Verbal Interaction Patterns, Student Opinions, and Teacher Perceptions in Classrooms with Mexican American Student Enrollment

Richard M. Sanchez

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VERBAL INTERACTION PATTERNS,
STUDENT OPINIONS, AND TEACHER PERCEPTIONS
IN CLASSROOMS WITH MEXICAN-AMERICAN STUDENT ENROLLMENT

by

Richard M. Sanchez

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
Degree of Doctor of Education

Western Michigan University
Kalamazoo, Michigan
December 1972

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The primary purpose of this study was to investigate classroom verbal interaction patterns, student opinions, and teacher perceptions in classrooms with Mexican-American student enrollment. A secondary purpose of the study ascertained if there was a relation between classroom verbal interaction patterns and response patterns of student sociometric choices. In addition, this investigation determined if there was a relation between classroom verbal interaction patterns of male and female students.

The sample used consisted of six teachers and 175 student subjects representing the fifth, eighth, and tenth grade levels in a midwest school system. Of the 175 student subjects, 31 were Mexican-American and 144 were Anglo students.

Data on verbal interaction patterns were gathered using an extended version of the Behavior Classification System developed by Coats (1971) similar to the system used by Flanders (1964). Using selected classroom verbal interaction variables and a student opinion and sociometric questionnaire, data were gathered pertinent to the objectives of the study.
The criterion measures used to gather data on student opinion and teacher perception were the Elementary and Secondary Student Opinion Questionnaires developed by Coats (1971). Classroom sociometric data were garnered by using a questionnaire developed by the researcher for each grade level investigated.

In order to carry out the objectives of the study, five major hypotheses and several constituent subhypotheses were investigated relative to the objectives inherent within the study.

Data were subjected to either a one way analysis of variance, \( t \)-test of student means, \( t \)-test of proportion, or Pearson's correlation coefficient. Analysis of data yielded the following results:

1. With the exception of sustained student questioning at the elementary level, no relation was found between selected verbal interaction variables and the elementary, junior, and senior high levels.

2. Differences were not found between Mexican-American and Anglo student verbal interaction patterns at the elementary and junior high levels. Differences were found at the senior high level.

3. Student opinion between Mexican-American and Anglo students failed to reveal differences between the elementary and senior high levels in relation to the three measures of student opinion. At the junior high level, there was a difference in student opinion toward each other, but no difference in student opinion toward the teacher and school milieu.
4. No relation was revealed between Mexican-American student opinion toward the teacher, the school environment, and each other and the three levels investigated.

5. Teacher perception of student opinion toward the teacher and school environment was assessed as accurate, while teacher perception of student opinion toward each other was considered as inaccurate assessment.

6. No relation was found between classroom verbal interaction patterns and verbal response patterns of student sociometric choices at each of the three levels investigated.

7. Male students responded more to teacher questioning and engaged in more student initiated response patterns than did female students.

8. At the elementary level, Mexican-American female students responded more to teacher questioning and engaged in more student initiated response patterns than did Mexican-American male students, at the junior high level, Mexican-American male students responded more. At the senior high level, there was no difference between Mexican-American male and female student response patterns.

Theoretical constructs in the literature have purported that Mexican-American students are more negative toward the school milieu than their Anglo counterparts. In addition, the same literature has indicated Mexican-American students, for the most part, are inarticulate, withdrawn, and passive. Findings in this study have
not supported these theoretical constructs relative to Mexican-American students in the midwest.
ACKNOWLEDGEMENTS

Deepest and sincere thanks are expressed to my Chairman, Dr. Dorothy McCuskey and Doctors Ulislis Smidchens and Lewis Walker, my two Committee members, for their assistance, competence, and guidance throughout this study. Their interest, attention, and responsiveness in giving time from their busy schedules and demands is greatly appreciated.

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A word of thanks is also given to the administrators, teachers, and students of the Fennville Public School System for their warmth, cooperation, and involvement in the study.

Appreciation is also extended to Dr. William D. Coats for the contribution he made to this study.

Special appreciation is extended to the Mott Foundation for my participation as a Mott Fellow during my initial year of doctoral study.

Lastly, my deepest and heartfelt gratitude goes to my wife Angeline and my four children, Richard, Anthony, John, and Yvette. Without their continued support, encouragement, and understanding this study would have never been possible.

Richard M. Sanchez
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Verbal Interaction 18 x 18 Matrix
CHAPTER I

AN OVERVIEW AND
BASIC PURPOSE OF THE STUDY

Public education in our nation is under ponderous scrutiny and steady criticism. This growing disenchantment with education is becoming a matter of record. Rarely does a day go by throughout the school year that the mass media fail to report parental or group dissatisfaction relative to school programs or a lack of school programs. In relation to the education of the Mexican-American, literature in the field has indicated that as a group, they tend to do poorly in school as a result of several factors. The same literature has also stated that Mexican-American students perceive the school environment more negatively than their Anglo counterparts. Most of this literature pertinent to the education of the Mexican-American relates to Mexican-American students in the southwest. As a substantial number of Mexican-American students attend school systems in the midwest, the purpose of this study was to provide knowledge and information relative to the verbal interaction patterns displayed by Mexican-American and Anglo students concomitant with student opinion and teacher perception of student opinion in a midwest school system. A secondary objective of this study was to determine if there was a relation between verbal response patterns of students selected on a sociometric instrument and classroom verbal interaction patterns. A third objective ascertained if
there was a difference between male and female verbal response patterns in classrooms investigated.

Overview of the Problem

For the majority of Mexican-Americans in this country, education has been described as a history of educational neglect. Galarza, Gallegos, and Zamora (1970) have indicated that the entire educational system, including the enlightened universities, stand indicted in the crippling of the Mexican-American people.

Servin (1970) stated although Mexican-Americans are not the most disadvantaged and oppressed minority in the nation, they represent the most neglected and ignored group of people in this country. According to the Bureau of Census Reports, 1972, two out of every 100 persons in this country are of Mexican-American origin. As a result, Mexican-Americans represent the second largest minority in the United States.

Schools are an integral part of our social system. Because of this, they also share in the denial of equal opportunities to Mexican-Americans. The theory of education in a democratic society maintains every child has a right to an education and that education is necessary in order to sustain such a society. The person lacking in formal education and guidance loses a significant aspect of life which he might have lived and society loses much of its most valuable resources—human capacity. In addition, if the person becomes anti-social, the loss is not only a failure to receive the positive
contribution he might have made, but also a subtraction from the common welfare.

Carter (1970) stated schools in America have not been responsive to the needs of Mexican-American students. The learning environment within these schools and classes can best be characterized as "dull" and "uninspiring." Teachers tend to blame the student for his failure and lack of motivation. Often there is neglect in recognizing that a drab and uninteresting classroom can be transformed into a learning environment in which children find experience, security, happiness, and progress.

Many teachers contend that children are generally all alike, regardless of their backgrounds, and what is good for one child is good for all. Carter (1970) has further stated a great number of Mexican-American students are not responsive to the educational approach most schools presently employ. Many sources of difficulty in school stem from the division of the community into contrasting groups of English-speaking and Spanish-speaking people, differences in the culture, and most important, a difference in the language. Together, these difficulties contribute to a lack of understanding by some teachers which causes a conflict in cultures with a degree of hostility one toward the other.

The teacher is considered by some scholars to be the most significant variable in the school learning environment of the Mexican-American student. His attitudes and expectations have a profound impact on student perception, academic performance, and self-concept. Rosenthal and Jacobson (1968) stated achievement in
a classroom seems to be more closely related to teacher perception of children than to any other measure of ability. Children with high intelligence quotients may not achieve if the teacher perceives them as not having the potential to succeed and children with low intelligence quotients may achieve if the teacher believes they have the potential to succeed. Clearly then, next to parents, the teacher is the most "significant other" in the life of the Mexican-American student. As one of the most important elements of the whole educational process in relation to the pupil, the teacher provides background and assistance at various places along the educational continuum. More important, the teacher is responsible for organizing and implementing the learning situation. This is the point where strength or weakness has its most direct and most devastating or helpful influence.

Importance of the Problem

Nearly all research relevant to the Mexican-American has been conducted in the southwest. A substantial number of Mexican-American students attend school systems throughout the midwest. From the experience and observation of the author, educators within these school systems appear to have a very naive understanding of the Mexican-American culture. As a result of their limited understanding, teachers employ patterns in a classroom which result in near debilitating circumstances for Mexican-American students. Carter (1970) stated that as a group, Mexican-Americans tend to do poorly in school as a result of factors which relate to the lack of
understanding educators possess about the Mexican-American culture. This lack of understanding sometimes results in negative school experiences whereby the Mexican-American student rejects the teacher, administration, and institution.

A number of Mexican-American children enter schools with disadvantages not inherent in other children. The failure of educators to recognize the influence of conflict on personality and student behavior as well as conditions permitting one cultural group to accept innovations and patterns from another can cause students to look upon themselves and their culture with a sense of ambivalence and/or contempt. Ulibarri (1959) questioned teachers about their awareness and sensitivity to cultural differences and found that teachers generally manifest little real awareness of the differences among Mexican-American, American Indian, and Anglo cultures or the influence each has on students. Hence, frustration among Mexican-American students in school may be caused by their individual personalities, failure of the culture, failure of teachers, or by some combination of these factors.

Statement of the Problem

Traditionally, Mexican-American students have been considered a deficit model by a number of school systems. Carter (1970) indicated that teachers and administrators have long upheld the concept that the cultural and linguistic characteristics displayed by Mexican-American students at school have negative value and, therefore, do not enhance the learning process.
Specifically, the problem to which the major thrust of this study addressed itself is that Mexican-American students are found in varying proportions throughout the midwest in schools of all types from rural settings to the inner-city agglomerations. The vast majority of Mexican-Americans in the midwest migrated from counties in the southwest where opportunity, acceptance, and tolerance are somewhat limited. Generally, they are in an environment which has many "strange and different" dimensions. Several aspects of educational experience and community life differ in the midwest which may often contrast sharply with those in the southwest. Mexican-American students entering schools in the midwest not only bring with them a "rich" cultural heritage, but a well documented history of failure. Purported to be a deficit model and coming from a sub-culture whose characteristics are to be uprooted, Mexican-American students tend to be inarticulate, withdrawn, and passive in classrooms where perceptions of failure, hostility, negativism, and non-acceptance are present. From the day they enter school, they tend to lag behind in acquiring skills as a result of an aggregate of factors which have produced a negative school environment. Circumstances associated with the naive understanding educators in the midwest possess about the conditions confronting Mexican-American students in school can cause these students to look upon themselves with further contempt. It is hoped that knowledge and information relative to Mexican-American student verbal interaction patterns, student opinion, and teacher
perception will provide a better understanding of the Mexican-American student in the midwest.

Definition of Terms

The use of the following terms in this study are intended to convey the following meanings:

1. **Mexican-American** — any individual displaying or possessing characteristics of the Mexican-American culture, heritage, and value system with certain manifest characteristics such as surname, bilingualism in Spanish and parental identification displaying or possessing similar characteristics.

2. **Anglo** — refers to the dominant "white" group excluding those who are Mexican-American, black, American Indian or members of another racial minority.

3. **Southwest** — the region comprised of the states of California, Arizona, New Mexico, and Texas.

4. **Midwest** — the region comprised primarily by the states of Michigan, Indiana, and Illinois.

5. **Verbal Interaction Patterns** — a sequence of verbal communication in a classroom between teacher-pupil and pupil-pupil that form a pattern of sequential verbal events occurring in a classroom.

7. **Student Opinions** — response by students on a questionnaire consisting of seventeen criterion items which indicate feelings in attitude toward the teacher and
school environment which was further categorized into three measures of student opinion toward the teacher, the school environment, and each other.

8. **Sociometric Choices** — students selected by their classroom peers as either most liked or least liked choices in each classroom investigated in this study.

9. **Teacher Perception** — the perception a teacher indicates in response to the identical questionnaire given to students measuring a congruence or noncongruence to the average student opinion on the questionnaire.

10. **i/d ratio** — ratio of percentage of time the teacher spends accepting student feelings, praising students, and accepting student ideas to the percentage of time spent giving directions, criticizing students, or justifying teacher authority.

**Major Hypotheses of the Study**

In relation to the literature on the Mexican-American, theoretical constructs have indicated that Mexican-American students are less verbal, view the school milieu more negatively, and have low educational aspirations. As a result, in an attempt to carry out the purposes of the study, five major hypotheses were investigated relative to verbal interaction patterns, student opinion, and teacher perception in classrooms with Mexican-American student enrollment.
**Hypothesis 1:** Mexican-American student verbal response patterns are different from Anglo student verbal response patterns at the elementary, junior, and senior high levels.

**Hypothesis 2:** Mexican-American students perceive the school milieu more negatively than Anglo students at the elementary, junior, and senior high levels.

**Hypothesis 3:** Overall teacher perception of Mexican-American and Anglo student opinion toward the teacher, the school environment, and each other is not congruent to the average of Mexican-American and Anglo student response toward the teacher, the school environment, and each other.

**Hypothesis 4:** Verbal response patterns of students selected as most liked and least liked are different from verbal response patterns of other students in the classroom at the elementary, junior, and senior high levels.

**Hypothesis 5:** Mexican-American and Anglo male student verbal response patterns are different from Mexican-American and Anglo female student verbal response patterns at the elementary, junior, and senior high levels.

**Scope and Limitations of the Study**

The study was designed to investigate (1) verbal interaction patterns, student opinions, and congruence of teacher perception of
student opinion and the average student opinion of students,
(2) the relation between verbal response patterns of classroom
sociometric choices and classroom verbal interaction patterns, and
(3) the relation between male and female student response patterns
and classroom verbal interaction patterns in classrooms with
Mexican-American student enrollment.

The thrust to which this study addressed itself necessitated
the selection of an area within the state of Michigan containing a
substantial percentage of Mexican-Americans. The area selected for
study was a rural community with a small population which does not
make it possible to generalize to a larger population. In addition,
classrooms were selected having the largest percentage of Mexican-
American students which did not allow a broad selection base.

Because data had to be collected during periods of teacher-
pupil interaction, coordination between the researcher and teachers
was accomplished by the use of a schedule which indicated the time
and day during which periods of optimum teacher-pupil interaction
would be occurring. This information available could have encouraged
the use of artificial behavior in the teacher during times when the
researcher was present for observation.

Interaction analysis data were collected by the researcher him-
self after extensive preparation. This information may cause the
reader to perceive a possible bias could have existed since the
researcher himself is Mexican-American.
Organization of the Dissertation

Chapter I has served as an overview of the basic purpose and problem of the study. Included within the first chapter are an introduction, a statement describing the importance of the problem, a statement about the problem, a definition of terms, major hypotheses of the study, and limitations of the study. Chapter II, Rationale and Related Literature, contains a detailed review of the literature relating to the major hypotheses this study has made about verbal interaction, student opinion, and teacher perception in classrooms with Mexican-American student enrollment.

Chapter III, Design of the Study, contains a description of the area and population under investigation. It also describes methods used for data gathering, a description of measuring devices used, verbal interaction variables studied, the hypotheses which were tested by the study, and treatment of data.

Chapter IV, Presentation and Analysis of Data, includes the analyses of the data gathered in the study and Chapter V presents a summary of the study, a discussion of the major findings, the conclusions drawn from the findings, and a statement of recommendations.
CHAPTER II

RATIONALE AND RELATED LITERATURE

Information presented within this chapter provides a review of related literature and research studies as they pertain to the suppositions made about verbal interaction patterns, student opinion, and teacher perception in classrooms with Mexican-American student enrollment. The focus within the chapter will be to develop an explicit rationale for each of the stated hypotheses which underlie the study.

Although the literature is replete with studies pertinent to Mexican-Americans, research as it relates to this study is best described as nearly non-existent. Therefore, the following literature has been selected for the contribution it provided to the hypotheses, problem, and research design implemented within this study.

Organization and presentation of the information will be as follows: (1) An Overview of Selected Observation Systems with Emphasis on Interaction Analysis; (2) Interaction Analysis, Student Opinion, and Teacher Perception Relative to Mexican-American and Anglo Students; (3) Interpersonal Relations in Classrooms with Mexican-American Student Enrollment; and (4) Response Patterns of Male and Female Students in Classrooms with Mexican-American Student Enrollment.
An Overview of Selected Observation Systems  
with Emphasis on Interaction Analysis

Classroom verbal interaction is a complex process. Of the several category systems in use, no one category system can measure all important aspects of teacher-pupil interaction. Each system appears to manifest those dimensions which are important to the person who created the system.

There are two major aspects of importance which underlie classroom observation systems, the "affective" and "cognitive" domains. Some systems focus on one domain while others focus on both. Sandefur and Bressler (1971) indicated the affective systems are those systems concerned primarily with the emotional climate of the room; the cognitive systems are those systems concerned primarily with intellectual activities resulting in the improvement of cognitive processes and skills, and multidimensional systems are those systems which attempt to assess both the affective and cognitive domains through the use of classroom behaviors. Affectively oriented systems are more numerous. Simon and Boyer (1968) have provided an analysis of classroom interaction systems depicted in Table 2-1. The information provided in Table 2-1 clearly indicates that observation systems are indeed numerous. Originally designed for research purposes, these systems have found their way into teacher training and supervision. Ober, Bently, and Miller (1971) have indicated observational systems, developed for the purpose of identifying, classifying, quantifying, and analyzing specific classroom behaviors and interactions, are in use
TABLE 2-1
FOCUS OF CLASSROOM OBSERVATION SYSTEMS*

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throughout the profession by the teacher researcher and teacher trainer. These systems do not, however, produce evaluative judgements, but rather serve as tools for obtaining data which can be used as a teacher training device that will provide specific changes in teacher behavior.

Selected Literature of Observation Systems as Used by Researchers

The earliest studies pertaining to spontaneous teacher-pupil learning behavior as they relate to classroom verbal interaction patterns are those of Harold H. Anderson, Helen and Joseph Brewer, and Mary Francis Reid. Anderson (1945, 1946), purported to be the greatest influence on the development of category systems which measure the affective climate, found that in the study of preschool, primary, and elementary school classrooms, domineering and integrative contacts of the teacher set a pattern of behavior that spreads throughout the classroom. The behavior of the teacher, more than that of any other individual, sets the influence of the class. The rule is that when either type of contact predominates, domination incites further domination and integration stimulates further integration. Furthermore, the pattern a teacher develops in one year is likely to persist in his classroom the following year with a different class of pupils. It is evident in these findings that the teacher is one of the most significant figures in determining classroom climate within a given classroom.

Withall (1949) developed a classroom observation system of teacher behaviors in the socioemotional climate. It consists of
seven teacher categories on a continuum ranging from teacher
centeredness to learner centeredness. The verbal statements made
by teachers using this observation system proved similar to the
dominative-integrative work of Anderson. This category, considered
the forerunner of several popular systems, ignored pupil behavior
exclusively.

One of the most widely used and best known systems for examin-
ing classroom verbal interaction is the Flanders system. This ten
category system provides seven categories which describe teacher
behavior as direct or indirect behavior, two categories describing
student behavior, and a final category used for describing silence,
short pauses, and moments of confusion often occurring in a class-
room. This system has been used widely in many different types of
research design ranging from experimental to descriptive studies in
which various teacher behaviors were correlated to pupil output
measures such as attitude and achievement for the purpose of
determining what teacher behaviors related to pupil growth.

In an early research design using interaction analysis,
Flanders (1960) reported on two studies conducted in Minnesota and
New Zealand. His findings revealed that pupils of teachers rated
as high in the use of indirect verbal patterns had higher achieve-
ment and more desirable attitudes toward their work and fellow
pupils than pupils of teachers using more direct verbal patterns.
His findings indicated the same results were found in Minnesota and
in New Zealand, some 8,000 miles apart, in spite of differences in
teaching style and pupil expectations. Classes indicating a
greater liking for the teacher, more motivation, fair rewards and punishments, lack of anxiety, and independence were taught by teachers using more indirect influence in the classroom. In New Zealand but not in Minnesota, teachers in classrooms that scored low used more direct influence, yet, in both countries teachers in classrooms that scored high used more indirect influence. The greater use of indirect influence meant asking more questions, clarifying and using pupil ideas, and giving praise.

