most and Least Successful Males in School #3

p = <.033

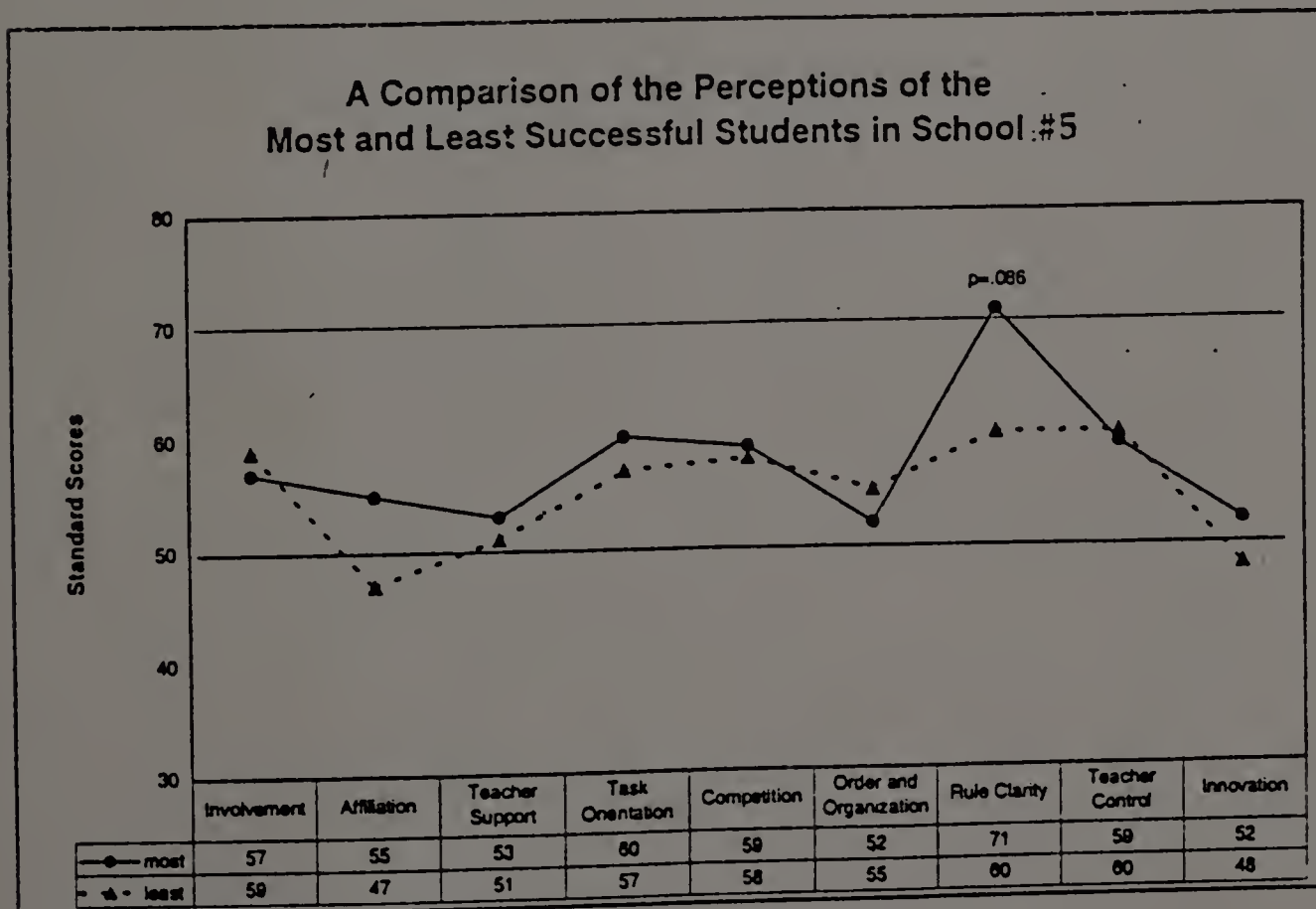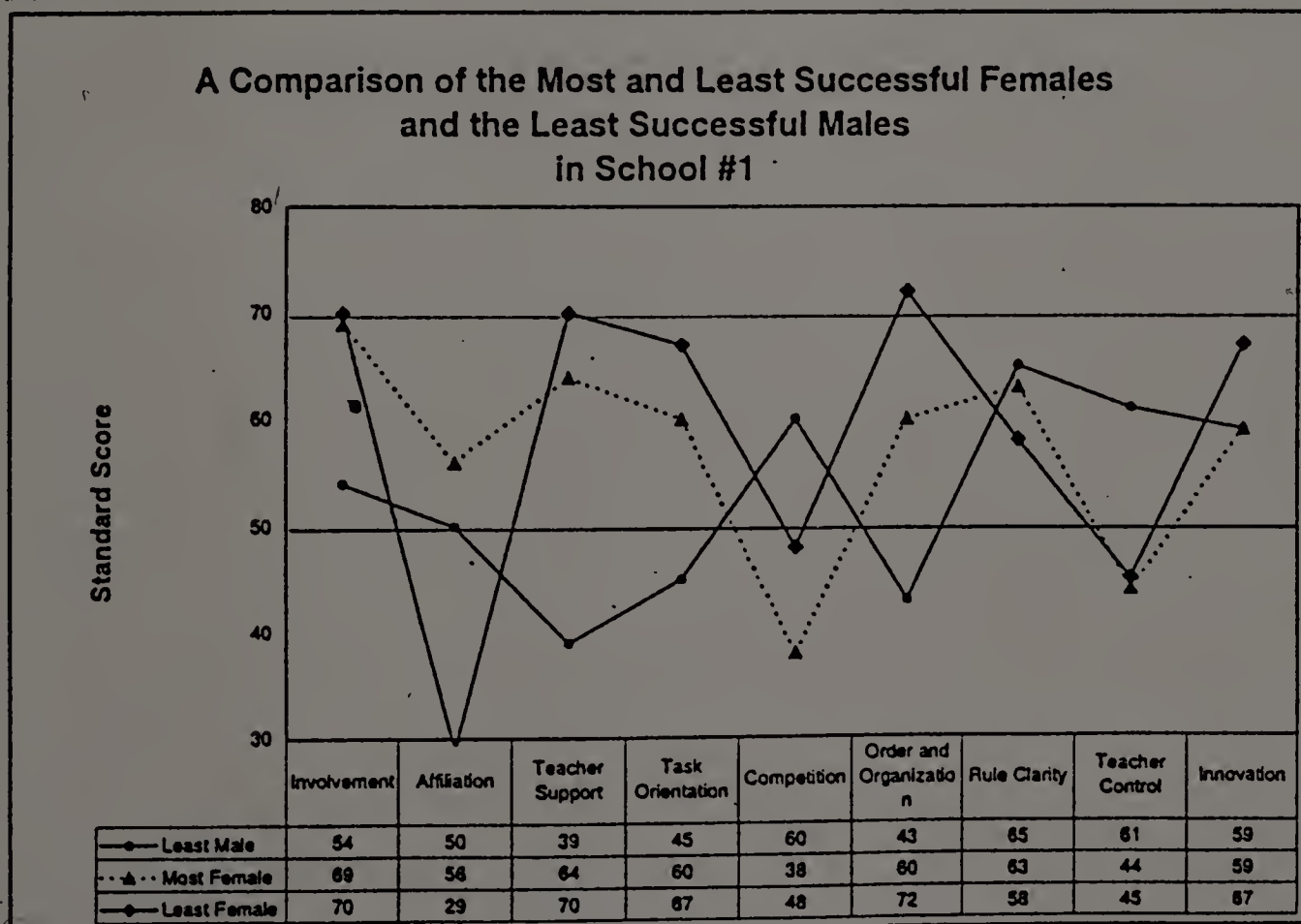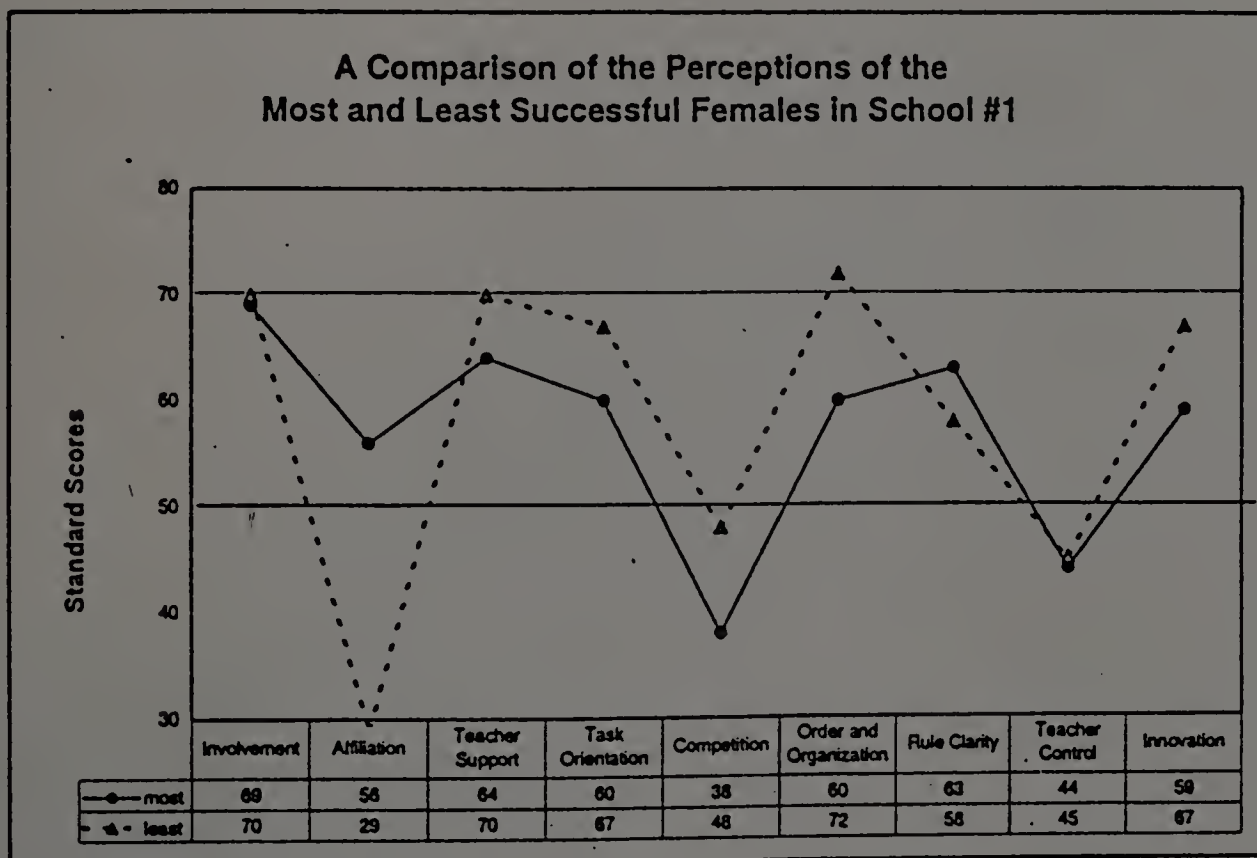| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 50 | 38 | 46 | 58 | 52 | 45 | 59 | 60 | 42 |
| least | 39 | 46 | 32 | 42 | 50 | 42 | 52 | 74 | 48 |

Figure 28. A Comparison of the Perceptions of the Most Successful Males and the Least Successful Males in School #3 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

Interestingly, the least successful males in School #3 rated their classes as more affiliative than the most successful students did. Therefore, although the least successful males in this school saw their classes as less involving and task focused, and their teachers as less supportive, they reported a greater sense of friendliness and enjoyment in working with peers. This result was in contrast to the reports of males in two of the other participating schools. In School #1 no male comparison was possible. Only in School #5 did the least successful males also report this measure of class climate (affiliation) to be higher than the most successful males did. In addition to greater affiliativeness, however, the least successful males in School #5 also perceived a higher degree of student involvement and teacher support in their classes than the most successful students did. The ratings on these three subtests made by the least successful males in School #5 were in contrast to comparisons of the most and least successful males in the other participating schools.

Comparison of the Most and Least Successful Females in School #3. A comparison of the most and least successful females in School #3 once again showed remarkable similarity regarding the relative strengths and weaknesses of the aspects of class climate measured (Figure 29). They differed by only one or two standard score points on their views of the affiliativeness, competitiveness, and innovativeness of their classes. However, the most successful females reported significantly more emphasis on work completion than did the least successful females (p = 0.052). The most successful females also saw their classes as more involving, organized, and clear, with their teachers being both more strict and more trusting and supportive.

**A Comparison of the Perceptions of the Most and Least Successful Females in School #3**

$p = <.052$

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 50 | 51 | 44 | 62 | 55 | 45 | 59 | 72 | 51 |
| least | 43 | 49 | 37 | 50 | 56 | 38 | 52 | 65 | 52 |

Figure 29. A Comparison of the Perceptions of the Most Successful Females and the Least Successful Females in School #3 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

Comparison of the Most and Least Successful Males in School #4. On average, both the most successful and the least successful males in School #4 saw their teachers as relatively strict with most other variables being about average. The two areas of greatest agreement between the two groups were how organized their classes were and how supportive their teachers were, which both groups described as average (Figure 30). However, the most successful males saw their classes as much more involving and affiliative than the least successful males, who rated their

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**A Comparison of the Perceptions of the Most and Least Successful Males in School #4**

p = <.073

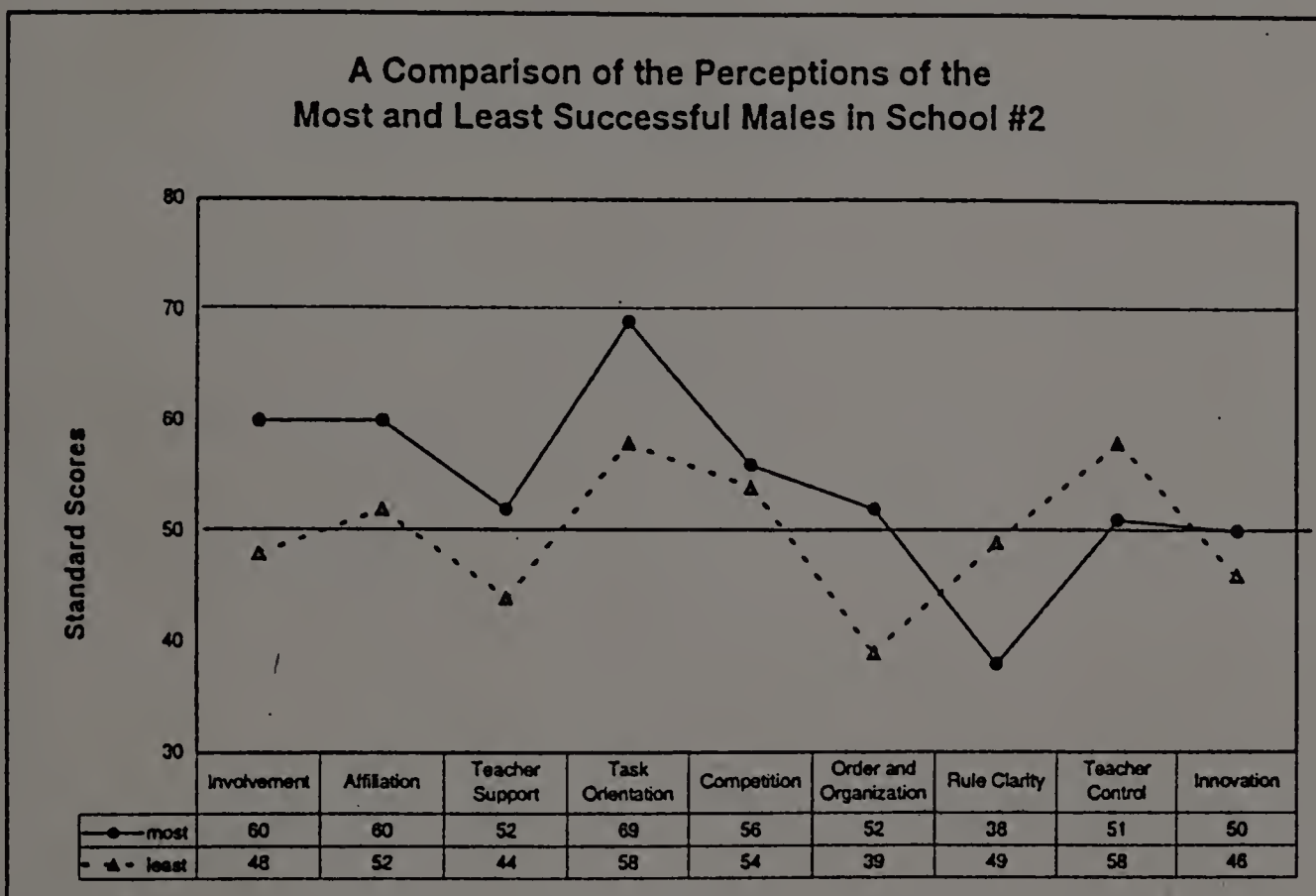| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 60 | 60 | 49 | 52 | 54 | 50 | 56 | 63 | 45 |
| least | 52 | 45 | 48 | 55 | 58 | 52 | 59 | 59 | 50 |

Figure 30. A Comparison of the Perceptions of the Most Successful Males and the Least Successful Males in School #4 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

classes as average in involvement and slightly below average in affiliation. Overall, the

least successful males perceived their classes as fairly competitive, with clear rules and

strong teacher control. They rated the other variables about average, with their lowest

rated variable, affiliation, reported as being slightly below average. It was noted that

there was a significant amount of variation of scores among the least successful males

regarding how supportive their teachers were and how task focused their classes were.

Comparison of Most and Least Successful Females in School #4. The

perceptions of the females in School #4 were remarkably similar to the males', in that

all variables of class climate measured were reported to be solidly average or above

(Figure 31). The combined perceptions of the most successful females were less

variable, with all measures of class climate reported to be in the average range.

**A Comparison of the Perceptions of the
Most and Least Successful Females in School #4**

p = <.015

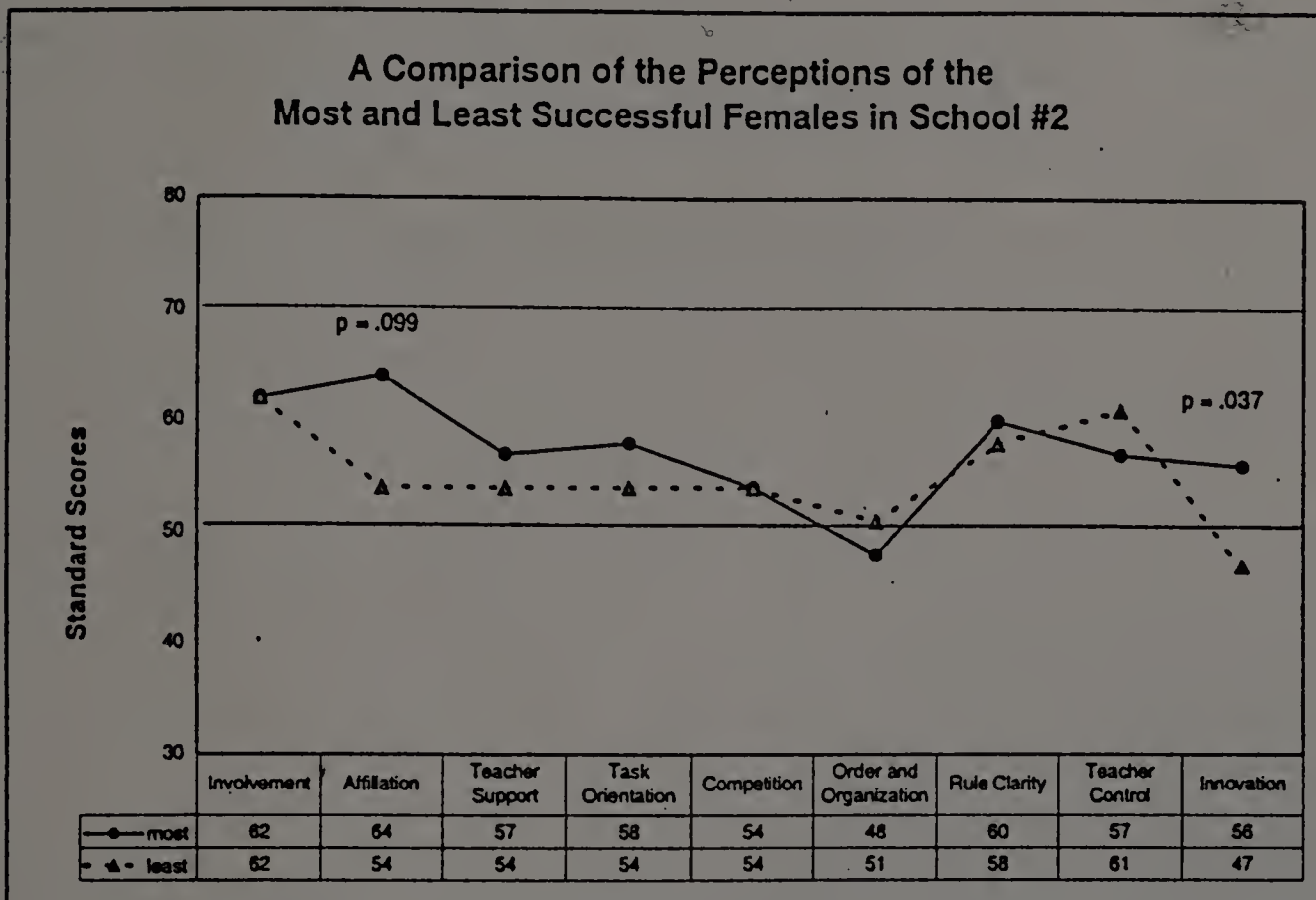| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 55 | 53 | 51 | 50 | 50 | 50 | 57 | 53 | 57 |
| least | 55 | 54 | 58 | 50 | 58 | 50 | 58 | 70 | 54 |

Figure 31. A Comparison of the Perceptions of the Most Successful Females and the Least Successful Females in School #4 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

However, the least successful females saw their teachers as significantly more strict (p

= 0.015) and their classes as more competitive for grades and recognition. Yet, they

also reported their teachers to be more interested, trusting and supportive than the

most successful females did. Interestingly, on this variable of teacher support, the

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variance around the mean of the most successful females group was double the

variance of the mean of the least successful females.

Comparison of the Most and Least Successful Males in School #5. Figure 32

shows the profiles of the most and least successful males in School #5 who were in

overall agreement that their classes were organized and task oriented, about average

on innovativeness and teacher support, and somewhat low on affiliation. The most

statistically significant difference between the two groups was regarding how clear and

consistent they perceived the rules to be. The most successful males reported



**A Comparison of the Perceptions of the Most and Least Successful Males in School #5**

p = <.078

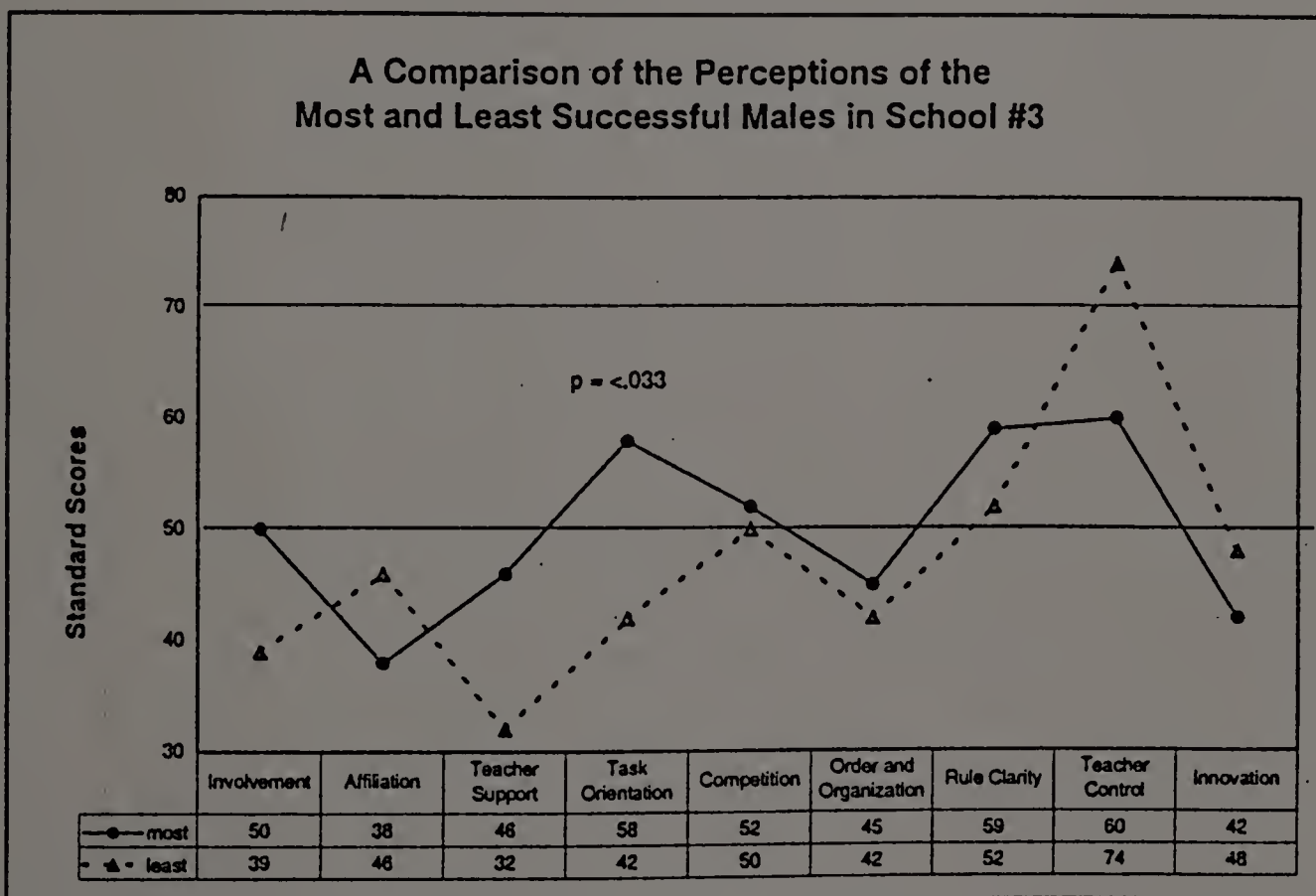| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| —●— most | 51 | 40 | 44 | 58 | 62 | 55 | 63 | 58 | 48 |
| - ▲ - least | 59 | 42 | 47 | 58 | 52 | 55 | 57 | 60 | 47 |
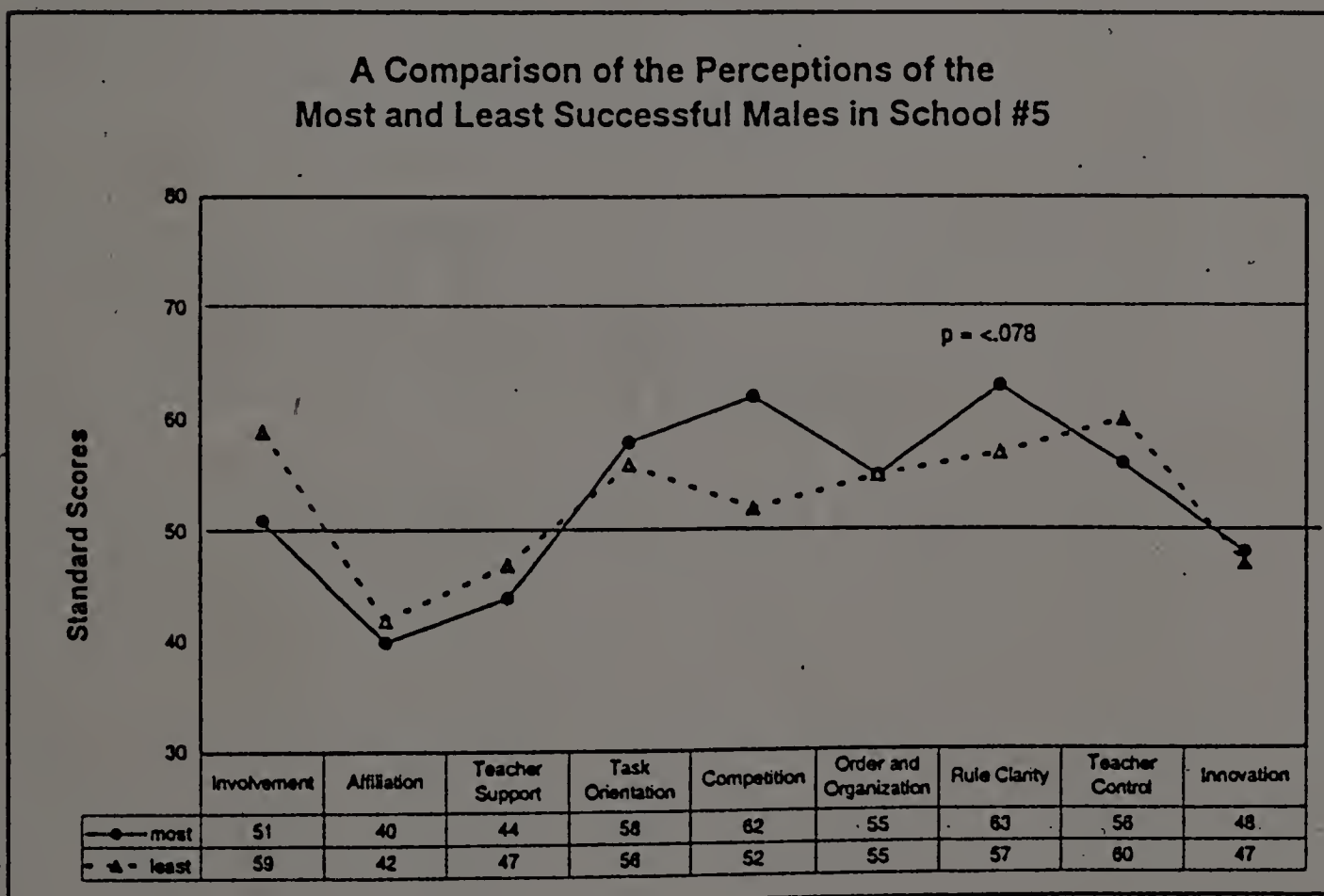
Figure 32. A Comparison of the Perceptions of the Most Successful Males and the
Least Successful Males in School #5 Regarding the Classroom Environment and Their
Place in It, Explored by Research Question #3

the rules to be more clear. Furthermore, the variance of scores around the mean within the least successful group was four times as great as the variance within the most successful group on this measure of rule clarity, suggesting that some of the least successful males understood the rules very clearly, while others may have seen them as very unclear and confusing.