Using a modified version of the Flanders system, Furst and Amidon (1967) conducted a study in grades one through six using twenty-five classrooms at each of the six levels. A minimum of five observations were conducted in arithmetic, social studies, and reading. The questions inherent within the study were: (1) are there differences in interaction patterns among six grade levels, and (2) are there any differences among the subject matter areas of reading, social studies, and arithmetic at the elementary level? The findings indicated that interaction analysis does differentiate the verbal interaction of a teacher. Primary teachers seemed to advocate more question answer techniques while intermediate teachers perceived lecturing as most conducive to learning. Primary teachers behaved as though student participation was more important and served to reinforce student talk more than teachers at other levels. Primary teachers also used more praise, encouragement, and acceptance. Teachers at both the primary and intermediate levels considered indirect influence to be important
and, in general, appeared to be more indirect in social studies than in reading and arithmetic.

In a study by Filson (1957) direct measures of dependent acts by students were associated with different patterns of teacher influence. His study showed that during a task in which the goal is not clear, more direct teacher influence elicited more requests for teacher approval and help during work periods even after considerable exposure to the task. The reverse appeared to be true when the teacher used indirect patterns.

Considerable research has been conducted concerning the ways in which teachers modify their behavior to fit different situations and students. Wispe (1951) and Smith (1955) have shown that when college age students are classified into different psychological types, each type has a different reaction to the same pattern of teacher influence. Gage (1956) found that elementary school pupils perceived the same teacher differently according to the classification of the pupil as tending to seek affective or cognitive responses from the teacher.

In a laboratory experiment, Amidon and Flanders (1961) revealed that dependent prone junior high school students were more sensitive than average students to differences existing in patterns of teacher influence and that the dependent prone learned less geometry when exposed to a rigid, direct pattern of influence than they did with an indirect pattern.

These few selected studies indicate that observation systems used by researchers in classroom settings provide information in
which the teacher is able to compare his personal perception of what occurs in his classroom with a more objective analysis of what actually occurs. In this way, the teacher may compare his intent or objectives with data collected and thereby obtain a basis from which to modify further plans or change directions entirely to achieve stated objectives.

Selected Literature of Observation Systems as Used by Teacher Training Institutions

Teacher training institutions have become increasingly aware of the value in providing teachers with a tool which will provide them objective feedback about their own teaching behavior. If teaching behavior is to be changed, then teachers must have an opportunity to study their own teaching and experiment with and practice new teaching behaviors.

Several projects and studies have been conducted in which prospective teachers were taught to analyze their own behaviors. Hough and Amidon (1964) initiated the first attempt in using Flanders' Interaction Analysis with undergraduate students. Subjects of the study were student teachers in the secondary education program at Temple University. The investigators taught interaction analysis to one group of student teachers while the control group was trained in the application of learning theory. Both groups received two hours of lecture and two hours of clinical experiences per week for one semester. Laboratory experiences encompassed both learning theory type experiments and role playing
experiences in the control group in which participants planned, executed, and evaluated lessons illustrating the use of learning theory principles. The experimental group was trained in the use of interaction analysis as a tool to be used in analyzing teacher and pupil behaviors in the classroom. Their clinical experiences consisted of practice in recording teacher-pupil interaction using audiotapes of classroom interaction. Skill required for interpreting interaction analysis data was included and role playing sessions consisted of students attempting to control their behavior by predetermining the interaction pattern desired, executing the lesson, and evaluation of resultant data. Additional training relating to pupil achievement and attitudes was also included.

Reporting on their project, Hough and Amidon indicated that college supervisors rated student teachers trained in interaction analysis higher than student teachers taught by conventional theory practices. Also reported was that student teachers trained in the use of interaction analysis had undergone significant attitude changes.

Furst (1965) conducted a follow-up study of the Hough-Amidon experiment for the purpose of determining performance differences. The participants of the study were student teachers in secondary schools who had been involved in courses similar to the original setting in the Hough-Amidon experiment. Three groups of student teachers were employed. One group was given a learning theory course with student teaching, another group was given an interaction analysis course concurrent with student teaching, and the third was
given a course in interaction analysis prior to student teaching. The findings concluded that students trained in interaction analysis used more total acceptance of pupil ideas and behaviors and less total rejection of pupil behaviors than did the group trained in learning theory. Additionally, students trained in interaction analysis tended to use pupil ideas more frequently and spent more time clarifying ideas than did the group taught in conventional theory.

In another study, Kirk (1964) trained fifteen elementary education student teachers in the use of interaction analysis during several sessions of a student teaching seminar at Temple University. Fifteen other student teachers participated in a traditional style student teaching seminar in which conventional practices were discussed. Student teachers from both groups were observed in their classrooms and reports indicated that the student teachers in the experimental group, those trained in interaction analysis, tended to talk less and give fewer directions than those who participated in the traditional control group. In addition, student teachers trained in interaction analysis also responded more often to pupil initiated questioning and by the end of student teaching, appeared to resist becoming more direct than the other group. Other findings indicated that pupils of the student teacher group trained in interaction analysis saw their teachers as more indirect in their behavior and doing less talk'ng as the semester progressed. This same perception was not reported for the other group trained in traditional modes.
Interaction analysis has also been used in the study of attitudes. Zahn (1964) investigated the effects of using interaction analysis in the supervision of student teachers. His participants in the study were elementary education majors. The experimental group consisted of student teachers under supervision who had been trained to use interaction analysis data as a feedback system. The control group included student teachers supervised using conventional and traditional supervision seminars. Results indicated, at the end of student teaching, that student teachers supervised using interaction analysis techniques reflected more positive attitudes toward teaching than their own cooperating teachers or student teachers supervised by conventional means. In addition, undergraduate student teachers having cooperating teachers with less positive attitudes were better able to resist any negative influence as a result of the supervision conducted using interaction analysis.

As knowledge from research based on teacher-pupil verbal interaction analysis increased, a number of investigators developed other systems or modification of current ones to study the relationship between teaching strategies and various components of cognitive processes. Smith and Meux (1959) considered the logical aspects of teaching behavior and logical structure for teaching subject matter. This system includes the basic ideas that instruction is essentially logical and that identification and descriptions of the various components of teaching behavior must be derived before basic concepts and principles are able to be determined. Hughes (1959) developed a system using verbal and nonverbal behaviors adapted for use in
training student observers in elementary school classrooms. A comprehensive set of categories was developed for classifying teacher behavior. There was much similarity to the Withall system with the exception that the categories were not restricted to verbal behavior. Taba (1964) developed a multidimensional model for interaction analysis that provides a scheme for coding and classifying teacher behavior in terms of teaching functions and pupil responses in a way that describes the type and level of thinking activity. Bellack (1965) developed a system analyzing linguistic behavior. As a cognitive function, it is primarily concerned with the types of meanings transmitted between teachers and learners.

There exist many other systems or modifications of current systems. A recent modification was implemented by Coats, (1971). Based on the Flanders Interaction Analysis Categories, this system was modified for the purpose of gathering data based on interaction analysis which would be used in implementing an adopted desegregation plan in Kalamazoo, Michigan. The system includes twelve categories with five categories describing teacher behavior, six categories describing student behavior, and one category describing periods of silence, short pauses, and confusion. The six student categories are further divided into three categories for white student talk and three categories for black student talk. The three categories of student talk include one category describing student response to teacher questioning, one category describing student initiated response, and one category describing student derogatory talk. This system was adopted by the author for use in
this study and will be described in greater detail in Chapter III, Design of the Study. Literature describing the study will appear in the next section of this chapter.

Observation systems have provided a new focus in education. The Interaction Newsletter (1971) indicated interaction analysis, as an observation system, is in use internationally and at present is being used in Nigeria, Latin America, Great Britain, New Zealand, Belgium, and Denmark. A well constructed observation system indicates what behaviors are being used in a classroom or the particular research setting under investigation. Through use of feedback, individuals, particularly teachers, become more sensitive to their own behavior and their understanding of how it affects the classroom and individual students. They accept responsibility for self improvement by systematically investigating their own teaching behavior.

Interaction Analysis, Student Opinion, and Teacher Perception Relative to Mexican-American and Anglo Students

Interaction Analysis

Having presented an overview of observation systems with emphasis on interaction analysis, the contents within this chapter hereafter will focus on literature and research studies pertinent to the hypotheses made, the problem, and the research design implemented within this study.

Hypothesis one stated that Mexican-American student verbal response patterns are different from Anglo student verbal response
patterns at the elementary, junior, and senior high levels.

A search of the literature revealed that there have only been two studies conducted using the process of interaction analysis in which Mexican-American students have been participants to the study. Using this process, Ward and Hedley (1968) investigated the nature of interaction between college student counselors and Mexican-American and Negro youth during an orientation to college conference held at the University of California, Santa Barbara. The participants were able, but non-college bound Mexican-American and Negro high school students. The group consisted of 38 high school students, 29 Mexican-American and 9 Negro. The group was further divided into 5 smaller groups of 6 to 8 students per group headed by two college student counselors. Each group, with the exception of one, included Mexican-American and Negro students. The interaction process was described in terms of Flanders' Interaction Analysis as utilized by Amidon and Hunter using Bion's categories which differentiate the emotional qualities of the interaction.

After analysis of student interaction within groups was conducted, student reaction to each group, including perceptions of the conference, the counselors, and himself were assessed in terms of the average length of the response of each group, general satisfaction of the group, and general creative response of the answers within each group. Results indicated that the analysis of the emotive quality of interaction for the five groups revealed work flight. With regard to the participation ratio of the Mexican-American and Negro youth, although the Negroes were in a minority
of 1 out of every 4, their participation ratio was close to one-third of the interaction occurring among the counselors, Mexican-American and Negro components. Group IV indicated low Negro participation while in group II, the counselors did almost two-thirds of the talking. Results obtained using Flanders' Interaction Analysis indicated differences among the groups. Groups I, II, III, and IV were very similar indicating sustained counselor initiated talk, student talk followed by counselor response, student response followed by counselor initiated talk, student initiated response followed by counselor initiated talk and silence or confusion. Group V reported student talk following counselor initiated response, student response followed by counselor initiated talk, pupil response followed by student initiated response, and pupil initiated response followed by student response. In this same group, the nature of interaction was high relative to students reacting to counselors and one another without much direction from the counselors being observed in addition to silence or confusion. Student reaction to the conference indicated that Groups I, II, and V were very satisfied and had high predilection to give socially accepted responses. Group III was the least satisfied and most creative in their responses. Group IV was positive yet creative in their response reaction to the conference. Furthermore, a similarity in descriptions of behavior occurred between Mexican-American and Negro youth with Negroes indicating greater evidence of being more verbal than Mexican-American youth.
Anderson and others (1969) conducted another study using interaction analysis in a classroom setting with Mexican-American student enrollment. Their sample consisted of 72 mathematics teachers drawn from nine schools located in three distinct ecological areas astride the migratory route followed by Mexican-American families as they immigrate from Juarez, Mexico to El Paso, Texas. Teachers were asked to complete a questionnaire and the Minnesota Teacher Attitude Inventory in order to obtain information regarding their academic backgrounds, experience, instructional practices and attitudes toward special programs for Mexican-American students. The instructional process was analyzed by systematically observing and recording classroom behavior using Flanders' Interaction Analysis. From the questionnaire, four factors were used to describe the teacher's academic background, experience, and attitude toward students. Seven indices describing the socioemotional climate of the classroom were constructed from the observation data.

The findings reported that on the whole, all of the classrooms studied were highly teacher dominated with little student initiated talk. Nevertheless, distinct differences in teacher attitude and classroom approaches were found in all three grade levels and areas investigated. Elementary teachers placed a high premium on affective relations with students and were more indirect in the classroom, spent much time giving directions, and were more peremptory in responding to students. High school teachers were the most direct and domineering in the classroom and spent much time lecturing. Teachers in the three areas also differed in several important
aspects. Area I teachers indicated a great deal of empathy for their Spanish-speaking disadvantaged students and overwhelmingly supported compensatory and bilingual programs in the schools. Area III teachers, who worked with fewer Spanish-speaking children from higher income families, were much more direct, devoting much time in the classroom to giving directions, criticizing, and justifying their authority. Moreover, they frequently responded to students by giving directions or criticizing.

Coats (1971) reported the relation between racial composition based on the neighborhood school concept and classroom verbal interaction patterns, student opinions, and teacher perceptions in the elementary and secondary schools of the Kalamazoo Public Schools, Kalamazoo, Michigan. The sample consisted of 32 second grade classes, 31 fourth grade classes, 20 seventh grade classes, and 14 tenth grade classes with a classroom composition of either all white, majority white, or majority black. Interaction analysis data were gathered using a category system similar to the one used by Flanders. Student opinion and teacher perception were measured by an instrument designed by the author. The findings indicated that at the elementary level, there was no meaningful relation between racial composition based on the neighborhood school concept and any of the classroom verbal interaction variables studied. Few significant differences were found in the analyses conducted on verbal interaction patterns when black and white students were studied separately. Student opinion at the elementary level indicated there were no differences in black children considering the racial
composition factor but white children did appear to be somewhat more sensitive. White children in all white classrooms reported they perceived their teacher to like them better than did the white children in majority black classrooms. Furthermore, white children in all white or majority white classrooms indicated more positive feelings on the questionnaire than the white children in majority black classrooms. Further results at the elementary level reported that black children had significantly more unfavorable attitudes toward school than did white children.

At the secondary level, the findings revealed few significant differences on verbal interaction variables investigated. Examination of verbal interaction patterns for black and white students at the secondary level were similar to the findings reported at the elementary level except that less significant differences were observed. Findings in student attitude indicated that no significant relationship existed between black and white student classroom composition.

Teacher role stress was found to be related to racial composition at the elementary level with teachers in majority white classrooms reporting greater role stress than teachers in all white or majority black classrooms. At the secondary level, teachers in all white classrooms predicted their students would have more favorable attitudes than did teachers in majority white and majority black classrooms. The correlation of teacher perception of student opinion and actual student opinion was reported as being very low at both levels.
Student Opinion and Student Attitude

Initially, children entering school manifest great anxiety toward the experiences they will encounter as a result of their participation in school. In time, as a result of circumstances existing in their environment, their opinions and attitudes change into various dimensions.

Hypothesis two inferred that Mexican-American students perceive the school milieu more negatively than Anglo students at the elementary, junior, and senior high levels. A search of the literature revealed that few studies investigated Mexican-American student opinion.

Ortego (1970) discussed the educational problems facing Mexican-Americans and reported that their drop-out rate is more than twice the rate of the national average and that the average number of 7.1 school years completed by Mexican-American students is significantly below 12.1 years of schooling reported for Anglo students and 9.0 years of school for Black students. Adding support for this statement, Lamana and Zamora (1967) indicated the significance of changes which took place in the educational status of Mexican-Americans over a ten year period. The interpretations clearly relate what the statistics indicate for Mexican-Americans both in an absolute sense and also in relation to the educational status of the total population. The findings include: (1) while the median level of education for Mexican-Americans increased from 3.6 to 4.8 years of schooling over the ten year period, the increase of 1.2 years was
lower than that of the total population over the same period; (2) the educational status of Mexican-Americans in Texas is clearly the poorest in the southwest; (3) the best educated Mexican-Americans are becoming more geographically segregated from the least educated; (4) the greatest increase in educational status for Mexican-Americans has been in areas where the percentage of Mexican-Americans in the community is the smallest; and (5) the relative educational status of Mexican-Americans in Texas remains unchanged at best.

Demos (1960) reported on an investigation to determine whether or not significant attitudinal differences toward education existed between Mexican-American and Anglo students. The sample consisted of three groups of 105 secondary school students. The first group was further divided into three groups of randomly selected Mexican-American students, 35 from the seventh and eighth grades, 35 from the ninth and tenth grades, and 35 from the eleventh and twelfth grades. The second group of 105 subjects consisted of Anglo students similarly stratified. The third group consisted of 105 Mexican-American students matched with Anglo students on variables such as age, sex, grade, social class, and I.Q. A 29 item attitude scale was devised and administered. The findings indicated that significant differences in attitude toward education did exist between Mexican-American and Anglo students. When the matched groups were compared, significant differences were found in six areas. Additional findings stated that in almost every case, Anglo students exhibited more desirable attitudes than Mexican-American students.
Swartz (1967) identified several differences in the attitudes of ninth and twelfth grade Mexican-American and Anglo students in a large urban school district. Employing scales developed from question responses of 3,000 Mexican-American and Anglo students, Swartz found that Mexican-American students appeared to be more oriented toward the family, to have more concern over adult as opposed to peer disapproval, to have less of a future time orientation, and to approve of the use of force to resolve conflicts. Furthermore, he found Mexican-American and Anglo twelfth grade students appeared to be more similar in their attitudes than the ninth grade students. High achievement to Mexican-American students was associated with a future time orientation, faith in human nature, acceptance of the formal goals of school, and belief in the peaceful resolution of conflict.

In an attempt to examine conflict in existence relative to Mexican-American and Anglo students, Rameriz and Taylor (1967) conducted a study that identified the areas of conflict common to Mexican-American students but not common to Anglo students of comparable ability and socioeconomic background. Six hundred subjects were selected from the student population of one junior high school and one senior high school in the Sacramento City Unified School District, Sacramento, California. One-half of the students were Mexican-American and one-half were Anglo with an equal number of males and females represented in each group. All students were classified as low socioeconomic status as determined by residential patterns. Subjects of the study were administered an "Attitude
Toward Education and Teacher Scale, a word association test, a school situation picture test, and, in addition, were observed and interviewed in the school setting.

Results revealed that Mexican-American students differed significantly from Anglo students. Responses to the word association test were highly variable showing that Mexican-American students reacted very negatively to the words school, activities, principal, and reading.

Levels of orientation and aspiration between Mexican-American and Anglo youth have also been well documented. Juarez (1968) reported findings on the assertion that Mexican-Americans have a low status orientation. The results indicated that both Mexican-American and Anglo sophomores have high educational aspirations, although Anglo youth are more certain about attaining their desired educational status than are Mexican-American students. Delloyos (1960) reported the relationship between occupational and educational levels of aspiration of Mexican-American youth to such factors as socioeconomic status and level of acculturation to American society. The findings reported that the levels of occupational and educational aspirations were positively correlated to their level of acculturation to the dominant society, and that these two variables were also positively correlated to socioeconomic status. Additional findings also reported that the social experience of Mexican-Americans in the midwest was quite different from that of Mexican-Americans in the southwest, especially with regard to
school and residential segregation as well as employment opportunities.

Malry (1968) studied the aspirations of Mexican-American, Anglo, and Negro students in the ninth and twelfth grades in Albuquerque, New Mexico and found that of the three groups, Mexican-American students had the lowest self image. This negative self image caused Mexican-American students to perceive themselves as being unable to learn and they felt that they would do much better in school if only the teacher would slow down in teaching. Furthermore, there appeared to be an indication that the educational aspirations held by Mexican-American and Negro parents for their children declined between the ninth and twelfth grades.

In an attempt to determine the educational aspirations of Mexican-American students and relate them to social class, Evans (1969) studied some of the sociocultural differences between Mexican-American and Anglo junior high school students to determine how these characteristics of both groups were related to language background and achievement. The sample consisted of 126 male and female junior high school students, 87 of whom were Mexican-American. Scales were developed from questionnaire and interview data to measure the following sociocultural characteristics:

(1) language background; (2) self-concept of ability; (3) academic orientation; (4) parental independence training practices; (5) parental achievement pressure; (6) social distance; and (7) socioeconomic status. Student achievement was measured by an assessment
of English and mathematics grades and scores of several standard
tests.