On the other hand, the most successful males in this school reported their classes to be much more competitive than the least successful males, who reported the competitiveness to be about average. Yet in two of the other three schools in this study in which male comparisons could be made, the most and least successful males were in agreement regarding the emphasis on competition, and in the third school, the least successful males reported their classes to be more competitive for grades and recognition. Another anomaly was that in contrast to the other schools in this study, the least successful males in School #5 reported their classes to be much more involving than the most successful males did. Even among the females in this study, the most successful students reported their classes to be more involving, or the same as the least successful students did. This anomaly may reflect the different collective view of the most successful males in school #5. In the other schools, the most successful males rated student involvement as equal to the ratings of the most successful females (and in one school, more involving). Furthermore, the least successful males in all of the schools except #5, rated their classes as less involving than did the most successful males and females, and the least successful females. However, in School #5 the least successful males rated their involvement in their classes to be strong and equal to the ratings of the most and least successful females, while the most successful males reported their involvement as only average.

. As

Figure 33 indicates, both the most and least successful females in School #5 rated their

classes as average or above in all class climate variables measured. The views of these

two groups of female students were remarkably similar, except that the least successful

females reported their classes to be more competitive and more structured, with less

student involvement in planning activities, less use of new techniques and creative

thinking, as well as less friendliness among students and enjoyment in working

together than did the most successful females in this sample.



A Comparison of the Perceptions of the
Most and Least Successful Females in School #5

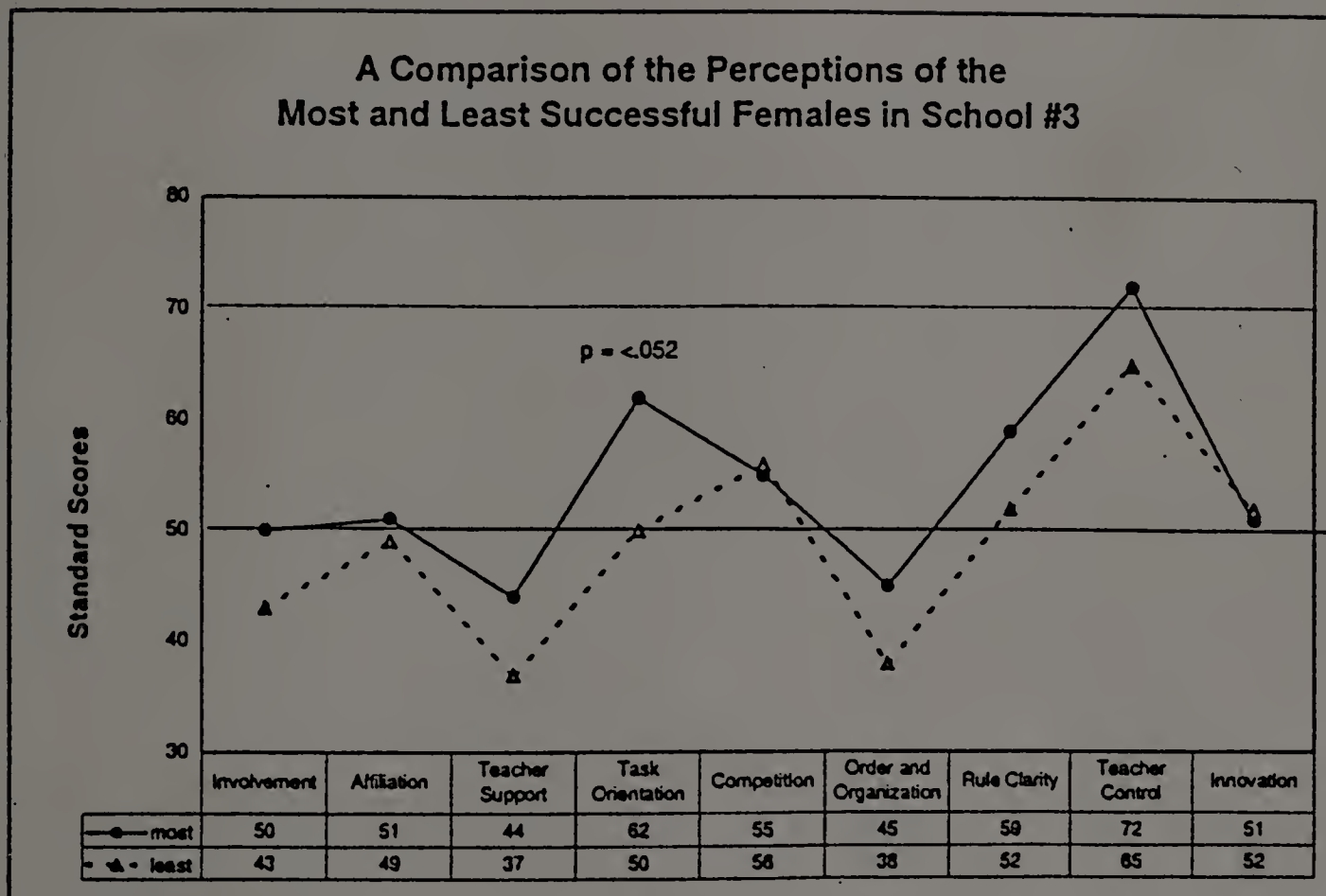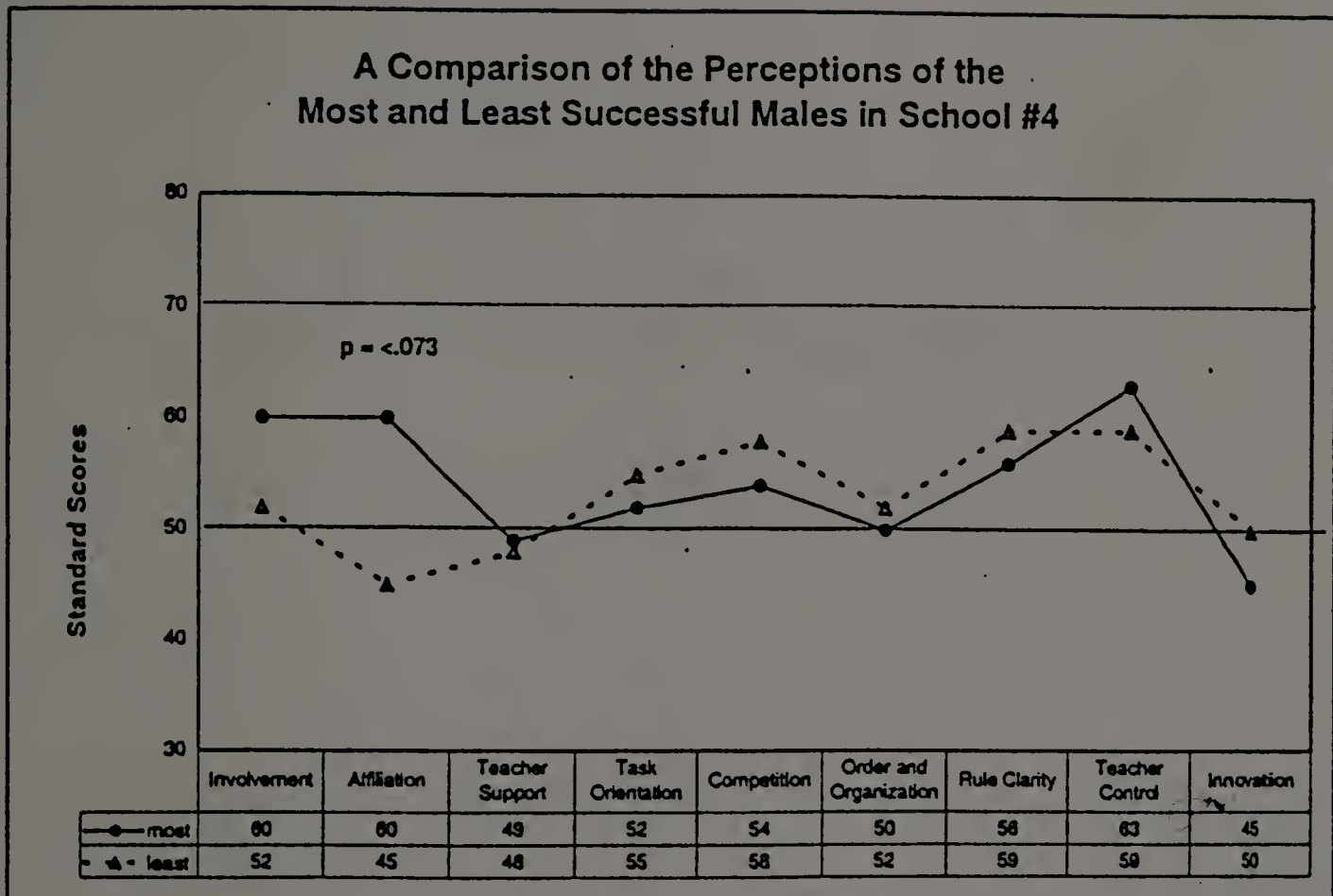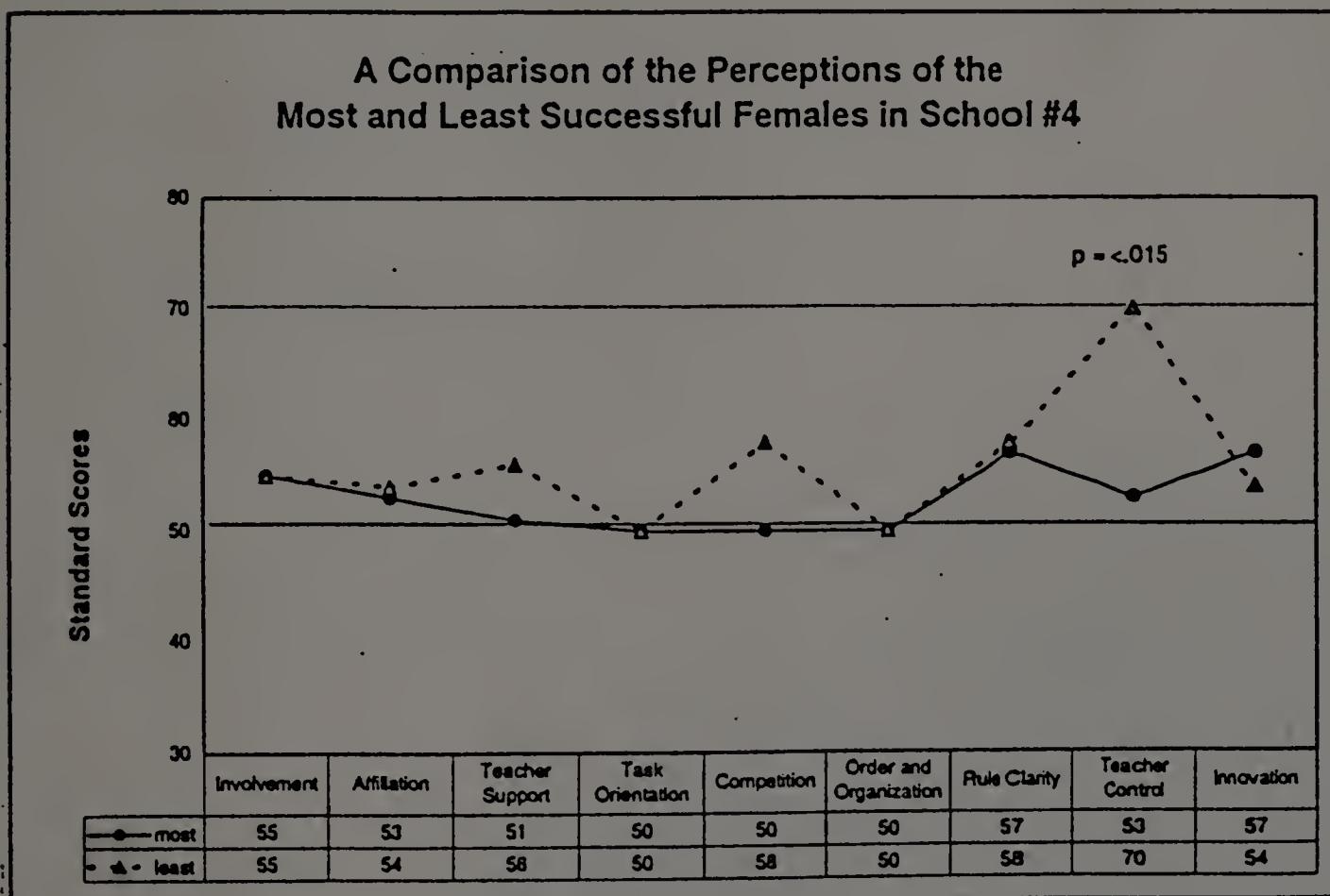| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 60 | 61 | 56 | 61 | 58 | 51 | 67 | 59 | 54 |
| least | 59 | 54 | 57 | 59 | 65 | 56 | 66 | 59 | 49 |
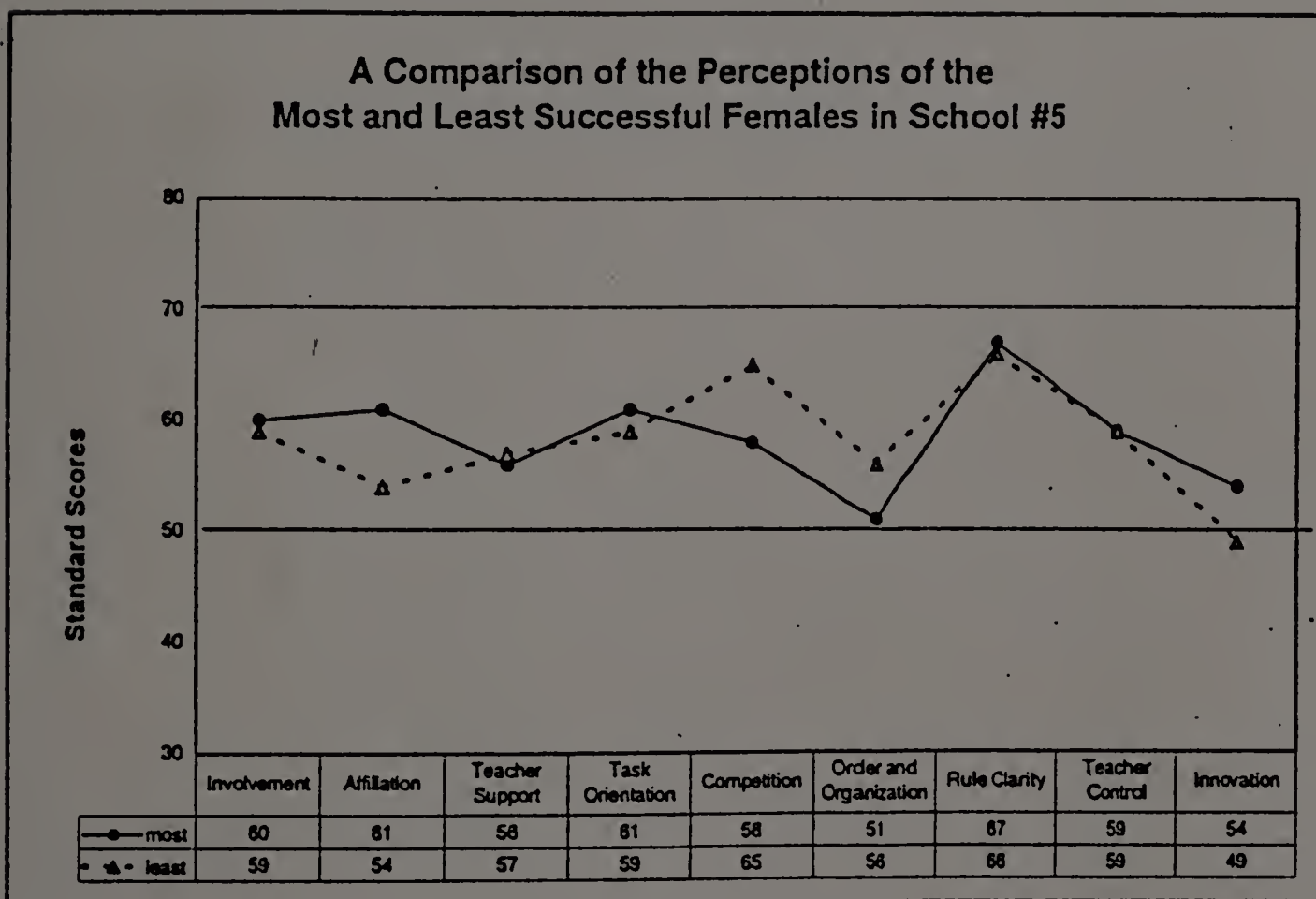
Figure 33. A Comparison of the Perceptions of the Most Successful Females and the
Least Successful Females in School #5 Regarding the Classroom Environment and
Their Place in It, Explored by Research Question #3

It was also noteworthy that both the most and least successful groups of females in School #5, on average, rated their classes as both affiliative and teacher supported, in contrast to the most and least successful groups of males in this school who, on average, reported these same classes to be low on friendliness and teacher support.

Comparison of The Most and Least Successful Students within Classes

Comparison of the Most and Least Successful Students in S1, Class #1. School #1 had only one class, and because the most and least successful students in this class were compared previously in the section in which comparisons at the school level were made (page 91) this comparison will not be repeated here.

Comparison of the Most and Least Successful Students in S2, Class #1. In this suburban school, the most successful students in this social studies class with a male teacher rated the Personal Relationship dimension higher than did the least successful students, on average, a difference that was not statistically significant at the .05 level (p = 0.058). Two subscales of this dimension reflected this difference most (Figure 34). Specifically, the most successful students saw their teacher as more friendly, trusting and supportive, and reported greater interest and involvement in class activities than did the least successful students. In general, both groups agreed that the teacher was about average in strictness and that there was a fairly strong emphasis on competition for grades and recognition. However, the most successful described the class as extremely involving, highly competitive, task-focused, and affiliative, but with less clear rules than the least successful. One of the most successful females described the rule system this way, "Some students really work hard and others don't. Our teacher doesn't have set rules, but you still have to behave." Whereas the least

**A Comparison of the Most and Least Successful Students in School #2, Class #1**

p= 0.095

p= 0.082

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 69 | 60 | 56 | 62 | 66 | 55 | 46 | 52 | 54 |
| least | 55 | 56 | 41 | 52 | 59 | 51 | 52 | 52 | 48 |
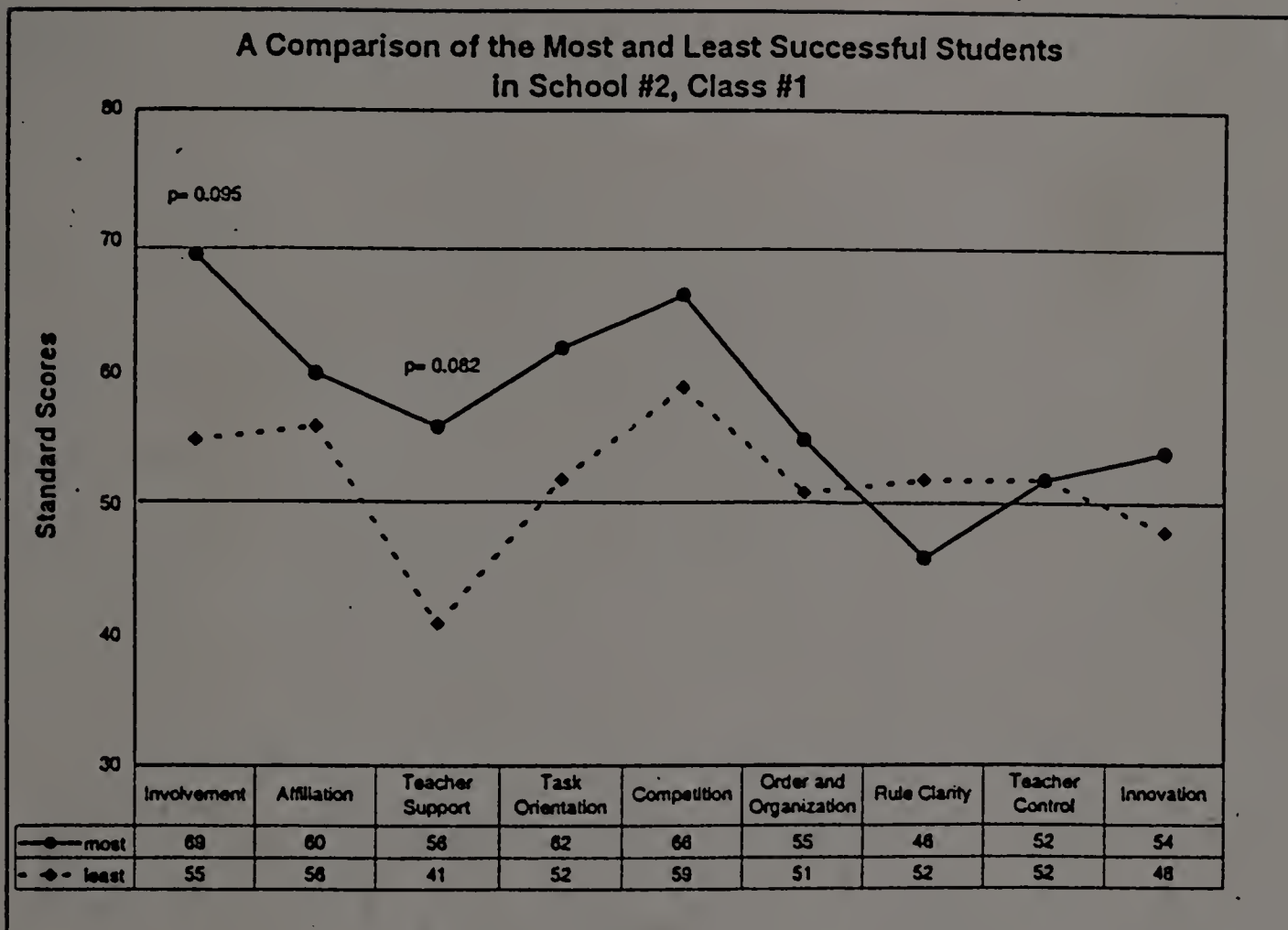
Figure 34. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #2 , Class #1 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

successful students reported that the class was quite competitive, fairly low on teacher support, and about average on the other variables. Interestingly, although both groups reported a fairly strong emphasis on competition, they also both reported a similarly positive degree of friendship and enjoyment in working together, in spite of the report of low teacher support by the least successful students.

Comparison of the Most and Least Successful Students in S2 Class #2. As previously mentioned, this class included several METCO students who were part of the least successful cohort and had a female teacher, who identified the class as her

"most challenging". Survey responses indicated that both the least successful and the most successful students in this class reported the teacher to be equally interested and helpful to them, and agreed that the class was highly task focused, with very clear, consistent rules and consequences (Figure 35). They also agreed that the class was involving with less emphasis on structure and organization. On the other hand, the most successful students reported their class to be more friendly and innovative, differences almost significant at the .05 level ($p = 0.053$ and $0.058$, respectively), whereas the least successful students reported the class to be more competitive and strict. Although these four subscale differences were similar to previous group comparisons, the degree of difference was second only to the class "fragment" left after the Chapter 1 students were removed from Class #3 in School #3.



**A Comparison of the Most and Least Successful Students in School #2, Class #2**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 53 | 64 | 56 | 62 | 43 | 44 | 62 | 56 | 54 |
| least | 56 | 52 | 56 | 65 | 53 | 42 | 59 | 66 | 43 |

Figure 35. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #2, Class #2 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

A comparison of the two classes in School #2 reveals that the students in Class #2, just described, saw their class as less competitive for grades and attention (especially the most successful students), less organized and structured, yet stricter and with clearer rules. The least successful students in this class reported it to be slightly more task oriented than did the most successful students in both classes, and much more task oriented than did the least successful students in Class #1, which had a male teacher.

Comparison of the Most and Least Successful Students in S3 Class #1. This was a social studies class in an inner-city school. Mentioned earlier, and described apologetically by its male teacher as "my worst class", it consisted of sixteen (16) students crowded into a very small, odd-shaped, windowless space. A wall intruded into the center of the room from the back wall, creating poor visibility for many students who could not see each other and could see the teacher only if he was at his desk. The desks were packed in so tightly that it was extremely difficult to move about. For the most part, the most and least successful students in this class agreed in their appraisal of their learning environment, that it was about average or below average on all subscales except teacher control - the teacher's strictness, the severity of punishment and how much students get into trouble - which they saw as high (Figure 36). Additionally, they both agreed on five of the nine variables of classroom climate measured. Specifically, both groups saw the class as average on the clarity and consistency of rules and consequences, yet as having a very strict teacher and a fair amount of students getting into trouble. They also agreed the class was fairly low on teacher support, organization and structure, as well as the students' involvement and interest in class activities.

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 45 | 40 | 36 | 57 | 42 | 41 | 52 | 64 | 34 |
| least | 42 | 50 | 38 | 47 | 54 | 40 | 54 | 67 | 54 |
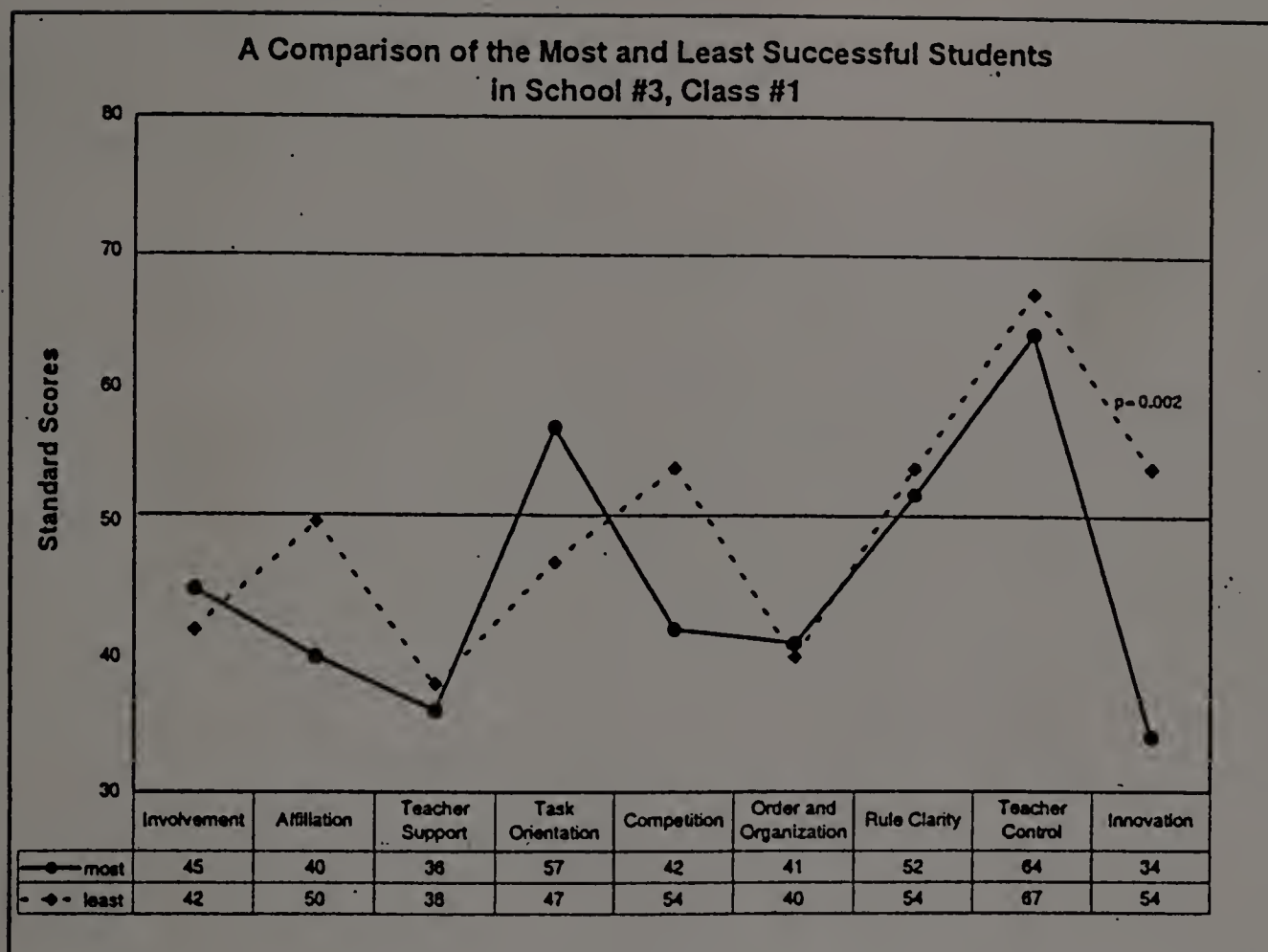
Figure 36. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #3 , Class #1 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

On the four subscales on which they disagreed, not unexpectedly, the least successful students saw the class as more competitive for grades and recognition, while the most successful students perceived greater emphasis on completing planned activities and staying on the subject matter. However, it was the least successful students who reported greater friendship and enjoyment in working with their peers, and also rated the class as significantly more innovative ($p = 0.002$). In fact, the most successful students rated this class to be very low on innovation and creativeness, while the least successful reported it to be about average.

It would not be surprising if the room's restrictive geography placed limitations on its climate as well. However, perhaps it is a tribute to the effort invested by this teacher, apparent in his comment, that when comparing the perceptions of the students in this class with those of the students in class #2, an English class in that school, the tiny class #1 was seen by both its most and least successful students as equally involving, task oriented, and organized, and less strict - although still strict. Also, the least successful students in this jigsaw-puzzle-piece classroom reported their class as equally affiliative, competitive and clear, and even more supportive and innovative than did the least successful students in class #2. Even the most successful students in class #1 perceived their class as more affiliative and equally supportive, although less competitive, innovative and clear than did the most successful students in class #2.

Comparison of the Most and Least Successful Students in S3, Class #2. As mentioned earlier (page 77) ten (10) of the 23 students present in this classroom were Russian immigrants, nine of whom were ranked among the top academic 50% of the class. Seven of these nine students were receiving support from three Russian speaking ESL tutors in the classroom. The two Russian students who were not receiving ESL services, and a Spanish-speaking student who was receiving ESL services were among the five students selected as the most successful students in this class. None of the five least successful students were receiving any special education support services. In this class the most and least successful students indicated remarkable similarity in their view of the environment which they reported to be extremely high on teacher control which included the teacher's strictness in enforcing the rules, the severity of the punishments and how much students got into trouble

**A Comparison of the Most and Least Successful Students in School #3, Class #2**

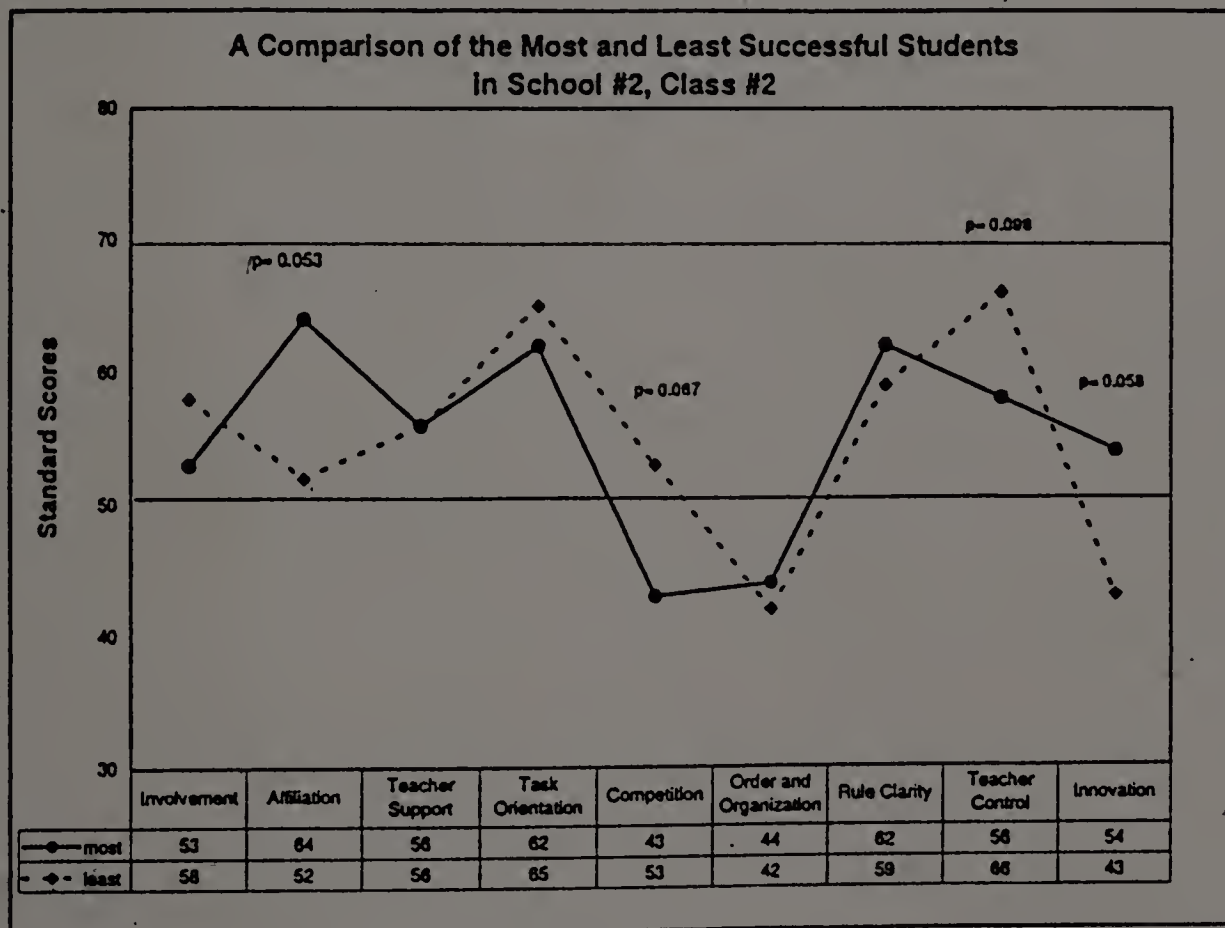| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 46 | 31 | 38 | 58 | 61 | 41 | 59 | 75 | 49 |
| least | 39 | 48 | 27 | 47 | 54 | 38 | 52 | 76 | 46 |

Figure 37. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #3, Class #2 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

(Figure 37). They also indicated the class was competitive and task focused, with clear rules and consequences. Additionally, they reported the class was low on teacher support, organization, involvement and affiliation. The greatest differences in their perceptions were that the most successful students reported more teacher support (although still very low), and, not unexpectedly, a greater emphasis on completing assigned activities. In all, the most successful students rated eight of the nine factors higher than the least succesful students who, nevertheless, reported a much greater enjoyment in working with their peers.

Comparison of the Most and Least Successful Students in S3, Class #3. At the time that the survey was given to this math class, many of the students had been removed to receive remedial services in a location outside of the classroom. Therefore, this sample is unique in that it was very small (N=7), and that it consisted of seven of the nine remaining students - those not identified as needing special assistance to learn math. Of these seven participating students, five were identified as the most successful and two were reported to be the least successful of this remnant of the original class. The other two students were considered "average" and, therefore, not included in the analysis. Removing students from the larger group is a regular occurance in the life of this class, so it was interesting to look at the perceived class climate of those who remained. Whereas, one might think that the remaining small group would be fairly homogenous, this does not appear to be the case. In fact, the disparity between the perceptions of the most and least successful students in this unique class fragment was greater than the differences in perceptions between these two groups in any other class in this study.

As Figure 38 shows, the most successful students reported the class to be strong on all variables measured except order and organization which they saw as about average. On the other hand, the least successful students agreed that the teacher was very strict, but reported the class to be below average on involvement, affiliation, teacher support, task orientation, order and organization, clarity of rules and consequences, and about average on competition and innovation. In fact, the differences between the mean scores of these two groups of students on six of the nine subscales were statistically significant. The most successful students reported the

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## A Comparison of the Most and Least Successful Students In School #3, Class #3

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 62 | 65 | 62 | 66 | 61 | 54 | 67 | 62 | 61 |
| least | 44 | 42 | 42 | 45 | 52 | 43 | 43 | 58 | 47 |

Figure 38. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #3 , Class #3 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

teacher to be significantly more supportive, trusting, interested and friendly (p = .001), reported significantly greater emphasis on completing assignments (p = 0.005), significantly greater friendship and enjoyment in working with peers (p = 0.010), significantly greater student participation in planning activities, and greater use of new and creative approaches (p = 0.020 ), significantly more emphasis on rules and more consistent consequences (p = 0.030), and reported the class activities to be significantly more interesting and involving (p = 0.048).

<u>Comparison of the Most and Least Successful Students in S4, Class #1.</u> In this

newly built rural-suburban middle school, both the most and least successful students

in this science class with a female teacher, perceived their class to be strong on at least

six of the subscales and average on the other three (Figure 39). Both groups agreed

**A Comparison of the Perceptions of the
Most and Least Successful Students
in School #4, Class #1**

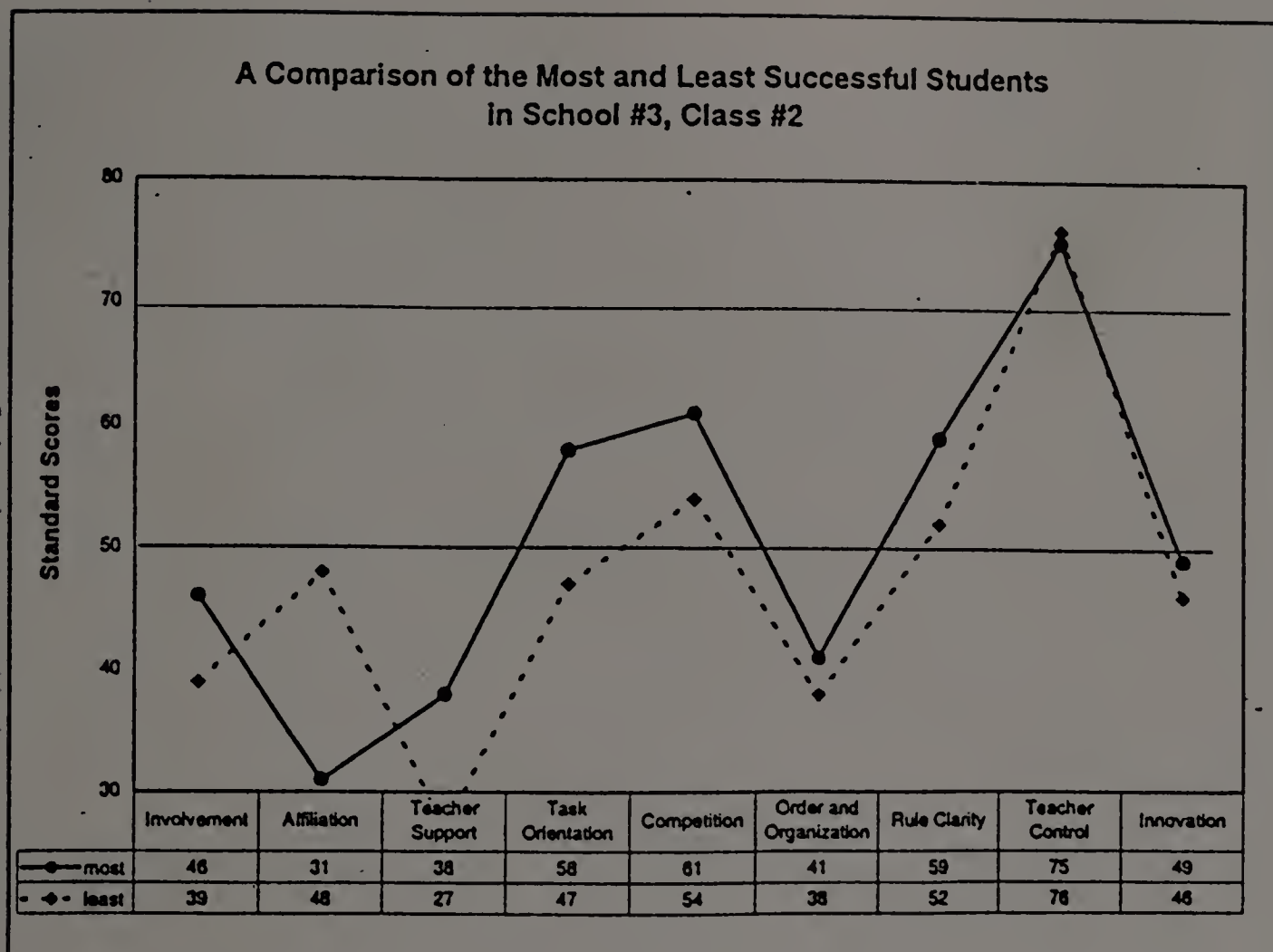| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 65 | 59 | 62 | 52 | 53 | 57 | 65 | 53 | 63 |
| least | 61 | 46 | 52 | 65 | 59 | 59 | 66 | 65 | 50 |

Figure 39. A Comparison of the Perceptions of the Most Successful Students and
the Least Successful Students in School #4, Class #1 Regarding the Classroom
Environment and Their Place in It, Explored by Research Question #3

that the class was very involving, and well organized, with clear rules and consistent

consequences. Not surprisingly, the most successful students reported greater

friendship and enjoyment in working with peers, more teacher support, friendship and

trust, and slightly more student interest and participation in class activities than the

least successful students did. Additionally, the differences between the means of the two groups on two of the subtests were statistically significant. First, the most successful students reported the class to be significantly more innovative (p = 0.005), and, surprisingly, the least successful students reported a significantly greater emphasis on completing activities and staying on the subject matter (p = 0.024).

Comparison of the Most and Least Successful Students in S4, Class #2. This was a social studies class with a female teacher, in which the most and least successful students agreed that the teacher was about average in her support and interest in the students and in the emphasis she placed on staying on the subject matter and completing the planned activities (Figure 40). They also agreed that the teacher was strict and emphasized clearly established rules and provided consistent consequences. Overall, the least successful students reported the class to be about



**A Comparison of the Most and Least Successful Students in School #4, Class #2**

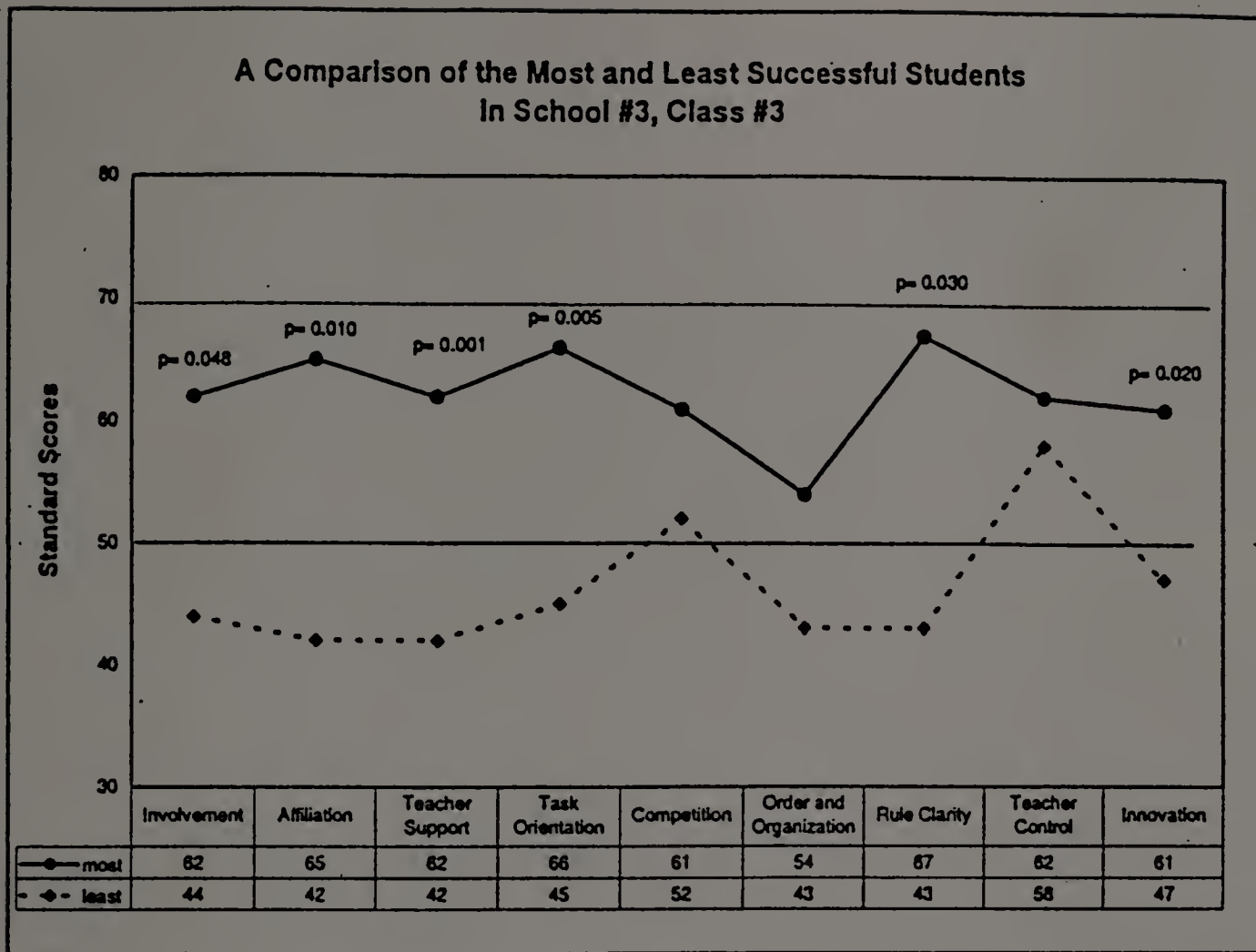| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 68 | 67 | 57 | 52 | 58 | 61 | 62 | 62 | 69 |
| least | 54 | 57 | 58 | 52 | 45 | 46 | 59 | 60 | 56 |

Figure 40. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #4, Class #2 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

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average on all variables, but slightly stronger on rules and teacher strictness. In contrast, the most successful students reported the classroom to be fairly strong on all variables except teacher support and task orientation, which they perceived as about average. In fact, the difference in the mean scores of these two groups of students was greatest on four of the nine variables measured. The most successful students reported the class to be almost significantly more innovative (p = 0.056), more organized, more competitive, and more involving.

Comparison of the Most and Least Successful Students in S4, Class #3. The most and least successful students were in agreement, on average, that the English class of this male teacher was task focused, with clear rules and strict enforcement of those rules, about average on structure and organization, as well as student involvement and somewhat below average on innovation, teacher support, and feelings of friendship between students and enjoyment in working together and helping each other (Figure 41). One subtest showed a significant difference (p=.016) between the mean reports of these two groups: while the most successful students reported an average emphasis on competition, the least successful students reported that the class was highly competitive for grades and recognition, and that it was very difficult to get good grades. The difference in this class on this subtest was much greater than in the other three classes in this school.

Comparison of the Most and Least Successful Students in S4, Class #4. As Figure 42 reveals, the most and least successful students reported general agreement that the class was average or slightly below on all variables, with teacher strictness rated the highest of the nine. In contrast to most of the classes in this study, the least

**A Comparison of the Most and Least Successful Students in School #4, Class #3**

p= 0.016

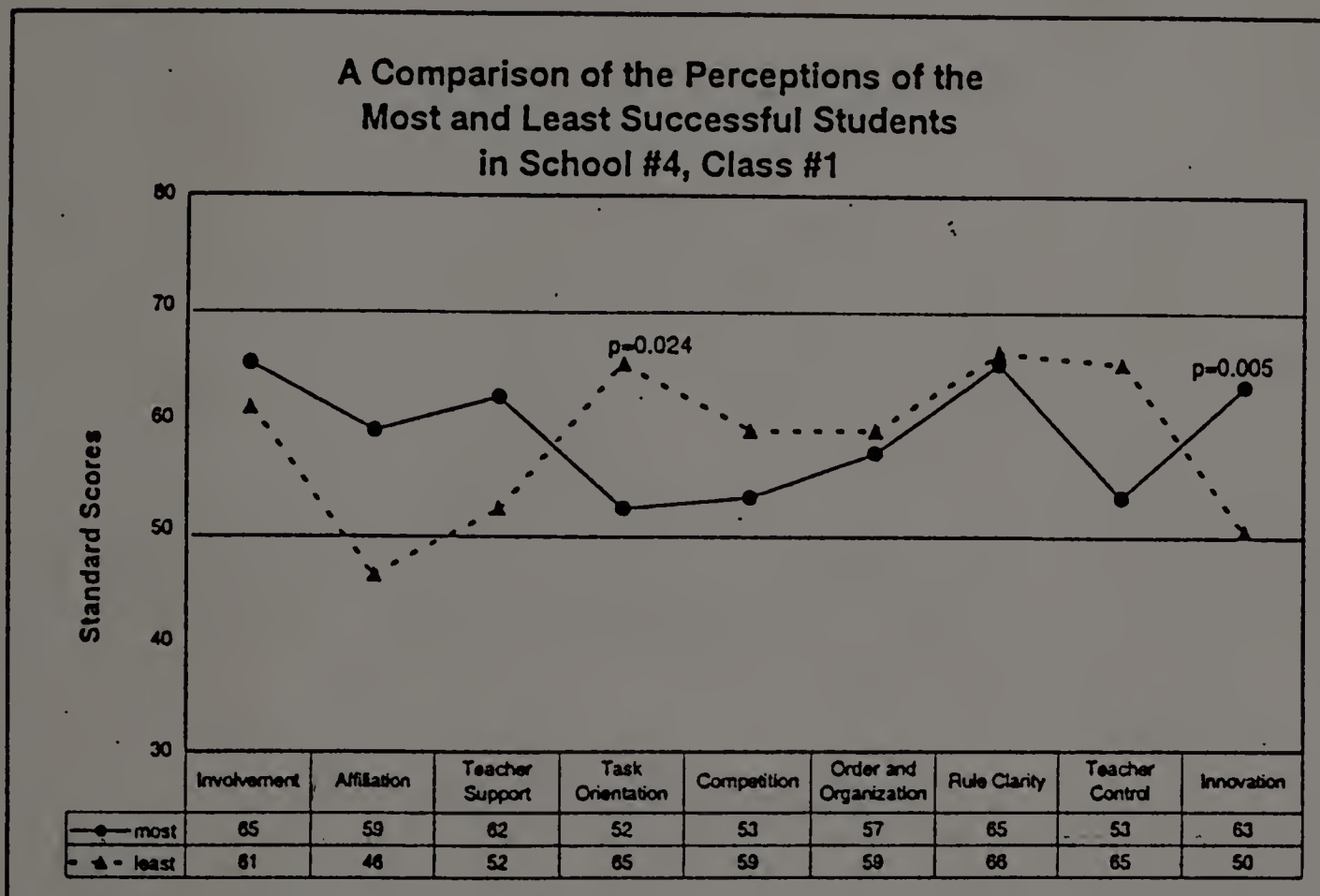| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 52 | 48 | 38 | 58 | 48 | 49 | 55 | 55 | 37 |
| least | 50 | 41 | 44 | 55 | 75 | 54 | 55 | 63 | 45 |

Figure 41. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #4, Class #3 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

involvement, and somewhat below average on innovation, teacher support, and

successful students rated all of the subscales slightly higher than did the most

successful students, except affiliation which had only a two point (standard score)

difference. Although both groups reported class structure and organization to be fairly

low, the most successful students perceived the class to be significantly less organized

than did the least successful students (p = 0.016 ).

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**A Comparison of the Most and Least Successful Students in School #4, Class #4**

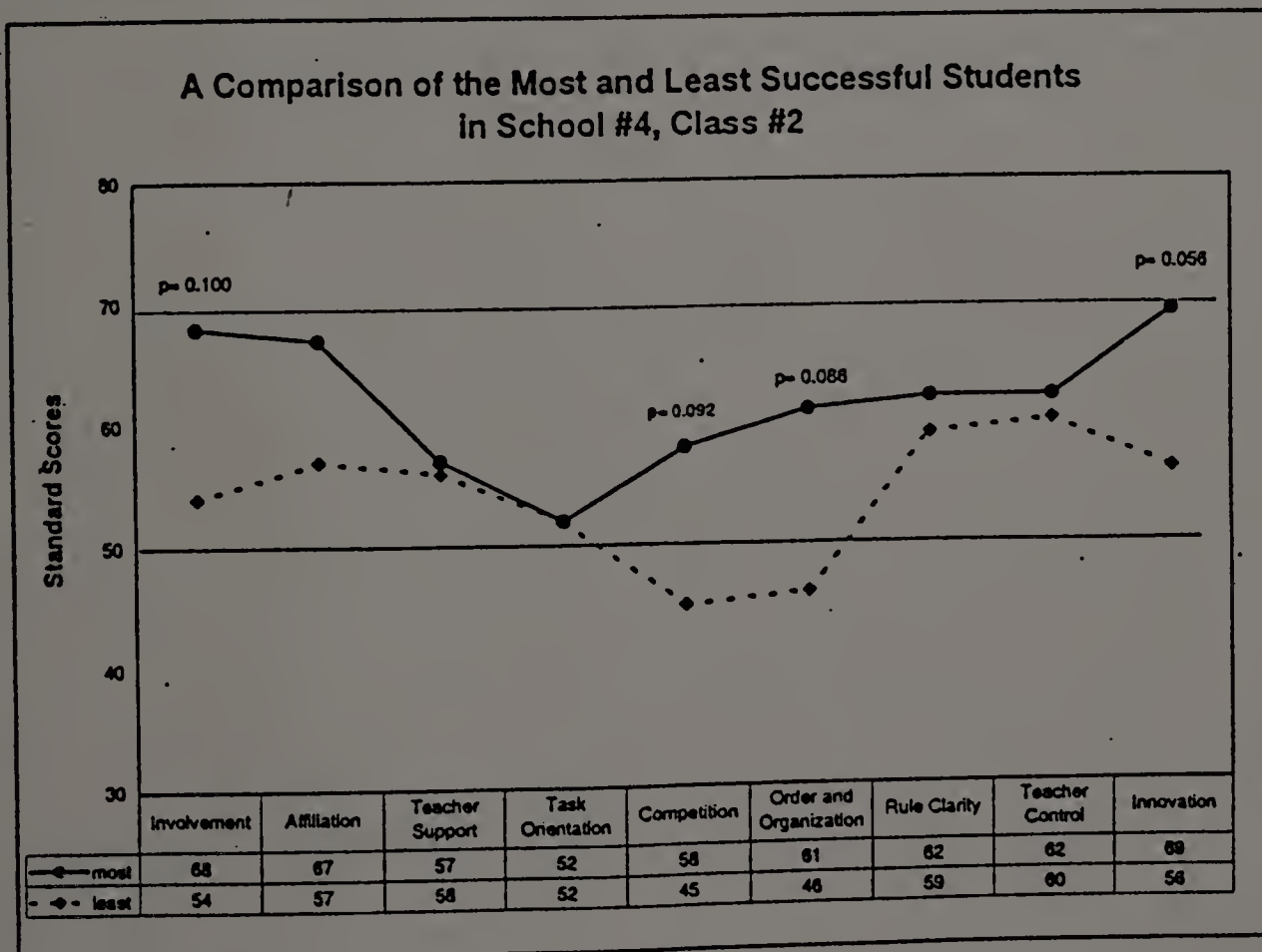| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 40 | 46 | 44 | 42 | 45 | 34 | 43 | 53 | 44 |
| least | 47 | 44 | 46 | 44 | .53 | 45 | 52 | 58 | 52 |

Figure 42. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #4, Class #4 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

Comparison of the Most and Least Successful Students in S5, Class #1. Figure 43 profiles the mean responses of the most and least successful students in the English class of a female teacher in School #5. The most successful students reported, on average, that the class was strong on competitiveness, teacher strictness, innovation, and the emphasis placed on following the rules. They reported the class to be lowest on teacher support and organization which was only slightly below average. The least successful students reported the class to be about average on eight of the nine measures.