Findings indicated that Mexican-American students, regardless
of the amount of English spoken in the home, when compared to Anglo
students, (1) came from families of much lower socioeconomic status;
(2) had lower self-concepts of ability; (3) had fatalistic present
time orientations; (4) had a passive acceptance toward life; (5) had
a high striving orientation; (6) experienced less democratic parental
independence; and (7) had high religious social distance. In ad-
dition, an English-speaking background was significantly associated
with higher socioeconomic status, more parental guidance and assist-
ance with schoolwork, and high parental pressure to complete high
school. The higher the socioeconomic status, the greater the associ-
ation was in regard to parental guidance and assistance with school-
work, democratic parental independence training practices, high pa-
rental pressure to get good grades, and low religious social dis-
tance. Additional findings indicated that self-concept of ability
was the best predictor for both groups of students.

In accordance with the second hypothesis in this study, Mexican-
American students often indicate feelings of inferiority which may
have implications to their behavior displayed in a classroom situ-
ation. Quijano (1968) indicated even when not singled out by his
peers, the child himself may be self-conscious about his background
and language and may be timid when called upon to express himself.
Perales and Howard (1969) indicated disadvantaged Mexican-American
students need well defined objectives and guidelines in education,
which, when closely scrutinized, differ from those of the typical middle-class pupil. Of paramount importance are objectives aimed at fulfilling the linguistic needs of those children, which too often have been overlooked or ignored. Furthermore, the authors asserted the disadvantaged Mexican-American student lacks the necessary linguistic experiences in the English language to assure him success in school. Whatever oral experiences these students have are usually limited to question and monosyllabic response type of communication. Questions by teachers are hardly ever answered with elaborate patterns as the student is accustomed to responding with one word or short phrases.

Derbyshire (1968) studied the identity crisis among Mexican-American adolescents. His findings revealed that identification with the Mexican culture served as an effective and integrative technique in reducing the identity and role-conflict among adolescents. Those adolescents who did identify were more education minded, and experienced fewer school and societal failures.

In a study relating cultural characteristics to school performance, Anderson and Johnson (1968) investigated the performance of 263 Mexican-American and Anglo students in grades 7-12 in a southwestern community. The study indicated that Mexican-American students desired good grades and received as much encouragement and assistance at home as did Anglo children. Educational plans and aspirations of Mexican-American children and their families approximated those held by Anglo children and their families. Retarded school performance was related to low socioeconomic level,
use of Spanish, and the minimal self-confidence expressed by Mexican-American children. Results further indicated that consistently low achievement of Mexican-Americans in school is due not to a low level of educational motivation, but to inadequate educational programs.

**Teacher Perception and Teacher Attitude**

The quality of educational opportunity provided for any child depends upon many interrelated factors. Hypothesis three stated that overall teacher perception of Mexican-American and Anglo student opinion toward the teacher, the school environment, and each other is not congruent to the overall average of Mexican-American and Anglo student response toward the teacher, the school environment, and each other.

Yee (1968) studied the relationship between teachers and pupil attitudes in a large number of elementary schools. Five measures of teacher attitude were used, four derived from the Minnesota Teacher Attitude Inventory and the other from a semantic differential scale. Twelve measures were used to characterize individual students and in administering these measures, Yee found that teachers influenced the attitude of students from lower class neighborhoods but at the same time had little effect on student attitudes in middle class schools. In the lower class schools, student appraisal of their teacher's ability to explain subject matter, use of modern teaching equipment, degree of individualized instruction, and the ability to motivate and inspire students declined as
a result of more negative feelings being observed in these teachers. These same findings were not reported for middle class schools.

To better understand the school environment and in particular, the origin of teacher attitudes toward minority group children, Anderson (1969) conducted a study consisting of 73 mathematics teachers in 9 schools in El Paso, Texas, a school district enrolling a large number of Mexican-American children. The areas selected for study were the same three ecological sites reported earlier astride the migratory route followed by Mexican-American families as they immigrate to the United States from Juarez, Mexico, coterminous with El Paso, Texas. The findings in this study suggested that teacher attitudes toward disadvantaged minority group students may lie to some extent in the type of professional training they receive. Analyses of the teacher questionnaire suggests the approach used by most teachers in teaching mathematics to Mexican-American students and the type of student they enjoy teaching is significantly associated with their academic background. Teachers with a strong academic background indicated a preference for teaching high ability students. These same teachers reported having attended NSF and NDEA sponsored summer institutes and at the same time felt that mastery of subject matter was more important than developing a warm personal relationship with their students. The other group of teachers without a strong academic background, who enjoyed teaching mathematics and aspired to pursue careers as teachers of mathematics, perceived their students as possessing high ability, trying hard to succeed in school, and capable of governing themselves.
Additional findings indicated that mathematics teachers also differed in their views of their role as a teacher. Ten of the 71 teachers felt that their major responsibility was primarily that of transmitting knowledge and that they should avoid becoming involved with students experiencing difficulty. Five other teachers were undecided and more than one-half were not convinced of the value of bilingual instruction for Mexican-American children in grades one through three. Those teachers who felt they should be concerned about students experiencing difficulty were also more predisposed toward instruction in bilingual education.

Perceptions of disadvantaged and advantaged youth were studied by Soares and Soares (1970). In this study, the authors compared the self-concept of disadvantaged and advantaged youth and how they believed their teachers viewed them. A sample of 91 disadvantaged students, 71 advantaged students, and 12 teachers was randomly selected for the study. Results of this study indicated that disadvantaged students not only had high self-perceptions, but also believed that their teachers perceived them and advantaged students in similar ways. The advantaged students, in turn, looked at themselves less positively and felt their teacher looked upon them less favorably. Teachers, on the other hand, had lower perceptions for the disadvantaged students than for the advantaged students. Teacher ratings were also found to be quite different from student perception, lending support to the contention that individuals see what they want to see on the basis of selective perception.
Hambridge (1968) conducted a study to determine if there was a relationship between the accuracy of teacher judgment concerning pupil social status and actual pupil social status in class. Six teachers representing grades one through six were involved in the study. Each teacher was given two teacher judgment forms, one pertaining to girls and one pertaining to boys in her room. As teacher judgments were completed, three different sociometric tests were administered to their pupils with one being given each day for three consecutive days. The results indicated that there is a difference between teachers in the accuracy of their judgments concerning the sociometric status of their pupils. The correlation coefficients representing teacher judgment relating to student social status ranged from .09 to .84. In general, teachers were more accurate in judging the girls than the boys with a reported mean accuracy of teacher judgment for girls being higher in all three categories.

The effects of perceptions and attitude of school personnel on the provision of equal educational opportunities for Spanish-speaking children were investigated by Anderson and Safer (1967). School personnel ranged from superintendents to teachers from two communities in New Mexico with a reported Spanish-speaking population of 15 and 40 percent. The results of this study indicated that there was a common feeling among school personnel that the Spanish-American children were less capable of achieving in school and that this lack was commonly perceived to be an inherent and
innate lack of ability on the part of these students rather than failure due to inadequate school programs.

Literature presented within this section has indicated the lack of existing research as it pertains to the first three major hypotheses. The literature has also clearly supported the contention that the education a child receives depends largely upon the teacher within the classroom. As the most influential determinant of classroom climate, teachers in classrooms with Mexican-American student enrollment must recognize the overwhelming influence of culture and classroom climate on personality which are continually acting upon Mexican-American students throughout their educational experiences.

Interpersonal Relations
in Classrooms with Mexican-American Student Enrollment

Recognizing that the primary responsibility of schools is the development of cognitive skills, schools are also in a strategic position to provide students with the necessary guidance and assistance in gaining meaningful experiences in social relations. Improving social relations in school in such a way that children accept, understand, and appreciate one another provides a positive contribution to all facets of society.

Hypothesis four inferred that verbal response patterns of students selected as most liked and least liked are different from verbal response patterns of other students in the classroom at the elementary, junior, and senior high levels.

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Sociological research on the social and personal-social life of the Mexican-American is abundant. However, literature as it relates to this aspect of the study is, for the most part, unrelated.

Institutions enrolling minority group children may be classified as ethnically mixed institutions. Within many of these institutions, in the view of the author, minority group members are sometimes isolated from sustained patterns of interaction with Anglo students. As a result, cleavages emanate forming two distinct social segments. Simmons (1952) indicated that this relationship is best characterized as dominant-submissive with the Anglo segment as superordinate.

In an early study of cleavage relationships conducted in New Mexico high schools, Loomis (1943) concluded that strong tendencies existed for Spanish-American and Anglo students to choose associates within their own groups. A tendency to reject members of the majority group was also manifested by members of the minority group whether English-speaking or Spanish-speaking.

Parsons (1966) employed a study of ethnic cleavages in a California community with a population of approximately 1,800 persons. The percentage of Mexican-American and Anglo persons was reported as 55 and 45 percent, respectively. Methods of observation and interview techniques were used within the community to gather data during a three year period. Included within the instrumentation was a sociometric instrument administered to 491 pupils in the school. Results indicated a cleavage between Mexican-American and Anglo adults in the community as well as with students.
in school. At school, the findings further indicated that cleavages were greater for girls than for boys and Anglo students expressed a stronger self preference than Mexican-American students. Additionally, Anglo students looked toward other Anglo students for prestige while Mexican-American students looked to both groups. Mexican-American students, however, were more interested in Anglo prestige than in Anglo camaraderie.

The relationship of intelligence to social perception, the differentiation of social role groups according to their intelligence, and the possibility of ethnic influence on social visibility was examined by Peck (1962). The sample consisted of 1,217 Mexican-American and Anglo pupils from three Texas communities. The instruments used in the study were the California Test of Mental Maturity and McGuire's Role Nomination Test. From the results, Peck concluded that intelligence was positively correlated to the nomination of the words brain, wheel, big, imagination, and average. A negative correlation with intelligence was associated with the nomination of day dreamer. Analyses of social roles indicated that Anglos were nominated more frequently by both groups than were Mexican-Americans. Furthermore, Mexican-Americans were rejected more often by both groups with Mexican-Americans appearing to degrade themselves. A negative halo effect appeared to reduce the prominence of Mexican-American students in ethnically mixed schools. Having high ability and intelligence was harmful to Mexican-American social status which may account for resulting passive behaviors manifested by Mexican-American children in school.
The information garnered for presentation within this section clearly demonstrates the need for further information on the relationship of interpersonal relations and verbal interaction patterns in classrooms with Mexican-American student enrollment. Understanding the implications interpersonal relations have on individuals should promote an increase in the teacher's ability in determining social forces operating against the child within the classroom. Such understanding should also tend to assist in alleviating or ameliorating additional barriers confronting Mexican-American students.

Response Patterns of Male and Female Students in Classrooms with Mexican-American Student Enrollment

Response patterns in a classroom vary between male and female students as a result of several factors. Together, these factors contribute to the interaction process within a classroom which may indicate to the teacher whether or not subject matter being taught is relevant and interesting for male and female students in a classroom.

Hypothesis five, the final hypothesis in the study, stated that Mexican-American and Anglo male student response patterns are different from Mexican-American and Anglo female student response patterns at the elementary, junior, and senior high levels.

A search of the literature indicated that verbal responses in a classroom may be significantly influenced by language development. Sex differences in language development in Mexican-American students
were investigated by Quijano (1968). The nature of the study was to
determine whether or not girls exceeded boys in verbal performance.
One group consisted of first grade students from elementary schools
in the Laredo Independent School District, Laredo, Texas. The
second group included first graders from Monterrey, Nuevo Leon,
Mexico, and the third group consisted of first grade students from
Houston, Texas. The sample included 30 pupils in each group, 15
boys and 15 girls, matched in age, sex, and grade level. Verbal
ability was determined by scores derived on translations of the
Van Alstyne Picture Vocabulary Test in the dominant language of
the child. Results indicated that no significant sex differences
occurred between boys and girls on a test of verbal ability in all
three cultures.

A few studies have specifically investigated sex differences
in a bilingual setting. Carrow (1957) studied a group of monoling-
gual and bilingual children in San Antonio, Texas. Both groups
were similar in age, grade, socioeconomic status, and intelligence.
Four elementary schools in San Antonio were screened to select
subjects for the experiment consisting of 50 monolingual and bilin-
gual children. Instrumentation included the California Test of
Achievement, Durrell-Sullivan Reading Capacity Test, Gilmore Oral
Reading Test, Fairbanks Test of Articulation, and a three minute
sample of oral language recorded on tape. Findings revealed that
the monolingual group was superior in oral reading accuracy, oral
reading comprehension, hearing vocabulary, arithmetic reasoning,
and speaking vocabulary. There was no difference in silent reading,
comprehension of vocabulary, oral rate, spelling, verbal output, length of clause, and degree of subordination. The bilingual group made more and different types of articulatory and grammatical errors than the monolingual group. The boys did not differ significantly from the girls in any of the measures of language function except in oral rate reading. This study implied that teachers of bilingual Mexican-American children should be conversant with the language problem of these children, particularly with regard to their difficulties with word meanings and grammatical errors.

In the view of the author, it is possible that more girls than boys pursue a kind of life in which more respect, incentive, and opportunities for reading appear and persist for a longer period of time. In contrast, more boys than girls may find little or no early need for learning to read. Gates (1961) studied sex differences in reading ability based on the test scores of 13,114 pupils consisting of 6,646 boys and 6,468 girls in grades two through eight. Each child included in the study took all three of the Gates Reading survey tests administered in twelve school systems in ten states. The results indicated that in each of the twenty-one comparisons, the mean score for the boys was lower with most of the differences considered significant. In several other studies, girls have appeared to have an advantage over boys in early language development. Olson (1959) compared the growth curves in language for boys and girls from the same family and found that age for age, girls regularly exceeded the boys. He further stated that many of the differences may be due to maturity rather than sex.

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Furthermore, girls exceeded boys in the number of words spoken and the number of different words used in most comparisons. However, in the case of the ratio of the total number of words spoken to the number of different words used, boys exceeded the girls.

In overall measures of intelligence, there are perhaps no significant differences between boys and girls. On the question of qualitative intellectual differences, there is a difference. In a study conducted using the Stanford-Binet, McNemar (1960) found that girls do better on tasks involving language, aesthetic matters, and social skills. Boys performed better on mathematical, mechanical, and absurdity items. It was concluded that males are superior in problems involving space while females performed better in memory, reasoning, and verbal fluency.

This review, although not exhaustive, indicates the importance of studying response patterns of male and female students in classrooms with Mexican-American student enrollment. Knowledge of verbal response patterns can provide the teacher with information which may be helpful in systematically organizing the classroom for instruction.

Summary

In summary, this chapter has provided related literature and research studies as they pertained to the hypotheses, problem, and research design of the study. The focus was to develop an explicit rationale for the hypotheses made which underlie the study.
Hypothesis one and two related to verbal response patterns and student opinion between Mexican-American and Anglo students in classrooms with Mexican-American student enrollment.

The literature reviewed relevant to these two hypotheses indicated Mexican-American students are less verbal, manifest more unfavorable attitudes toward school, and are more passive, withdrawn and in many situations, inarticulate.

Hypothesis three investigated teacher perception of student opinion and the average student opinion as measured on the student opinion questionnaire.

In the literature reviewed, teachers, for the most part, have inadequate perceptions of Mexican-American youth and, as a result, are less prepared to effectively provide meaningful learning experiences for Mexican-American students.

Hypothesis four stated that verbal response patterns of students selected as sociometric choices are greater than verbal response patterns of other students in the classroom at the elementary, junior, and senior high levels.

Interpersonal relations are an inherent and necessary social process existing within the educational milieu. Literature reviewed indicated that Mexican-Americans have most always occupied subordinate roles in their association with the dominant society. This subservient role existing in the community is also observed in schools with Mexican-American youth indicating greater preference to Anglos in roles other than companionship.
Hypothesis five inferred that Mexican-American and Anglo male students engage in more student response patterns than Mexican-American and Anglo female students at the elementary, junior, and senior high levels.

Literature presented pertinent to this hypothesis indicated that girls appear to be more verbal in their behavior than boys and that verbal response may be significantly associated with language development.

It has been stated on numerous occasions that the school should try and adjust its learning opportunities to the unique characteristics and needs of each child. Recognizing this is not an easy task, Mexican-American students must be provided with encouragement, stimulus, and direction in order that they may persevere within schools that will provide them a relevant, exciting, pleasant, and truly significant experience.
CHAPTER III

DESIGN OF THE STUDY

This chapter of the report contains a description of the area and population under investigation, hypotheses tested by the study, instrumentation, selected classroom interaction variables, methodology used in data gathering, and treatment of the data.

Review of the Problem

The primary purpose of the study was to investigate selected classroom interaction variables, student opinion, and teacher perception between Mexican-American and Anglo students in classrooms with Mexican-American student enrollment. In addition, response patterns of students selected as sociometric choices and response patterns between males and female students were investigated to ascertain their relationship to verbal interaction patterns.

Description of the Area

The area selected for study was Fennville, Michigan located in northwestern Allegan County. The Fennville School District includes the city of Fennville and parts of seven surrounding townships which encompass an estimated area of approximately 125 square miles.

The area of Fennville and its surrounding townships is mostly agricultural and industrial. With the advent of industry, such as food processing plants in Fennville, in addition to manufacturing
plants in nearby towns, the community changed from a farming to an industrial perspective. The population appears to be composed of conservative and stable representatives of majority Anglo, Mexican-American, Black, Orientals, and American-Indian groups with socioeconomic levels ranging from upper-lower to average middle-class.

Because the community and surrounding areas are mostly agricultural, farm workers appear annually for seasonal employment migrating from various parts of the United States. The majority of these farm workers are Mexican-American from counties in Texas. With new mechanized methods in farming and opportunities available in industrial plants for stable employment, many transient workers became permanent residents of Fennville and surrounding communities. As a result, an estimated 25 to 30 percent of the area population is bilingual of Mexican-American origin.

Reports in the Bureau of Census Reports, (1970, 1971) indicated that the increase in population of Mexican-American residents in Fennville and surrounding areas has occurred recently within the last fifteen years. Indications suggest that perennially, a number of migrant farm workers elect to remain and establish residence in the area. In view of the author, at the projected rate of 2-7 families remaining per year, the area could manifest a 50 percent bilingual Mexican-American population within the next ten years.

The Fennville Public School District is comprised of three elementary schools, one junior high school, and one senior high school. As indicated in Table 3-1 the total student enrollment is 1,782 students.


<table>
<thead>
<tr>
<th>Level</th>
<th>Anglo Student Enrollment</th>
<th>Mexican-American Student Enrollment</th>
<th>Black Student Enrollment</th>
<th>Oriental Student Enrollment</th>
<th>American-Indian Student Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>816</td>
<td>208</td>
<td>10</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Junior High</td>
<td>246</td>
<td>40</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Senior High</td>
<td>390</td>
<td>57</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1451</td>
<td>305</td>
<td>22</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

*Figures obtained from Lottie Porter, Allegan County School Auditor*

Selection of the Sample

The sample for this study was a selected stratified sample consisting of 175 students and 6 teachers. Of the total number of students in the sample, 31 were Mexican-American and 144 were Anglo students.

The 175 subjects were a selected sample because of the fact that the study had to be conducted in an area with a substantial population of Mexican-Americans. Furthermore, classrooms participating in the study were selected on the basis of the greatest Mexican-American student enrollment at the desired levels. The sample was further stratified by grade level desired at the elementary, junior high, and senior high levels. From the levels selected, 66 students were from the elementary level, 40 from the junior
high level, and 38 from the senior high level.