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**A Comparison of the Most and Least Successful Students in School #5, Class #1**

| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 48 | 56 | 43 | 56 | 67 | 46 | 60 | 63 | 60 |
| least | 55 | 51 | 46 | 49 | 56 | 51 | 53 | 62 | 44 |

Figure 43. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #5, Class #1 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

On the ninth measure they agreed with the most successful students that the teacher was strict. However, when looking at how innovative the two groups reported the class to be, the most successful students reported much more involvement in planning activities, use of new techniques, and encouragement of creative thinking in their class. They also saw the class as more competitive, this difference was not statistically significant.

Comparison of the Most and Least Successful Students in S5, Class #2. In this sixth grade math class, the teacher was female and there was a remarkable consistency of perceptions between the most and least successful students in this class (Figure 44). In fact, of the 14 classes in this study, this class had the greatest degree of agreement across all variables. Overall, the most and least successful students in this class agreed both on the relative strengths of variables compared with each other, and that the class



**A Comparison of the Most and Least Successful Students in School #5, Class #2**

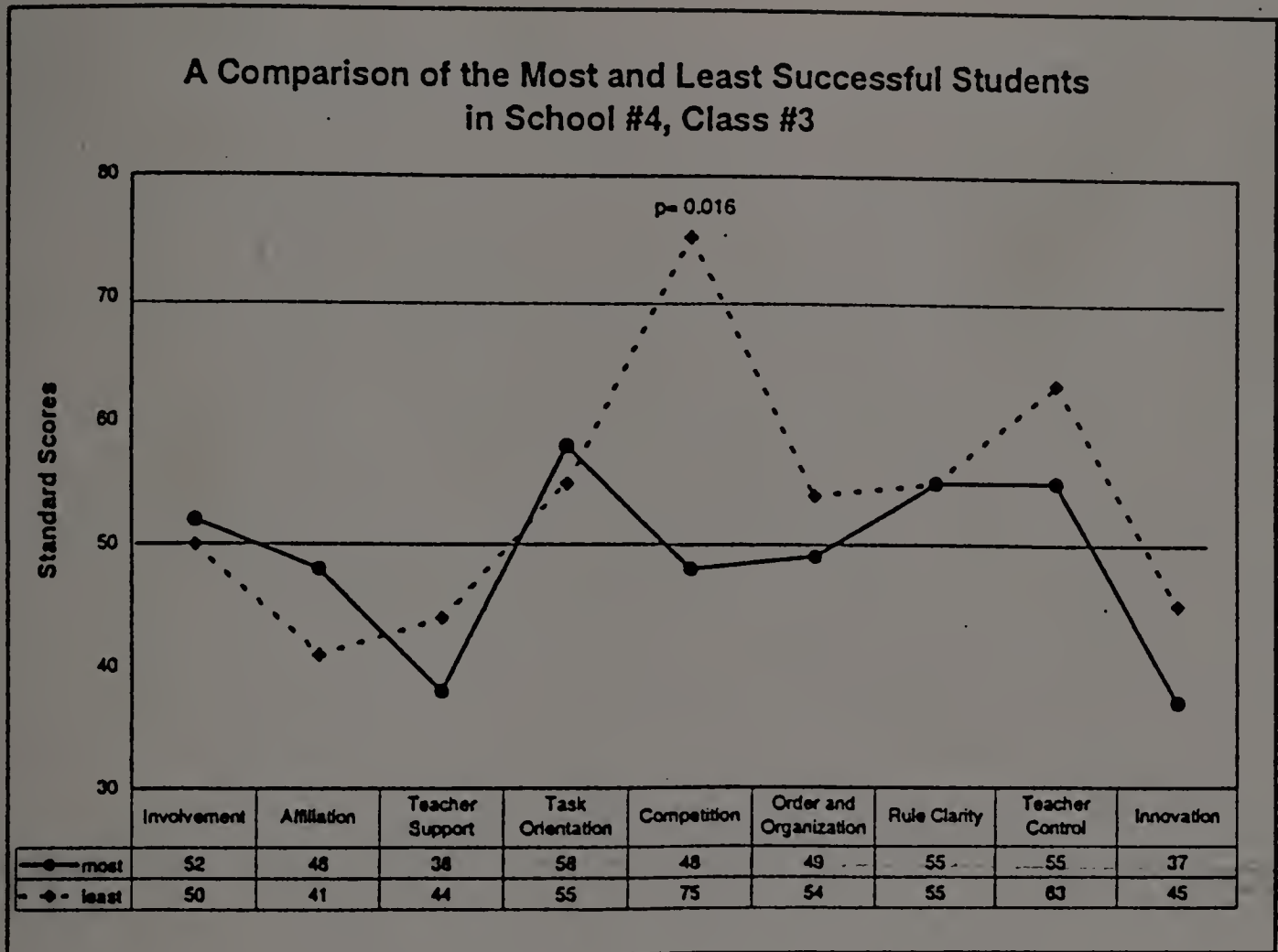| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 66 | 56 | 53 | 63 | 61 | 55 | 70 | 59 | 54 |
| least | 58 | 51 | 50 | 59 | 64 | 55 | 65 | 63 | 54 |

Figure 44. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #5, Class #2 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

was involving, task focused, competitive, had clear rules and consequences, and that the teacher was strict in enforcing the rules. The mean reports of the two groups were identical on the variables of providing an organized class structure and innovativeness.

Still, the most successful students rated the other variables slightly higher than did the least successful students, with two exceptions: the least successful students exhibited a now familiar pattern, they perceived the class to be a little more competitive and the teacher as stricter.

Comparison of the Most and Least Successful Students in S5, Class #3. This class was a reading class with a female teacher. The most and least successful students agreed that this class was task oriented, with an interested, supportive teacher, clear rules and consistent consequences, and an organized structure (Figure 45). They also appraised the class as about average on its competitiveness and innovativeness. The

## A Comparison of the Most and Least Successful Students in School #5, Class #3

p= 0.088

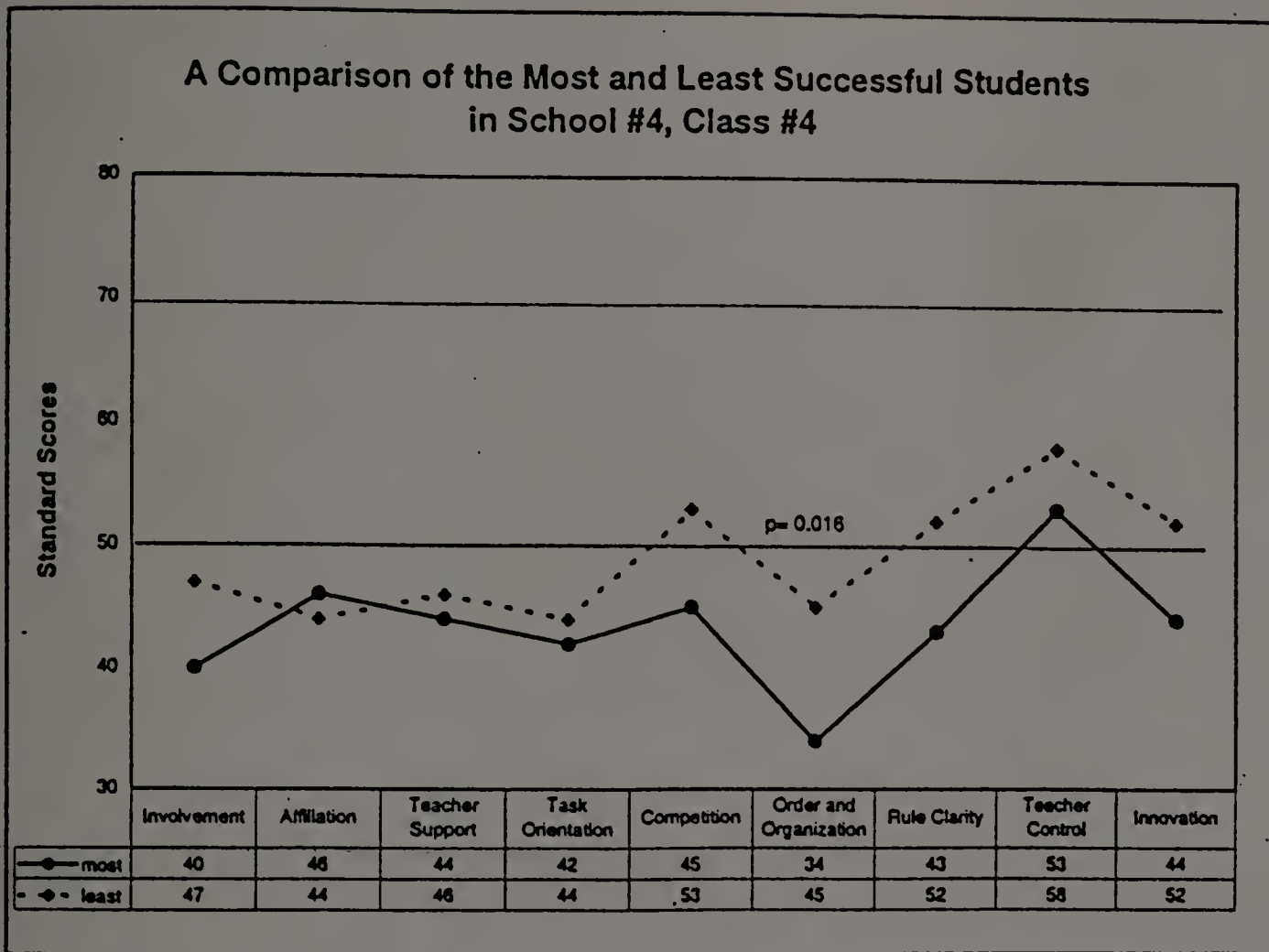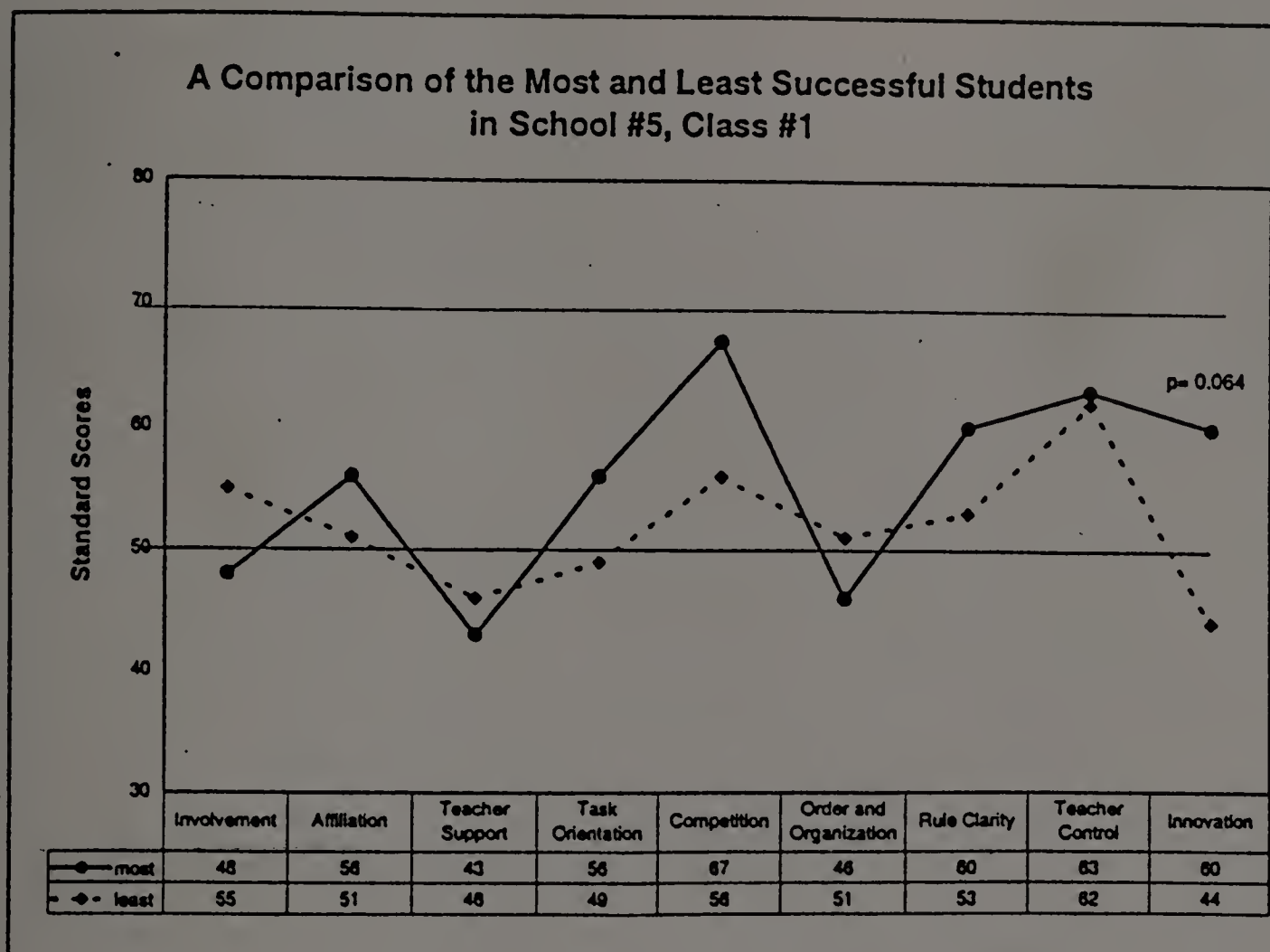| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 53 | 54 | 59 | 66 | 53 | 57 | 70 | 59 | 51 |
| least | 65 | 49 | 60 | 62 | 53 | 60 | 59 | 53 | 45 |

Figure 45. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #5, Class #3 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

most successful students again reported a greater sense of friendship and enjoyment in working with peers, although, surprisingly, the least successful students reported, on average, a greater sense of involvement and interest in class activities. The greatest difference was detected between the means of the two groups on rule clarity. Once again, the most successful students reported the rules to be clearer and the consequences more consistent.

Comparison of the Most and Least Successful Students in S5, Class #4. The most and least successful students in the math class of this female teacher reported similar views on eight of the nine variables measured (Figure 46). Although the least successful students reported slightly higher views of the class's task orientation, competitiveness, organization, innovativeness, clarity of rules, and the teacher's strictness, the most successful students once again rated the class as more involving,



**A Comparison of the Most and Least Successful Students in School #5, Class #4**

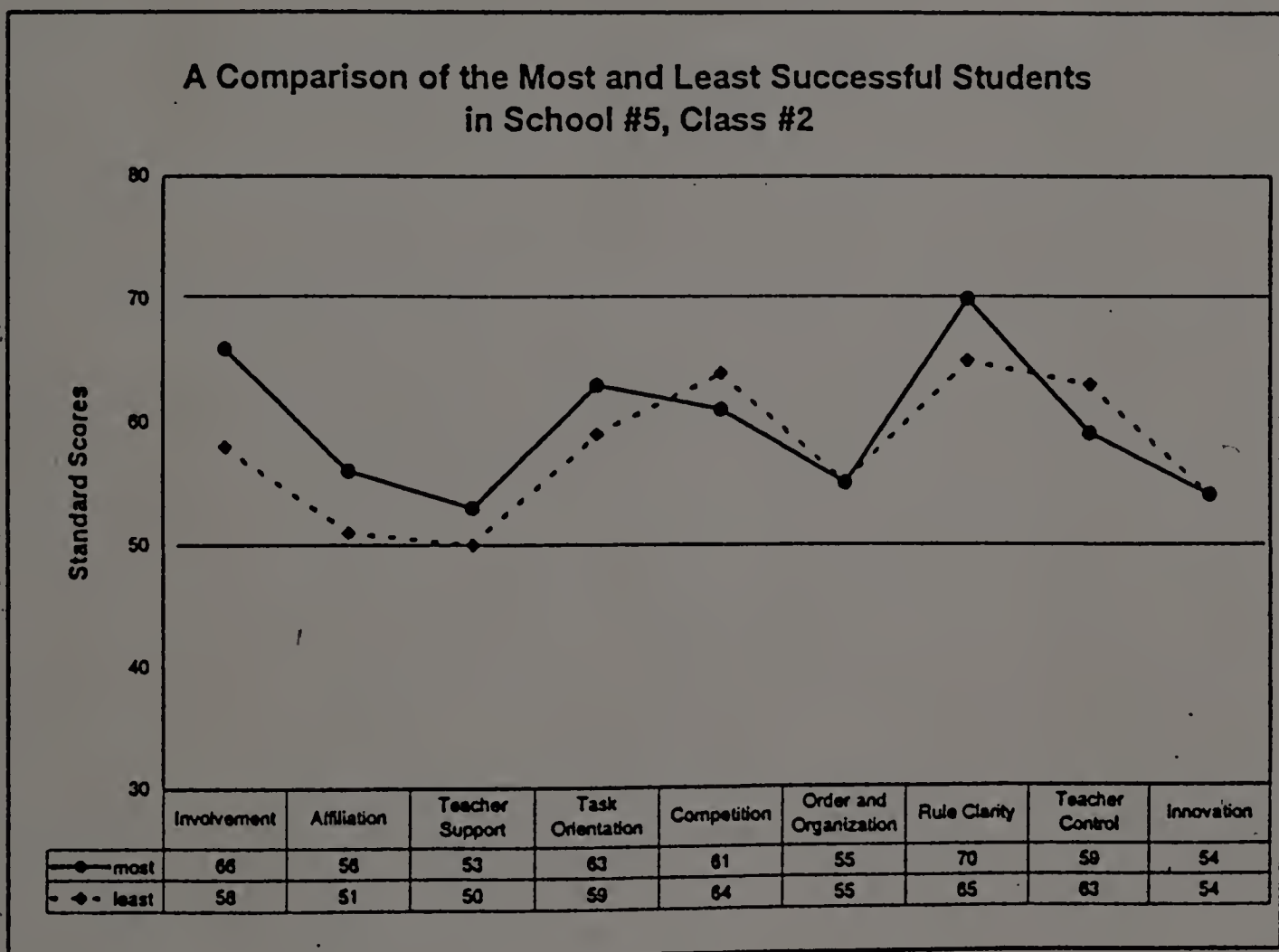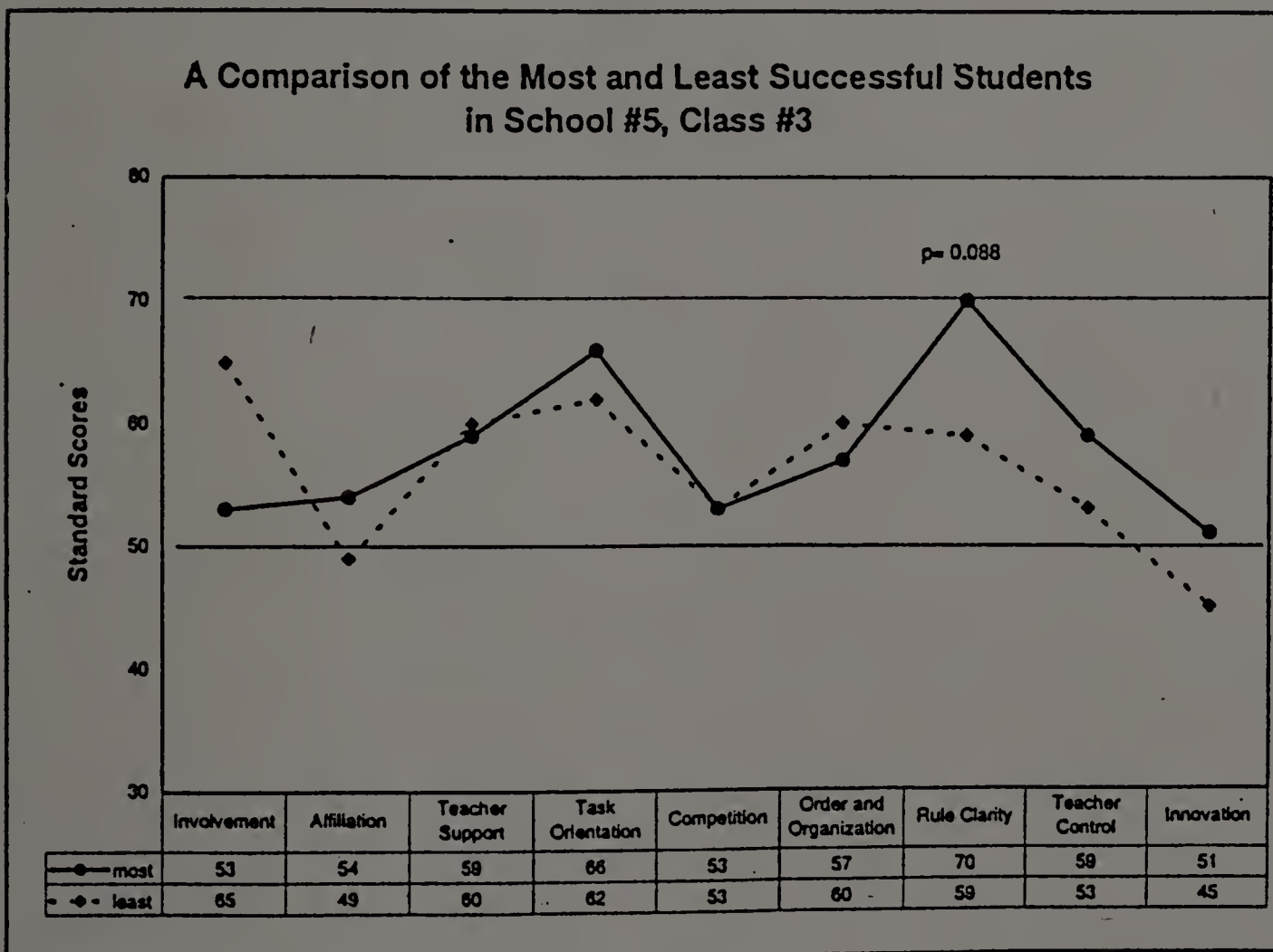| | Involvement | Affiliation | Teacher Support | Task Orientation | Competition | Order and Organization | Rule Clarity | Teacher Control | Innovation |
|---|---|---|---|---|---|---|---|---|---|
| most | 61 | 51 | 53 | 55 | 54 | 51 | 63 | 52 | 45 |
| least | 56 | 36 | 48 | 58 | 56 | 55 | 65 | 59 | 48 |
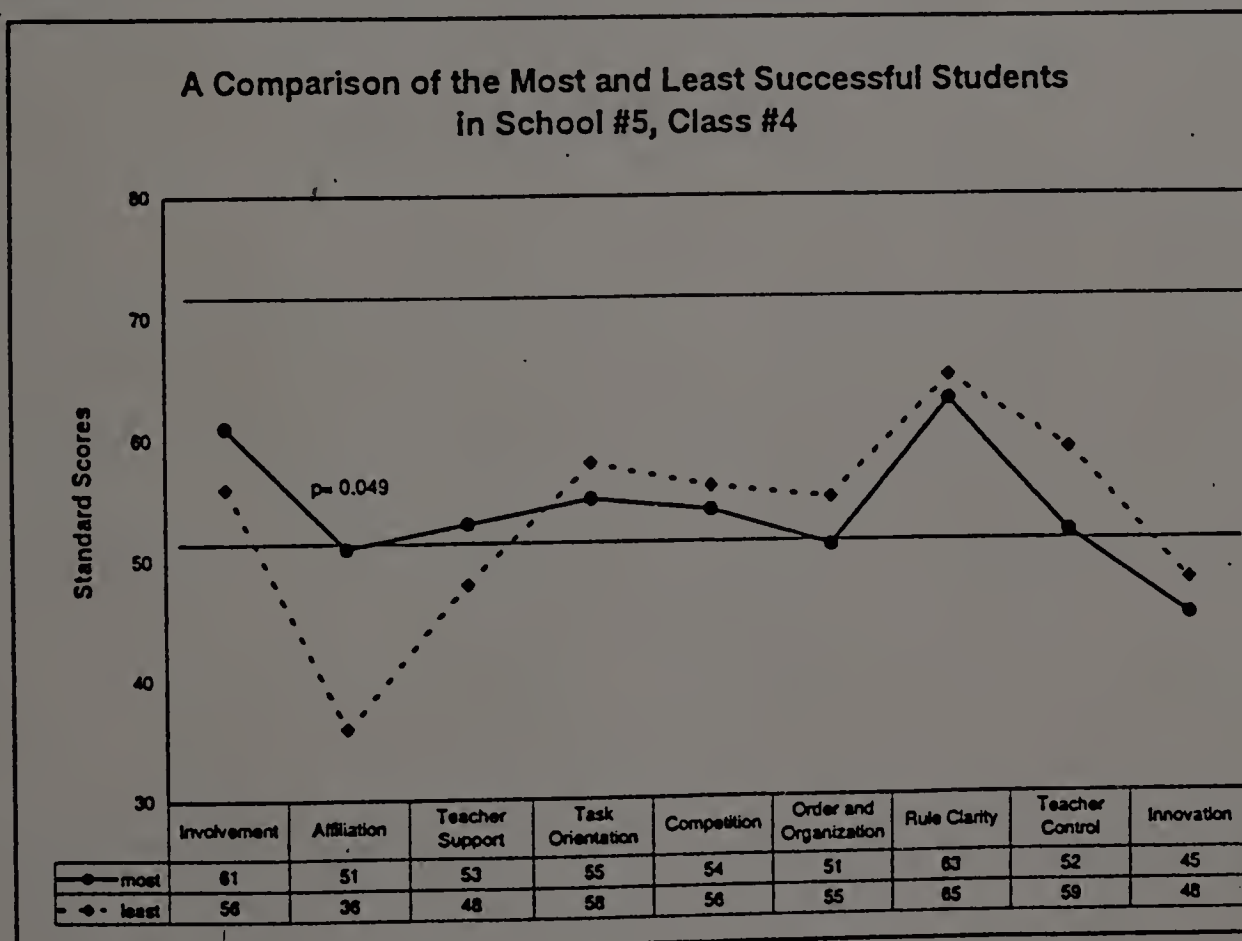
Figure 46. A Comparison of the Perceptions of the Most Successful Students and the Least Successful Students in School #5, Class #4 Regarding the Classroom Environment and Their Place in It, Explored by Research Question #3

the teacher as more supportive, and reported a greater sense of friendship and enjoyment in working with peers. In fact, on the measure of affiliation, the difference between the means of the two groups was significant ($p = 0.049$). In this class the most successful students reported affiliativeness to be solidly average (which was lower than the reports of the most successful students in the other three participating classes in this school), and the least successful students reported the affiliativeness to be very low, much lower than the reports of the least successful students in the other three classes. Moreover, this class was reported by administration and teachers to contain three boys who were described as the most behaviorally demanding and disruptive students in the sixth grade. These three students were identified as members of the least successful group of students in this class.

Comparison of the Most and Least Successful Students on Individual Survey Statements

In this section the individual statements on the Classroom Environment Scale that showed the greatest statistical differences between the mean responses of the group of most successful students and the group of least successful students at the aggregate level will be presented. These twenty-four (24) statements will be presented in order from those with the greatest degree of statistical significance to the least (Table 7). If there is more than one statement with the same statistical significance, these items will be presented in numerical order as they appeared on the CES.

As a framework for the presentation of these statements, the four variables on which the most statistically significant differences were detected between the means of

the most and least successful students at the aggregate level are reiterated here: the most successful students rated their classes significantly higher on affiliation (p = 0.036 ), and higher also, not significant however, on task orientation (p = 0.059) and teacher support (p = 0.082), while the least successful students reported their classes to be a great deal more teacher controlled and strict (p = 0.099).

Statistically Significant Statements. The statement with the greatest statistical difference (p = 0.001) between the mean responses of the two groups of students was statement #5 (competition): "Students don't feel pressured to compete here". The least successful students more often reported this statement to be "false", indicating that they, in fact, felt more pressured to compete than the most successful students Table 7). This CES item may also be a confusing statement for a true/false response.

The statement for which the second most significant difference (p = 0.006) was detected was item #48 (teacher support): "This teacher talks down to students." The least successful students more often answered this statement "true", indicating that they more frequently saw the teacher as "talking down" to students or treating them as though they were younger and less able than they were. In fact, the least successful students in this study may have been saying that they felt their teacher treated *them* as though they were less able than they felt they were, although this is not clear.