Selection of the six teacher subjects was accomplished by requesting that each school identify those classrooms enrolling the largest number of Mexican-American students at the three desired grade levels. As teacher participation in the study was to be on a voluntary basis only, the researcher met with the teachers to discuss the study, instrumentation, and procedures to be used in conducting the study. All six teachers agreed to partake in the study. Table 3-2 indicates the classroom composition for each grade that participated in the study.

**TABLE 3-2**

**CLASSROOM COMPOSITION BY GRADE**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Teacher</th>
<th>Anglo Students</th>
<th>Mexican-American Students</th>
<th>Percentage Mexican-Subjects Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>5a</td>
<td>1</td>
<td>20</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>5b</td>
<td>1</td>
<td>22</td>
<td>5</td>
<td>19</td>
</tr>
<tr>
<td>5c</td>
<td>1</td>
<td>24</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>8a</td>
<td>1*</td>
<td>21</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>8b</td>
<td>1*</td>
<td>19</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>10a</td>
<td>1</td>
<td>21</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>10b</td>
<td>1</td>
<td>17</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>144</td>
<td>31</td>
<td>21</td>
</tr>
</tbody>
</table>

*Denotes the same teacher for both classes

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Hypotheses of the Study

The hypotheses to be studied within this report are predicated upon the five major hypotheses made in Chapter I which underlie the study. Together, there are forty-two hypotheses relative to verbal interaction patterns, student opinion, and teacher perception in classrooms with Mexican-American student enrollment.

The rationale for each hypothesis is incorporated in Chapter II of this report as part of the rationale developed for each of the five major hypotheses.

Hypothesis 1

Mexican-American student verbal response patterns are different from Anglo student verbal response patterns at the elementary, junior and senior high levels.

Subhypothesis 1-1

Selected classroom verbal interaction variables under investigation will reveal differences among the three levels investigated.

1-1a Teacher lecture at the elementary level is less than teacher lecture at the junior and senior high levels.

1-1b Teacher criticism at the elementary level is greater than teacher criticism at the junior and senior high levels.

1-1c More confusion will be observed at the elementary level than at the junior and senior high levels.

1-1d The indirect/direct teacher ratio is greater at the elementary level than at the junior and senior high levels.

1-1e Sustained teacher acceptance of student response is greater at the elementary level than at the junior and senior high levels.
Sustained student questioning is greater at the elementary level than sustained student questioning at the junior and senior high levels.

Student talk is greater at the elementary level than student talk at the junior and senior high levels.

Subhypothesis 1-2

Mexican-American student talk is less than Anglo student talk at the three levels studied.

1-2a Mexican-American student talk is less than Anglo student talk at the elementary level.

1-2b Mexican-American student talk is less than Anglo student talk at the junior high level.

1-2c Mexican-American student talk is less than Anglo student talk at the senior high level.

Hypothesis 2

Mexican-American students perceive the school milieu more negatively than Anglo students at the elementary, junior, and senior high levels. The following three subhypotheses were derived from this second major hypothesis.

Subhypothesis 2-1

Mexican-American student opinion toward their teachers is less positive than Anglo student opinion toward their teacher at the three levels investigated.

2-1a Mexican-American student opinion toward their teachers is less positive than Anglo student opinion toward their teachers at the elementary level.

2-1b Mexican-American student opinion toward their teachers is less positive than Anglo student opinion toward their teachers at the junior high level.

2-1c Mexican-American student opinion toward their teachers is less positive than Anglo student opinion toward their teachers at the senior high level.
Subhypothesis 2-2

Mexican-American student opinion toward the school environment is less positive than Anglo student opinion toward the school environment at all three levels investigated.

2-2a Mexican-American student opinion toward the school environment is less positive than Anglo student opinion toward the school environment at the elementary level.

2-2b Mexican-American student opinion toward the school environment is less positive than Anglo student opinion toward the school environment at the junior high level.

2-2c Mexican-American student opinion toward the school environment is less positive than Anglo student opinion toward the school environment at the senior high level.

Subhypothesis 2-3

Mexican-American student opinion toward students in their school is less positive than Anglo student opinion of students in their school at the three levels investigated.

2-3a Mexican-American student opinion toward students in their school is less positive than Anglo student opinion of students in their school at the elementary level.

2-3b Mexican-American student opinion toward students in their school is less positive than Anglo student opinion of students in their school at the junior high level.

2-3c Mexican-American student opinion toward students in their school is less positive than Anglo student opinion of students in their school at the senior high level.

Subhypothesis 2-4

Mexican-American student opinion toward their teachers is more positive at the elementary level than at the junior and senior high levels.

Subhypothesis 2-5

Mexican-American student opinion toward the school environment is more positive at the elementary level that at the junior and senior high levels.
Subhypothesis 2-6

Mexican-American student opinion toward other students is more positive at the elementary level than at the junior and senior high levels.

Hypothesis 3

The third major hypothesis inferred that overall teacher perception of Mexican-American and Anglo student opinion toward the teacher, the school environment, and each other is not congruent to the overall average of Mexican-American and Anglo student response toward the teacher, the school environment, and each other.

Subhypothesis 3-1

Overall teacher perception of Mexican-American and Anglo student opinion toward the teacher is not congruent to the overall average of Mexican-American and Anglo student opinion toward the teacher.

Subhypothesis 3-2

Overall teacher perception of Mexican-American and Anglo student opinion to the school environment is not congruent to the overall average of Mexican-American and Anglo student opinion toward the school environment.

Subhypothesis 3-3

Overall teacher perception of Mexican-American and Anglo student opinion toward other students in their school is not congruent to the overall average of Mexican-American and Anglo student opinion toward other students in their school.

Hypothesis 4

Verbal response patterns of students selected as most liked and least liked are different from verbal response patterns of other students in the classroom at the elementary, junior, and senior high levels.
Subhypothesis 4-1

Most liked and least liked student response is greater than the response of other students in the classroom at the elementary level.

Subhypothesis 4-2

Most liked and least liked student response is greater than the response of other students in the classroom at the junior high level.

Subhypothesis 4-3

Most liked and least liked student response is greater than the response of other students in the classroom at the senior high level.

Hypothesis 5

Mexican-American and Anglo male student response patterns are different from Mexican-American and Anglo female student response patterns at the elementary, junior, and senior high levels.

Subhypothesis 5-1

Female students in classrooms with Mexican-American student enrollment respond less to teacher questioning than male students at the three levels investigated.

5-1a Female students in classrooms with Mexican-American student enrollment respond less to teacher questioning than male students at the elementary level.

5-1b Female students in classrooms with Mexican-American student enrollment respond less to teacher questioning than male students at the junior high level.

5-1c Female students in classrooms with Mexican-American student enrollment respond less to teacher questioning than male students at the senior high level.

Subhypothesis 5-2

Male students in classrooms with Mexican-American student enrollment manifest more initiated student response than female students at all three levels investigated.
Male students in classrooms with Mexican-American student enrollment manifest more initiated student response than female students at the elementary level.

Male students in classrooms with Mexican-American student enrollment manifest more initiated student response than female students at the junior high level.

Male students in classrooms with Mexican-American student enrollment manifest more initiated student response than female students at the senior high level.

Subhypothesis 5-3

Mexican-American male student talk is greater than Mexican-American female student talk at the three levels investigated.

Mexican-American male student talk is greater than Mexican-American female student talk at the elementary level.

Mexican-American male student talk is greater than Mexican-American female student talk at the junior high level.

Mexican-American male student talk is greater than Mexican-American female student talk at the senior high level.

Instrumentation

Three instruments were required in the study to determine verbal interaction patterns, student opinion, teacher perception, and interpersonal relations in the study. A Behavior Classification System developed by Coats (1971), measured student opinion and teacher perception, and an Elementary and Secondary Sociometric Instrument developed by the author from Gronlund, (1959) was used to gather information relative to interpersonal relations in a classroom. A description of each instrument follows.
The Behavior Classification System used to measure verbal interaction patterns in this study was developed by Coats (1971) very similar to Flanders (1964). The system, modified for the population under study described herein, lists a set of classroom behaviors which serve to identify aspects of verbal interaction patterns existing within a classroom. This set of behaviors also serves as a basis for identifying the type of interaction under investigation.

BEHAVIOR CLASSIFICATION SYSTEM

1. Criticism
2. Directions
3. Lecture
4. Questions
5. Acceptance
6. Mexican-American Student Response
   1. Male Response
   2. Male Initiation
   3. Male Derogatory
   4. Female Response
   5. Female Initiation
   6. Female Derogatory
7. Anglo Student Response
   1. Male Response

---

1 See Appendix A
2. Male Initiation  
3. Male Derogatory  
4. Female Response  
5. Female Initiation  
6. Female Derogatory  
8. Confusion

The first five categories describe teacher behavior, the next two categories describe student behavior, and the final category describes silence, short pauses, and confusion. Categories six and seven are used to describe Mexican-American and Anglo student talk. Each category is further partitioned into six sub-categories which describe male and female student response to teacher questioning, male and female initiated response, and male and female student derogatory talk. From this system, an 18 x 18 matrix can be constructed whereby hundreds of verbal interaction variables present themselves for study. As an example, with reference to Figure 3-1, cell (1,3) identifies teacher criticism followed by lecture, cell (5,5) identifies teacher acceptance, and cell (3,3) identifies sustained lecture by the teacher. Figure 3-1 indicates the variables generated by the matrix.

Using this system, the author gathered data on spontaneous verbal communication in classrooms selected for study by indicating the appropriate numeric symbol of verbal interaction patterns occurring during a three second interval. At the end of the observation period, a sequential list of numerals was transferred onto the
**Figure 3-1**

**VERBAL INTERACTION MATRIX 18 x 18**

<table>
<thead>
<tr>
<th>Teacher Talk</th>
<th>Student Talk</th>
<th>Mexican-American</th>
<th>Anglo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Criticism</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Directions</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Questions</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Acceptance</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Response</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Initiation</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Derogatory</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Confusion</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

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matrix by taking the sequential list of numerals and combining every two for the purpose of identifying a behavioral pair.

Example:

\[
\begin{array}{c}
3 \\
4 \\
5 \\
\end{array}
\quad \begin{array}{c}
\text{Behavioral pairs} \\
(3,3), (3,4), (4,6), \\
(6,5), (5,5) \\
\end{array}
\]

As this information was transferred onto the matrix, each number within each cell indicated the number of times that specific behavior pair occurred. The number in each cell was next converted to a percentage figure by dividing the number represented in each cell by the total number of tallies indicated on the matrix to determine the amount of time that particular behavior sequence occurred.

**Student Opinion Questionnaire**

The Student Opinion Questionnaire was used to garner student reactions to the teacher, the class, and each other. Two questionnaires were used, one for elementary students, and one for secondary students. The validity and reliability of the items appearing on the questionnaires have been demonstrated by the Educator Feedback Center located at Western Michigan University, which has used the instruments in numerous classroom analyses.

**Elementary Student Opinion Questionnaire (ESOQ)**. The (ESOQ) was used to measure student reactions to the teacher, the class, and each other along a seventeen item criterion measure.

---

1See Appendix B
These measures are:

1. Do you understand what your teacher says when she talks to you? (Like when she explains things)

2. Is your teacher fair?

3. Do the kids in your class behave?

4. Does your teacher like you?

5. Is your class fun?

6. Does your teacher think what you say is important?

7. Does your teacher want you to ask questions and give your ideas in class?

8. Is it okay if your idea is different from your teacher's idea?

9. Does your teacher get angry when little problems come up in class?

10. Do you feel free to tell your ideas in class?

11. Do you like to be called on in this class?

12. Do you feel like you learn a lot in your class?

13. Do you worry about other students picking on you?

14. Do you like your teacher?

15. Do you like your school?

16. Are the children in your class friendly?

17. Do you feel your teacher understands Mexican-Americans?

These same seventeen criterion items were categorized into three measures of student opinion toward the teacher, the school environment, and each other. Items associated with student opinion toward the teacher include 1, 2, 4, 6, 7, 8, 9, 10, and 17. Items 5, 11, 12, 13, 14, and 15 measured student opinion toward the school
environment and items 3 and 16 related to student opinion toward each other.

Secondary Student Opinion Questionnaire (SSOQ). The (SSOQ) was used to measure student reaction of the teacher, the class, and each other at the junior and senior high school levels. The questionnaire also measured student reaction along seventeen criterion items. These measures are:

1. Are the ideas presented at a level you can understand?
2. Is this teacher fair and impartial in his treatment of all students in the class?
3. Is this classroom orderly but also relaxed and friendly?
4. Do you feel that this teacher likes you?
5. Is this class interesting and challenging?
6. Does this teacher have respect for the things you say in class?
7. Does this teacher encourage you to raise questions and express ideas in class?
8. Is this teacher able to see things from your point of view?
9. Does this teacher become angry when little problems arise in the classroom?
10. Do you feel free to give your own ideas and express your own opinions in this class?
11. Do you like to be called on in this class?
12. Do you feel like you learn a lot in this class?
13. Do you like most of your teachers?
14. Do you like this class?
15. Do you like this school?

---

See Appendix C
16. Are the students in this school friendly?

17. Do you feel your teacher understands Mexican-Americans?

As previously mentioned for (ESOQ), each item was subsumed under one of the three measures of student opinion. The identical items associated with the three measures of student opinion on the (ESOQ) were also used on the (SSOQ).

The (ESOQ) and (SSOQ) were administered in the classroom by the observer. Students responded to each measure of student opinion by encircling any one of five categories indicated by the letters N (Never), L (Little of the Time), S (Sometimes), M (Most of the Time), and A (Always). At the elementary level, the items which comprised the three measures of student opinion were read aloud in class due to the heterogeneity existing in reading ability. After students completed the questionnaire, an envelope was given to a selected student where all questionnaires were placed. After analyses, data were tabulated to determine a mean score for each of the three measures of student opinion which served to compare one group of students with another.

Teacher Perception

Teacher perception was measured by using the (ESOQ) and (SSOQ). Teachers were asked to complete the identical questionnaire given to their students on the basis of how they felt the class, as an average would respond to each of the seventeen criterion items listed. This information was then analyzed and compared to the mean score represented by students in the classroom and a correlation figure between teacher response to each measure of student opinion.
opinion and the average student response to each measure of student opinion was derived which indicated an indices of teacher perception. Student Sociometric Analysis

An instrument developed by the researcher was used to determine interpersonal relations existing in classrooms selected for study at the elementary and secondary level.

At the elementary level, four questions were used to obtain responses from students relevant to sociometric choices. These questions were:

1. I would choose to sit near these students most.
2. I would choose to work with these students most.
3. I would choose to play with these students most.
4. I would choose to work with these students the least.

At the junior high level, three questions were used to achieve the same results desired at the elementary level. These questions were:

1. I would choose to work with these students most.
2. I would choose these students as my seating companions.
3. I would choose these students least for group work or as seating companions.

Three questions were also used at the senior high school level. The questions were:

1. Who would you choose to work with in working together on a group project?
2. If you were given a break during the project, who would you choose to interact with?

1See Appendix D
3. Identify three individuals you would least likely choose to work with on a given project?

Using these instruments, students were asked to identify five student names for each question asked. At the elementary level, teacher assistance was required due to some students experiencing difficulty in the spelling of names. As this information was received, student responses were plotted on a sociogram by classroom for the purpose of identifying the three most liked and two least liked students in classrooms investigated at each of the three levels.

Selected Interaction Variables Studied

Of the total number of verbal interaction variables generated by the matrix used in this study, the following are of primary interest within this report. Concommitant with each variable is a theoretical and operational definition.

1. Percentage of time in which the teacher transmits information related to subject matter.

2. Criticism

Percentage of time in which the teacher engages in giving directions followed by criticism, followed by more directions, or more criticism.

*See figure 3-1 on page 62 to identify all variables.

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3. Confusion

Theoretical definition

Percentage of time during which communication cannot be understood by the observer.

Operational definition

Percentage of the numbers represented in column 8.

4. i/d ratio

Theoretical definition

Ratio of the percentage of time the teacher spends accepting student feelings, praising students, and accepting student ideas to time spent giving directions, criticizing students, or justifying teacher authority.

Operational definition

Numbers in column 5
Numbers in columns 1, 2, and 5

5. Sustained Acceptance

Theoretical definition

Percentage of time in which the teacher displays acceptance of student behavior, ideas, or feelings for more than a three second interval.

Operational definition

Percentage of the numbers in cell (5,5).

6. Sustained Mexican-American Student Questioning

Theoretical definition

Percentage of sustained Mexican-American student questioning followed by Mexican-American student response, more teacher questioning, more Mexican-American student response, etc.

Operational definition

Numbers in cells (4,6₁) and (4,6₂)
Numbers in cells (4,6₁), (4,6₂), (4,7₁) and (4,7₂)
7. Sustained Anglo Student Questioning

**Theoretical definition**
Percentage of Anglo sustained student questioning followed by Anglo student response, more teacher questioning, more Anglo student response, etc.

**Operational definition**
Numbers in cells $(4,7)$, $(4,7_4)$, $(4,6)$, $(4,7_1)$ and $(4,7_4)$

8. Sustained Student Questioning

**Theoretical definition**
Percentage of sustained Mexican-American and Anglo student questioning followed by student response, more teacher questioning, more student response, etc.

**Operational definition**
Percentage of numbers in cells $(4,6)$, $(4,6_4)$, $(4,7)$, and $(4,7_4)$.

9. Mexican-American Student Response

**Theoretical definition**
Percentage of Mexican-American student response which conforms to a teacher idea or question.

**Operational definition**
Numbers in columns $(6_1)$ and $(6_4)$, $(6_4)$, $(7_1)$, and $(7_4)$

10. Mexican-American Student Initiated Response

**Theoretical definition**
Percentage of Mexican-American student initiated expression of his own ideas, thoughts, or concerns which does not conform to a teacher idea or question.

**Operational definition**
Numbers in columns $(6_2)$ and $(6_5)$, $(6_2)$, $(7_2)$, and $(7_4)$
11. Mexican-American Student
Derogatory Response

**Theoretical definition**
Percentage of Mexican-American student response toward the teacher or fellow student which is rude, disrespectful, or insulting.

**Operational definition**
Numbers in columns \((6,3)\) and \((6,6)\)
Numbers in columns \((6,3)\), \((6,6)\), \((7,3)\), and \((7,6)\)

12. Mexican-American Student
Non-derogatory Talk

**Theoretical definition**
Percentage of Mexican-American student response classified as non-derogatory.

**Operational definition**
Numbers in columns \((6,2)\), \((6,4)\) and \((6,5)\)
Numbers in columns \((6,2)\), \((6,4)\), \((6,5)\), \((7,1)\), \((7,2)\), \((7,3)\), \((7,4)\), \((7,5)\), and \((7,6)\)

13. Mexican-American Student
Talk

**Theoretical definition**
Percentage of all Mexican-American student talk comprised of variables 9, 10, 11, and 12.

**Operational definition**
Numbers in columns \((6,1)\), \((6,2)\), \((6,3)\), \((6,4)\), \((6,5)\), and \((6,6)\)
Numbers in columns \((6,2)\), \((6,3)\), \((6,4)\), \((6,5)\), \((6,6)\), \((7,1)\), \((7,2)\), \((7,3)\), \((7,4)\), \((7,5)\), and \((7,6)\)

14. Anglo Student Response

**Theoretical definition**
Percentage of Anglo student response which conforms to a teacher ideas or question.

**Operational definition**
Numbers in columns \((7,1)\) and \((7,4)\)
Numbers in columns \((6,1)\), \((6,4)\), \((7,1)\), and \((7,4)\)
15. Anglo Student Initiated Response

**Theoretical definition**

Percentage of Anglo student initiated expression of his own ideas, thoughts, or concerns which does not conform to a teacher idea or question.

**Operational definition**

Numbers in columns (7_2) and (7_5)

Numbers in columns (6_2), (6_3), (7_2), and (7_5)

16. Anglo Student Derogatory Response

**Theoretical definition**

Percentage of Anglo student response toward the teacher or fellow student which is rude, disrespectful, or insulting.