Four statements tied for third place in the ranking of statistical significance  (p = 0.008) - #13, 17, 27, and 29. Item #13 (task orientation) stated: "Students are expected to stick to classwork in this class". The most successful students more frequently reported this to be true of their classes, whereas, the least successful students reported perceiving significantly lower classroom expectations for staying on task. On statement #17 (teacher control) the least successful students reported more

Table 7

Statements Contained in the Classroom Environment Scale (CES)
That Showed the Greatest Statistical Difference
Between the Perceptions of the Most and Least Successful Students

| The most successful students perceived: | CES Item No. | Level of Significance |
|---|---|---|
| a greater amount of new and different ways of teaching being tried in the classroom. | 27 | $p = 0.008*$ |
| it was easier to get a group together for a project | 29 | $p = 0.008*$ |
| more clarity about the class rules and more certainty that they were explained early in the school year | 70 | $p = 0.012*$ |
| a lot of friendships had been made in class | 20 | $p = 0.028*$ |
| students had more to say about how class time was spent | 45 | $p = 0.031*$ |
| more flexibility in how they went about and completed their work | 63 | $p = 0.035*$ |
| almost all class time was spent on the lesson for the day | 4 | $p = 0.050$ |
| the teacher took a more personal interest in students | 12 | $p = 0.060$ |
| the teacher trusted students more | 75 | $p = 0.083$ |
| more student participation and involvement in class activities | 37 | $p = 0.095$ |
| the teacher had to tell the students to calm down more | 51 | $p = 0.095$ |
| The least successful students perceived: | | |
| more pressure to compete | 5 | $p = 0.001*$ |
| the teacher "talked down" to students or treated them as though they were younger and less able than they were | 48 | $p = 0.006*$ |
| lower classroom expectations for staying on task | 13 | $p = 0.008*$ |
| a student was significantly more likely to get into trouble if he broke a rule in class | 17 | $p = 0.008*$ |
| their classes were more out of control and noisy | 33 | $p = 0.014*$ |
| what students did in class was very different on different days | 18 | $p = 0.027*$ |
| greater difficulty getting to know everyone by their first name | 65 | $p = 0.037*$ |
| *less* opportunity to get to know each other in class | 56 | $p = 0.041*$ |
| a lot of students seemed to be only half awake in class | 64 | $p = 0.065$ |
| being less sure if something was against the rules or not | 79 | $p = 0.065$ |
| more time being spent discussing outside activities rather than class-related material | 22 | $p = 0.076$ |
| the teacher embarrassed students for not knowing the right answer more often | 39 | $p = 0.076$ |
| a greater threat of getting in trouble if not in their seats when the class was supposed to start | 53 | $p = 0.092$ |

*Statistically significant differences

truth to the statement, "If a student breaks a rule in this class, he's sure to get in trouble." To statement #27 (innovation) "New and different ways of teaching are not tried very often in this classroom", the most successful students, on average, perceived a greater amount of new and different ways of teaching being tried in the classroom than did the least successful students. Not unexpectedly, in response to statement #29 (affiliation) "It's easy to get a group together for a project", the most successful students reported, on average, that it was easier to get a group together than it was for the least successful students.

Item #70 (rule clarity) was next in the ranking of statistically significant statements. It stated, "In the first few weeks the teacher explained the rules about what students could and could not do in this class." Student responses to this statement indicated that the most successful students were significantly ($p = 0.012$) clearer about the class rules and more certain that they were explained early in the school year.

To statement #33 (order and organization) "This class is often in an uproar", student responses indicated that the least successful students saw their classes as significantly ($p = 0.014$) more out of control and noisy than the most successful students did.

Curiously, in response to item #18 (innovation) which stated, "What students do in class is very different on different days" it was the least successful students who reported this statement to be true significantly ($p = 0.027$) more often than did the most successful students, suggesting that there may be a significant difference in the way these two groups of students view change, the regularity of routines and patterns, and similarities and differences between activities.

On statement #20 (affiliation): "A lot of friendships have been made in this class", the most successful students saw this as significantly (p = 0.028 ) more true. Perhaps not surprisingly, the least successful students did not perceive that a lot of friendships had been made in their classes.

Another compelling finding resulted from student responses to statement #45 (innovation): "Students have very little to say about how class time is spent." The most successful students perceived that students had a greater influence on how class time was spent than the least successful students did (p = 0.031).

Next in significance was a related survey item #63 (also from the innovation subscale) which stated, "Students are expected to follow set rules in doing their work." Not unexpectedly, the most successful students again reported having more flexibility in how they went about and completed their work than the least successful students reported having. The difference between the means of these two groups was significant (p = 0.035 ).

In response to statements #65 and #56 (affiliation): "It takes a long time to get to know everybody by his first name in this class" and "Students don't have much of a chance to get to know each other in class", the least successful students indicated that they not only had *greater difficulty* learning the names of other students, but also felt they had *less opportunity* to get to know others compared to the reports of the most successful students. The difference between the means of these two groups on both statements was also significant (p = 0.037 and p = 0.041 respectively).

The most successful students felt it was more true that "Almost all class time is spent on the lesson for the day" (statement #4 - task orientation) than did the least successful students (p = 0.050).

Additionally, the most successful students felt that it was more true that "The teacher takes a personal interest in students" (statement #12 - teacher support). This was the next most statistically significant difference between the means of the most and least successful students (p = 0.060), again reinforcing the recurring theme that the most successful students perceive their teacher as being more personally interested in them and their peers.

Statements with Strong, but not Statistically Significant, Differences. In response to statement #64 (involvement), which stated, "A lot of students seem to be only half awake during this class", the least successful students perceived this to be more true (p = 0.065).

Statement #79 addressed the variable of rule clarity and stated, "Students aren't always sure if something is against the rules or not." Again, the most successful students indicated greater clarity about the rules; the least successful students were less clear (p = 0.065).

Two statements, #22 and #39, shared the same degree of statistical significance (p = 0.076). Statement #22 tapped the task orientation variable and stated, "We often spend more time discussing outside student activities than class-related material." Consistent with the aggregate finding on this variable, the least successful students perceived more time being spent discussing outside activities rather than classwork, but what is unclear is the nature of these discussions - whether they occurred between students (and if so, whether these discussions were condoned by the teacher), or whether the conversations occurred between the teacher and a student(s), or between the teacher and the class in general. Regardless, these off-task discussions seemed more prominent in the minds of the least successful students.

Statement #39 (teacher support) stated, "Sometimes the teacher embarrasses students for not knowing the right answer." Not unexpectedly, the most successful students reported this to be less true, while the least successful students detected more student embarrassment -- theirs or others' -- as a result of their teacher's response to their incorrect answers. Whether or not these students would be embarrassed just by the act of making an incorrect answer in front of their peers, regardless of the teacher's response, was unclear.

"This teacher does not trust students" is statement #75 (teacher support). The most successful students perceived that the teacher trusted students more than the least successful students did, although the difference was not statistically significant (p = 0.083).

The variable of teacher control was addressed by statement #53, "Students get in trouble if they're not in their seats when the class is supposed to start." The least successful students perceived a greater threat of getting in trouble (p = 0.092).

Statement #37 from the involvement subscale stated, "Very few students take part in class discussions or activities." More of the most successful students reported this to be false. They perceived more student participation and involvement in class activities than did the least successful students (p = 0.095).

## Statistically Significant CES Statements Listed by Subscale Categories

The following section presents statements from the CES on which this study found a significant difference between the means of the responses of the two student groups in this study (the most and least successful students in selected sixth grade

classes). In this section the statements will be organized by subscales and ranked by level of significance within these categories (Table 8).

Affiliation (p = 0.036). The most successful students in this study rated their classes significantly higher on this variable of friendship and feelings of enjoyment in working with their peers. Individual statements within this variable that also showed significant differences between the means follow.

The most successful students reported these statements as true more often:

#29 - It's easy to get a group together for a project .

#20 - A lot of friendships have been made in this class.

The least successful students reported these statements to be more true:

#65 - It takes a long time to get to know everybody by his first name in this

class.

#56 - Students don't have much of a chance to get to know each other in this

class.

Task Orientation (p = 0.059). The most successful students rated their classes as more goal oriented, not significantly however, and reported the following statements to be true more often:

#13 - Students are expected to stick to classwork in this class.

#4 - Almost all class time is spent on the lesson for the day.

Teacher Support (p = 0.082). The most successful students rated their teachers as caring, trusting, interested and helpful more frequently, although not at a

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Table 8

Statements Contained in the Classroom Environment Scale (CES)
that Showed a Statistically Significant Difference
Between the Perceptions of the Most and Least Successful Students
Listed by Subscale

| Significant CES findings: | Level of Significance |
|---|---|
| **Affiliation:** | |
| Most: it was easier to get a group together for a project | $p = 0.008$ |
| Most: a lot of friendships had been made in class | $p = 0.028$ |
| Least: difficulty getting to know everyone by their first name | $p = 0.037$ |
| Least: *less* opportunity to get to know each other in class | $p = 0.041$ |
| | |
| **Task Orientation:** | |
| Least: lower classroom expectations for staying on task | $p = 0.008$ |
| Most: almost all class time was spent on the lesson | $p = 0.050$ |
| | |
| **Teacher Support:** | |
| Least: the teacher "talked down" to students | $p = 0.006$ |
| | |
| **Teacher Control:** | |
| Least: a student was more likely to get into trouble if he broke a rule in class | $p = 0.008$ |
| | |
| **Involvement:** | |
| | |
| **Innovation:** | |
| Most: new and different ways of teaching are tried | $p = 0.008$ |
| Least: classwork was very different on different days | $p = 0.027$ |
| Most: students had more to say about how class time was spent | $p = 0.031$ |
| Most: more flexibility in how they completed their work | $p = 0.035$ |
| | |
| **Competition:** | |
| Least: more pressure to compete | $p = 0.001$ |
| | |
| **Order and Organization:** | |
| Least: classes were more out of control and noisy | $p = 0.014$ |
| | |
| **Rule Clarity:** | |
| Most: more clear about the class rules and more certain that they were explained early in the school year | $p = 0.012$ |

statistically significant level. In contrast, the least successful students perceived this statement to be significantly more true:

#48 - This teacher "talks down" to students.

Teacher Control (p = 0.099)  The least successful students reported the teacher to be stricter, the punishments more severe, and more students getting into trouble than did the most successful students. One statement had statistical significance. The least successful students reported the following statement to be true more often:

#17 - If a student breaks a rule in this class, he's sure to get in trouble.

Involvement (p = 0.156).  The most successful students in this study perceived that students were more attentive and interested in class activities. However, no statements within this subscale were statistically significant.

Innovation (p = 0.175).  On this variable which measures how much students contribute to the planning of classroom activities and the extent to which the teacher uses new techniques and encourages creative thinking there was, also, a noteworthy difference only between the means of the most and least successful females at the aggregate level. The most successful females reported the class to be more innovative than did the least successful females. However, on four of the ten statements used to measure this variable, a significant difference between the means of the most and least successful students was detected at the aggregate level (males and females combined). On all four statements the least successful students reported:

#27 - New and different ways of teaching are not tried very often in this class.

#18 - What students do in class is very different on different days.

#45 - Students have very little to say about how class time is spent.

#63 - Students are expected to follow set rules in doing their work.

In sum, on this subscale, although the most successful students perceived new and different ways of teaching being used more often in class, the least successful students reported greater variations in class activities from day to day.

Competition (p = 0.231). On this variable at the aggregate level, although the least successful students perceived more competitiveness, there was a noteworthy, although not significant, difference only between the means of the most and least successful females (p = 0.076). There was only one statement within this subscale for which a significant difference between the most and least successful students at the aggregate level was detected (p < 0.001). The least successful students, especially the females, reported this statement to be significantly less true:

#5 - Students don't feel pressured to compete here.

Nevertheless, one of the most successful female students interviewed mentioned that she felt pressured to compete:

> ...sometimes when another girl finishes reading before me, I try to distract her so that I can finish first. I don't feel competition or pressure on projects because it (your grade) depends on how much effort you put into it. The effort put in depends on how much they want to put in.

Another student, a male, in the most successful group stated, "This might sound real bad, but, I think I do a pretty good job because I put in a lot of time. I work hard." Thus, both of these successful students said they worked hard and they liked the projects they had a chance to select best of anything they do in school.

Order and Organization. The difference between the group means of the most and least successful students on this subscale was not statistically significant. However, for one statement within that subscale, a significant difference (p = 0.014) between the means was detected. The least successful students apparently perceived

their classes as more noisy and out of control by reporting the following statements to be more true:

#33 - This class is often in an uproar.

Rule Clarity (p = 0.307). This subscale also did not show a significant difference between the means of the most and least successful students at the aggregate level. However, one statement within this subscale indicated a significant difference. The most successful students reported the following statement to be more true:

#70 - In the first few weeks the teacher explained the rules about what students could and could not do in this class.

It is interesting that although the least successful students reported that students were more likely to get into trouble for breaking a class rule (#17), they were also less sure exactly what those rules were (# 70, #79) compared to the most successful students.

## Summary of Student Responses on Statistically Significant CES Statements

The responses of the most and least successful students indicate different perceptions of their relationships with others in the class and the assigned tasks. The collective responses of the most successful students paint a picture of an interesting, comfortable, caring, flexible environment where students have some voice and choice in meeting teacher expectations and completing tasks. The most successful students perceived making more friendships and greater ease getting a group together for a project. They reported that their teacher is more trusting and takes a personal interest in students and that negative teacher interaction consists of reminders to "calm down".

In addition, as a group they perceived clear rules, class time as very task-focused, students participating and involved in new and different kinds of learning activities, and more flexibility in how they complete their work as well as more say about how class time is spent. In sum, the most successful students as a group painted a picture of a teacher-student-task relationship that is positive, comfortable, and motivating.

In contrast, according to the collective response of the least successful students on specific CES statements, the classroom picture looks very different. As a group they perceived their classrooms as somewhat chaotic, even threatening environments where they feel pressured to compete for grades and recognition on activities that change from day to day. Also, they indicated feeling devalued by low on-task expectations and by being verbally disrespected by teachers who talk down to them, treat them as less able than they are, and embarrass them for not knowing the right answer. Furthermore, the least successful students perceived little opportunity to get to know peers, many of whom they didn't know by their first names.

## Student Interviews

In this section quotes from a representative sampling of participants will be presented. These interviews substantiate and provide further insights regarding what appears to be relevant to their learning and highlights the importance or lack of importance of the teacher between the two groups. The interview questions (Appendix G) were based on the statements on the CES that showed the most statistical difference between the most and least successful students. To expand on the information generated by the CES statements, these additional questions were asked:

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(1) What do you like about learning in this classroom? (2) What makes learning easier for you? (3) What makes learning difficult? and (4) What changes would you recommend?

## Student Comments Regarding The Teacher Showing a Personal Interest

### Most successful students.

MALE: "Ya, she talks with you about your vacation, shares it with the class, and will talk about what she did, too."

FEMALE: "When you're done your work, she *gets to know you* a little better -- talks with me, asks me questions about how classes are going, how things at home are going..."

### Least successful students.

FEMALE: "Yes, if you have trouble with a word or something, she helps."

FEMALE: "If you do something good, she gives you a piece of candy. "

MALE: "The teacher does *not* take a personal interest:. She doesn't ask what is going on at home, and why we can't do this, and why we can't do that - or ask why we can't finish our homework. Like, if we were working on a paper and weren't able to finish it ... she should ask us, 'Why didn't you do this? Do you have anything going on at home or anything?' She doesn't do that."

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Student Interview Comments Regarding Group Work

Most successful students.

FEMALE: "One day the teacher had a new student join us. She was really

quiet, so no one knew her. But she knew a lot and really got into

it. We saw her differently after that."

MALE: "It's not easy for me to get a group together because of put-downs.

It is easier when the teacher assigns groups, but the others are

whining, 'Oh, do we have to have (name)!' The teacher's face says,

'immature'. Students don't stop, they avoid me in the group."

MALE: "Usually she lets us pick our own groups. It's easier to go with our

friends - we work better. (Do the others listen to you?) About 70%

of the time the others listen to me. Some people won't listen to

others - think their own ideas are better before they even hear others'.

They usually do it to everyone - they want their own ideas. There are

about five in our class that like to be independent and won't use

others' ideas. Easier with friends - we don't fool around or anything."

FEMALE: "It's hard to learn when the teacher *over explains it*. She *gives* us

the answers when working separately. In groups she explains it

just the right amount so we can figure it out ourselves, because

there's more than one mind working."

Least successful students.

MALE: ""It's better for me to work with people. If I don't get something,

that other person could help me figure it out"

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MALE: "There was always somebody working hard and somebody that

wasn't. Wasn't fair. In a group my ideas were better than some of

the other kids', but they don't like me - so they didn't pay

attention. They decided based on who the person was, not on the

idea."

MALE: "I like to work in groups; I like to see what other people's ideas

are." It's not easy to get a group together. The teacher tells us to

be in groups of four. The most popular kids get in groups of four.

Then the least amount of kids get in a group of four. Then you're

stuck with somebody you don't like and doesn't want to work."

MALE: "When the teacher chooses the groups, she puts the smartest kids

with some kids who aren't as smart so they'll work better. It helps

people who aren't that smart to pick up some new learning habits.

Like, I felt really different because my writing was twice as big as

theirs. Someone said, 'Why do you write so big?' I said, 'Cause I

like to.' I started making it smaller because I didn't like to feel

different from everybody else."

FEMALE: "When you have to work by yourself on a question, like Science,

I'm afraid I'm going to get the wrong answer."

FEMALE: "Group work is easy because you have people there to help you."

## Student Interview Comments Regarding a Negative Self-Image

Poignant comments from the least successful students interviewed relate to the

issue of overcoming a negative self-image. Comments by the most successful students

indicate that they are also sensitive to and "put off" by teachers' "talking down to students," even when the person is not him or herself.

Most successful students.

FEMALE: "Some teachers 'put down' students and say they shouldn't be in this class because they won't be smart enough to do it, and that's talking down to kids that don't really like the class. I don't like it when the teacher says that, so I get down on myself. Sometimes I feel that I'm not really good enough for that class when the teacher says that."

FEMALE: "Sometimes teachers 'put down' students when it's just that they're not interested. Teachers should help students instead, so they will get interested - or pair them with a student who *is* interested. You feel helpful. Some people don't like to help others - but I think it's good."

MALE: "I overheard a teacher criticizing a student to another teacher. She treats (name) like he's a little kid. But I know (name) and he's not like that."

FEMALE: "Some kids don't even try to get to know others because they know their reputation: bossy, mean, get mad really easily. People don't like that attitude."

MALE: "When someone behaves bad, I like it when the teacher takes students out into the hall; not so embarrassing if others don't know what it's about."

<u>Least successful students</u>.

FEMALE: "Sometimes when we take a test or something, I feel like I'm

going to fail. Sometimes I do and sometimes I don't. I know I'm

going to get a bad grade."

MALE: "In math, we were writing out fractions and solving them. I picked

up that good, and I said, 'I get this. Can I do another paper?'

And she (teacher) said, 'Oh, so this means that this paper should

be a 100 when I get it?'

And I say, 'Ya, I hope.'

She said, 'I know you're not going to.'

Then, I did all the steps that she taught me and I got an 'F' on it."

(How did you feel?) I just tried to prove her wrong about what

she said. I really tried hard on that paper, too. I kept on trying."

MALE: "... teacher yells at us when students do something by accident and

he says, 'You did it on purpose. You never do anything on

accident.'"

## Findings Regarding Being Embarrassed in Class

While in most classrooms approximately 20% of the students can be

embarrassed due to their own inner dynamics, good teaching can (and did in one class

in this study) reduce the number of students vulnerable to embarrassment (0%). Poor

teaching can (and did in one classroom) vastly increase the number of students

vulnerable to embarrassment (80%).

Additional Interview Questions

Interview Question #1: <u>What do you like about learning in this classroom?</u>

<u>Most successful students.</u>

FEMALE: "I like a choice of what we can read - like books linked to

social studies - like the middle ages ... get more in depth, more

into it; and a choice of activities we can pick from -- can make

things. She lets us do extra credit activities - a choice from a

list on the wall."

MALE: "Projects are my favorite! I like doing things orally. (Also), the

teacher does accents and jokes. It makes it fun."

MALE: "Sometimes we do projects. They're fun."

FEMALE: "The teacher makes it fun: do really different kinds of things

things we don't expect to do - fun."

FEMALE: "When you're done your work, she gets to know you a little

better - talks with me - asks me questions about how classes

are going, how things at home are going."

FEMALE: "She makes it easy: When a couple kids don't get it, she

keeps on going over it until they get it."

FEMALE: "When teachers joke around with each other and students. It

makes learning fun, not so boring. Breaks up the class a little."

FEMALE: "... teacher would let you struggle to figure it out. Most get

frustrated, but some don't, and if you don't, you learn new

things about stuff."

MALE: "I liked sharing work in groups. It helps people who aren't that

smart to pick up some new learning habits."

FEMALE: "...when the teacher arranges seats with nobody near me."

MALE: "Math. It's my favorite subject because that's what I know most

about."

FEMALE: "I like the breaks between classes, moving from class to class.

In grade 5 we'd do one thing, then go on to something else,

but you're still sitting there."

FEMALE: "When my sister helps me with my homework."

FEMALE: "...liked drawing maps, liked projects, but the rest was boring.

Boring papers every day."

MALE: "I like knowing the schedule, what we're working on, because I

know for these two weeks, that's what we're going to be

working on - protractors."

MALE: "This is the first year math has been my favorite. One of these

days I'm going to look up and that box of algebra stuff won't

be there and I'm going to ask, "Where is it?' and I hope she

says, 'We're using it today.'"


Interview Question #2: What makes learning easier for you?

Most successful students.

FEMALE: "She relaxes us; says, 'It's easy. Try, I'll help you'. She will

stay after school to help us. Some kids say, 'I don't want to

stay after. That's for babies.' But, I think it's better to stay

after. I get on the honor roll and make my parents proud"

MALE: "The teacher explains it real good, and if someone doesn't get it, she

explains it again with another problem. She points things out, like,

two ways you can do things, and we choose which way we want to

do it. Sometimes we have to do exactly what she says. Other times we

can go ahead. I like being able to go ahead. It helps my learning. I do

more - get more practice - so I can do better next time."

FEMALE: "I can listen better if I'm doing something, like getting supplies,

rather than just sitting and getting bored."

MALE: "We can try new ways to do fractions that are fun - so everyone gets

it. If someone doesn't get it, she will explain it again, just with them, so

they'll get it. She'll let us share different ways we do things. If it's

easier for us to do it another way we know about, she'll let us.

Sometimes she wants us to do it her way just so we try it out."

FEMALE: "She writes stuff on the board, so if you forget about it, you can

just look up on the board. It will say it there."

FEMALE: "If you have any questions, she knows exactly what you're asking

for, so it's easy for her to answer them."

Least successful students.

FEMALE: "Instead of just showing the paper, she uses the overhead. She

shows us instead of just talks. It's bigger and we can see it better."

FEMALE: "Having people help us: Special Education teachers, teachers,

...but, we can't interact with other students."

MALE: "The fun things."

FEMALE: "When it's quiet."

MALE: "...liked sharing work in groups."

MALE: "Making something, like the houses. It gets to me. It'll get through."
(i.e., He understands.)

MALE: "I sometimes carry gum with me, so I don't fall asleep. I concentrate
on chewing it and not going to sleep."

MALE: She taught me how to spell a lot of words. When I come to a word I
don't know, she taught me how to break it down and sound it out.
She taught us how to clap syllables."


Interview Question #3: What makes learning difficult?

Most successful students.

FEMALE: "Being distracted by students fooling, talking and giggling and
teacher talking to the other group. Kids who fool around make us
have extra worksheets to do as punishment."

MALE: "I get a lot of put-downs and can't keep my mind on the subject.
(Name) and a lot of others ... not just in that class. On the bus (name)
hit me, and kicked me at lunch; the other kids laughed. All the time
kids say, 'Get out of here, Fat Face.'"

MALE: "Rough drafts take too much time. I love the computer, but I don't
get a chance to use it because the same people hog it."

FEMALE: "Some of the kids aren't really respecting other people's rights. So
when the teacher keeps going over it for the kids who don't get it yet,

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they go and, like, groan and all that. And that's kind of difficult because each time she explains it she might toss in something new and it just makes it difficult when they keep groaning. I feel like they're making fun of them because they don't catch on really quickly, and that's not right."

FEMALE: When the teacher picks my paper off my desk and says to the class, 'Some people think this is the way to do this, but it's not ... have to redo it.' I'd prefer her telling me after class."

Least Successful Students.

MALE: "When teacher talks to students and tells them to sit down, it makes everybody stop. ... Like, when I'm writing something, then I lose my ideas or whatever."

FEMALE: "I don't like working with the teacher with kids around - it makes me feel stupid when I don't know the answers."

FEMALE: "I can't understand what I read unless I read it out loud. Can't get it if I read to myself (silently)."

FEMALE: "If the teacher says huge words I don't even know the meaning of; and when I don't understand the directions for homework"

FEMALE: "...feeling pressured to keep up with the class, especially on tests."

FEMALE: "We sit too long and do too many boring papers."

MALE: "Once you really start to get the hang of something, it's difficult that you always have to change and do something else! Some people that don't, like, 'get it' real quick, I'd have them work on it longer."

MALE: "When reading in a group, I don't get through the story and just

before it gets really interesting, 3 or 4 kids talk and it really distracts

me."

FEMALE: "Some kids might laugh when I give a wrong answer, like, when I

really have trouble with homework and most of the kids don't. Then I

don't feel good."

MALE: "Others read twice as fast as I can. I try to skim - pick up the pace –

but it doesn't make much sense."

MALE: "Noise level. Can't concentrate. Can't do work. I'm thinking I want

them to be quiet. I can't do anything about it. Only place to go that's

quiet is the Learning Center."

Interview Question #4: What changes would you recommend?

Most academically successful students.

FEMALE: "More choices: "rather than just follow the rules or 'please people'.

Would let people just read rather than listen to discussions.

Historical novels give me more imagination. You get, like, a picture

in your head about the middle ages."

MALE: "I like having choices - feel better, like we're included. When she lets

us pick a partner, I feel older, more grown up."

MALE: "I would have desks in groups. Instead of moving desks all over the

room it's easier to work with the person next to you. If it's not group

work, just move desk out a little. If someone doesn't get it, you can

explain to others at your table. You can help others rather than have

the teacher explain to everyone. I like it more. Last week I told three ... how to multiply fractions. I like to help others more than have them help me. When I explain it to others, I 'get it' more. I'll know how to do it better, too."

FEMALE: "Have <u>students who are interested in a subject tutor</u> students who aren't interested and need help."

MALE: "I would have a <u>quieter</u> class. Some people when working with partners are, like, really loud. Not quiet. They, like, <u>don't respect other people</u> when they're doing work together."

<u>Least academically successful students.</u>

MALE: "At the end of class, have ten or fifteen minutes to talk about what we just did, what went on in class. Have the teacher ask us what we just did, so we can get an idea of what we just did; go over it."

MALE: "Make it funner. Like, give them a sheet (of paper) and see what they want to do. Have choices like going on the computer instead of writing, and making stuff."

FEMALE: "...be able to chew something, like candy or jawbreakers, while I work."

MALE: "Have our favorite subjects first, while we're fresh, and for a longer time."

MALE: "Have our best subjects after lunch, when I'm more awake."

MALE: "More choice on what to learn."

MALE: "It's better for me to work with people. If I don't get something, that other person could help me figure it out."

MALE:  "I'd probably have, like, your own silent reading room for a bunch of kids.  Just a bigger room with (lots of) desks where you could do book reports, and you could silent read.  You could ask for help if you wanted.  There'd be a teacher there to supervise and it would be quiet.  It'd have a back room where you could go and talk with the teacher, ask questions and stuff.  We'd have big desks and comfortable chairs like the teacher's, and big lockers.  You could <u>do as little or as much</u> of the work that you wanted to do <u>without feeling badly about school</u>."

FEMALE:  "Not so much homework (do some in class); have things explained better, and not as much tests."

MALE:  "Ask some questions about what they already did learn.  I don't really take much interest in stuff that I already know, but for the stuff that I don't know, I pay a lot of attention to!"

Learning style differences are apparent.  Children are asking for opportunities to develop more fully their own learning style combinations and to pursue meaningful, interesting learning tasks.  In addition, they are asking for learning environments and instructional schedules that are flexible and variable enough to provide for their needs at least some of the time.

## Summary of Findings from Student Interviews

The stated learning needs, preferences and concerns of the most and least successful students in this study were remarkably similar.  They both wanted and said they felt more involved and learned more with:

- Projects- especially when they have some choice on topic or approach;

- Choices - that enable them to pursue topics of interest and use their preferred style of learning;

- Group work - where students can learn from each other and cooperative social skills are monitored. Both groups expressed the advantages of getting more ideas than they would have on their own, learning new study skills from each other, and getting to know others better

- An interesting, challenging environment

- A quiet environment, especially when reading silently

- Help available from the teacher or other students;

- Peers who are respectful of others' learning needs;

- Believing that they will be successful and will have their voices heard

- Feeling safe from put-downs

- The challenge of being allowed to figure things out for themselves

- Teachers who take the time to show a personal interest in students;

- Teachers who make the work fun, use humor, and do the unexpected

- Teachers who explain things well and understand what you are asking

- Teachers who intervene when students have difficulty being included in cooperative work groups, having their voice heard, or asking their friends to be quiet so they can get back on task

- Teachers who discipline students out of earshot of their peers

- Teachers who don't embarrass students by calling on them when their hands aren't raised and they don't know the answer

- Teachers who post schedules and reminders on the board

• An interdisciplinary approach - for example, historical novels in reading class that are set during the historical time period being studied in history class to get, as one student said, "a clearer picture in my head" about the time period;

A few differences in perspective were also expressed. For example, many of the most successful students realize that when working in groups some students just won't listen to the ideas of others. "They just want their own." However, many of the least successful students, and some of the most successful, take the rejection of their ideas personally.