**Operational definition**

Numbers in columns (7_3) and (7_6)

Numbers in columns (6_2), (6_3), (7_3), and (7_6)

17. Anglo Student Non-derogatory Talk

**Theoretical definition**

Percentage of Anglo student response classified as non-derogatory.

**Operational definition**

Numbers in columns (7_1), (7_2), (7_4), and (7_5)

Numbers in columns (6_2), (6_3), (6_4), (6_5), (7_1), (7_2), (7_4), and (7_5)

18. Anglo Student Talk

**Theoretical definition**

Percentage of all Anglo student talk comprised of variables 14, 15, 16, and 17.

**Operational definition**

Numbers in columns (7_1), (7_2), (7_3), (7_4), (7_5), and (7_6)

Numbers in columns (6_2), (6_3), (6_4), (6_5), (6_6), (7_1), (7_2), (7_3), (7_4), (7_5), and (7_6)
19. Mexican-American Male
Student Response

Theoretical definition
Percentage of Mexican-American
male student response which con-
forms to a teacher idea or
question.

Operational definition
Numbers in column \((6_1)\)
Numbers in columns \((6_1)\)
and \((6_4)\)

20. Mexican-American Male Student
Initiated Response

Theoretical definition
Percentage of Mexican-American
male initiated expression of his
own ideas, thoughts, or concerns
which does not conform to
teacher ideas or questions.

Operational definition
Numbers in column \((6_2)\)
Numbers in columns \((6_2)\)
and \((6_5)\)

21. Mexican-American Male
Student Talk

Theoretical definition
Percentage of all Mexican-
American male talk com-
prised of variables 19 and
20.

Operational definition
Numbers in columns \((6_1),\)
\((6_2),\) and \((6_3)\)
Numbers in columns \((6_1),\)
\((6_2), (6_3), (6_4), (6_5),\)
and \((6_6)\)

22. Mexican-American Female
Student Response

Theoretical definition
Percentage of Mexican-American
female student response which con-
forms to a teacher idea or
question.

Operational definition
Numbers in column \((6_4)\)
Numbers in columns \((6_1)\)
and \((6_4)\)
23. Mexican-American Female Student Initiated Response

**Theoretical definition**

Percentage of Mexican-American female initiated expression of their own ideas, thoughts, or concerns which does not conform to a teacher idea or question.

**Operational definition**

Numbers in column (6_5)

Numbers in columns (6_2) and (6_5)

24. Mexican-American Female Student Talk

**Theoretical definition**

Percentage of all Mexican-American female talk comprised of variables 22 and 23.

**Operational definition**

Numbers in columns (6_4) and (6_5)

Numbers in columns (6_2), (6_3), (6_4), (6_5), and (6_6)

25. Anglo Male Student Response

**Theoretical definition**

Percentage of Anglo male student response which conforms to a teacher idea or question.

**Operational definition**

Numbers in column (7_1)

Numbers in columns (7_1) and (7_4)

26. Anglo Male Student Initiated Response

**Theoretical definition**

Percentage of Anglo male initiated expression of his own ideas, thoughts, or concerns which does not conform to a teacher idea or question.

**Operational definition**

Numbers in column (7_2)

Numbers in columns (7_2) and (7_5)
27. Anglo Male Student Talk

**Theoretical definition**

Percentage of all Anglo male student talk comprised of variables 25 and 26.

**Operational definition**

Numbers in columns \((7_1), (7_2),\) and \((7_3)\)

28. Anglo Female Student Response

**Theoretical definition**

Percentage of Anglo female student response which conforms to a teacher idea or question.

**Operational definition**

Numbers in column \((7_4)\)

Numbers in columns \((7_1)\) and \((7_4)\)

29. Anglo Female Student Initiated Response

**Theoretical definition**

Percentage of Anglo female initiated expression of their own ideas, thoughts, or concerns which does not conform to a teacher idea or question.

**Operational definition**

Numbers in column \((7_5)\)

Numbers in columns \((7_2)\) and \((7_5)\)

30. Anglo Female Student Talk

**Theoretical definition**

Percentage of all Anglo female student talk comprised of variables 28 and 29.

**Operational definition**

Numbers in columns \((7_4), (7_5),\) and \((7_6)\)

Numbers in columns \((7_1), (7_2), (7_3), (7_4), (7_5),\) and \((7_6)\)
### 31. Male Student Response

**Theoretical definition**
Percentage of Mexican-American and Anglo male response which conforms to a teacher idea or question.

**Operational definition**
- Numbers in columns (6₁) and (7₁)
- Numbers in columns (6₁), (6₄), (7₁), and (7₄)

### 32. Male Student Initiated Response

**Theoretical definition**
Percentage of Mexican-American and Anglo male initiated expression of their own ideas, thoughts, or concerns which does not conform to a teacher idea or question.

**Operational definition**
- Numbers in columns (6₂) and (7₂)
- Numbers in columns (6₂), (6₅), (7₂), and (7₅)

### 33. Male Student Talk

**Theoretical definition**
Percentage of all Mexican-American and Anglo male student talk comprised of variables 31 and 32.

**Operational definition**
- Numbers in columns (6₁), (6₂), (6₃), (7₁), (7₂), and (7₃)
- Numbers in columns (6₁), (6₂), (6₃), (6₄), (6₅), (6₆), (7₁), (7₂), (7₃), (7₄), (7₅), and (7₆)

### 34. Female Student Response

**Theoretical definition**
Percentage of Mexican-American and Anglo female response which conforms to a teacher idea or question.

**Operational definition**
- Numbers in columns (6₄) and (7₄)
- Numbers in columns (6₁), (6₄), (7₁), and (7₄)
35. Female Student Initiated Response

**Theoretical definition**

Percentage of Mexican-American and Anglo female initiated expression of their own ideas, thoughts, or concerns which does not conform to a teacher idea or question.

**Operational definition**

Numbers in columns (6₅) and (7₅)

Numbers in columns (6₂), (6₃), (7₂), and (7₅)

36. Female Student Talk

**Theoretical definition**

Percentage of all Mexican-American and Anglo female student talk comprised of variables 34 and 35.

**Operational definition**

Numbers in columns (6₄), (6₅), (6₆), (7₄), (7₅), and (7₆)

Numbers in columns (6₁), (6₂), (6₃), (6₄), (6₅), (6₆), (7₁), (7₂), (7₃), (7₄), (7₅), and (7₆)

37. Most Liked Student Response

**Theoretical definition**

Percentage of the most liked student response which may or may not conform to a teacher idea or question.

**Operational definition**

Any column combination of the following numbers with an additional number of 1, 2, or 3 appearing next to the subscript (6₁), (6₂), (6₃), (6₄), (6₅), (6₆), (7₁), (7₂), (7₃), (7₄), (7₅), and (7₆)

Numbers in columns (6₁), (6₂), (6₃), (6₄), (6₅), (6₆), (7₁), (7₂), (7₃), (7₄), (7₅), and (7₆)
38. Least Liked Student Response

**Theoretical definition**

Percentage of the least liked student response which may or may not conform to a teacher idea or question.

**Operational definition**

Any column combination of the following numbers with an additional number of 4 or 5 appearing next to the subscript (6_1), (6_2), (6_3), (6_4), (6_5), (6_6), (7_1), (7_2), (7_3), (7_4), (7_5), and (7_6)

Numbers in columns (6_1), (6_2), (6_3), (6_4), (6_5), (6_6), (7_1), (7_2), (7_3), (7_4), (7_5), and (7_6)

39. Most Liked and Least Liked Student Response

**Theoretical definition**

Percentage of the most liked and least liked student response which may or may not conform to a teacher idea or question.

**Operational definition**

Any column combination of the following numbers with an additional 1, 2, 3, 4, or 5 next to the subscript (6_1), (6_2), (6_3), (6_4), (6_5), (7_2), (7_3), (7_4), (7_5), and (7_6)

Numbers in columns (6_1), (6_2), (6_3), (6_4), (6_5), (6_6), (7_1), (7_2), (7_3), (7_4), (7_5), and (7_6)

Methodology Used in Data Gathering

On February 4, 1972, a letter requesting an appointment with the Superintendent of Fennville Public Schools was sent for the purpose of seeking formal approval to conduct the study. Having
secured approval, on April 26, 1972, the researcher met with the school principals of the elementary, junior, and senior high schools to discuss the study and answer any technical aspects involved in conducting the study. Next, the researcher asked each principal to identify those teachers and classrooms enrolling the largest percentage of Mexican-American students.

Having identified the teachers and classrooms desired, the researcher met with the six teachers having the largest enrollment of Mexican-American students. The study was discussed in full detail to include a clear description of procedures to be used in data gathering using interaction analysis and instrumentation. Questions were answered relevant to any aspect of the study and it was indicated at that time that participation in the study would be strictly voluntary. Satisfied with the intent of the study and primarily interested in assessing their own teaching behavior, all six teachers agreed to participate.

The researcher then requested a schedule from each teacher indicating events which normally occur during a given week. In this way, the researcher and teacher were collectively able to construct a schedule indicating periods of time during which optimum teacher-pupil interaction would be occurring.

On the same day the researcher met with the teachers, the Elementary and Secondary Sociometric Analysis forms were distributed with directions necessary for administering the instrument. The teachers were asked to complete the forms within a two day period so the researcher could begin identifying students selected on the
Instruments. Two days later the researcher returned to collect the sociometric instruments and analysis revealed student choices in the classroom.

On May 8, 1972, the researcher entered selected classrooms for the purpose of identifying selected student choices on the sociometric instruments since verbal interaction data were gathered on all verbal communication observed in the classroom during three second intervals with selected student choices using the sociometric process receiving special coding procedures.

The researcher himself gathered all interaction analysis data after extensive preparation. Reliability of the observer was accomplished by observing classrooms at identical levels for a continuous two week period. At the same time interaction analysis data were being gathered, taped recordings were made of the identical classroom setting under observation and approximately one day later the researcher tabulated responses as heard on the tapings and a comparison was made with the original data gathered previously to obtain a reliability coefficient. The reliability of the author is supported by data in the appendix.¹

Following a well constructed schedule, interaction analysis were collected using the description indicated in the Behavior Classification System described earlier in this chapter and found in Appendix A. Data gathered within each classroom included a numeric representation for the behavior pattern observed, male and

¹See Appendix E
female response, and sociometric choice. This was accomplished by indicating the behavior pattern with the category numbers 1-8 inclusive, male response as (+), female response as (-), and the sociometric choice with either an A, B, or C for most liked and D or E for least liked.

Example:

\[
\begin{array}{c|ccccc}
6_1 & + & - & A & B & C & D & E \\
7_2 & + & - & A & B & C & D & E \\
\end{array}
\]

Interpretation: The numeral 6_1 identifies Mexican-American student response, the (+) indicates a Mexican-American male, and the A indicates the first sociometric choice. Same interpretation for 7_2 with appropriate identification.

The average time spent in observation for each class was approximately six hours. Interaction analysis data gathered were first completed at the junior high level and the (SSOQ) was administered to all students in the class. At the same time, the teacher was asked to complete the identical questionnaire indicating how he felt the class, on the average, would respond. Upon completion of the instrument, a student from the class was selected to gather all questionnaires and was given an envelope in which the questionnaires were placed.

Interaction analysis data were next completed at the senior high level and the (SSOQ) was also administered using the same procedures described for the junior high level. At the elementary level, after interaction analysis data gathering were completed, the (ESOQ) was administered using the same procedures described for the junior and senior high levels with the exception that the directions
and items were read aloud in class due to differences existing among students relative to their reading ability. Administration of the student opinion questionnaires culminated activities outlined for data gathering during this investigation.

Treatment of Data

The data collected in this study included: (1) interaction analysis data; (2) responses to the (ESOQ) and (SSOQ); (3) responses to teacher perception questionnaires; and (4) responses to the elementary and secondary student sociometric analysis. Statistical models used in treatment of data included a one way analysis of variance, a t-test of student means, a t-test of proportions, and Pearson's product moment correlation coefficient. Table 3-3 indicates the statistical model used to test each of the hypothesis in the study.

As indicated on Table 3-3, verbal interaction variables were analyzed at the three levels by using a one way analysis of variance model. In order to provide a reliable measure of classroom verbal interaction patterns between Mexican-American and Anglo students, a t-test of proportion was used. Analysis on each selected variable was achieved by computing a percentage ratio that represented the amount of talk which would normally be expected from Mexican-American and Anglo students in the classroom or level under investigation. This percentage ratio was derived by dividing the total number of Mexican-American students enrolled in the classroom or level under investigation by the total number of students enrolled.
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</tr>
</tbody>
</table>
in the identical classroom or level investigated. These figures, obtained for each classroom and level under investigation, denote the amount of talk expected by Mexican-American and Anglo students as a result of their classroom enrollment. This expected percentage ratio was compared with the observed frequency to determine any differences that may have occurred. Frequencies did not have to be indicated for Anglo students because the expected and observed frequencies derived for Mexican-American students are each a percentage of one which, when subtracted from 100 percent will provide the expected and observed value for Anglo students on the identical variable under investigation. Similar procedures were used in data analysis relative to verbal response patterns of sociometric choices and male and female students. The major difference is that in place of analyzing data for differences between Mexican-American and Anglo students, analysis determined the difference between the two variables under investigation.

Analysis of the (ESOQ) and (SSOQ) was accomplished by categorizing all items on the questionnaire into three measures of student opinion. The three measures of student opinion were student opinion toward the teacher, the school environment, and each other. From these three measures of student opinion, a mean score was derived representing the total measure of student opinion for that category. The means were then analyzed to determine differences between Mexican-American and Anglo student opinion on each measure of student opinion. Similar procedures were employed in determining teacher perception of student opinion on each of the three measures.
of student opinion. Teacher responses to each measure of student opinion were averaged and a mean score derived which was correlated with the average student response for the identical measure of student opinion. This procedure was used to ascertain teacher perception of student opinion and the average student response toward the teacher, the school environment, and each other.

Procedures used in analyzing classroom sociometric data included the use of a sociogram whereby student choices on the sociometric questionnaire were plotted to determine the three most liked and the two least liked students in each classroom investigated. Once this information was available, special coding procedures were implemented for use during interaction analysis data gathering.

This chapter has presented an overview of the design of the study, the instruments used, and the procedures used in the analysis of data. The following chapter presents the results of treatment of data as they relate to the major hypotheses of the study.
CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

This chapter includes the presentation and analysis of data collected relevant to the objectives inherent within the study. The primary purpose of the study was to investigate classroom verbal interaction patterns, student opinions, and teacher perception in selected classrooms with Mexican-American student enrollment.

In addition, a sociometric analysis was conducted to determine if there was a relation between the response patterns of student sociometric choices and verbal interaction patterns in classrooms selected for study. Also, student male and female responses were investigated to ascertain whether there was a relation between male and female student response patterns and classroom verbal interaction patterns.

Organization of information presented within this chapter will follow the sequence used in stating the five major hypotheses and their constituent subhypotheses presented in the previous chapter.

Classroom Verbal Interaction

The first major hypothesis of the study stated that Mexican-American student verbal response patterns are different from Anglo student verbal response patterns at the elementary, junior, and senior high levels.
In an attempt to determine whether there was a relation between classroom verbal interaction variables investigated and the elementary, junior, and senior high levels, subhypothesis 1-1 was derived.

Subhypothesis 1-1:
Selected classroom verbal interaction variables under investigation will reveal differences among the three levels investigated.

Testing each of the three levels investigated required that subhypothesis 1-1 be subdivided into seven constituent subhypotheses.

Subhypothesis 1-1a:
Teacher lecture at the elementary level is less than teacher lecture at the junior and senior high levels.

A one way analysis of variance model was used to determine whether there was a relation between variable one, described as lecture, and the three levels investigated. The analysis was made by comparing the three levels under investigation with variable one for no relation between lecture and the three levels studied. With an F-table value of 5.79 at the .05 level of confidence using two degrees of freedom in the numerator and five degrees of freedom in the denominator, data in Table 4-1 indicate that there is no relation between variable one, lecture, and the three levels investigated. As a result, insufficient data is available to support subhypothesis 1-1a.
TABLE 4-1
COMPARISON OF INTERACTION ANALYSIS VARIABLES AT THE
ELEMENTARY, JUNIOR, AND SENIOR HIGH LEVELS

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Variable</th>
<th>Elementary High</th>
<th>Junior High</th>
<th>Senior High</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lecture&lt;sup&gt;a&lt;/sup&gt;</td>
<td>22.06</td>
<td>39.95</td>
<td>29.80</td>
<td>4.04</td>
</tr>
<tr>
<td>2</td>
<td>Criticism</td>
<td>4.30</td>
<td>3.40</td>
<td>7.70</td>
<td>1.63</td>
</tr>
<tr>
<td>3</td>
<td>Confusion</td>
<td>13.06</td>
<td>12.15</td>
<td>7.80</td>
<td>4.47</td>
</tr>
<tr>
<td>4</td>
<td>i/d ratio</td>
<td>53.30</td>
<td>60.75</td>
<td>65.75</td>
<td>3.90</td>
</tr>
<tr>
<td>5</td>
<td>Sustained Acceptance</td>
<td>3.77</td>
<td>5.95</td>
<td>5.30</td>
<td>5.13</td>
</tr>
<tr>
<td>8</td>
<td>Sustained Student Questioning</td>
<td>5.07</td>
<td>2.20</td>
<td>2.05</td>
<td>14.21*</td>
</tr>
<tr>
<td>13,18</td>
<td>Student Talk</td>
<td>19.23</td>
<td>13.50</td>
<td>17.80</td>
<td>.59</td>
</tr>
</tbody>
</table>

<sup>a</sup>The reader is reminded that the variables above are the result of the 18x18 matrix generated in this study appearing on page 62. F-table value is 5.79

*Significant at the .05 level of confidence

Subhypothesis 1-1b:

Teacher criticism at the elementary level is greater than teacher criticism at the junior and senior high levels.

Analysis of data relative to subhypothesis 1-1b was conducted using similar procedures described for subhypothesis 1-1a. Data in Table 4-1 indicate no relation between variable two, criticism, and the three levels investigated as the F value of 1.63 failed to exceed the F-table value of 5.79 at the .05 level of confidence using two degrees of freedom in the numerator and five in the denominator. The same data indicate insufficient support for subhypothesis 1-1b.

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Subhypothesis 1-lc:

More confusion will be observed at the elementary level than at the junior and senior high levels.

The identical procedures were used to test subhypothesis 1-lc that were described previously for subhypotheses 1-la and 1-lb. Results on Table 4-1 also indicate there is no relation between variable three, confusion, and the three levels investigated. Hence, insufficient data fail to support subhypothesis 1-lc.

Subhypothesis 1-ld:

The indirect/direct teacher ratio is greater at the elementary level than at the junior and senior high levels.

Testing for no relation between the indirect/direct teacher ratio and the three levels under investigation, analysis of data was accomplished by using similar procedures described for the previous subhypotheses. Data in Table 4-1 indicate there is no relation between the teacher indirect/direct ratio and the three levels investigated. With an F-table value of 5.79 at the .05 level of confidence using two degrees of freedom in the numerator and five in the denominator the F value of 4.47 depicted in Table 4-1 relative to variable four failed to reach significance at the .05 level of confidence. The same data fail to lend support to subhypothesis 1-ld.

Subhypothesis 1-le:

Sustained teacher acceptance of student response is greater at the elementary level than at the junior and senior high levels.

A one way analysis of variance was also used to test subhypothesis 1-le. Using the identical F-table value of 5.79 at the
.05 level of confidence with the identical degrees of freedom, testing for no relation between sustained teacher acceptance of student response and the three levels investigated revealed no relation between the two variables. Data in Table 4-1 relative to variable five indicate insufficient support for subhypothesis 1-1e.