Other thoughts advanced by the most successful students interviewed include: (1) many of them don't mind when a teacher has to reteach to a student who learns more slowly or differently, because they learn something new in the reteaching, especially when the teacher uses a slightly different approach; (2) many greatly enjoy helping other students by explaining new concepts or skills, because they say it helps them learn it better; (3) some said they like having extra time while others are still learning, especially when the teacher has lists of extra credit projects that they can choose from; (4) some of the most successful also perceive that teachers will use this extra time to talk with students on a more personal level about their interests, family and things outside of school; In contrast, most of the least successful students feel that teachers show them a personal interest by helping them with their school work.

It is clear that students indicate a much greater willingness to try when they believe they can be successful, and believe that help and resources will be there, if needed. Additionally, it is apparent that homework is more likely to be done if the student understands the directions, and understands the concepts and processes involved before leaving school.

## Chapter Summary

Chapter Four focused on an analysis of data obtained from the study. The findings were related to the three research questions that guided the study. Significant demographic findings included that the least successful students were found to be older on average, with a greater age range, and fewer consecutive years of attendance in their present school than the most successful. Additionally, nearly twice as many girls than boys were in the most successful group, and nearly twice as many boys than girls in the least successful group. Half of the least successful students received Special Education services, and half did not.

An analysis of the data obtained from research question #1 indicated that the most successful students in this study saw their classes as having clear rules, high teacher control, and a strong emphasis on task completion. They reported their classes were moderately involving, affiliative, and competitive, and about average in providing a supportive, innovative, organized structure. Overall, the most successful males and females agreed that their classrooms were task focused, strict, and relatively organized, although the males saw their classes as less involving, more competitive, and with less clear rules than the females. The greatest differences were that the males saw their learning environments as much less innovative, affiliative and supportive than the most successful females. Although the reported perceptions of the most successful students in the five (5) schools and fourteen (14) participating classes presented unique and varied profiles for each school and class, students in all of the classes perceived that their teacher was strict and their class was very task focused. These findings are consistent with the literature on characteristics of successful learners (Wang, et al., 1994).

Data obtained from research question #2 revealed that the least successful students in this study, on average, saw their classes as high on teacher strictness, but somewhat below average on affiliation and teacher support, and fairly competitive. They also reported that their classes were clear on rules and consequences, moderately task focused, and about average on providing an involving, innovative, organized structure.

Gender comparisons revealed a remarkable similarity of view on seven of the nine subscales, however, there was a great difference in their views on their teacher's supportiveness and the friendship, helpfulness and enjoyment students felt in working together. The least successful females rated their classes as about average, while the males perceived them to be below average on these measures. Interestingly, the least successful females saw their classes as more competitive than the least successful males, although the opposite was true of the most successful males and females. These findings are consistent with most gender research on affiliation and competition (Nash, 1979; Fennema & Petersen, 1985).

In four of the five schools, the least successful students viewed their classes and teachers similarly. The exception was the inner city School #3, whose least successful students reported very low teacher support, low student interest and involvement in class activities, and the highest degree of strictness in rule enforcement, how much students get into trouble, and the severity of punishment. The small rural school was rated by its least successful students (2 males and 1 female) as the most innovative and clear, and the least strict, yet least affiliative of the five schools.

Research question #3 findings showed that there was a significant difference between the groups in perceptions about friendliness of environment. The most successful students not only perceived a friendlier atmosphere in the classroom, but also a much greater emphasis on staying on task and completing the assigned classwork, and a much greater degree of help, interest, and trust shown by the teacher toward students than the least successful students did. They also expressed a greater amount of student contribution to planning classroom activities and greater interest, attentiveness and participation in class and in doing additional work on their own. In contrast, the least successful students perceived their teacher as being much stricter in enforcing the rules, perceived a greater severity of punishment for rule infractions, and a higher incidence of students getting into trouble. They also reported that students are more competitive for grades and recognition, and that they have to work harder to get good grades.

There was remarkable similarity between the most and least successful students within the genders and even between the genders on their appraisals of most of the dimensions of the learning environment. However, both groups of females reported more friendship and enjoyment in working together and more teacher support than both groups of males did. They also saw their classes as clearer about rules and consequences. Notable differences within the genders included the finding that the most successful males clearly perceived a greater emphasis placed on staying on task and completing planned activities than the least successful males did, while the least successful males perceived their teachers as stricter. Two findings within the female population were suggestive. The first was that the most successful females saw the class as more innovative, in that students contributed to planning activities and the

teacher used new techniques and encouraged creative thinking, than the least successful females did. The other finding was that the least successful females perceived more emphasis on competition for grades and recognition than the most successful females and both groups of male students.

The responses of the most and least successful students to specific CES statements clearly express significantly different perceptions of their relationships with others in the class and the assigned tasks. The collective responses of the most successful students paint a picture of an interesting, comfortable, caring, flexible environment where students enjoy working together and have some voice and choice in meeting teacher expectations and completing tasks. Specifically, they perceived making more friendships, greater ease getting a group together for a project, a more trusting teacher who takes a personal interest in students, clear rules, and a strong emphasis on completing planned activities. In sum, the most successful students as a group painted a picture of a teacher-student-task relationship that is positive, comfortable, and motivating.

In contrast, the collective response of the least successful students indicates that they perceived their classrooms as somewhat chaotic, even threatening environments where they feel pressured to compete for grades and recognition on activities that change from day to day. Also, they indicated feeling devalued by low on-task expectations and by being verbally disrespected by teachers who talk down to them, treat them as less able than they are, and embarrass them for not knowing the right answer. Furthermore, the least successful students perceived little opportunity to get to know peers, many of whom they didn't know by their first names.

Interviews with student participants indicate that both the most and least successful students learn best with an integrated approach between subjects, cooperative learning opportunities to learn from each other, group and individual projects, studying in-depth in areas of interest to them, peer tutoring, flexible pacing, a quiet, respectful environment, humor and the unexpected, teacher encouragement and belief in them, and challenging independent work for bonus points. In sum, students are asking for greater instructional diversity, and more choice and voice in how they learn. These findings are reflective of the literature on effective teaching (Combs, 1991; Wang, et al. 1990; Caine and Caine,1995; Pigford, 1995).

The next chapter summarizes the findings of the present research. It includes a discussion of the findings generated from the analysis of data obtained in the present study. Implications for educators are advanced and recommendations are made for future avenues of research branching from this study.

CHAPTER 5

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

This chapter summarizes this study and its findings. First, the findings presented address the three research questions that guide this study and are organized accordingly. Second, implications for educators, organizations that provide preservice and inservice education, and educational policymakers are drawn. Finally, recommendations for classroom practice and future research are made.

Summary of Findings

The findings presented in this study describe (a) how sixth graders who are the most successful academically perceive their classroom environment on the selected variables of involvement, affiliation, teacher support, task orientation, competition, order and organization, rule clarity, teacher control, and innovation, (b) how sixth graders who are the least successful academically perceive their classroom environment on these same variables, and (c) the similarities and differences between the perceptions of the most academically successful and the least academically successful students on these same nine selected variables. When the findings are viewed in light of and compared to the literature review, the perceptions of the most successful students, the perceptions of the least successful students, and the similarities and differences between those perceptions are better understood. Six key findings deserve attention. The first finding is that the most academically successful students perceived their classroom environment to support friendships, enjoyment in working with other students, and completing assignments. They also perceived their teacher to be more helpful, friendly, trusting, open, and

interested in their ideas than the least successful students did. A second finding is that

the least successful students tended to view the classroom as being much more strict,

more competitive, and below average on teacher support, affiliation and innovation. The

third finding is that, compared to the males, the females in this study perceived their

classrooms to be significantly more affiliative and teacher supported. A fourth finding is

the tendency of the most successful males to perceive a greater emphasis on staying on

task and completing work as well as a greater degree of competition for grades and

recognition than the least successful males did. In contrast, the fifth finding indicates

that the least successful females perceived the classroom as more competitive for grades

and recognition than the most successful females and both groups of males. The sixth

and final finding could be called the "case of the missing teacher" from the viewpoint of

the least successful students. It is apparent, especially from interview comments, that for

the most successful students the teacher is a central, motivating, caring and critical

component in their learning. On the other hand, for the least successful students the

teacher appears more remote, less caring and, in some cases, a deterrent to learning.


## Research Question #1

How do sixth grade students who are the most successful academically perceive

their classroom environment on the selected variables of involvement, affiliation, teacher

support, task orientation, competition, order and organization, rule clarity, teacher

control, and innovation? Overall, the most successful students at the aggregate level

perceived all variables of class climate measured as average or above. They reported

that the rules were very clear, the teacher was very strict in enforcing them, classes were

strongly task focused with a strong emphasis on completion of activities, and that student interest, attentiveness, and involvement in class activities was high. They also rated their classes, on average, as above average on the variables of friendliness and competition. They reported their classes to be slightly above average on innovations such as students contributing to planning class activities, the use of new techniques, and opportunities for creative thinking. They also rated their classes as average on teacher's support, friendship, interest, and trust and the organization of activities and assignments.

Gender comparisons showed that the greatest differences between the perceptions of the most successful males and females were that the males saw their learning environments as much less innovative, affiliative and supportive than the most successful females did. In fact, the females rated their classes above average with regard to students contributing to the planning of activities, feelings of friendship among students and enjoyment in working together, and having teachers who encourage creative thinking, use new techniques, help students, talk openly with them, and show friendship and trust, as well as interest in their ideas. In contrast, the males rated these same classes below average in these areas. However, males and females agreed that their classes were very task focused and rules were strictly enforced.

The data collected for the present study validates the findings of Wang, Haertel, and Walberg (1994) who also found that student characteristics of feelings of belonging, high involvement, task committment and affiliation were highly related to advantageous learning outcomes.

How do sixth grade students who are the least successful academically perceive their classroom environment on these same variables? In short, the least successful students in this study reported that (a) their teachers were very strict, many students got into trouble, and punishments were severe; (b) there was a high degree of competition for grades and recognition (especially by the females); (c) although they perceived the classes to be average in structure and organization, (d) they reported their classes to be below average for feelings of friendship among peers and enjoyment in working together, as well as (e) below average for having teachers who show trust, caring, help, and a personal interest in students. The least successful males perceived these last two variables which assess relationships with peers and teachers much lower than the females.

These findings are consistent with The Urban Education Studies by Francis Chase and his colleagues cited by Tyler (1989), in which they found that the teacher's attitudes toward children is a major factor in their learning. "Where teachers clearly cared about their students, set high standards for their achievement, and encouraged them, the children were learning. Where teachers showed no evidence of personal concern or encouragement, and did not expect much, the children were learning little." Whether or not the teachers in the present study actually showed less caring, interest, and lowered expectations is beyond the scope of this exploration, however, the least successful students perceived this to be the case. Students' interview comments also suggest it might be true in some classrooms.

## Research Question #3

What are the similarities and differences in the perceptions of the most academically successful and the least academically successful students on the nine selected variables of involvement, affiliation, teacher support, task orientation, competition, order and organization, rule clarity, teacher control, and innovation? The most and least successful students agreed that the emphasis on students behaving in an orderly and polite manner and the degree of structure and organization of activities and assignments within their classes was solidly average. However, as might be expected, the most successful students rated the personal relationships within the class much higher than the least successful students did.

Four of the nine subscales used to measure dimensions of the class environment showed a statistically significant difference between the two groups. The most successful students perceived their classes to be significantly (1) more friendly and enjoyable, with (2) greater emphasis on staying on task and completing planned activities, and (3) teachers who were more friendly, open, helpful, trusting, and interested in their ideas. Whereas, (4) the least successful students perceived these same classes to have teachers who enforced the rules more strictly and gave more severe punishments, with more students getting in trouble.

The most successful students also saw their classes as more involving and innovative and reported that the rules and the consequences for breaking those rules were more clear than the least successful students did. Not unexpectedly, the least successful students not only saw these classes as more teacher controlled and strict, they also saw them as more competitive for grades and recognition than the most successful students did.

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A comparison of the most and least successful males showed remarkable similarity in their views of their class, except that the most successful males reported their class to be more task-oriented than the least successful males did.

A comparison of the most and least successful females indicated that the most successful females perceived that they had more choice and voice by being able to contribute to the planning of classroom activities. They also perceived that the teacher used new techniques, encouraged creative thinking, and that the class was more friendly and inclusive, task-focused, involving, supportive, organized and clear about rules and consequences. Like the least successful males, the least successful females reported the teacher to be stricter with more students getting into trouble. They also saw the class to be more competitive for grades and recognition. The greatest degree of agreement was with regard to the degree of classroom structure and teacher support provided.

These findings confirm the research of Vahala and Winston (1994) about the impact of classroom climate on learning. They reported that better grades were achieved by students who perceived that (1) they knew each other, cooperated with one another, and did not feel the environment was hostile or personally intimidating; (2) they had a friendly, concerned teacher, (3) less-exacting academic standards and yet, (4) classes were structured, interactive, and intellectually challenging.

The findings of important inter-relationships among the classroom conditions of involvement, affiliation, innovation and student success are consistent also with the findings of Strong, Silver, and Armstrong (1995). The review of the literature also identified gender differences which reflect the findings of the present study. These gender differences include: (a) girls tend to be more affiliative, and (b) males tend to be more competitive (Fennema & Peterson, 1985).

During follow-up interviews conducted by the researcher, participants in this study shared their thoughts about classroom conditions that improve and impede their learning and made suggestions about ways teachers can increase student learning. Students cited many factors that promote their learning. The most successful students said that they liked: interesting topics and activities to choose from, new and unexpected ways to learn things, making things, doing things orally, projects, extra credit activities, choice of what we read, novels linked to social studies time periods studied to get more depth of understanding; being allowed to struggle to figure things out for yourself; the teacher breaks up the class routine and makes it fun by doing accents and jokes, or by joking around with other teachers or students; the teacher disciplines students in the hall outside the classroom - out of earshot of peers; the teacher makes work easy, goes over the lesson until students "get it"; and the teacher talks with students and gets to know them better when their work is done.

In contrast to the most successful students who enjoyed their teachers' supportiveness, personal interest, joking around, and granting a range of choices, the least successful students spoke of liking space, quiet, breaks, knowing the schedule, working in groups, and hands-on projects. For example, the least successful students reported that they liked the following things about their classes: sharing work in groups to pick up new learning habits, movement and breaks between classes, drawing maps, projects, knowing the schedule of what they're working on for each class and for the week, when the teacher arranges seats with no one nearby, a family member helping with homework, and liking their favorite subject because that's what they know most about.

When asked what makes it easier for you to learn? The most successful students indicated that the following conditions make it easier to learn: (a) when the teacher

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relaxes us, says, "It's easy.  Try, I'll help you."; (b) explains things well; (c) is willing to explain again with another problem; (d) explains one-to-one; (e) stays after school to help students; (f) understands our questions; (g) gives us new ways to learn things that are fun so that everyone gets it; (h) let's us share different ways we do things; (j) gives us a choice of ways to solve problems; (k) writes on the board so you can check if you forget; and (l) allows us to "go ahead" and get more practice.  Another said, "It's easier to listen if I'm doing something."

Similarly, yet with little of the contagious enthusiasm of having a supportive, interactive, sharing and choice-filled relationship with the teacher mentioned by the most successful students, the least successful students said it is easier to learn when the teacher shows instead of just talks, uses the overhead so we can see better, and teaches us how to spell by breaking words into syllables and sounding them out.  They also mentioned that it easier to learn when it's quiet, people help (support staff in the class), there are fun things to do, there are opportunities to share work in groups and make things to increase understanding, and chewing gum to keep from falling asleep when bored.

Several conditions that impede learning were reported by both the most and least successful students.  For example, the noise of the teacher's reprimands or peers talking interferes with concentration, especially when students are trying to read.  They also reported that learning is impeded by teachers who embarrass students.  The most successful students mentioned that they were embarrassed when the teacher used identifiable student work as examples of incorrect ways to do things, and corrected students in front of peers.  The least successful students cited that they were embarrassed when peers laughed at them for giving a wrong answer in a whole group situation, and

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when working with the teacher with peers around when the student doesn't know the answer.

Other conditions mentioned by the most successful students that interfered with learning were primarily issues of respect, but also of equity and learning style. For example, personal "put downs" by peers in class, school, or on the bus interfere with concentration throughout the rest of the day. Equally disrespectful "groaning" by students when the teacher repeats instruction or explains in a different way to accommodate the learning rates and styles of others interferes with the learning of those students who anticipate hearing the "something new she might toss in". The groaning is also perceived as a put down and "not right", making many other students uncomfortable. Issues of equity mentioned by the most successful students include unequal access to classroom computers and being given extra worksheets as a group punishment for the misbehavior of a few. A style concern was that handwritten rough drafts take too much time. These students would rather do them on a computer.

In addition to the conditions mentioned by both groups and listed previously, the least successful students addressed issues related to learning style and pace that interfere with their learning. Examples of style concerns were: not being able to read out loud to oneself ("the only way I can understand it") during silent reading activities, sitting too long, too many boring papers, teacher's vocabulary too advanced for students' understanding, not being comfortable about telling a friend to stop talking so they can get back to work, and not understanding homework directions. Pace issues mentioned were: pressure to "keep up", especially on tests; losing comprehension when trying to keep pace with peers when reading silently; not quite enough time to grasp a concept before starting something else.

The most and least successful students offered the following suggestions for improving learning conditions within the classroom. The most successful students suggested: (1) more choices rather than just following rules to please the teacher; (2) choices that make students feel included and trusted; (3) putting desks in groups so that students can work together, help, and explain things to others; (4) allowing students who are interested in a subject to tutor those who aren't interested and need help; (5) being more quiet when working with partners to show respect for other students; and (6) just reading, not having to listen to discussions.

The least successful students suggested: (1) more choices like making things and using the computers; (2) having favorite subjects early, when students are fresh and for a longer time; having favorite subjects after lunch when awake; (3) allowing students to chew something; (4) checking whether students have already learned something before teaching it; (5) taking ten or fifteen minutes at the end of class to review what was learned; (6) working with partners who could help figure things out; (7) having less homework - or doing some in class; (8) having fewer tests; (9) having more fun; (10) having things explained better; (11) a quiet room; (12) comfortable chairs; (13) big desks and lockers; (14) a separate quiet room to read silently and write book reports, with a teacher in a back room to whom you could go to ask questions.

In summary, interviews with student participants reveal that both the most and least successful students are asking for a quiet, respectful, supportive environment, with interesting work, a more integrated approach between subjects when studying a topic, more cooperative learning opportunities to learn from each other, group and individual projects (i.e., especially hands-on projects), more choice, some fun, studying more in-depth in their areas of interest, opportunities for peer tutoring, and also challenging

independent work for bonus points. In addition, the least successful students asked for more time, space, support, visual experiences, and working in groups for support. In short, students are asking for greater instructional diversity, more depth of understanding, and more choice and voice in how they learn. Factors that help and hinder their learning identified by students in this study are consistent with recent research about how the brain learns best (Jensen, 1998; Sprenger, 1999).

It is interesting to note that the findings from this study regarding how students prefer to learn - or how they say they learn best - are very similar to the results of a study that explored how teachers prefer to learn something new. Ciesluk (1982) found that teachers stated that they preferred to work together, to believe they were capable of accomplishing it, and that the learning be of interest and immediately useful to them.

## Discussion

As mentioned in Chapter 4, the demographics of age, gender, and attendance seem to be important findings.

## Age

The finding that the mean age of the most academically successful students was significantly lower than the mean age of the least academically successful students suggests that some of the least successful students may have started school later due to perceived developmental readiness issues or may have repeated a grade for the same reason or due to illness or other disruption of their school progress. Furthermore, the greater range of ages for the least successful students suggests not only older students

among the least successful, but also the possibility that some of the youngest students may be among the least successful.

## Attendance

The findings that the least successful students averaged fewer consecutive years of attendance at the participating school, as well as a greater range of variation in the number of years they had attended, though not statistically significantly, are worthy of note. These differences suggest that the most successful students may have had more years of schooling, perhaps starting in private pre-school programs, and a more stable home life indicated by less transiency as evidenced by changing homes and schools. These attendance patterns combined with the greater age range among the least successful students may also suggest the possibility of greater variability in reasons for these students not succeeding in school. This greater variability in reasons is supported by Tyler's (1989b) contention that students with learning problems need to be looked at individually, focusing on one or two problems to address at a time.

## Gender

Although the total number of male and female participants in this study was fairly equal, there were more girls in the most successful group, and more boys in the least successful group by a ratio of almost 2:1. As noted in Chapter 4, this is not totally unexpected, as girls mature more quickly than boys, and boys have more trouble with reading, writing, and sitting still than do girls. Some boys in this study suggested allowing movement, more time, and computer use for those who are not ready to sit still and lack small-motor skill development. The findings of the present study concur with

Hornblower's (1998) contention that boys' self-esteem as learners is more at risk than that of girls.

A second reason for more females being in the most successful group might be that the use of cooperation is more effective than competition which tend to be the gender stereotypes to which children aspire. The data in this study indicated that the closer the student group came to their gender stereotype, the more successful they were. For example, the most successful males perceived more competition, while the most successful females perceived the most affiliation, and the females who perceived the most competition - even more than the most successful males - were the least successful.

## Implications of the Study

In this section, the implications of the present study for (a) sixth grade teachers' practice; (b) principals and administrators; (c) colleges, universities and professional organizations that provide preservice and inservice professional development instruction; and (d) superintendents, departments of education and other educational policymakers, are discussed.

## Implications for Sixth Grade Teachers /Educators

### Affiliation

The findings from this study indicate that those students who are involved in comfortable relationships with teachers and peers do better. Accordingly, if students can get involved with, and feel supported by the teacher, they will be more successful. Teachers need to get better at including all students. Teachers need to look more closely

at and develop more effective techniques to get students involved with teachers and peers within the classroom. The literature review concurs that all learners need to feel included and valued for their uniqueness. In fact, in order for higher level thinking to occur, a sense of belonging, trust and safety are essential (Goleman, 1995).

Teachers tend to be attracted to success. The challenge of teaching is finding approaches and activities that involve not just a few, but all students, even the most insecure and reluctant. If students feel they have real abilities to be admired, then they will be more willing to look at their areas of weakness. This requires teachers to have, or develop, the necessary social skills to be able to make each student feel valued.

Quoted in the literature (Oakes, 1985; Cohen, 1986; Marzano et al., 1992) and emphasized by data from this study was the perception that group work can be an important tool to increase student learning and promote affiliative feelings among students. It provides students more opportunities to get to know each other as they participate in interesting, structured, group tasks. The importance of a peer group, especially when working on mutual tasks, should not be underestimated. An illustration of this point was given by one of the "least successful" students interviewed. This young man's handwriting was very large and "scrawled" for his age. He routinely handed in an 8"x 10" lined page with no more than twelve illegible words, in sentences, which filled the entire page. Teachers complained constantly, admonished the boy, and made him rewrite the papers before they would accept them. This continued for several months, but the size and quality of his writing changed little. Suddenly his handwriting got smaller and neater. Teachers were elated and praised themselves for persisting in demanding the constant rewriting. A few months later, the boy was interviewed as part of this study. When asked his feelings about group work, part of his response was,

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"[working in groups] helps people who aren't that smart to pick up some new learning habits. Like, I felt really different because my writing was twice as big as theirs. Someone said, 'Why do you write so big?' I said, 'Cause I like to.' I started making it smaller because I didn't like to feel different from everybody else."

This story illustrates the point that peer influences can be more persuasive with 11-13 year olds than teacher admonishment. The story further validates brain research findings that learning occurs in social and emotional contexts (Goleman, 1995; Sprenger, 1999). It also illustrates the need for teachers to continuously examine their assumptions, reflect on the effectiveness of their practice, and to remember that students have to create their own meaningful learning - it can't be forced on them. To achieve this end, knowing the student and listening to him are important tools. Another implication of this study is very clear, if a teacher wants to know how students learn best, the students should be asked because they know.

## Task Orientation

A second significant finding was that those students who are successful perceive the class as more task-focused and goal-oriented. The implication is that successful experiences motivate students. Success creates success and the confidence that they will be able to meet the challenges presented. This confidence is further reinforced by a strong sense of teacher support. The most successful students "buy into" values that include the importance of attending to and completing assigned work (Fennema & Peterson, 1985). Whereas those students who work at a slower rate can develop a habit of not expecting to complete assignments. Those who do not understand or are having difficulty with a task and are not comfortable asking for help, or are in a structure that

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does not allow it, and students are not allowed to help each other, are more likely to become distracted or to decide not to value completion, or the task, and lose interest. Research confirms that the stress and threat that accompanies a student's anticipation of failure interferes with focus. Educators must provide learning experiences that are perceived by students to be interesting, valuable, and that allow all students to succeed if they invest the required effort.

Furthermore, experts on attention and motivation explain that in order to work to achieve, the learner not only must believe he is in control of the outcome, but also must value the outcome (Stipek & Weisz, 1981). Participants in the present study indicated that projects with some degree of choice and with written performance rubrics are helpful because students have a clear understanding of expectations and control of their performance and, thus, their grades. This is consistent with one of the most basic brain principles: students find it easier to learn if they know what they are trying to accomplish.

Teacher Support

A third significant finding from this study was that the most successful students perceived the classroom as being more supportive. They saw the teacher as more friendly, helpful, trusting, and interested in their ideas. Success is reinforced by approval, support, and positive feedback. A history of successes tends to encourage students to ask for help when they need it without fear of embarrassment. Teachers or others may also provide this assistance more cheerfully knowing that the needed support is likely to be brief and not taxing of time or effort. Whereas, students who have had limited experience with success, both at home and at school are more reluctant to open

themselves to possible embarrassment or rejection. This is illustrated by the data from this study, in which the least successful students perceived being "talked down" to and embarrassed for not knowing the right answer significantly more than the most successful students did. Furthermore, even the most successful students expressed feelings of discomfort when teachers "put down" students in front of the whole class, or behind the student's back. Students in this study perceived that the teachers who engaged in these behaviors did not know or understand the student or the situation, and such teacher behavior eroded students' respect for the teacher. The implication for educators is that classrooms must become places where all students perceive that the teacher shows respect, trust and a personal interest in him or her, and that they are safe from embarrassment for not knowing the right answer.

Innovation

A significant difference between the genders was that, compared to the most successful males and the least successful females, the most successful females saw their classes as more innovative as exemplified by students contributing to planning classroom activities and the teacher using new techniques and encouraging creative thinking. This finding is reflective of sex differences attributable to 11-13 year-olds (Wilkinson & Marrett, 1985). Girls tend to be more verbal and much instruction is also verbal - either oral or written. The variety of verbal tasks, combined with the sociability of girls this age increases the likelihood that assigned classwork would match their strengths and encourage them to feel they can influence lesson design by asking if they can work with a friend, for example. Whereas, the males and other females whose strengths may lie in other than the verbal domains may perceive these "new and different approaches" as

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"more of the same" that doesn't capture their interest, attention, strengths, or perceived usefulness. These data strongly suggest that teachers must utilize a wider range of approaches to meet the variety of needs, learning styles, and intelligences of the students in their classrooms. The implication of this finding is also highlighted by another principle from brain research which states that students work harder at learning tasks that they have helped to define for themselves or when allowed to pursue some goals of their own choosing.

Competition

Gender findings indicated that, compared to the most successful females, both groups of males in this study perceived greater competition in their classes in the sense that it was much more difficult to get good grades and recognition. However, the least successful female participants perceived the most pressure to compete, more than both groups of males. The finding that the least successful males perceived nearly as much competition as the most successful males did, supports a cautious hypothesis that at least at the sixth grade level the unsuccessful males have not yet given up. They are still trying. And the least successful girls try extra hard, perhaps because of their affiliative goal to be included with the most successful females and success is the key to entry and acceptance.

This finding may also be related to the research that states that adolescent girls have body image problems. They tend to express discrepancy with their perception of their body shape, size, and so forth, compared to the ideal. Some tend to think of themselves as being "too fat." This lack of self-esteem may also influence their perception of their standing in the classroom. Their lack of self-confidence may also

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inhibit their utilizing behavior in the classroom that would contribute to greater success and recognition. It seems reasonable to assume that if one feels confident that success is possible, then one is more apt to participate in the autonomous learning behaviors that lead to success (Fennema & Peterson, 1985). It would appear that these students do not realize that "their problems, and their hopes for improvement, are inextricably tied to how they think" (Senge, 1990). Being aware of and influencing these self-perceptions is but one of the many challenges facing middle school teachers.

## Implications for Principals and Administrators

The data generated by this study have important ramifications for principals and school administrators. The first implication of the study findings for principals is that it is critical that principals take the responsibility for providing the same supportive, nurturing, yet challenging conditions for teachers that we expect teachers to provide for children. Schools should be caring, trusting places where all members needs are getting met so that learning can occur, where there is excitement in learning, where risks are encouraged, and where expectations encourage growing and helping others grow. Also, problem-solving and creative thinking should be the norm, and the student voice and perspective should be sought and considered carefully throughout the school.

The second implication is that principals must make it a priority to fulfill their dual responsibility to (a) hire teachers who have a capacity for empathy and the knowledge, skills and dispositions to reach out and engage all students, and (b) monitor most closely the relationships, sense of community, and learning conditions that occur in each classroom and throughout the school.