Subhypothesis 1-1f:

Sustained student questioning is greater at the elementary level than sustained student questioning at the junior and senior high levels.

Analysis of data in relation to subhypothesis 1-1f was also made by using the similar procedures described for the previously stated subhypotheses. Testing for no relation between sustained student questioning and the three levels investigated, Table 4-1 shows that using an F-table value of 5.79 at the .05 level of confidence with two degrees of freedom in the numerator and five in the denominator revealed a relation between the two variables. Consequently, data in Table 4-1, as it relates to variable eight, support rejecting the null hypothesis and acceptance of the theoretical hypothesis.

Subhypothesis 1-1g:

Student talk is greater at the elementary level than student talk at the junior and senior high levels.

The same statistical model used previously in testing the other subhypotheses was also used to test subhypothesis 1-1g. Data in Table 4-1 indicate that testing for no relation between student talk and the three levels investigated revealed no relation between the two variables. The F value of .59 was an insufficient value to
support subhypothesis 1-1g using the identical criteria established for significance. The same data indicate insufficient support for subhypothesis 1-1g.

In summary of the seven constituent subhypotheses of subhypothesis 1-1, data appearing in Table 4-1 indicate that no relation was revealed between the variable investigated and the three levels studied in subhypotheses 1-1a, 1-1b, 1-1c, 1-1d, 1-1e, and 1-1g. These same data also indicate insufficient support for the corresponding subhypotheses. However, a relation was revealed between variable eight, sustained student questioning, and the three levels investigated. As a result, the null hypothesis was rejected and the theoretical hypothesis accepted.

The second subhypothesis of the first major hypothesis in this study stated:

Mexican-American student talk is less than Anglo student talk at the three levels investigated.

Subhypothesis 1-2 was also comprised of three component subhypotheses. Subhypothesis 1-2a stated:

Mexican-American student talk is less than Anglo student talk at the elementary level.

Analysis of data pertinent to verbal response patterns between Mexican-American and Anglo students was accomplished by using a t-test of proportion. Reference is made to Chapter III under the section entitled Procedures for a discussion of the methodology employed.

At the elementary level, Mexican-American students were expected
to talk 22.9 percent and 15.1 percent was observed. Analysis of data in all three categories of Mexican-American student talk yielded a t value of .77 which failed to reach significance using a t-table value of 2.78 at the .05 level of confidence with four degrees of freedom. Consequently, there is no difference between Mexican-American and Anglo student talk at this level. The same data fail to lend support for subhypothesis 1-2a.

Subhypothesis 1-2b:

Mexican-American student talk is less than Anglo student talk at the junior high level.

At the junior high level, similar procedures were utilized as described for the elementary level pertinent to data analysis. Using the identical statistical model, Mexican-American students at this level were expected to talk 14.9 percent and 24.9 percent was observed. With a t value of -1.54, no differences were revealed between Mexican-American and Anglo student talk at the .05 level of confidence with a t-table value of 2.78 and four degrees of freedom. These same data indicate a lack of support for subhypothesis 1-2b.

Subhypothesis 1-2c:

Mexican-American student talk is less than Anglo student talk at the senior high level.

Employing the identical procedures described for data analysis at the elementary and junior high levels revealed a difference between Mexican-American and Anglo student talk at the senior high level. At this level, Mexican-American students were expected to talk 19.1 percent and 3.1 percent was observed. The resulting t value was 3.16 which exceeded the t-table value of 2.78 at the .05
level of confidence using four degrees of freedom. Consequently, at this level, the null hypothesis was rejected which tested for no differences between Mexican-American and Anglo student talk and the theoretical hypothesis accepted.

In summary of the three levels as they relate to subhypothesis 1-2, data presented indicate there is no difference between Mexican-American and Anglo student talk at the elementary and junior high levels. However, at the senior high level, there was a difference between Mexican-American and Anglo student talk. Consequently, at this level, the null hypothesis was rejected and the theoretical hypothesis accepted.

Student Opinion

The second major hypothesis of the study with its six component subhypotheses sought to determine Mexican-American and Anglo student opinion. Specifically, the second major hypothesis of the study inferred that Mexican-American students perceive the school milieu more negatively than Anglo students at the elementary, junior, and senior high levels. As described in Chapter III of this study under the section pertinent to procedures used in this study, three measures of student opinion were garnered from the student opinion questionnaire. Items on the questionnaire pertaining to the measure of student opinion were analyzed within this section. Reference is made to Appendix B and C where the (ESOQ) and (SSOQ) are presented chronologically by item.
The first subhypothesis of the second major hypothesis stated; Mexican-American student opinion toward their teachers is less positive than Anglo student opinion toward their teachers at the three levels investigated.

In order to test each level indicated in relation to student opinion toward the teacher, three subhypotheses were derived.

Subhypothesis 2-1a:

Mexican-American student opinion toward their teachers is less positive than Anglo student opinion toward their teachers at the elementary level.

A t-test of student means was used to determine whether there was a difference between Mexican-American and Anglo student opinion toward the teacher. Analysis was made by comparing the total group means for no differences on the measure of student opinion under investigation.

At the elementary level, the overall Mexican-American student mean in relation to student opinion toward the teacher was 3.54 and the overall Anglo student mean was 3.46. Analysis of the two student means resulted in a t value of 0.35 which failed to reach significance at the .05 level of confidence using a t-table value of 2.12 with sixteen degrees of freedom. These same data provide insufficient support for subhypothesis 2-1a.

Subhypothesis 2-1b:

Mexican-American student opinion toward their teachers is less positive than Anglo student opinion toward their teachers at the junior high level.

Analysis of data relative to subhypothesis 2-1b was made using similar procedures described for subhypothesis 2-1a. At the
senior high level, the student mean for Mexican-American student opinion toward the teacher was 3.64 and the Anglo student mean was 3.72. As a result, a $t$ value of $-0.31$ was revealed which failed to reach significance using a $t$-table value of 2.15 at the .05 level of confidence and fourteen degrees of freedom. Consequently, data presented fail to support subhypothesis 2-1b.

Subhypothesis 2-1c:

Mexican-American student opinion toward their teachers is less positive than Anglo student opinion toward their teachers at the senior high level.

The identical procedures were used to test subhypotheses 2-1c that were described for subhypothesis 2-1b. With a Mexican-American student mean of 3.94 and an Anglo student mean of 4.00, the resulting $t$ value of $-0.35$ failed to reach significance at the .05 level of confidence using a $t$-table value of 2.15 and fourteen degrees of freedom. Therefore, no differences exist between Mexican-American and Anglo student opinion toward their teachers at the senior high level. These same data provide insufficient support for subhypothesis 2-1c.

The second subhypothesis of the second major hypothesis in this study tested student opinion toward the school environment.

Subhypothesis 2-2 stated:

Mexican-American student opinion toward the school environment is less positive than Anglo student opinion toward the school environment at all three levels investigated.

Testing each of the three levels indicated required that three constituent subhypotheses be derived.
Subhypothesis 2-2a:

Mexican-American student opinion toward the school environment is less positive than Anglo student opinion toward the school environment at the elementary level.

A \( t \)-test of student means was used to test for no differences between Mexican-American and Anglo student opinion toward the school environment. With a \( t \)-table value of 2.23 and ten degrees of freedom, the \( t \) value of .61 garnered from a Mexican-American student mean of 3.38 and an Anglo student mean of 3.19 failed to reach significance at the .05 level of confidence. Therefore, there is no difference in Mexican-American and Anglo student opinion toward the school environment at the elementary level.

Subhypothesis 2-2b:

Mexican-American student opinion toward the school environment is less positive than Anglo student opinion toward the school environment at the junior high level.

Similar procedures described for data analysis at the elementary level were used in testing for no differences between Mexican-American and Anglo student opinion toward the school environment at the junior high level. Using the same \( t \)-table value of 2.18 at the .05 level of confidence and twelve degrees of freedom, a \( t \) value of .66 reveals no difference between Mexican-American and Anglo student opinion toward the school environment at this level. This \( t \) value of .66 was derived from a Mexican-American student mean of 3.57 and an Anglo student mean of 3.41. These same data fail to lend support for subhypothesis 2-2b.
Subhypothesis 2-2c:

Mexican-American student opinion toward the school environment is less positive than Anglo student opinion toward the school environment at the senior high level.

Procedures used in analysis of data at this level were identical to the procedures described for the elementary and junior high levels. With a Mexican-American student mean of 3.95 and an Anglo student mean of 3.81, the \( t \) value of .69 was not significant using a \( t \)-table value of 2.18 at the .05 level of confidence and twelve degrees of freedom. These same data indicate no differences between Mexican-American and Anglo student opinion toward the school environment at the senior high level. Hence, there is insufficient support for subhypothesis 2-2c.

The third measure of student opinion related to student opinion toward each other. Subhypothesis 2-3:

Mexican-American student opinion toward students in their school is less positive than Anglo student opinion of students in their school at the three levels investigated.

Subhypothesis 2-3a:

Mexican-American student opinion toward students in their school is less positive than Anglo student opinion of students in their school at the elementary level.

A \( t \)-test of student means was used to determine differences between Mexican-American and Anglo student opinion toward each other. With a \( t \)-table value of 2.23 at the .05 level of confidence and ten degrees of freedom, a \( t \) value of .95 resulting from a Mexican-American student mean of 3.42 and an Anglo student mean of 2.90 indicate there is no difference between Mexican-American and
Anglo student opinion toward each other at the elementary level. These same data indicate insufficient support for subhypothesis 2-3a.

Subhypothesis 2-3b:

Mexican-American student opinion toward students in their school is less positive than Anglo student opinion of students in their school at the junior high level.

The same procedures described for the elementary level were used to test for no differences between Mexican-American and Anglo student opinion toward each other at the junior high level. With a t-table value of 2.45 and six degrees of freedom, a Mexican-American student mean of 4.45 and an Anglo student mean of 3.85 reveal a t value of 2.84 that is significant at the .05 level of confidence. Consequently, these data indicate a difference between Mexican-American and Anglo student opinion toward each other at this level. These data support rejecting the null hypothesis and acceptance of the theoretical hypothesis.

Subhypothesis 2-3c:

Mexican-American student opinion toward students in their school is less positive than Anglo student opinion of students in their school at the senior high level.

Analysis of data for this level was made by using the identical procedures described previously to test subhypotheses 2-3a and 2-3b. Using the .05 level of confidence with a t-table value of 2.78 and four degrees of freedom, the t value garnered from a Mexican-American student mean of 4.09 and an Anglo student mean of 3.84 was .65. As .65 failed to reach significance at the .05 level of confidence, there is no difference between Mexican-American and Anglo
student opinion toward each other at this level. As a result, insufficient support is provided for subhypothesis 2-3c.

In summary of subhypotheses 2-1, 2-2, and 2-3, data presented relevant to these hypotheses indicate there is no difference between Mexican-American and Anglo student opinion toward the teacher and school environment at the elementary and senior high levels. Consequently, data presented were insufficient to support the corresponding subhypotheses. However, at the junior high level, differences were revealed relative to Mexican-American and Anglo student opinion toward each other. As a result, the null hypothesis was rejected and theoretical hypothesis accepted. In relation to student opinion toward the teacher and school environment, there was no difference revealed between Mexican-American and Anglo student opinion at the junior high level.

In accordance with the second major hypothesis of the study, the fourth subhypothesis sought to determine whether there was a relation between each of the three measures of student opinion and Mexican-American student opinion at the three levels.

Subhypothesis 2-4:
Mexican American student opinion toward their teachers is more positive at the elementary level than at the junior and senior high levels.

A one way analysis of variance model was used to determine whether there was a relation between Mexican-American student opinion toward the teacher at the three levels studied. The analysis was made by comparing the three levels under investigation with each
item on the questionnaire that comprised the three measures of Mexican-American student opinion toward the teacher. With an F-table value of 3.40 and two degrees of freedom in the numerator and twenty-four in the denominator, an F value of 3.01 indicates there is no relation between Mexican-American student opinion toward the teacher and the three levels investigated. The F value of 3.01 was derived from a Mexican-American student mean of 3.38 at the elementary level, 3.59 at the junior high level, and 3.98 at the senior high level. These same data indicate insufficient support for subhypothesis 2-4 at the .05 level of confidence.

Subhypothesis 2-5:
Mexican-American student opinion toward the school environment is more positive at the elementary level than at the junior and senior high levels.

Through the use of the identical procedures employed in testing subhypothesis 2-4, a Mexican-American student mean of 3.46 at the elementary level, 3.63 at the junior high level, and 3.86 at the senior high level indicate there is no relation between Mexican-American student opinion toward the school environment and the three levels investigated. With an F-table value of 3.63 using two degrees of freedom in the numerator and sixteen in the denominator, the F value of .34 fails to reach significance at the .05 level of confidence. As a result, these same data indicate insufficient support for subhypothesis 2-5.
Subhypothesis 2-6:

Mexican-American student opinion toward other students is more positive at the elementary level than at the junior and senior high levels.

Procedures described for data analysis in subhypotheses 2-4 and 2-5 were also used to test subhypothesis 2-6. A Mexican-American student mean of 3.42 at the elementary level, 4.45 at the junior high level, and 4.09 at the senior high level revealed an F value of 4.09 which was not significant at the .05 level of confidence using an F-table value of 4.10 with two degrees of freedom in the numerator and ten in the denominator. As a result, these data indicate there is no relation between Mexican-American student opinion toward other students in school and the three levels studied. Consequently, insufficient support is provided for subhypothesis 2-6 at the .05 level of confidence.

In summary of subhypotheses 2-4, 2-5, and 2-6, data presented in this section indicate there is no relation between Mexican-American student opinion toward the teacher, the school environment, and other students at the elementary, junior, and senior high levels. These same data indicated insufficient support for subhypotheses 2-4, 2-5, and 2-6 at the three levels investigated.

Teacher Perception

The third major hypothesis of the study and its three component subhypotheses relates to teacher perception of student opinion. Specifically, the third major hypothesis stated that overall teacher
perception of Mexican-American and Anglo student opinion toward the teacher, the school environment, and each other is not congruent to the overall average of Mexican-American and Anglo student response toward the teacher, the school environment, and each other.

Three subhypotheses were derived from the third major hypothesis for the purpose of determining a coefficient of correlation which would indicate teacher perception of student opinion and the average student response on each of the three measures of student opinion on the questionnaire. Reference is made to Chapter III for a discussion of procedures used in data analysis.

Subhypothesis 3-1:
Overall teacher perception of Mexican-American and Anglo student opinion toward the teacher is not congruent to the overall average of Mexican-American and Anglo student opinion toward the teacher.

Pearson's product moment correlation coefficient was used to determine to what extent teacher perception of student opinion toward the teacher was related to the average student opinion response toward the teacher. An average student response mean of 3.52 and the teacher response mean of 3.59 resulted in a coefficient of correlation of .82. This positive correlation indicates that the overall teacher perception of student opinion toward the teacher and the average student opinion response toward the teacher was a positive relation at the .05 level of confidence using a correlation table value of .77 with eight degrees of freedom and two variables. This positive relation denotes that teacher perception of student opinion
toward the teacher and the average student opinion response toward the teacher was an accurate assessment. Consequently, these same data indicate insufficient support for subhypothesis 3-1 at the .05 level of confidence.

Subhypothesis 3-2:

Overall teacher perception of Mexican-American and Anglo student opinion to the school environment is not congruent to the overall average of Mexican-American and Anglo student opinion toward the school environment.

Similar procedures were employed as described for subhypothesis 3-1 in determining to what extent teacher perception of student opinion toward the school environment related to the average student opinion response toward the school environment. With an average student opinion response mean of 3.35 and a teacher response mean of 3.58, the resulting coefficient of correlation was .93. The resulting coefficient of .93 indicates a positive relation between the overall teacher perception of student opinion toward the school environment and the average student opinion response to the school environment at the .05 level of confidence using a correlation table value of .87 with five degrees of freedom and two variables. This positive relation indicates accurate teacher assessment of teacher perception of student opinion toward the school environment and the average student opinion toward the school environment. Hence these data fail to provide sufficient support for subhypothesis 3-2.
Subhypothesis 3-3:

Overall teacher perception of Mexican-American and Anglo student opinion toward other students in their school is not congruent to the overall average of Mexican-American and Anglo student opinion toward other students in their school.

Data relevant to the measure of student opinion were analyzed by the same procedures described for subhypotheses 3-1 and 3-2. Analysis of data revealed that with an average student response mean of 3.65 and a teacher response mean of 3.60, the coefficient of correlation of .40 indicates that teacher perception of student opinion toward each other and the average student opinion response toward each other were not related at the .05 level of confidence using a correlation table value of .64 with thirteen degrees of freedom and two variables. This lack of relation at the .05 level of confidence indicates that teacher perception of student opinion toward each other and the average student opinion response toward each other was considered to be inaccurate teacher assessment. Consequently, these data support rejecting the null hypothesis and acceptance of the theoretical hypothesis on this measure of student opinion.

Interpersonal Relations and Verbal Interaction

A secondary purpose of the study included investigating response patterns of students selected as sociometric choices and verbal interaction patterns in classrooms with Mexican-American student enrollment. In accordance with the secondary purpose of the
study, the fourth major hypothesis stated that verbal response patterns of students selected as most liked and least liked are different from verbal response patterns of other students in the classroom at the elementary, junior, and senior high levels.

Three constituent subhypotheses were derived from the fourth major hypothesis of the study.

Subhypothesis 4-1:
Most liked and least liked student response is greater than the response of other students in the classroom at the elementary level.

In reference to Chapter III under the procedures section, a \( t \)-test of proportion was used to test subhypothesis 4-1 to determine differences between response patterns of students selected as sociometric choices and classroom verbal response patterns. Data in Table 4-2 indicate a difference at the .05 level of confidence using a \( t \)-table value of 2.78 and four degrees of freedom at the .05 level of confidence between verbal response patterns of the most liked and least liked students and verbal response patterns at the elementary level. This difference is the opposite relation to that hypothesized. Consequently, data in Table 4-2 provide insufficient support for subhypothesis 4-1.

Subhypothesis 4-2:
Most liked and least liked student response is greater than the response of other students in the classroom at the junior high level.
A COMPARISON OF THE EXPECTED AND OBSERVED RESPONSE PATTERNS OF STUDENT SOCIOMETRIC CHOICES AT THE ELEMENTARY LEVEL

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Variable</th>
<th>% Expected</th>
<th>% Observed</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>Most Liked Student Response</td>
<td>11</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Least Liked Student Response</td>
<td>7</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Most Liked and Least Liked Student Response</td>
<td>16</td>
<td>7</td>
<td>4.36*</td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence

Data at the junior high level were treated in the similar manner described for the elementary level. With a t-table value of 2.78 at the .05 level of confidence using four degrees of freedom, Table 4-3 shows data which indicate no differences between verbal response patterns of student sociometric choices and classroom verbal response patterns. Consequently, data in Table 4-3 indicate insufficient support for subhypothesis 4-2 at this level.

Subhypothesis 4-3:
Most liked and least liked student response is greater than the response of other students in the classroom at the senior high level.

At this level, data analysis was similarly performed using the same procedures outlined for the elementary and junior high levels. Data in Table 4-4 indicate a difference between verbal response
TABLE 4-3

A COMPARISON OF THE EXPECTED AND OBSERVED RESPONSE PATTERNS OF STUDENT SOCIOMETRIC CHOICES AT THE JUNIOR HIGH LEVEL

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Variable</th>
<th>% Expected</th>
<th>% Observed</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>Most Liked Student Response</td>
<td>11</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Least Liked Student Response</td>
<td>9</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Most Liked and Least Liked Student Response</td>
<td>21</td>
<td>18</td>
<td>1.42</td>
</tr>
</tbody>
</table>

_t_-table value is 2.78

patterns of the most liked and least liked students and classroom verbal response patterns at the .05 level of confidence using a _t_-table value of 2.78 with four degrees of freedom. At this level, the difference observed was the opposite relation of that hypothesized. Therefore, data in Table 4-4 indicate that at the senior high level, insufficient information is available to provide adequate support for subhypothesis 4-3.

In summary of this section relating to student response patterns of sociometric choices and classroom verbal response patterns, data presented in Table 4-2 indicate no differences between response patterns of student sociometric choices and classroom verbal response patterns. Data in Tables 4-3 and 4-4 indicate differences which are the opposite relation to that hypothesized. Hence, data appearing in these Tables are insufficient to support 4-1, 4-2, and 4-3.
### Table 4-4

A COMPARISON OF THE EXPECTED AND OBSERVED RESPONSE PATTERNS
OF STUDENT SOCIOMETRIC CHOICES AT THE SENIOR HIGH LEVEL

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Variable</th>
<th>% Expected</th>
<th>% Observed</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>Most Liked Student Response</td>
<td>13.5</td>
<td>12.7</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Least Liked Student Response</td>
<td>8.7</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Most Liked and Least Liked</td>
<td>26.7</td>
<td>13</td>
<td>19.00*</td>
</tr>
<tr>
<td></td>
<td>Student Response</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* t-table value is 2.78

Significant at the .05 level of confidence

Male and Female Response Patterns and Verbal Interaction Patterns

The final purpose of the study was to determine whether there was a relation between verbal response patterns of male and female students and classroom verbal response patterns in classrooms with Mexican-American student enrollment. With this purpose in mind, the fifth major hypothesis with its three constituent parts inferred that Mexican-American and Anglo male student response patterns are different from Mexican-American and Anglo female student response patterns at the elementary, junior, and senior high levels.

Investigating this aspect of the study required similar procedures used previously in this chapter as those procedures relate to expected and observed frequencies. Reference is again made to Chapter III for discussion on methodology.
Subhypothesis 5-1:
Female students in classrooms with Mexican-American student enrollment respond less to teacher questioning than male students at the three levels investigated.

In order to test for differences at each of the three levels studied, subhypothesis 5-1 was measured using three component subhypothesis.

Subhypothesis 5-1a:
Female students in classrooms with Mexican-American student enrollment respond less to teacher questioning than male students at the elementary level.

Data appearing in the remaining tables of this chapter have been analyzed using the similar procedures described in the previous section. These procedures included a $t$-test of proportion to determine differences between male and female student response patterns. Table 4-5 shows data which indicate a difference between male and female student response patterns toward teacher questioning at the .05 level of confidence using a $t$-table value of 2.78 and four degrees of freedom. Data in Table 4-5 indicate support for rejecting the null hypothesis and accepting the theoretical hypothesis at this level.

Subhypothesis 5-1b:
Female students in classrooms with Mexican-American student enrollment respond less to teacher questioning at the junior high level.

At the junior high level, Table 4-6 indicates data that show a difference between response patterns of male and female students toward teacher questioning at the .05 level of confidence with a
TABLE 4-5

A COMPARISON OF MALE AND FEMALE STUDENT RESPONSE PATTERNS TO TEACHER QUESTIONING AT THE ELEMENTARY LEVEL

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Variable</th>
<th>% Expected</th>
<th>% Observed</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Male Student Response</td>
<td>50.6</td>
<td>68.5</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Female Student Response</td>
<td>49.4</td>
<td>31.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Difference in proportions</td>
<td></td>
<td></td>
<td>3.14*</td>
</tr>
</tbody>
</table>

_t_-table value is 2.78

* Significant at the .05 level of confidence

_t_-table value of 2.78 and four degrees of freedom. Consequently, data in Table 4-6 lend support to the theoretical hypothesis and at the same time reject the null hypothesis which tested for no difference between response patterns of male and female students toward teacher questioning at the junior high level.

Subhypothesis 5-1c:

Female students in classrooms with Mexican-American student enrollment respond less to teacher questioning than male students at the senior high level.

Similar procedures described for subhypotheses 5-1a and 5-1b were used to analyze subhypothesis 5-1c. With a _t_-table value of 2.78 at the .05 level of confidence using four degrees of freedom, results in Table 4-7 indicate a difference between response patterns of male and female students to teacher questioning at the senior high level. The same data indicate support in rejecting the null hypothesis which tested for no differences between response patterns.
TABLE 4-6
A COMPARISON OF MALE AND FEMALE STUDENT RESPONSE PATTERNS TO TEACHER QUESTIONING AT THE JUNIOR HIGH LEVEL

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Variable</th>
<th>% Expected</th>
<th>% Observed</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Male Student Response</td>
<td>55.3</td>
<td>77.9</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Female Student Response</td>
<td>44.7</td>
<td>22.1</td>
<td></td>
</tr>
</tbody>
</table>

Difference in proportions

$\text{t-table value is } 2.78$

*Significant at the .05 level of confidence

of male and female students toward teacher questioning and acceptance of the theoretical hypothesis.

TABLE 4-7
A COMPARISON OF MALE AND FEMALE STUDENT RESPONSE PATTERNS TO TEACHER QUESTIONING AT THE SENIOR HIGH LEVEL

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Variable</th>
<th>% Expected</th>
<th>% Observed</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Male Student Response</td>
<td>42.5</td>
<td>58.8</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Female Student Response</td>
<td>57.5</td>
<td>41.2</td>
<td></td>
</tr>
</tbody>
</table>

Difference in proportions

$\text{t-table value is } 2.78$

*Significant at the .05 level of confidence
Subhypothesis 5-2 tested male and female response patterns toward initiated student response in the classroom at each level investigated.

Subhypothesis 5-2:
Male students in classrooms with Mexican-American student enrollment manifest more initiated student response than female students at all three levels investigated. Testing for no differences at each level, three component sub-hypotheses were derived from subhypothesis 5-2.

Subhypothesis 5-2a:
Male students in classrooms with Mexican-American student enrollment manifest more initiated student response than female students at the elementary level.

Data appearing in Table 4-8 indicate differences between male and female initiated student response. With a $t$-table value of 2.78 at the .05 level of confidence using four degrees of freedom, the $t$ value depicted reached significance at the .05 level. Consequently, data appearing in Table 4-8 provide support for the theoretical hypothesis and at the same time reject the null hypothesis which tested for no differences between male and female student response patterns.

Subhypothesis 5-2b:
Male students in classrooms with Mexican-American student enrollment manifest more initiated student response than female students at the junior high level.

Procedures similar to those described for subhypotheses 5-1a was used with subhypothesis 5-2b. Data in Table 4-9 indicate a difference between male and female student initiated response
### TABLE 4-8
A COMPARISON BETWEEN MALE AND FEMALE STUDENT INITIATED RESPONSE PATTERNS AT THE ELEMENTARY LEVEL

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Variable</th>
<th>% Expected</th>
<th>% Observed</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>Male Student Initiated Response</td>
<td>50.6</td>
<td>77.9</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Female Student Initiated Response</td>
<td>49.4</td>
<td>22.1</td>
<td></td>
</tr>
</tbody>
</table>

**Difference in proportions** 6.89*

*t-table value is 2.78

*Significant at the .05 level of confidence

patterns at the .05 level of confidence using a *t*-table value of 2.78 and four degrees of freedom. As a result, data in Table 4-9 indicate sufficient information to reject the null hypothesis and accept the theoretical hypothesis at this level.

At the senior high level, male and female initiated response patterns were tested using subhypothesis 5-2c.

**Subhypothesis 5-2c:**

Male students in classrooms with Mexican-American student enrollment manifest more initiated student response than female students at the senior high level.

At the senior high level, data were also tested for no differences between male and female initiated student response patterns. Using a *t*-table value of 2.78 at the .05 level of confidence a difference was revealed between male and female initiated student response patterns. Hence, in Table 4-10, data support the rejection

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A COMPARISON BETWEEN MALE AND FEMALE STUDENT INITIATED RESPONSE PATTERNS AT THE JUNIOR HIGH LEVEL

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Variable</th>
<th>% Expected</th>
<th>% Observed</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>Male Student Initiated Response</td>
<td>55.3</td>
<td>82.5</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Female Student Initiated Response</td>
<td>44.7</td>
<td>17.5</td>
<td></td>
</tr>
</tbody>
</table>

Difference in proportions 23.44\text{*}  
\text{t-table value is 2.78}  
\text{*Significant at the .05 level of confidence}  

of the null hypothesis and acceptance of the theoretical hypothesis 5-2c.

In summary of this section, it can be stated that data in Tables 4-8, 4-9, and 4-10 indicate sufficient information to conclude there is a difference between male and female initiated student response patterns at all three levels. As a consequence, subhypothesis 5-2 is supported at each of the three levels investigated.

**Subhypothesis 5-3:**

Mexican-American male student talk is greater than Mexican-American female student talk at the three levels investigated.

The procedures used to analyze data pertinent to subhypothesis 5-3 were very similar to the procedures used in the previous section. The major difference is that subhypothesis 5-3 was primarily concerned with Mexican-American male and female response patterns.
TABLE 4-10
A COMPARISON BETWEEN MALE AND FEMALE STUDENT INITIATED RESPONSE PATTERNS AT THE JUNIOR HIGH LEVEL

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Variable</th>
<th>% Expected</th>
<th>% Observed</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>Male Student Initiated Response</td>
<td>42.5</td>
<td>62.6</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Female Student Initiated Response</td>
<td>57.5</td>
<td>37.4</td>
<td></td>
</tr>
<tr>
<td>Difference in proportions</td>
<td></td>
<td></td>
<td></td>
<td>73.67*</td>
</tr>
</tbody>
</table>

$t$-table value is 2.78
* Significant at the .05 level of confidence

Investigating each of the three levels required three subhypotheses.

Subhypothesis 5-3a:

Mexican-American male student talk is greater than Mexican-American female student talk at the elementary level.

Using a $t$-test of proportion model to examine differences between Mexican-American male and female student talk, a $t$ value of 5.27 was revealed as a result of the expected and observed response frequencies of Mexican-American male and female students at this level. As Mexican-American male students were expected to talk 80 percent and 73.1 percent was observed, the $t$ value of 5.27 was significant using a $t$-table value of 2.78 and four degrees of freedom at the .05 level of confidence. The difference observed was the opposite relation to that hypothesized. As a result, data at this level fail to support subhypothesis 5-3a.

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Subhypothesis 5-3b:

Mexican-American male student talk is greater than Mexican-American female student talk at the junior high level.

At the junior high level, similar procedures described for subhypothesis 5-3a were used to analyze data relevant to subhypothesis 5-3b. At this level, Mexican-American males were expected to talk 44.4 percent and 83.4 percent was observed. The t value of 8.01 was significant at the .05 level of confidence using a t-table value of 2.78 and four degrees of freedom. As a result, differences were revealed between Mexican-American male and female students at the junior high level. These same data support rejecting the null hypothesis and acceptance of the theoretical hypothesis.

Subhypothesis 5-3c:

Mexican-American male student talk is greater than Mexican-American female student talk at the senior high level.

At the senior high level, Mexican-American students talked 57.5 percent and were expected to talk 86.8 percent. The resulting t value of 1.00 was not significant at the .05 level of confidence using a t-table value of 2.78 and four degrees of freedom. These data indicate no differences between Mexican-American male and female talk at the senior high level. As a result, insufficient information is available to lend support for subhypothesis 5-3c.

In summary of this section, data presented for the elementary level indicated a difference but in the opposite direction to that hypothesized. As a result, these data did not support subhypothesis 5-3a. Data presented for the junior high level indicate a
difference at this level and as a result supported rejecting the null hypothesis and supporting the theoretical hypothesis. At the senior high level, data revealed no differences and therefore was insufficient to support subhypothesis 5-3c.

Summary of the Findings

The major objective of the study was to investigate verbal interaction patterns, student opinions, and teacher perception in classrooms with Mexican-American student enrollment. A secondary purpose of the study was to determine if there was a relation between the total classroom verbal interaction patterns and verbal response patterns of classroom sociometric choices. Also, an additional purpose of the study was to ascertain if there was a relation between verbal interaction patterns in a classroom and response patterns of male and female students.

Five major hypotheses were investigated in this study from which several subhypotheses were derived. Presentation of data within this chapter followed the sequence utilized in stating the five major hypotheses and their constituent subhypotheses in Chapter III.

Data were analyzed by using a one way analysis of variance, t-test of student means, t-test of proportion, and Pearson's correlation coefficient.

The findings reported in this chapter will be summarized succinctly for verbal interaction patterns, student opinion, teacher perception, response patterns of student sociometric choices, and
response patterns of male and female students relative to the total classroom verbal interaction patterns.

In relation to verbal interaction patterns, an attempt was first made to determine if there was a relation between selected classroom verbal interaction variables and the three levels studied. Results indicated there was no relation between selected verbal interaction variables and the three levels investigated with one exception, sustained student questioning. For this variable, the null hypothesis was rejected and the theoretical hypothesis supported. Next, verbal interaction patterns were compared between Mexican-American and Anglo students. The results on the analysis indicated that at the elementary and junior high levels, there was no difference between Mexican-American and Anglo students on selected classroom interaction variables. However, at the senior high level, there was a difference between Mexican-American and Anglo students on selected verbal interaction variables.

Student opinion was categorized into three measures of student opinion toward the teacher, the school environment, and each other. Testing for no differences in student opinion between Mexican-American and Anglo students at the three levels investigated revealed a difference relative to student opinion toward each other at the junior high level. As a result, at this level, the null hypothesis was rejected and the theoretical hypothesis supported for this measure of student opinion. At the other two levels, there was no difference in Mexican-American and Anglo student opinion. Student opinion toward the teacher and school environment revealed no
differences between Mexican-American and Anglo students at each of the three levels.

Teacher perception of student opinion and the average student response on the student opinion questionnaire was also analyzed by the three measures of student opinion. Overall teacher perception of student opinion and the average student opinion toward the teacher and school environment was assessed as accurate. Overall teacher perception of student opinion and the average student opinion toward each other was considered as inaccurate assessment.

In relation to verbal response patterns of sociometric choices and the total classroom verbal interaction patterns, it was concluded that there was no difference between verbal response patterns of student sociometric choices and the other students in the classroom at the junior high level. At the elementary and senior high levels, a difference was revealed but in the opposite direction to that hypothesized. Hence, the null hypothesis was rejected without support to the theoretical hypothesis stated but support for the hypothesis stating the opposite direction.

Response patterns of male and female students revealed a difference between male and female response patterns on a majority of the analyses. At the three levels investigated, male students respond more to teacher questioning and engage in greater initiated student response than female students. On the final analysis of the study, results revealed that at the elementary level, a difference was observed between Mexican-American male and female student response. However, this difference was in the opposite direction to
that hypothesized. Consequently, the null hypothesis was rejected without sufficient support for the stated theoretical hypothesis and acceptance of the opposite hypothesis. At the junior high level, a difference was observed between Mexican-American male and female student response patterns and, as a result, the null hypothesis was rejected and the theoretical hypothesis accepted. At the senior high level, data presented was insufficient to support the theoretical hypothesis as no differences were observed between Mexican-American male and female student response patterns.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This final chapter of the report contains a review of the problem and procedures used, a summary of the major findings, and a presentation of conclusions. Furthermore, recommendations for possible use of the data obtained as well as recommendations for further research are included.

Review of the Problem

The primary purpose of the study was to investigate classroom verbal interaction patterns, student opinion, and teacher perception in classrooms with Mexican-American student enrollment. A secondary purpose of the study was to ascertain if there was a relation between verbal interaction patterns and response patterns of student sociometric choices. In addition, an investigation was conducted to determine if there was a relation between verbal interaction patterns and response patterns of male and female students.

Data on classroom verbal interaction were gathered using an extended version of the Behavior Classification System developed by Coats (1971) similar to the system used by Flanders (1964). As a result of the category system used to describe verbal behavior, literally hundreds of variables presented themselves for study. Using selected classroom interaction variables and a student opinion questionnaire, an attempt was made to gather data pertinent to the
objectives of the study. Through the use of appropriate classroom verbal interaction variables, the intent was not only to demonstrate passive, withdrawn, and inarticulate classroom verbal behavior manifested by Mexican-American students, but to also gather data pertinent to verbal response patterns of student sociometric choices and response patterns of male and female students.

The criterion measure used to gather data on student opinion and teacher perception was the Elementary and Secondary Student Opinion Questionnaire developed by Coats (1971).

In order to carry out the objectives of this study, five major hypotheses were investigated. From the five major hypotheses of the study, several constituent subhypotheses were tested. The five major hypotheses stated:

1. Mexican-American student verbal response patterns are different from Anglo student verbal response patterns at the elementary, junior, and senior high levels.
2. Mexican-American students perceive the school milieu more negatively than Anglo students at the elementary, junior, and senior high levels.
3. Overall teacher perception of Mexican-American and Anglo student opinion is not congruent to the overall average of Mexican-American and Anglo student response on the questionnaire.
4. Verbal response patterns of students selected as most liked and least liked are different from verbal response patterns of other students in the classroom at the elementary,
juniors, and senior high levels.

5. Mexican-American and Anglo male student verbal response patterns are different from Mexican-American and Anglo female student verbal response patterns at the elementary, junior, and senior high levels.

Review of the Procedures Used in the Study

The major purpose of the study made it necessary for the author to seek an area in Michigan having a substantial Mexican-American population. As the area desired for study was located, a series of meetings with key personnel yielded the sample used in this study. The sample consisted of six teachers and 175 student subjects from the Fennville Public School system located in northwestern Allegan county. Of the 175 student subjects, thirty-one were Mexican-American and 144 were Anglo students.

The first instrument administered was a student sociometric analysis which provided information in relation to the three most liked and two least liked students in classrooms investigated. Once this information was received, student sociometric choices were identified and the researcher was able to distinguish those students selected from the other students in the classroom. The rationale for identifying the students selected on the sociometric instrument is that the students selected by this process received special coding consideration above those used for gathering data on classroom verbal interaction analysis. All classroom interaction analysis data were gathered by the researcher himself after extensive
preparation. The average time spent in observation for each class was approximately six hours. At the conclusion of interaction analysis data gathering, the Elementary Student Opinion Questionnaire (ESOQ) and the Secondary Student Opinion Questionnaire (SSOQ) were administered to each classroom. At the same time, the identical questionnaire was given to the classroom teacher with instructions requesting that the teacher respond to each of the seventeen criterion items the way he perceived the class, as an average, would respond to each item. Classroom interaction analysis data were keypunched into data processing cards and a computer program was selected that would yield the necessary statistical information in accord with the objectives of the study. The statistical models used to test for differences were a one way analysis of variance, $t$-test of student means, $t$-test of proportion, and Pearson's correlation coefficient. These data made possible the analysis related to the five major hypotheses of the study and their constituent hypotheses.

Summary of Major Findings

The results of the subhypotheses investigated in this study were analyzed and presented in Chapter IV. Findings, related to the five major hypotheses underlying this investigation, are summarized as follows:

1. Several classroom verbal interaction variables were investigated in this study. Analysis to determine whether there was a relation between these variables and the elementary, junior, and
senior levels revealed a relation between variable eight, sustained student questioning and the three levels investigated. On this variable, the elementary level had a higher mean score than did the junior and senior high levels.

2. No differences between Mexican-American and Anglo student verbal interaction patterns were observed at the elementary and junior high levels. However, at the senior high level, there was a difference between Mexican-American and Anglo student verbal interaction patterns as Mexican-American student talk was less than would have normally been expected in accordance with the percentage ratio derived based on the number of Mexican-American students enrolled in classrooms investigated at this level.