To strengthen climate at the school level teachers and administrators must concentrate their attention on helping others provide conditions that increase student engagement, ensure persistence, and foster satisfaction (Schlechty, 1997). This means that principals who wish to change the quality of school learning experiences must be able to help teachers determine what students value, their interests, and what they believe will meet their needs. They must be able to help educators provide work that engages students, that motivates them to do it, so that learning can occur.

Third, Tyler (1989) stresses the importance of identifying the problems that interfere with children learning and the importance of the principal's role in facilitating this process. Principals should support teachers' problem-solving efforts with unwavering positive expectations, dialogue, encouragement, time, and resources including materials and ongoing high-quality professional development. Positive expectations would include ensuring a schoolwide philosophy of maximizing learning potential without prejudged limitations. Identifying conditions that hinder student learning may require principals to spend more time in the classroom formally and informally and to have discussions with teachers regarding their beliefs and attitudes.

Principals should provide simple things such as encouragement, and scheduling that allows teachers to meet and to share problems, experience, and knowledge, and provides opportunities to dialogue, reflect and inquire about problems in student learning. To guide this problem-solving process, principals should encourage teachers to set realistic expectations about what they can accomplish and help teachers explore two or three goals at which they are likely to succeed, rather than long lists of expectations that are doomed to failure (Tyler, 1989). Principals need to help teachers focus on the changes that are the most likely to increase the learning of students. When teachers

include these goals as part of their individual professional development plans and their annual evaluations, it allows them to focus on real problems in student learning that are of interest, importance, and immediately useful to them. Through evaluation projects, including action research, principals can help teachers see what needs to be done, articulate or help teachers discover pathways to get there, provide ongoing support, and hold teachers accountable for achieving outcomes of increasing learning for all students.

A final implication for principals and administrators is that they must be persistent in securing professional development funding and the time for teachers to continuously develop their skills especially in differentiating instruction to accommodate the variety of learning styles and the multiple intelligences of students in their classrooms and to be compatible with brain research findings. In sum, principals and administrators need to make it a priority to (a) carefully select new teachers who have a capacity for empathy and a willingness to continue learning, and (b) spend more time supporting the growth of teachers to ensure that they have the necessary knowledge, skills, and dispositions to create powerful learning conditions for all students. It was apparent in this study, and also in the literature review, that teachers were not meeting the learning needs of many student participants. However, as Schlechty (1990) stated,

> People can not do what they don't know how to do. It is therefore the
> obligation of leaders to ensure that ... (they) know how to do what is
> expected of them. ...the development of new skills is likely to be
> necessary.

## Implications for Pre-service and In-service Professional Development Providers

The implications for professional development providers are substantial because for educators today, knowing critical information about how to do your job is no longer

optional (Jensen, 1998). Teachers need to be professionals, which means behaving like curious, passionate, life-long learners who really want to know about the best ways for our students to learn. A professional teacher also assumes responsibility for his or her own learning. Colleges, universities, and professional organizations that provide professional development at both the pre-service and in-service levels will be an increasingly crucial component in this continuous learning process. As such, the community of professional development providers will have to transform and reinvent itself to accommodate and reflect not only the burgeoning research information about how the brain works, and its connection to learning and classroom practices, but also the ever-expanding menu of options as to how professional development can and must occur to meet state and federal mandates as well as the wide range of needs and circumstances of teachers in preparation and in practice.

## Preservice

Data gathered in this study strongly suggest that pre-service providers in colleges and universities need to become more vigorous in the preparation of all prospective teachers to ensure that they have a solid foundation in curriculum and instruction theory, academic content knowledge, and current research, as well as sufficient well-supervised experiences (practice) to demonstrate proficiency in applying essential pedagogical skills, knowledge, and dispositions in public school classrooms. Based on the findings in the present study perhaps one of the most essential dispositions for a teacher candidate is to be a curious, passionate learner who not only wants to know about the best ways for our students to learn, but also is willing to do what they can to provide it.

Another essential combination of dispositions and skills that prospective educators must have, based on the data collected for this study, is sufficient empathy and social skills to be able to develop a personal interest in, and consistent, positive, trusting, supportive relationships with all students. A fundamental belief in the importance of doing this is key.

A further implication for teacher preparation programs is that understanding recent brain research and its connections to learning must become standard requirements for educators. The classroom conditions that helped or hindered learning that were identified by participants in this study, are consistent with research about the brain and how it learns, particularly the biology and chemistry of the brain's response to conditions that facilitate its learning or impede it. With this new information educators can be far more clear about establishing a brain compatible learning environment which includes varied sources of input, meaningful active learning, timely appropriate feedback, and a safe, non-threatening environment (Rutherford, 1998). Participants in the present study echo brain research findings by perceiving that they learned best when they felt safe and trusted, were reasonably sure that they could be successful, and could use the new information. Thus, the curriculum of pre-service programs must ensure that prospective teachers are able to understand and apply this research information well, to create more productive learning environments in which instruction is designed to match how students' brains learn best, and perhaps vastly increase the learning of a wider range of students.

It is critical that teachers take responsibility for their own learning. Therefore, pre-service providers must ensure not only that prospective teachers are knowledgeable about current research, but also that they believe in the necessity and importance of keeping updated on research findings and how they relate to learning and classroom

conditions as a context for learning. Furthering the ability of new teachers to develop a

means, and a habit of keeping current would be a valuable part of a pre-service program.

Data gathered for this study strongly suggest that pre-service programs should

also include instruction about the fundamental relationship between students' perceptions

and their learning behavior. Undesirable classroom behavior occurs for a reason which is

essential to understand before favorable changes can be made. The classroom provides

the climate for learning, and teachers control the weather in the classroom. Teachers

must understand that in order for learning to take place, a student must feel worthy, safe,

comfortable, supported, relaxed, and secure. Pre-service instruction should emphasize

the importance of accessing students' perceptions of learning conditions in their

classroom so that teachers can make adjustments to continuously improve the learning

success of their particular students. Thus, familiarity with observation techniques,

available climate survey tools, and interview techniques should also be experienced.

Other features of a minimal pre-service curriculum, based on the data generated

by the present study, would include a strong knowledge base and experience

implementing research-proven differentiated instruction that incorporates multiple

intelligences theory (Gardner, 1983), learning styles and preferences (how an individual

perceives, organizes, and processes information), cooperative learning, flexible grouping,

classroom and time management approaches, creative problem-solving and creative

thinking, appreciation and respect for diversity, and the developmental process and

stages of a group's evolution, and, of course, brain research. The data collected for this

study verify Sylwester's (1995) assertion that,

Educators have handled many complex learning behaviors rather ineffectively. Schools tend to be most successful with motivated students of at least average ability who come from secure homes and can function reasonably well without much teacher assistance. They are less successful with students who don't fit this profile.

Advances in technology have made possible new brain research which offer educators greater understanding of the miraculous learning process that is the focus of educators' daily efforts. Understanding how the brain learns, combined with the knowledge base listed in the previous paragraph, helps educators understand why certain educational approaches have achieved success, while many others have met a less happy fate. This knowledge offers educators an opportunity to be more successful with more students.

## In-Service

Providing ongoing professional development to teachers already practicing in the field is also challenging because professional teachers represent a diverse range of beliefs, experiences and skills. However, professional development providers who offer coursework, conferences, seminars, and workshops to educators should assume nothing and include updated instruction regarding different learning styles, brain research, and multiple intelligences theory: specifically, how to teach, assess, and report to include them all fairly. This in-service should be delivered in ways that make the information both meaningful and useful, so that teachers understand the theory and have opportunities to practice applying it and to explore their conflicting beliefs.

A second focus of on-going professional development should be a fundamental belief in the importance of developing a personal interest and relationships with all students, and the development of social skills necessary to be able to accomplish that.

Third, professional development providers should emphasize the classroom environment as a context for learning and provide educators with the tools and the courage to look fairly at the conditions they have created, using a variety of new lenses, or frames, to determine which factors impede and which encourage learning.

Fourth, teachers also need support for their own learning needs and benefit from opportunities to meet with others, reflect on the difficulties of teaching, identify problems in improving student performance, brainstorm and develop solutions together. Professional development providers who help teachers reframe their thinking or provide a variety of frames to use when trying to understand student learning problems, provide them with a valuable service.

Fifth, professional development providers should also address the benefits of cooperation, while minimizing competition in the classroom. This study does not advocate eliminating all competition. Teachers need to recognize research that states that for 6th grade students, congruency with sex-role identity is important for success. The traditional male identity tends to be competitive. However, channeling competitiveness constructively and developing skill and comfort with working cooperatively with others is supported by the data from the present study.

Finally, professional development providers should firmly establish in the minds of educators in the field the expectation for teachers and administrators to keep current regarding research findings about how the brain functions and learns and how that information impacts learning in the classroom. The data from the present study suggest that not all teaching practice reflects current research findings and, furthermore, it negatively impacts student achievement. Obviously, the more that is understood about

the brain, the better teachers will be able to design instruction to match how it learns best.

## Implications for Policymakers

An important implication of the study findings is that policymakers must fully realize that the literature is consistent: what happens in the schoolhouse and in the classroom (direct influences on the student) has a greater impact on increasing student learning than do state and federal policies (indirect influences) alone. Thus, when planning local school improvement, policymakers and educators can no longer overlook the importance of understanding the student's perspective. Data gathered in this study show that students are capable of taking seriously and making constructive comments about the influence of the classroom on their learning. What students in this study are saying is different from, but complementary to the emphases of policymakers. However, policymakers play an unmistakably important role in improving public education. They must be reliable both in setting the direction and in supporting the means to get there.

A second implication is that federal, state and local policymakers must be clear about the need to educate all students well. Policymakers at all levels must also be consistent and very clear when defining the standards for student performance. This means determining what kind of people the adults who provide and support the schools want children to become and what they should be able to do to be responsible, contributing members of a democratic society. Hopefully, the power of the MCAS tests will bring forth such thoughtful and important dialogues between colleagues, administration, parents, students, and community members. Teaching what is truly important might also increase the interest, focus, effort and, thus, the learning of more students.

The state must help schools build the capacity to educate all students well. In order to do so they must clearly state the importance of teachers being able to provide a variety of learning conditions that motivate students to learn and that provide them with a sense of belonging. The state must provide professional development opportunities for superintendents, principals, teachers and curriculum directors how to provide diverse learning experiences. They also need to help schools restructure so that teachers have more opportunity to collaboratively develop learning conditions to improve student learning.

Data generated by this study strongly suggest that policymakers must establish stronger incentives for schools to address the educational needs of their lowest-performing students and of special needs populations. Schools should be required to narrow the gap between the lowest and highest-performing students so that all groups of students meet the same performance standards. To close the achievement gap policymakers must ensure that all students have comparable learning opportunities such as (a) access to instruction that addresses the required standards, (b) teachers with strong content knowledge and the skills to teach to diverse learners, and (c) access to sufficient supplemental help and more time.

To increase the learning of the many struggling and low-achieving students to meet the performance standards will require substantial school improvement effort. Therefore, policymakers at all levels must be equally firm in providing resources to make possible the enormous changes and improvements that they mandate. Emphasizing and funding the measurement and accountability demands of the "what" of increased learning

without adequate support of the "how" of increasing student learning to meet those expectations is irresponsible. Raised expectations for teachers and students has created levels of stress for both which can be detrimental to learning unless sufficient guidance, support, and resources are also made available to provide the conditions to make meeting those expectations possible. Policymakers need to maintain an awareness of this delicate balance and make needed adjustments to keep the stress at a productive level to enhance the performance of educators and the students they teach. The data from this study suggest that critical resources from the students' perspective would include:

- manageable class sizes to allow teachers opportunities to develop personal relationships with all students not just the more socially adept, and to allow sufficient space to provide differentiated instruction which entails a variety of groupings, materials, and approaches;

- full support of teachers' efforts to meet the learning needs of all students; public school systems need to more fully support the continuing education of their employees by providing the funds and released time for professional development in order to keep the stress level from raised expectations for teachers manageable;

- a sufficient body of well-trained, caring teachers and skilled support personnel, which may require increasing financial recognition and pay scales to attract and retain high quality candidates; and

- sufficient materials and technology to meet diverse learning needs and to prepare students so that they can more effectively meet the demands and opportunities they will encounter in society outside of school.

In sum, policymakers must make a serious commitment of time, money, resources, and courage to ensure that schools have the capacity to support and sustain the enormous change required to significantly increase the learning of all students.

## Recommendations for Teaching and Research

The recommendations are of three types. First, recommendations for actions teachers may take to improve their classroom environment to increase student learning are advanced. Second, recommendations are provided to improve the present study, and, third, recommendations are proposed to guide the efforts of future research about teaching, perception, and learning.

## Recommendations for Teachers/Educators

This is a descriptive-exploratory study and, therefore, the information generated cannot be used to prescribe to others. However, the rich data that emerged offer insight into what may be contributing to the learning problems of students and may aid educators in solving the particular problems of students they teach. It is important for teachers to fully realize and be constantly aware that the classroom social environment is one of the primary psychological determinants of academic learning and the teachers' personal style establishes the climate in the classroom through their approach to teaching and learning, daily mood, and response to situations. This gives the teacher the power to determine whether a child in his classroom will be nurtured or humiliated, feel competent or worthless. Every teacher must believe that he or she has the power to make a difference. All children want to learn and be successful. Even one small change can make a big difference.

In this study the most successful students perceive the same class environment differently than the least successful. Whether the differences in their perceptions are due to receiving different treatment or experiences in the class environment, or whether the students filtered a similar experience through different inner filters is unclear. The greatest differences seem to be in the perceptions or feeling of being in a warm, supportive, helpful, enjoyable peer learning community within the class, the feeling of having a supportive, caring teacher - a teacher who guides rather than coerces; and a sense of completing planned activities and staying on task which the most successful students reported. Teachers must look carefully at the relationships fostered in their classroom. Clearly, a classroom environment in which students feel comfortable, accepted, and supported by ones peers is closely related to academic success.

In contrast, the least successful participants in this study perceived (1) significantly less-satisfying relationships with peers, including more difficulty being included in groups and little opportunity to make friends, (2) significantly less interest, trust, and help from teachers, (3) a greater threat of getting into trouble for breaking a rule, and (4) a lack of self-confidence about being able to complete their assignments. These findings are consistent with the literature review that explains that when a student feels helpless when faced with a learning task, or even subtly threatened by it, the brain reacts by going into a state of stress. Experiencing conditions of threat and stress interfere with students accessing brain regions where concentration and higher level thinking occur. It is crucial that teachers realize that excess threat and stress is the single greatest contributor to impaired academic learning (Jensen, 1998).

It is imperative to children's futures that all teachers understand current research findings about how the brain functions. For example, knowing that the major threats to

today's students include (1) being embarrassed in front of their peers, (2) being seen as a failure by their peers, and (3) being bullied in informal settings, makes it easy for teachers to make changes in their classrooms to avoid these biological impediments to learning.

It is important for teachers to know what changes will provide the greatest benefit to enhance the learning of their students. Since the goal of instruction is to encourage student learning, educators should look closely at the kind of social climate that is created in their classrooms and whether that climate is likely to promote or detract from learning. Careful observing, listening, inquiring, more formal surveys, and interviews are all ways to gather essential information to be considered when making changes designed to increase the learning of all students, especially the most challenging. It is important for teachers to take the pulse of their own classroom climate - even a small change can make a big difference.

The literature on school reform reports that a strong sense of community is related to increased student achievement. Data gathered for this study show that teachers must look carefully at the relationships fostered in their classroom. For example, in this study a student mentioned not being able to access computers because others dominate them. This suggests the need for teachers to monitor the equity of accessing classroom resources, as well as the need to be alert for subtle harassment between students. Just because certain things are a part of our culture and they exist in the classroom does not mean they should remain. Teachers and principals as educational leaders need to model and enforce the values of equity and fairness in the learning environment.

Respect between students and between teachers and students is an essential element in a supportive learning environment. Data gathered for this study strongly suggest that respectful behavior is not fostered in all classrooms. When teachers' discussions center on how to accommodate the needs of students with different learning rates and modes, teachers should give careful consideration to the concern expressed by one of the most successful students in the present study:

> Some kids aren't respecting others' rights. When the teacher repeats for students who don't get it yet, they groan and all that. That makes it difficult because each time she explains it she might toss in something new and it just makes it difficult when they keep groaning. I feel like they're making fun of them because they don't catch on really quickly, and that's not right.

The rudeness of some students interferes with even the most successful students benefiting from a teacher's instructional clarification and amplification. Teachers who don't address and extinguish this behavior are penalizing the others and sending a message that inquiry is not valued in this class, nor is understanding. Furthermore, teachers who respond by acquiescing to the pressure of rude students are giving the message that rudeness and disrespect "rule". Instead, teachers could use student groaning as an opportunity to teach respect and appreciation for different learning styles and to reinforce the concept gleaned from recent brain research that in order to learn, everyone has to make their own personal meaning for the information, and that takes time.

At the same time, data gathered during student interviews regarding what they like about learning and what makes learning easier for them indicate that some very good teaching is taking place, and that sixth grade students can reflect and recognize it, articulate it, and, therefore, confirm that it works to make learning easier for students!

These favorable conditions identified by study participants are also described in the literature on effective teaching. These include having the teacher put desks in groups and allow students to help each other, arrange peer tutoring by interested students, explain things really well, provide additional explanations in different ways, write the schedule and important information on the board, reassure students that they "can do it" and that the teacher will help, and then provide help until the student understands, even after school, if needed.

Educators should carefully consider the changes that the students in this study recommended. For example, when discussions center on how to accommodate the needs of students with different learning rates and modes, teachers should think about whether or not they are making use of peer tutors in ways that would benefit both the tutee and the tutor. This may be an overlooked resource, which many students enjoy and find helpful according to the recommended changes made by several of the most successful students. In the words of one of the most successful students, "When I explain it to others, I 'get it' more. I'll know how to do it better, too." Students who reach out to others in affiliative ways should be encouraged. A small change such as giving students permission to help each other might make a big difference in the learning of many students. This kind of paired learning can also build respect for learning differences, allowing students to learn from each other to enhance each student's own range of approaches to learning tasks.

A second suggestion for improving student learning made by one of the least successful study participants was to have the teacher summarize at the end of class. Teachers should ask themselves if they are leaving enough time at the end of class to summarize, so that the learning needs of both the part-to-whole learners and the whole-

to-part learners are addressed. Apparently some of the students in this study feel that they are left with a myriad of details, or parts, at the end of the lesson without a "big picture" on which to assemble them. These students are asking for "classic" teaching: say what you are going to teach, teach it, then summarize what you just taught. Brain research also affirms the need for teachers to teach new information within a meaningful context so that students can organize the information to store it in memory and, thereby, "learn it".

A third category of student suggestions involved having more choices to accommodate learning differences within the study sample. Examples include: (1) having their favorite subjects when they are most alert; for some students that is early in the day, for others it is in the afternoon; (2) having the teacher write things on the board so if students forget it, they can just look up; (3) having the teacher show, demonstrate, use visuals, "not just tell"; (4) having their favorite subjects for longer periods of time; and (5) building things to increase students' understanding. Learning style differences are apparent in this study and need to be continually reinforced. Teachers should encourage students to understand and develop more fully their own learning style combinations and multiple intelligences (Gardner, 1985), as well as have a clear, basic understanding of how their brain functions and how learning occurs. Howard Gardner believes that students may learn more easily when they use their strongest intelligences. Therefore, to maximize the learning of all students, the classroom environment should offer "style-rich and intelligence-rich" (Silver et al., 2000) learning experiences and assessments, that are also compatible with current brain research findings. In addition, learning environments and instructional schedules need to be flexible and variable enough

to accommodate instructional purposes and provide for all students' needs at least some of the time.

In this study many students indicated that the noise level was mentioned by many students as interfered with their learning: "Can't concentrate. Can't do work. I'm thinking I want them to be quiet. I can't do anything about it." Teachers need to develop classroom routines that provide students with a way to signal their teacher when the noise level interferes with their learning, or even give the student the means to influence the noise level more directly. Research indicates that there is a strong link between noise levels and stress and that students become aggressive from elevated stress levels due to noise (Freiberg, 1998). The review of the literature on brain research confirms the concerns of students in this study that noise and stress interfere with the brain's thinking processes. Teachers must vigilantly monitor the noise levels in their classes in order to provide an environment that optimizes student learning.

Noise related data from the present study indicate that the least successful students perceived their classrooms as significantly more out of control and noisy than the most successful students did. Whether or not this finding is suggestive of different tolerances for noise and movement is unclear. One possible explanation is that there are more students with Attention Deficit Disorder (ADD) in the least successful group and the external environment is more distracting to the least successful students with ADD. A second possibility is that they use the distractions as reasons why they can't succeed.

Teachers also need to intervene for students whose friends are very talkative and the student has difficulty asking them to be quiet so they can do their work. A student in this study suggested moving the talkative friend away to a desk that is not so near. The benefit of involving the student in the decision is that the move is then perceived as

purposeful and proactive rather than punitive. Some students find it helpful and easier to concentrate when the teacher moves their desk away from other students. Differences in students' sensitivity to noise level and need for space are related to learning style and brain functioning. If teachers naturally and comfortably respect and accommodate the variety of needs within the classroom, and understand why meeting these needs is necessary for the brain to learn, students will follow their lead.

One of the least successful students mentioned, "I don't really take much interest in stuff that I already know, but for the stuff that I don't know, I pay a lot of attention to!" This student's comment sounded like a request for the "Mastery Learning" pretest, formative test(s), and summative test approach. The goal of Mastery Learning is to master the material that is considered important to learn with as many re-teachings and practices as needed. Of course, for many students passing the pretest meant not having to review the material, but to go on to other important learning. With lock-step instruction everyone is on the same page, and, as students in this study indicated, some may be bored and for some, instruction may be way over their heads.

Sixth grade students in this study are asking for greater instructional diversity, while, traditionally, most teachers ask to minimize or filter out the diversity. Providing a more varied learning environment as suggested by students in this study requires first conceptualizing and then creating it. This can involve a lot more time and effort than one-size-fits-all instruction. The approach that is easier for teachers seems to traditionally be selected: sorting and tracking students into more homogeneous groups - - an illusory goal, at best; a demoralizing experience for some students, at worst. One issue that needs to be consciously considered when opting for reducing diversity, is the perpetuation of the social status quo, a value with which educators should not be

comfortable. Level the playing field and equalizing educational opportunities for students of all social and economic backgrounds is the expressed goal of public education in a democracy (Tyler, 1985, 1989; Sinclair & Ghory, 1987). This is a concept which all educators must fully embrace. To learn at high levels of achievement, all students need access to high-quality teachers and instruction and appropriately high and challenging expectations.

Another compelling finding that has implications for educators was that the most successful students perceived having a significantly greater sense of power and voice by reporting that students had more flexibility in how they went about and completed their assignments, and had a greater influence on how class time was spent. This suggests that the most successful students generally feel more able and confident in themselves and see their teachers as more approachable, flexible and innovative. Students liked these opportunities for choice. In the words of one successful student, "It makes me feel older, more grown up." The literature confirms that giving students much choice and control reflects the teacher's deep and abiding faith in students and is very motivating (Pintrich et al., 1994). The findings from the present study support the theory that a sense of autonomy, especially in terms of students feeling that they have a "voice" and some "choice" in classroom activities is related to success in school. On the other hand, a "sense of powerlessness frequently breeds reduced interest and motivation, at best a kind of passionless conformity and at worst a rejection of learning" (Sarason, 1990). To increase student motivation schools must become interesting places where students are actively involved in the negotiation of the reasons for learning, because in the end, students must construct their own knowledge, it cannot be assembled for them.

The data collected from student interviews indicate that for successful students the teacher's personal interest in them extends beyond the walls of the classroom. For the least successful, it seems more restricted. The data from this study indicate that the least successful students seldom complete work with time left over for more personal discussions. Data generated by this study strongly suggest that it is important for teachers to make time for meaningful, more personal conversations that show true interest in each student as a person.

It would be interesting to know whether teachers take an interest in a student because of the student's documented success and reputation, or if students do well because the teacher takes an interest in them. This raises the issue of teacher expectations. The implication is that, perhaps, teachers can play a role in making more students successful by showing an interest in those students who don't leap out as being successful. In sum, the least successful students feel less affiliation to the group and the teacher because they feel they have less to offer. It seems obvious that to keep the least successful students involved in school, it is important to give them tasks at which they can be successful.

The question is, how can teachers get better at including all students? To begin with, the teacher can be more active in getting students to come for help. For the less able students, the teacher can recognize and praise their strengths. Students who feel that teachers are truly interested in them are more willing to come for help. Certainly a student who feels the teacher regards him to be stupid, lazy and valueless is not likely to listen to the teacher's advice or instruction.

Teachers need to look more closely at and develop more effective techniques to get students involved with teachers and peers within the classroom. One way is to find

something to compliment - a strength, ability, or talent the student has - and to verbally recognize and show appreciation of it. Then the student will be more likely to approach the teacher if she feels valued by the teacher and worth the time required to provide the needed help. When this recognition is given in front of peers, it increases the student's sense of worth within the group and increases his or her comfort in interacting with peers in learning activities.

Consistent with the research that describes learning as the discovery of personal meaning regarding a situation or information, students in the present study indicated that they want the challenge of constructing their own knowledge and understanding of things. In the words of one student, "It's hard to learn when the teacher over explains it. She gives us the answers when we work separately. In groups she explains it just the right amount so we can figure it out ourselves, because there's more than one mind working." This advocacy for working in cooperative groups was just one of many excellent research-supported reasons given by students interviewed. Their preference for working in groups was strong.

Participants interviewed in this study also indicated a need to concentrate and pursue their own ideas at their own speed without interruption some of the time. Therefore, group work should be used purposefully and in combination with other approaches. Data collected in this study indicate that when utilizing group approaches, teachers need to be aware that even some of the most successful students have difficulty being included when getting a group together. Academically successful students are not all equally popular or valued among their peers. Sometimes teachers give careful thought to the placement and group acceptance of students with known behavior problems, or students who present themselves as less academically able and, therefore,

less valued in a group. We need to be more aware of all students' strengths -- sometimes it seems we focus on the weaknesses that need to be "fixed" -- and more conscious of the variety of skills and talents required to complete the tasks we design for "group work", so that all students can contribute and feel valued. This gives students who may lag academically opportunities to be recognized for skills they have that are not usually recognized in the school setting. In fact, usually acknowledging students' strengths makes them more able to take suggestions for improvement.

Data collected for this study also strongly suggest that two other components are necessary for successful group work. First, by assigning roles for accountability and for equity of participation the teacher helps students realize that each of them is necessary to complete the task successfully; and second, children need to learn how to work together cooperatively, how to listen to each other and to be constructively critical when needed. This means that the teacher must provide instruction, monitoring, and feedback to students regarding their group's process (the social skills used). Both are important for group work to be a truly cooperative learning experience - rather than the negative experience that can sometimes occur when groups are left to their own devices. Particularly for sixth grade classes these techniques are important.

Research shows that some grouping practices, such as assigning students to "low ability" groups can have negative effects. To minimize the negative effects of groups teachers must remember to treat children in the low ability range with the same respect as those who achieve more easily. Berliner and Casanova (1993) recommend recognizing their skills and considering what they don't yet know and can't yet do as temporary hindrances that are likely to disappear with the help of interesting and challenging work. Both high-ability and low-ability students tend to achieve better in

groups where the teacher's comments are both demanding of their best efforts, and encouraging. Furthermore, the finding that 80% of both the most successful and the least successful students in this study enjoy working together on projects and helping each other with homework, indicates that sixth graders still have the enthusiasm and hope of being successful and included. Students start out with enthusiasm and become defined "in" or "out" during the pre-puberty years going into puberty. The implication is that a healthy use of groups would be to begin group projects at this age level.

Teachers need to be careful how and where they vent their frustrations. The observed teacher behaviors described as "put downs" by students in this study were interpreted negatively by the most successful students and had a significant impact on the least successful students, also, fueling their fears of being incompetent. Furthermore, students in this study perceived that the teacher did not understand why some students were not succeeding and that, therefore, the teacher's current negative methods for changing, or inspiring, these students were not going to be effective because they didn't address the problem(s). It is evident that students in this study saw and understood more about their teacher's behavior, purposes and assumptions than teachers realized. We are more transparent to students than we know.

Data collected for this study indicate that some students have difficulty freeing themselves from a negative image when they transition to Middle school from elementary school. To help the child succeed, teachers must understand the complexity of the process involved. The student not only must manage his or her own disciplined change, but also dissolve and reconstruct other people's expectations of them. In other words, these students need to develop new ways of working and develop a new image. Things that hold the student's negative view of himself in place include the stereotypes and

expectations of teachers and fellow students. Unfortunately, both of these factors were evident in the data collected for this study.

What really seems to stand out from the interview data collected for this study is the difference in the perception of the teacher by the two groups. The most successful students are more aware of the teacher's presence in the learning process, and experience the teacher as a stimulus to learn. They recognize the teacher as providing them with choices, making things fun, and making learning easy by going over things until they "get it". In the expressed perceptions of the most successful students the teacher is very present.