3. On the three measures of student opinion toward the teacher, the school environment, and each other, no differences were revealed between Mexican-American and Anglo students at the elementary and senior high levels. At the junior high level, a difference was reported between Mexican-American and Anglo student opinion on the measure of student opinion toward each other. On this measure of student opinion, Mexican-American students indicated a more positive view than did Anglo students. At this same level, no differences were reported between Mexican-American and Anglo student opinion toward the teacher and the school environment.

4. No relation was revealed between the three measures of student opinion and Mexican-American student opinion at the elementary, junior, and senior high levels investigated.
5. Teacher perception of student opinion toward the teacher, the school environment and the average student response toward the teacher and school environment was assessed as accurate in this investigation. Inaccurate teacher assessment was revealed in teacher perception of student opinion toward each other and the average student response toward each other, as a low correlation was derived on this measure of student opinion.

6. At each of the three levels investigated, no relation was found between verbal response patterns of students selected as most liked and least liked and classroom verbal interaction patterns.

7. Response patterns of male and female students revealed differences at the elementary, junior, and senior high levels. At each of the three levels, Mexican-American and Anglo male students responded more to teacher questioning and manifested more initiated student response patterns than did Mexican-American and Anglo female students.

8. Mexican-American male and female student response patterns revealed differences at the elementary and junior high levels. At the elementary level, Mexican-American female students responded more to teacher questioning and engaged in more initiated student response patterns than did Mexican-American male students. At the junior high level, Mexican-American male students responded more to the two categories of student response than did Mexican-American female students. At the senior high level, no differences were
found between Mexican-American male and female student response to teacher questioning and student initiated response.

In summary, Mexican-American student verbal interaction patterns and student opinion were no different from those of Anglo students at the three levels investigated. The only difference observed was at the senior high level in relation to verbal interaction patterns where findings indicated that Mexican-American students talked far less than would have normally been expected in accordance with the percentage ratio of Mexican-American students to Anglo students enrolled in classrooms investigated. Teacher perception was considered as accurate assessment in relation to the overall student opinion toward the teacher and school environment. Inaccurate teacher assessment was revealed on student opinion toward each other. No relation was found between classroom verbal interaction patterns and verbal response patterns of student sociometric choices. At the three levels investigated, female students responded less toward teacher questioning and engaged in less student initiated response patterns than male students. Finally, Mexican-American females responded more to teacher questioning and engaged in more student initiated response patterns than Mexican-American males at the elementary level while at the junior high level, Mexican-American males responded more than Mexican-American females. At the senior high level, there was no difference in verbal response patterns of Mexican-American male and female students.
Recommendations

This final section of the report will focus on recommendations which have been derived as a result of the findings reported. The section will provide suggestions for possible use of the data by school systems enrolling a similar number of Mexican-American students used as subjects in this study. Additionally, a second area of recommendations will provide implications of this study for future research.

Mexican-Americans in the midwest are substantial in number yet comprise a small percentage of the population in various locations where they have elected to establish residence. As a consequence, Mexican-American children enrolled in schools throughout the midwest also represent a small percentage of the student population in schools they attend. Therefore, a representative sample of Mexican-Americans in the midwest is difficult to find. However, this conjecture should not negate studying Mexican-American students in the midwest because of their small number. Individuals professing this theory cause the author to feel that this theory is not only a poor rationale but more importantly, against the basic principles of education. Therefore, the following recommendations appear to be valid for school systems in the midwest enrolling a limited number of Mexican-American students and desiring to formulate theories relevant to their Mexican-American student population in school.
Mexican-American students at the senior high level talked far less than would have normally been expected in accordance with the percentage ratio derived as a result of classroom composition. This important finding suggests that a lack in verbal response by Mexican-American youth at this level could indicate an unresponsive educational environment that is failing to provide adequate learning experiences. Educators aware of this phenomenon can provide positive experiences and structure the learning environment in accordance with the special needs of these youth. As the senior high level is continually plagued by the school dropout, students in a classroom expressing limited verbal behaviors could consider withdrawing from school as the next alternative. Failure in providing these youth with meaningful experiences and purposeful learning will cause these same youth to perceive the school milieu as unresponsive to their needs. Considering Mexican-American students, a better understanding of the culture will provide educators with theories that can be used effectively in structuring the educational environment to ameliorate or amend factors responsible for negative school environments.

A second important finding in this study is that Mexican-American female students, for the most part, were less verbal than Mexican-American male students. Recognizing this, educators aware of this lack in verbal expression can initiate alternatives and provide experiences which will encourage Mexican-American female students to express their views and opinions on an equal proportion to that of Mexican-American male students. Such an undertaking will
increase verbal expressions of Mexican-American male and female alike where their participation is limited.

One last important finding is that Mexican-American student opinion toward their teachers, the school environment, and each other was, for the most part, more positive than Anglo student opinion at the three levels investigated. Implications of this important finding suggest that Mexican-American students as subjects of this investigation are concerned about their education. Sources of difficulty which cause negative school experiences are not working as forcibly against these students as some individuals would assert. With a reflection of positive views from Mexican-American students toward the school milieu, educators can develop compounding experiences for Mexican-American students to perpetuate an already existing positive view.

In Chapter II, where related literature was reviewed for this study, theoretical constructs suggested that Mexican-American student opinion and attitude were more negative toward the school milieu than the opinion and attitude of Anglo students. This present study has not upheld the deficit model types of theoretical constructs which were formulated to guide the study. Mexican-American students in this study viewed the school milieu equal to and in some cases, more positive, than their Anglo counterparts. With the exception of the high school level, Mexican-American student talk did not deviate beyond that which would have normally been expected based on chance expectation. This finding suggests that Mexican-
American students are not as inarticulate, withdrawn, and passive as some scholars report.

It is apparent that research studies need to go beyond the scope of this present investigation. Such studies would provide information and measures outside the scope of this study relevant to Mexican-American students in the midwest. The following recommendations for further research are:

1. It would be of considerable value to repeat the basic thrust of this study on a larger scale. Individuals interested in the problem presented in this study might seek out larger Mexican-American populations both in single and varied communities, and make broader generalizations than were possible in this study.

2. In this investigation, a small rural community was selected for study. Additional studies using Mexican-American students in different kinds of communities will provide data which will indicate whether findings revealed as a result of the investigation can be attributed to individual students, the school milieu, or the community.

3. So far as this study indicated, there was not a notable difference between Mexican-American and Anglo students on the areas and measures investigated. Some factors that could be responsible for these findings include age of students, socioeconomic level, length of residence in the community, and academic achievement. Further research considering these aspects would provide an additional understanding of Mexican-American students in the midwest.
4. The basic thrust of this study focused on the social climate of the classroom. Determining to what extent the social environment is related to cognitive achievement is another area that merits consideration.

5. Longitudinal research on Mexican-American students in the midwest will indicate measures of positive or negative relations toward the school milieu, the community, and the midwest in general.

6. Another recommendation for further research would be to partition the sample using three independent measures in classroom composition with student enrollments characterizing a majority Mexican-American population, a mixed population, and a majority Anglo population. Such a study would provide data this investigation could not reveal.

7. Three questions that merit additional study that would result from a study conducted using the previous recommendation are: (1) Do classroom verbal interaction patterns vary with Mexican-American student enrollment; (2) Do student opinions vary with Mexican-American student enrollment; and (3) Do teacher perceptions of their jobs, principals, and students vary in classrooms with Mexican-American student enrollment?

8. Finally, the use of interaction analysis and sociometry in the classroom appear to be very promising devices which can be used in studying Mexican-American student populations. Although the process of interaction analysis can become an involved and cumbersome process, resultant data will reveal output measures

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which can be used most effectively by educators in providing successful experiences for Mexican-American student populations.
BIBLIOGRAPHY


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Havighurst, R. J. and Neugarten, B. L. Society and Education. Boston, Massachusetts: Allyn and Bacon, Inc., 1968.


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APPENDIX A
BEHAVIOR CLASSIFICATION SYSTEM

1. CRITICISM — statements intended to change pupil behavior from non-acceptable to acceptable patterns; bawling someone out; stating why the teacher is doing what he is doing; extreme self reference.

2. DIRECTIONS — directions, commands, or orders to which a pupil is expected to comply.

3. LECTURE — giving information other than directions.

4. QUESTIONS — asking a question about content or procedures with the intent that a pupil answer is based on teacher ideas.

5. ACCEPTANCE — accepts the ideas or feelings of the student in a non-threatening manner. Praises or encourages pupil action or behavior. As the teacher brings more of his own ideas into play, observer shifts to category three.

6. MEXICAN-AMERICAN STUDENT RESPONSE —
   1. MALE STUDENT RESPONSE — talk by male pupils in response to teacher. Teacher initiates the contact or solicits pupil statements or structures the situation. Freedom to express student ideas is limited.
   2. MALE STUDENT INITIATION — talk by male pupils which they initiate. Expressing their own ideas is much more evident, such as asking thoughtful questions. Student may disagree with the teacher's viewpoint and/or other students in a non-threatening manner.
   3. MALE STUDENT DEROGATORY — different from student initiated response in that student directs rude, disrespectful, and insulting remarks toward the teacher or fellow student.
   4. FEMALE STUDENT RESPONSE — talk by female pupils in response to the teacher. Teacher initiates the contact or solicits pupil statements or structures the situation. Freedom to express student ideas is limited.
   5. FEMALE STUDENT INITIATION — talk by female pupils which they initiate. Expressing their own ideas is much more evident, such as asking thoughtful questions. Student may disagree with the teacher's viewpoint and/or other students in a non-threatening manner.
   6. FEMALE STUDENT DEROGATORY — different from student initiated response in that student directs rude, disrespectful, and insulting remarks toward the teacher or fellow student.

7. ANGLO STUDENT RESPONSE —
   1. MALE STUDENT RESPONSE — talk by male pupils in response to the teacher. Teacher initiates the contact or solicits pupil statements or structures the situation. Freedom to express student ideas is limited.
2. **MALE STUDENT INITIATION** -- talk by male pupils which they initiate. Expressing their own ideas is much more evident, such as asking thoughtful questions. Student may disagree with the teacher's viewpoint and/or other students in a non-threatening manner.

3. **MALE STUDENT DEROGATORY** -- different from student initiated response in that student directs rude, disrespectful, and insulting remarks toward the teacher or fellow student.

4. **FEMALE STUDENT RESPONSE** -- talk by female pupils in response to the teacher. Teacher initiates the contact or solicits pupil statements or structures the situation. Freedom to express student ideas is limited.

5. **FEMALE STUDENT INITIATION** -- talk by female pupils which they initiate. Expressing their own ideas is much more evident, such as asking thoughtful questions. Student may disagree with the teacher's viewpoint and/or other students in a non-threatening manner.

6. **FEMALE STUDENT DEROGATORY** -- different from student initiated response in that student directs rude, disrespectful, and insulting remarks toward the teacher or fellow student.

8. **CONFUSION** -- short periods of confusion in which communication cannot be understood by the observer.

**NOTE:** There is no scale implied by the numbers represented. Each number is classificatory; it designates a particular kind of communication event. Writing these numbers down during periods of observation is to enumerate, not to judge a position on a scale.
APPENDIX B
ELEMENTARY STUDENT OPINION QUESTIONNAIRE

This is not a test because there are no right or wrong answers. We want to find out how you feel about school. Think about the whole year when you mark your answer. No one from your school will see your answers. DO NOT WRITE YOUR NAME. PLEASE FOLLOW DIRECTIONS.

Code

N = NEVER
L = LITTLE
S = SOMETIMES
M = MOST OF THE TIME
A = ALWAYS

Examples

<table>
<thead>
<tr>
<th>Questions</th>
<th>Never</th>
<th>Some</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think you should have school on Saturdays?</td>
<td>N</td>
<td>L</td>
<td>S</td>
</tr>
<tr>
<td>Boys talk more than girls.</td>
<td>N</td>
<td>L</td>
<td>S</td>
</tr>
</tbody>
</table>

Questions

1. Do you understand what your teacher says when she talks to you? (Like when she explains things)  
2. Is your teacher fair?                        
3. Do the kids in your class behave?           
4. Does your teacher like you?                 
5. Is your class fun?                          
6. Does your teacher think what you say is important?  
7. Does your teacher want you to ask questions and give your ideas in class? 
8. Is it okay if your idea is different from your teacher's idea? 
9. Does your teacher get angry when little problems come up in class?
10. Do you feel free to tell your ideas in class?  N L S M A
11. Do you like to be called on in this class?  N L S M A
12. Do you feel like you learn a lot in your class?  N L S M A
13. Do you worry about other students picking on you?  N L S M A
14. Do you like your teacher?  N L S M A
15. Do you like your school?  N L S M A
16. Are the children in your class friendly?  N L S M A
17. Do you feel your teacher understands Mexican-Americans?  N L S M A
JUNIOR HIGH STUDENT OPINION QUESTIONNAIRE

This is not a test because there are no right or wrong answers. We are interested in your opinion about this class and school based on the whole year. No one in your school will see your answers. DO NOT WRITE YOUR NAME. Follow the directions.

Directions: Think about the entire school year. Using the code shown to the right, circle the letter that best tells how you feel about each question. After everyone is finished, the papers will be collected.

<table>
<thead>
<tr>
<th>Code</th>
<th>Never</th>
<th>Some</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>L</td>
<td>S</td>
<td>M</td>
</tr>
</tbody>
</table>

1. Are the ideas presented at a level you can understand?

2. Is this teacher fair and impartial in his/her treatment of all students in the class?

3. Is this classroom orderly but also relaxed and friendly?

4. Do you feel that this teacher likes you?

5. Is this class interesting and challenging?

6. Does this teacher have respect for the things you say in class?

7. Does this teacher encourage you to raise questions and express ideas in class?

8. Is this teacher able to see things from your point of view?

9. Does this teacher become angry when little problems arise in the classroom?
10. Do you feel free to give your own ideas and express your own opinions in this class? N L S M A
11. Do you like to be called on in this class? N L S M A
12. Do you feel like you learn a lot in this class? N L S M A
13. Do you like most of your teachers? N L S M A
14. Do you like this class? N L S M A
15. Do you like this school? N L S M A
16. Are students in this school friendly? N L S M A
17. Do you feel your teacher understands Mexican-Americans? N L S M A

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SENIOR HIGH STUDENT OPINION QUESTIONNAIRE

This is not a test because there are no right or wrong answers. We are interested in your opinion about this class and school based upon the whole year. No one in your school will see your answers. DO NOT WRITE YOUR NAME. Follow the directions.

Directions: Think about the entire school year. Using the code shown to the right, circle the letter that best tells how you feel about each question. After everyone is finished, the papers will be collected.

<table>
<thead>
<tr>
<th>Code</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>L = Little of the time</td>
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<td></td>
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<tr>
<td>S = Sometimes</td>
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</tr>
<tr>
<td>M = Most of the time</td>
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</tr>
<tr>
<td>A = Always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Are the ideas presented at a level you can understand? N L S M A
2. Is this teacher fair and impartial in his/her treatment of all students in the class? N L S M A
3. Is this classroom orderly but also relaxed and friendly? N L S M A
4. Do you feel that this teacher likes you? N L S M A
5. Is this class interesting and challenging? N L S M A
6. Does this teacher have respect for the things you say in class? N L S M A
7. Does this teacher encourage you to raise questions and express ideas in class? N L S M A
8. Is this teacher able to see things from your point of view? N L S M A
9. Does this teacher become angry when little problems arise in the classroom? N L S M A
10. Do you feel free to give your own ideas and express your own opinions in this class? N L S M A

11. Do you like to be called on in this class? N L S M A

12. Do you feel like you learn a lot in this class? N L S M A

13. Do you like most of your teachers? N L S M A

14. Do you like this class? N L S M A

15. Do you like this school? N L S M A

16. Are students in this school friendly? N L S M A

17. Do you feel your teacher understands Mexican-Americans? N L S M A
This is not a test

If your teacher were to change your seats around so that we could have small groups for games, you could help your teacher arrange the groups. You could do this by writing the names of the students you would like to have sit near you, the student you would like to have work with you, and the student you would like to have play with you. You may choose anyone in this room you wish, including those pupils who are absent. Your choices will not be seen by anyone else. Write the first name and the initial of the last name only of the student you choose.

Please make your choices carefully so that the groups will be the way you would like them to be.

Remember:

1. Your choices must be made from pupils in this room, including any students who are absent.
2. You should write the first name and the last initial of the first name of the student you choose.
3. You should choose one student for each blank line in each question remembering the name you choose first is the student you would like the most, number two next and so on.
4. You may choose a student you would most like to work with as the one you would choose most to play with if you want.
5. Boys can choose girls and girls can choose boys.
6. Your choices will not be seen by anyone else.

I would choose to sit near these students most:

1. ___________________________ 2. ___________________________
3. ___________________________ 4. ___________________________
5. ___________________________

I would choose to work with these students most:

1. ___________________________ 2. ___________________________
3. ___________________________ 4. ___________________________
5. ___________________________
I would choose to play with these students most:
1. ____________________ 2. ____________________
3. ____________________ 4. ____________________
5. ____________________

I would choose to work with these students the least:
1. ____________________ 2. ____________________
3. ____________________
JUNIOR HIGH FORM

Name __________________________ Date __________________

This is not a test

Suppose the teacher decided to group the class in order to form small groups of maybe 4-6. The reason for gathering into small groups would be to work in small group discussions in Social Studies. You can help structure the groups by indicating which students you would choose to work with, the students you would choose to talk with on a class break and the students you would choose least if you worked together on a problem or question. You may choose anyone in this room you wish, including those pupils who are absent. Your choices will not be seen by anyone else. Write the first name and the initial of the last name only for those students you choose.

Please make your choices carefully so your choice may help structure the groups the way you would like to see them.

Remember:

1. Your choices must be made from pupils in this room, including any students who may be absent.
2. You should write the first name and the initial of the last name only for those students you choose.
3. You should choose one student for each blank line in each question remembering the name you choose first is the student you would like the most, number two next and so on.
4. You may choose the same students on different questions if you wish.
5. Your choices will not be seen by anyone else.

I would choose to work with these students most:

1. ____________________________ 2. ____________________________
3. ____________________________ 4. ____________________________
5. ____________________________

I would choose these students to talk with on a class break:

1. ____________________________ 2. ____________________________
3. ____________________________ 4. ____________________________
5. ____________________________
I would choose these students \textit{least} for group work in class:

1. 

2. 

3. 

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This is not a test

The teacher is thinking of forming small groups for the purpose of small group interaction. If you were asked to help structure these groups by providing choices of students you would prefer to work with, what student names would you indicate as your choices on the questions below? You may choose students in this class including anyone who may be absent. Your choices will not be seen by anyone else. Write the first name and the initial of the last name only for those students you choose.

Please make your choices carefully and do not allow anyone else's choice influence your choice.

Remember:

1. Your choices must be made from pupils in this class, including any students who may be absent.
2. You should write the first name and the initial of the last name only for those students you choose.
3. You must make the number of choices indicated by the blank spaces for each question.
4. You may choose the same students for each question if you so desire.
5. Your choices will not be seen by anyone else.

Who would you choose to work with in working together on a group project?

1._________________________ 2._________________________
3._________________________ 4._________________________
5._________________________

If you were given a break during the project, who would you choose to interact with?

1._________________________ 2._________________________
3._________________________ 4._________________________
5._________________________
Identify three individuals you would least likely choose to work with on a given project?

1. ___________________  
2. ___________________

3. ___________________
ESTABLISHED RELIABILITY FOR OBSERVER
ON INTERACTION ANALYSIS CODING

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<th>Percent of 2</th>
<th>Percent Difference</th>
<th>(Ave. (%))^2</th>
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<td>7.6</td>
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<td>.80*</td>
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*A Scott coefficient of .85 or higher is a reasonable level of reliability; however, as each second observation was compared to the first observation for reliability by using a taped lesson, the coefficient depicted is an underestimate of reliability as the author was unable to see facial expressions that went along with the verbal interaction under observation.