Whereas, in the views of the least successful students regarding what they like about learning and what helps them learn, the teacher seems to be missing, or providing little or no stimulus to learn. They don't seem to see the teacher as a central character in their learning. Their interview responses are missing the presence of the teacher, or the teacher only seems to be present as a sorter outer of seats. Thus, the responses of the least successful students suggest that the teacher is not an important factor in their experience--which is a real loss.

In sum, what comes across in the student interviews is the perceived presence or absence of the teacher. The preponderance of the most successful students are getting positive teacher interaction and attention, including laughter and inquiries about their personal interests. The preponderance of the least successful students seem to be focused on the learning task, help from family, and staying awake. The teacher's efforts in engaging students are important. The effective teacher is the one who reads the class well and develops techniques that keep all students involved.

Summary of Recommendations for Educators

The intent is to help increase the capacity of teachers to improve teaching and student learning. The first recommendation based on the findings of this study is that teachers make the classroom an environment where students and teachers are learners together, where students are learning the subject matter offered and teachers are continuously learning about how their students learn. This requires teachers to have mastery of a variety of teaching approaches that are compatible with how the brain learns best, and an openness to be responsive to the array of particular needs, interests, talents, strengths and background experiences of each student. It also requires a willingness to continually monitor and make adjustments so that the match between the learner and the learning experiences provided is as effective as possible. Thus, teachers must be able to differentiate instruction for diverse learners. This means teachers must know what to differentiate, how to differentiate, and why differentiate it.

All children at all achievement levels want to succeed and want to be in an environment where success is possible. Likewise, in classrooms each day teachers act on their deeply held beliefs and convictions. Therefore, the second recommendation is that educators must embrace this notion of student success as part of their belief system Those students who are unsuccessful are the ones who need the teacher to be able and willing to go the extra mile and not give up on them, even if the student appears to have given up or masks his feelings with bravado.

The third recommendation is that teachers acknowledge that students have the capacity to reflect and share their thoughts on issues affecting their lives. All of the sixth grade participants in this study took the opportunity seriously, provided thoughtful answers, and were sincere in their interest to improve their learning and to improve

learning conditions for their peers. It is imperative that teachers inquire, and listen, and take their students' perspectives into consideration as they undertake improving the quality of teaching and learning in their own classrooms, keeping what is proving to be effective and changing what impedes learning. It is critical that educators and students work together to improve teaching practice and student learning. Including the voices of students is an important component of this process.

Finally, this study recommends that educators shift from a focus on teaching to a focus on learning. This necessitates that teachers become better observers. It also compels teachers to examine their educational assumptions and principles about student learning behavior that were developed when "societal conditions were different and our knowledge of the conditions required for learning was very primitive" (Tyler, 1989). Many of these assumptions and principles are erroneous, but have been slow to change. Since assumptions and beliefs are rules that teachers accept and base actions upon, while useful, they often blind teachers to ways of looking at things outside themselves. Educators must develop a wider range of "lenses" with which to explore problems in student learning. Teachers must take the students' perspective. Thus, educators need to ask, "What does the child require in order to learn, and how can we provide those things?" An important caution from Tyler (1989) applies and echoes the findings of the present study, "Appropriate instructional procedures and materials are required, but they will not substitute for teachers who care."

## Recommendations for Improving the Present Study

The student surveys were administered late in May of the school year, which allowed little time to analyze the survey results, generate follow-up questions, and

conduct the interviews before the end of the school year. Future surveys should be given earlier in the school year. The beginning of April would be late enough for students to have developed a good understanding of their teachers and classes, and their place in them, but early enough to allow sufficient time to analyze survey results and prepare and fine tune interview questions that would generate even more detail to inform our understanding of students' perceptions on the most relevant survey findings. Additional time might allow a larger sampling of interviewees to ensure that the greatest diversity of perspectives is included. It might also allow time for a second interview with students whose responses generate interesting follow-up questions when transcribed.

Second, the schools in this study were selected using a stratified sample to ensure demographic diversity. The findings cannot be generalized beyond the schools that participated, however, because the sample was not randomized. It is recommended that this study be replicated using a randomized sampling across different states so it could be determined if the findings can be generalized to a larger population. Replication of this study with other grades should also be conducted to explore the question of: when do these differences begin?

Third, students in the most and least successful categories were teacher selected, supported by report card grades when available. This study could be improved by clarifying the criteria the teacher used to select the least and most successful students.

A fourth recommendation would be to examine the data for possible differences in perceptions between the least successful students who were enrolled in special education programs compared to the least successful students who were not identified as having special needs. Of the sixty-six least successful student participants in this study, exactly half (33 students) were enrolled in special education programs, while the other

33 students were not. It might be useful to see if these different treatments were related to any differences in their perceptions.

Several questions arose as the data were analyzed, indicating ways to build on this research. For example, the finding that the most successful males perceived their learning environments as less innovative, supportive and affiliative than the most successful females did, suggests that these classrooms may be geared more toward female interests, styles, and support preferences. Comparisons of teachers with their students on the variables of teaching and learning styles, interests, and gender, and the relationship of these factors to students' academic success might provide insights useful to educators' efforts to improve student learning.

Similarly, the most successful students in this study perceived new and different ways of teaching being tried more often than the least successful students did. This suggests that studies that compare the learning styles and multiple intelligences profiles of students at both levels of success with their teacher's, might generate potentially useful information for planning classroom instruction that interests and engages all students by allowing them to use their strengths in the learning process.

## Recommendations for Future Research

Further research should be conducted to compare teachers' perceptions of what aspects of their classroom climate are likely to promote or detract from learning with the perceptions of their most and least successful students. This information might advance understanding of how attuned teachers are to the learning needs of both groups of students. Whether or not the teacher's gender influences the comparison results might be another useful aspect of such research explorations.

The least successful students perceived more time being spent discussing outside activities rather than classwork. What is unclear is the nature of these discussions. For example, did these occur between teachers, or between students (and if so, were these discussions condoned by the teacher?) Did the conversations occur between the teacher and student(s), or between the teacher and the class in general? Regardless, these off-task discussions seemed more prominent in the minds of the least successful students. Since both the research review and findings from the present study indicate that being task focused is highly related to student success, exploring the nature of the discussions of "outside activities" perceived by the least successful students might prove to be useful research for improving student learning.

In the present study the most successful students perceived that the teacher frequently had to tell the students to calm down. The least successful students did not see this occurring as often. This finding raises several questions. First, could there be a difference in the level of awareness, or consciousness, of teachers' warnings between these two groups of students? Secondly, how do students' and teachers' perceptions of warnings compare to the actual frequency? Since the least successful students perceived the class as significantly more noisy and out of control and perceived a greater likelihood of getting into trouble for breaking a rule, research that explores differences in noise perception, awareness of teacher warnings, and perceptions versus the actuality of getting into trouble might provide valuable insights for improving the learning conditions for many of the least successful students. During the interviews, some of the most successful participants reported that the noise level increases when the teacher is talking to another teacher or a student, or when students are working in groups, and that the teacher has to remind them to lower the volume. In contrast, the least successful

students spoke primarily of their intense frustration when the noise level interferred with their ability to concentrate and think, and offered less reflection on the causes of the noise. The influence of distracting noise in a classroom is an area for future study.

Other directions suggested by the present study include research to explore the nature of teachers' "put downs" and "talking down" to students, research to determine how teachers identify student learning problems, and research regarding how they problem solve to increase student learning. These studies might also include an exploration of teachers' assumptions about students' abilities and the way these assumptions influence the teaching of both the high achiever and the low achiever in their classrooms.

A serendipitous occurrence during the study resulted in a finding worthy of further exploration for its relevance to the overall educational effects of using "pullout" programs to provide small group support services to students with identified special needs versus providing those services in the regular classroom. When the researcher arrived at one of the participating classrooms to administer the survey, a group of students had already left the class to receive small group instruction with a specialist. Thus, the group of most successful students was still present, but the students defined as the least successful, were those who were the least successful in this remaining class fragment, not the same students who would have been identified if the whole class were intact. One might think that the two groups actually surveyed in this class would have had more similar perceptions of the classroom environment, but statistical analyses revealed the largest differences in perceptions between these two groups than between the groups in any of the other classrooms in the study. This finding raises several questions. In classes in which removing students for instruction is a regular occurrence,

how is the classroom climate perceived by the students who remain after the least successful students have left? The most successful students will still be the most successful, but a new group of students now becomes defined as the least successful in this new context. Does that impact their perception of the classroom and the relationships within it, as the data from this study suggest? Also, does it impact their perception of themselves as learners?

## Conclusion

The classroom social environment is one of the primary psychological determinants of academic learning. The teacher creates and controls the climate in the classroom, and students are vulnerable to the atmosphere the teacher creates.

Students' perceptions decisively influence their behavior, and it was apparent in this study that the least successful students lacked the sense of a supportive, productive learning community enjoyed by those who were successful. Since humans are social beings, feeling excluded from the classroom community can result in loneliness and even despair and hopelessness. To be serious about improving the learning of all children of all families, teachers cannot continue to ignore the student's perspective. It is imperative that the least successful students be helped to see the classroom the same way as successful students.

Successful teachers are interested in the ideas, concerns, interests, talents, goals, and needs of their students. This awareness can generate invaluable information for planning classroom activities that generate enthusiasm, creative thinking, enhanced relationships and a sense of a supportive learning community. It also generates the kind of success that fosters perseverance, a commitment --and even a passion-- for learning,

and a sense of themselves as successful and competent human beings. This will go a long way toward eliminating "the missing teacher and the denigrating teacher" in the eyes of our least successful students. It will help to improve the match between students' strengths, interests, and needs and the classroom environment, so that schools can become caring, interesting, emotionally safe places where all children learn well.

This study has demonstrated that students' perceptions are the key to student involvement. Perceptions of being encouraged, valued, trusted, and appreciated are strongly related to students who are involved and highly successful. Students whose perceptions are of being ignored, unvalued, and criticized withdraw and fail to succeed. If student learning is to improve, teachers must recognize the importance of knowing their students well, of having a capacity for empathy and the ability to tailor an environment that makes all students feel respected, appreciated, and involved.

APPENDIX  A

DATA COLLECTION SHEET

# DATA COLLECTION SHEET
## For Initial Contact with Principals

School: _____

Address: _____ Tel. No.: _____
_____ Fax. No.: _____

Principal: _____ Secretary: _____

Grade levels included in school: _____

How many sixth grade classes: _____

Approx. # students in each class: _____

Are classes heterogeneously grouped for instruction? ___ yes ___ no ___ Comments:


Do students receive their academic instruction from

___ one teacher, or do they

___ rotate for instruction through different classrooms and teachers?

Are Sp.Ed. students included for instruction ___ in the regular classroom, or

___ receive instruction elsewhere

Approx. # students in school _____ Approx. # students are: white _____

African American _____ Spanish _____ Asian _____ Native American _____ Other _____

Administrative approval for study needed from _____ tel. _____

Research access to report cards ___ yes ___ no; Available from ___ office ___ teacher

Participating teachers:                    Subject(s) teaches              # stu:

1. _____

2. _____

3. _____

4. _____

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# APPENDIX B

# FOLLOW-UP LETTERS TO PRINCIPALS

78 Fairlawn Avenue
Gardner, MA 01440
(date)

(name)
(address)

Dear (Principal):

This is a brief letter to confirm our conversation of (date) and to thank you for granting me permission to administer a research questionnaire to students in (number) of your heterogeneously grouped sixth grade classrooms.

As I mentioned, the research is designed to identify and compare the perceptions of students whom teachers identify as the most successful and the least successful academically in an effort to determine similarities and differences about how they perceive their classroom environment. The purpose is to increase our understanding of classroom conditions that either help or hinder them in their learning. I am not measuring the actual classroom environment, only students' perceptions of it. The study will also address the implications of these findings for re-designing classroom learning experiences for our youth so that more students are able to learn and reach higher levels of accomplishment.

The data will be handled in such a way that anonymity of both the school and the students will be maintained. The schools, the teachers, and the students in this study will all be identified by a number. I have enclosed for your review a summary of the research proposal, a copy of the letter of consent which would need to go home with students in the selected classes, and a copy of the letter of consent for those students with whom I may be doing follow-up interviews.

Since you have (number) sixth grade classrooms and I would like to sample (number) from your school, I have randomly selected the following (number) classes from your list to whom I would like to administer the questionnaire: 1._____, 2._____, and 3._____. As I mentioned to you on the telephone, the questionnaire will take approximately twenty minutes. I will be calling the teachers on (date) at (time) to arrange a mutually agreed upon time.

If you have any further thoughts or questions, you can reach me at work at (508) 827.1425 between the hours of 8:00 a.m. and 3:00 p.m. My home telephone number, which has an answering machine, is (508) 632.7757.

Sincerely,

Jean E. Greenwood

78 Fairlawn Avenue
Gardner, MA 01440
(Date)

(Principal's name)
(School)
(Address)

Dear (Principal's name):

Just a brief note to thank you again for your assistance in making it possible for me to do some of my research at your school. Mr. (Name) and Ms. (Name) have both agreed to participate in the study. I will be meeting with their classes on Thursday, (date). Scheduled times are as follows:

Ms. (Name)            -        11:45 – 12:30

Mr. (Name)            -        9:00 – 11:45 (exact time to be determined by him
                                         on Thursday)

Thank you so much for making this possible.

Sincerely,

Jean E. Greenwood

APPENDIX C

PARTICIPANT CONSENT FORM

78 Fairlawn Avenue
Gardner, MA 01440
(Date)

Dear Parent,

Your child's school is participating in a research study that is being conducted to gain a richer and more complete understanding of how sixth grade students perceive their classroom learning environments and how classroom conditions influence their learning. Information gathered from this study will be used for a doctoral dissertation entitled *Student Perceptions about Grade Six Classroom Conditions that Enhance Learning.*

Your child's classroom has been selected to participate in this study which will involve having each student complete a 15 minute survey in class. The survey includes a variety of statements about classrooms. Students decide which of these statements are true or mostly true of their classroom and which are false or mostly false and mark the appropriate box with an X. The following are examples of the kinds of statements that are included: "Students can choose where they sit" and "A student's grade is lowered if he gets homework in late." The study will maintain the confidentiality of the identity of the school and student participants. To accomplish this the identification of your school and all student participants will be in codes (numbers) throughout the study. Individual responses will be kept confidential and results will be reported primarily in aggregate terms.

Your child's participation is voluntary and he/she may withdraw at any time. If you do <u>not</u> want your child to participate, please indicate so by signing and returning the lower portion of this letter to your child's teacher by Friday, (date). If we do not hear from you, we will assume that permission is granted to have your child participate. Be assured that non-participation will not affect your child's grades or standing in school in any way.

If you have questions, please contact the principal or your child's teacher at school, or me at 508-632-7757.

Sincerely,

Jean Greenwood
Graduate Student
School of Education
University of Massachusetts

\* \* \* \* \* \* \* \* \* \*

I do <u>not</u> want my child _____ to participate in the graduate research study. I understand that this decision will in no way affect my child's grades or standing in school.

Parent signature _____ Date _____

Note: You will receive no direct or monetary benefits, however, the information you share will add to our knowledge base from which educational improvements may be generated.

APPENDIX D

INTERVIEW CONSENT FORM

78 Fairlawn Avenue
Gardner, MA 01440
(date)

(Name)
(Address)

Dear (name):

Thank you for agreeing to be interviewed. According to our agreement, we will meet at (school), on (day), (date), at (time). Please return this signed letter before the interview.

As you know from our conversation, you have been selected from a pool of participants in the first phase of my research to participate in a follow-up interview. From these interviews I hope to gain a richer and more complete understanding of how sixth grade students perceive their classroom learning environments and how classroom conditions influence their learning. Information gathered from this study will be used for a doctoral dissertation entitled *Student Perceptions regarding Grade Six Classroom Conditions that Enhance Learning.* The findings may also be included in some other publication or be used in a professional presentation.

Your participation in this interview is entirely voluntary. Whether you choose to be interviewed and what you say in the interview will not have any effect on your status of being a student in your school. The interview will last approximately 30 minutes. I will take notes during the interview and use a tape recorder. You are under no obligation to be recorded and have the right to say no. During the interview you may refuse to answer any of the questions. The purpose of tape recording is to be able to capture the responses more accurately than is possible by taking notes. Your name will not be on the tape and the tape will be erased upon completion of the study. Participants' names will not be used in the study. However, quotations from the interviews will be used to clarify student experiences. Be assured that your identity will be protected. Individual responses will be kept confidential, and results will be reported primarily in aggregate terms. The identification of your school and yourself will be in codes. You are free to withdraw your consent from the interview at any time. If you do not want me to reproduce any statements from the interview, please let me know at the end of the interview process. I can be reached by telephone at (508) 632 .7757.

Please sign and return one copy of this consent form which indicates that you and your parents (or legal guardian) give your permission to be interviewed. The interview will take place after the consent form has been received. Please return the consent form to me at school.

I, _____, have read the above and agree to participate in this research
     (full name)
study under the conditions stated above.

Signature of participant _____    Date_____

Signature of parent (guardian) _____    Date_____

Signature of interviewer _____    Date_____

# APPENDIX E

# LETTERS TO TEACHERS

78 Fairlawn Avenue
Gardner, MA  01440
(Date)

(Name)
(School)
(Address)

Dear (Name):

This is a brief letter to confirm our conversation of Thursday and to thank you for granting me permission to administer a research questionnaire to students in your sixth grade classroom.

As I mentioned to you on the telephone, the questionnaire will take approximately twenty minutes to complete once we get started.  I would appreciate it if you could have ready for me a copy of your class list on which you have identified the 20% of these students who are the most academically successful (M), the 20% who are the least academically successful (L), and special education students (*).  I look forward to meeting you and your students Thursday, (date) at 11:45.

I have enclosed copies of the letter of consent to go home with your students on Monday.  Please explain the following to your students;

1.  Their participation will help to determine how to improve classroom environments.

2.  There are no right or wrong answers on the questionnaire; I am interested in their opinions.

3.  Their participation is entirely voluntary.

4.  The letter to their parents is to keep parents informed.  Students should bring back the form signed by their parents *only* if they *don't* want to participate.

5.  This is an opportunity to give their ideas about how to improve schools.

If you have any further thoughts or questions, you can reach me at work at 508.827.1425 between the hours of 8:00 and 3:00 p.m.  My home telephone number, which has an answering machine, is 508.632.7757.  Thank you for all your help.

Sincerely,

Jean E. Greenwood

cc: (Principal)

78 Fairlawn Avenue
Gardner, MA 01440
(Date)

(Name)
(School)
(Address)

Dear (Name):

This is a brief letter to to thank you for granting me permission to administer a research questionnaire to students in your sixth grade classroom.

The questionnaire will take approximately twenty minutes to complete once we get started. I would appreciate it if you could have ready for me a copy of your class list on which you have identified the 20% of these students who are the most academically successful (M), the 20% who are the least academically successful (L), and special education students (*). I look forward to meeting you and your students Friday, (date) between 8:30 and 10:00, as scheduled by (Principal).

I have enclosed copies of the letter of consent to go home with your students by Wednesday. Please explain the following to your students;

1. Their participation will help to determine how to improve classroom environments.

2. There are no right or wrong answers on the questionnaire; I am interested in their opinions.

3. Their participation is entirely voluntary.

4. The letter to their parents is to keep parents informed. Students should bring back the form signed by their parents *only* if they *don't* want to participate.

5. This is an opportunity to give their ideas about how to improve schools.

If you have any further thoughts or questions, you can reach me at work at 508.827.1425 between the hours of 8:00 and 3:00 p.m. My home telephone number, which has an answering machine, is 508.632.7757. Thank you for all your help.

Sincerely,

Jean E. Greenwood

cc: (Principal)

APPENDIX F

CLASSROOM ENVIRONMENT SCALE

# CLASSROOM ENVIRONMENT SCALE
## FORM R

### Edison J. Trickett & Rudolf H. Moos

### Instructions

There are 90 statements in this booklet. They are statements about high school and junior high school classrooms. You are to decide which of these statements are true of your classroom and which are false.

Make all your marks on the separate answer sheet. If you think a statement is *True* or mostly *True* of your program, make an X in the box labeled T (true). If you think the statement is *False* or mostly *False*, make an X in the box labeled F (false).

**Do not make any marks on this booklet.**

*CPP*

**Consulting Psychologists Press, Inc.**
**3803 E. Bayshore Road, Palo Alto, CA 94303**

1. Students put a lot of energy into what they do here.
2. Students in this class get to know each other really well.
3. This teacher spends very little time just talking with students.
4. Almost all class time is spent on the lesson for the day.
5. Students don't feel pressured to compete here.
6. This is a well-organized class.
7. There is a clear set of rules for students to follow.
8. There are very few rules to follow.
9. New ideas are always being tried out here.
10. Students daydream a lot in this class.
11. Students in this class aren't very interested in getting to know other students.
12. The teacher takes a personal interest in students.
13. Students are expected to stick to classwork in this class.
14. Students try hard to get the best grade.
15. Students are almost always quiet in this class.
16. Rules in this class seem to change a lot.
17. If a student breaks a rule in this class, he's sure to get in trouble.
18. What students do in class is very different on different days.
19. Students are often "clock-watching" in this class.
20. A lot of friendships have been made in this class.
21. The teacher is more like a friend than an authority.
22. We often spend more time discussing outside student activities than class-related material.
23. Some students always try to see who can answer questions first.
24. Students fool around a lot in this class.
25. The teacher explains what will happen if a student breaks a rule.
26. The teacher is not very strict.
27. New and different ways of teaching are not tried very often in this class.
28. Most students in this class really pay attention to what the teacher is saying.
29. It's easy to get a group together for a project.
30. The teacher goes out of his way to help students.
31. Getting a certain amount of classwork done is very important in this class.
32. Students don't compete with with each other here.
33. This class is often in an uproar.
34. The teacher explains what the rules are.
35. Students can get in trouble with the teacher for talking when they're not supposed to.
36. The teacher likes students to try unusual projects.

37. Very few students take part in class discussions or activities.

38. Students enjoy working together on projects in this class.

39. Sometimes the teacher embarrasses students for not knowing the right answer.

40. Students don't do much work in this class.

41. A student's grade is lowered if he gets homework in late.

42. The teacher hardly ever has to tell students to get back in their seats.

43. The teacher makes a point of sticking to the rules he's made.

44. Students don't always have to stick to the rules in this class.

45. Students have very little to say about how class time is spent.

46. A lot of students "doodle" or pass notes.

47. Students enjoy helping each other with homework.

48. This teacher "talks down" to students.

49. We usually do as much as we set out to do.

50. Grades are not very important in this class.

51. The teacher often has to tell students to calm down.

52. Whether or not students can get away with something depends on how the teacher is feeling that day.

53. Students get in trouble if they're not in their seats when the class is supposed to start.

54. The teacher thinks up unusual projects for students to do.

55. Students sometimes present something they've worked on to the class.

56. Students don't 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 takes some effort to catch up.

59. Students here don't care about what grades the other students are getting.

60. Assignments are usually clear so everyone knows what to do.

61. There are set ways of working on things.

62. It's easier to get in trouble here than in a lot of other classes.

63. Students are expected to follow set rules in doing their work.

64. A lot of students seem to be only half awake during this class.

65. It takes a long time to get to know everybody by his first name in this class.

66. This teacher wants to know what students themselves want to learn about.

67. This teacher often takes time out from the lesson plan to talk about other things.

68. Students have to work for a good grade in this class.

69. This class hardly ever starts on time.

70. In the first few weeks the teacher explained the rules about what students could and could not do in this class.

71. The teacher will put up with a good deal.

72. Students can choose where they sit.

73. Students sometimes do extra work on their own in the class.

74. There are groups of students who don't get along in class.

75. This teacher does not trust students.

76. This class is more a social hour than a place to learn something.

77. Sometimes the class breaks up into groups to compete with each other.

78. Activities in this class are clearly and carefully planned.

79. Students aren't always 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 do the same kind of homework almost every day.

82. Students really enjoy this class.

83. Some students in this class don't like each other.

84. Students have to watch what they say in this class.

85. The teacher sticks to classwork and doesn't get sidetracked.

86. Students usually pass even if they don't do much.

87. Students don't interrupt the teacher when he's talking.

88. The teacher is consistent in dealing with students who break the rules.

89. When the teacher makes a rule, he means it.

90. In this class, students are allowed to make up their own projects.

# CLASSROOM ENVIRONMENT SCALE

## DIRECTIONS

Look at your test booklet and check the Form printed on it here:

Form R___E___I_____

Please provide the information requested below.

Your Name _____ Age _____

School _____ Sex: M  F

Grade _____ Classroom _____ (circle)

How long have you been in this school? _____ _____
                                          years              months

How long have you been in this classroom? _____ _____
                                             years              months

Today's Date _____ Other _____

Now, please read each statement in your booklet and then, in the boxes on the other side of this sheet, mark T (true) if you think the statement is true of your classroom, and F (false) if the statement is not true of your classroom.

EXAMPLE ONLY

Use a heavy X, as in the example: Please use a pencil with an eraser, not a pen. Be sure to match each number in the booklet with each one on this sheet.

| | 1 | 2 |
|---|---|---|
| T | X | |
| F | | X |

START
HERE

| | T | | | | | | | | | | T | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| | F | | | | | | | | | | F | |
| | T | | | | | | | | | | T | |
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | | |
| | F | | | | | | | | | | F | |
| | T | | | | | | | | | | T | |
| | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | | |
| | F | | | | | | | | | | F | |
| | T | | | | | | | | | | T | |
| | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | | |
| | F | | | | | | | | | | F | |
| | T | | | | | | | | | | T | |
| | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | | |
| | F | | | | | | | | | | F | |
| | T | | | | | | | | | | T | |
| | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | | |
| | F | | | | | | | | | | F | |
| | T | | | | | | | | | | T | |
| | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | | |
| | F | | | | | | | | | | F | |
| | T | | | | | | | | | | T | |
| | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | | |
| | F | | | | | | | | | | F | |
| | T | | | | | | | | | | T | |
| | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | | |
| | F | | | | | | | | | | F | |
| | T | | | | | | | | | | T | |
| | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | | |
| | F | | | | | | | | | | F | |

do not mark below this line

| | I | A | TS | TO | C | OO | RC | TC | Inn |
|---|---|---|---|---|---|---|---|---|---|
| R/S | | | | | | | | | |
| S/S | | | | | | | | | |

APPENDIX G

QUESTIONS TO GUIDE THE INTERVIEW

## Questions to Guide the Interview

1. What do you like about learning in this classroom?

2. What do you find difficult?

3. What makes it easier for you to learn in this classroom?

4. What distracts you, or interferes with your learning, in this classroom?

5. How interesting or boring for you is what you are learning in this class?

   very interesting    interesting    boring    very boring

6. Do you feel pressured to compete? (#5)

   Could you explain what you mean and how you feel?

   What kinds of things make you feel that way?

7. "The teacher talks down to students". What does this mean to you? (#48)

   Give me an example:

   Could you tell me what the teacher does that makes you feel that way?

8. Is almost all class time spent on the lesson for the day? What other kinds

   of things is time spent on? (#4)

   How do you feel about that?

9. Describe the noise level in this class.

   Does it help or hinder your learning?

   Explain.

10. Is it easy to get a group together for a project? (#29)

    Why is it easy (or hard)?

    What does the teacher do that makes it easy/ hard?

    When in these groups, do you feel that your ideas are listened to?

11. Do students have very much to say about how class time is spent? (#45)

How do you feel about this?

Would you like to have more to say about what you do?

How would you make things different?

How would this help you learn better?

12. Does the teacher have to tell students to calm down very often? (#51)

Describe what is happening in the class and what the teacher does.

How does this affect your learning?

13. Do students get in trouble if they're not in their seats when the class is

supposed to start? (#53)

How do you feel about this?

14. Are students expected to follow set rules in doing their work? (#63)

How do you feel about this?

Does it affect your learning?

15. Does it take a long time to get to know everybody by his first name? (#65)

16. Are students expected to stick to classwork in this class? (#13)

Describe how this happens.

17. If a student breaks a rule in this class, does he/she get in trouble? (#17)

18. Are new and different ways of teaching tried very often in this class? (#27)

Describe some of the ways you like best, and that help you learn best.

19. In the first few weeks of school, did the teacher explain the rules about

what students could and could not do? (#70)

20. Is this class often in an uproar? (#33)     Tell me more.

21. Are the things you do in this class very different on different days? (#18)

    Give some examples/describe:

    How do you feel about this?

22. Have you made a lot of friends in this class? (#20)

    Explain how this happens.

23. Does the teacher take a personal interest in students? (#12)

    Give some examples.

24. Do many students seem to be only half awake during this class? (#64)

25. Do you think more time is spent discussing outside student activities than

    class-related material? (#22)

26. Does the teacher sometimes embarrass students for not knowing the

    right answer? (#39)

27. Does this teacher trust students? (#75)

28. Do many students take part in class discussions or activities? (#37)

29. What changes would you recommend that would help students learn

    better?

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