The Effect of Integrated Grouping and of Studying Minority Culture in Reducing Cultural Cleavage in Elementary Classrooms

Daniel L. Paul
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THE EFFECT OF INTEGRATED GROUPING AND
OF STUDYING MINORITY CULTURE IN
REDUCING CULTURAL CLEAVAGE
IN ELEMENTARY CLASSROOMS

by

Daniel L. Paul

A Dissertation
Submitted to the
Faculty of The Graduate College
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of the
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you are working so hard on your study, I hope you get a gold star
for it."

Daniel Paul
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CHAPTER I

INTRODUCTION

Statement of the Problem

One major generalization of most recent studies on integration is that our society is becoming more divided rather than less. This cleavage between minority and majority groups cannot be ignored. The question is, "How can it be corrected?" The role of the educational leader will become of prime importance in finding the answer to this problem. Should he accept court ordered school integration by means of law as fulfilling his obligation? Should he accept an incidental (or maybe accidental) approach to fulfilling his obligation? Or should he look for intentional means to end segregation of minority groups by bringing them into equal membership in society, more commonly called integration? The answer is obviously the last one. It is, therefore, the purpose of this study to aid the educational leader to find a simple but practical means by which he can implement better integration in his school.

More specifically, this study deals with finding ways to implement the integration of the Mexican American into the American

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2Reasons for the use of the term, Mexican American, are explained later in this chapter under the section entitled Definition of Terms.
Cabrera, writing on the need to accept Mexican Americans as first class citizens, said,

Finally, the meaningful goal in America is integration as a bilingual and bicultural group into a pluralistic society which owes its growth, strength, and achievement to the blood and sweat of many diverse, racial and cultural groups. Cabrera further states that "today, many Mexican Americans are among the disadvantaged who are submerged by discrimination and prejudices. . . ."

If the assumption is accepted that the average Mexican American is disadvantaged, and that it would be desirable to enable him to be integrated into the mainstream of American society, the problem is clear, "How can it be done?"

In order to accomplish this purpose, two often suggested methods of reducing the cleavage between minority groups and the rest of society were investigated. The first was the concept that if the minority culture were better known by all persons including the minority itself, there would be greater understanding and acceptance of the minority group. The second concept was that integration

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3 ibid.

of the minority groups would be aided by some form of actual integration, the idea being that understanding would come about through actual contact with one another.  

Objectives of the Study

The primary purpose of this study was to investigate the effectiveness of the two previously mentioned procedures. Throughout the rest of this study these areas will be labeled (1) Culture (an understanding of the minority's culture) and (2) Integrated (an opportunity to work together on an equal status). Allport in The Resolution of Intergroup Tensions lists these two areas as of prime importance in aiding the task of integration.

Since this study deals only with children of middle and upper elementary age, the question may be asked, "Will integration be increased by the application of culture and integration at this age?" Studies by Robinson, Maines, and Drummond will be cited in Chapter II which indicate that age is a factor and that children are more likely to change their attitudes than their elders.

In attempting to determine whether studying cultural heritage and working in ethnically integrated groups would in fact improve the integration or socialization of minority groups, the following specific objectives were investigated:

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1 loc. cit., p. 103

1. To determine if the degree of cleavage between Mexican American and Anglo American upper elementary children would be lessened by learning about the culture of the Mexican American people.

2. To determine if the degree of cleavage between Mexican American and Anglo American upper elementary children would be lessened by intentionally and systematically providing situations in which the two groups of children would be working in integrated groups.

3. To determine if the degree of cleavage between Mexican American and Anglo American upper elementary children would be lessened by having both groups learn about the culture of the Mexican American people while working in integrated groups.

4. To determine if the Mexican American students would be more accepting of the Anglo American students for each of the aforementioned treatments.

5. To determine if the Anglo American students would be more accepting of the Mexican American students for each of the aforementioned treatments.

A detailed description of the experimental groups will be given in Chapter III, but to facilitate an understanding of the study, a brief overview of the experiment is presented here.

Twelve classrooms were divided into four groups so that each group consisted of three classes. The groups are described as follows:
GROUP | TITLE | DESCRIPTION
--- | --- | ---
I | Culture | This group studied a unit in Mexican culture by working with the entire class as one entity.
II | Integrated | This group studied a science unit but studied it in ethnically integrated small groups.
III | Culture-Integrated | This group studied the same Mexican culture unit as group I but did it in ethnically integrated small groups.
IV | Control | This group received no treatment but was given the pre and post tests.

All of these treatments were assigned at random. Prior to any treatment, all of the children were given a sociometric test to determine the degree of social cleavage between Mexican American children and all other children. After the experimental treatment, this test was repeated to determine if any or all of the groups made a significant gain since the time of the pre test.

In addition to these major areas of investigation some effort was made to determine whether in the process of giving a sociometric test the results would be significantly affected by the type of questions and the number of sociometric choices.

Definition of Terms

The terms which are used frequently throughout the report are defined for purposes of the experiment as follows:
Ethnic is defined by Webster\(^1\) as "Relating to large groups of people classed according to common traits and customs." In this study the term ethnic groups refers specifically to the two major groups identified as either Mexican American or Anglo American.

Mexican Americans are those persons who come from a Spanish speaking culture and who were identified by the principal and the classroom teacher as coming from such a culture.\(^2\)

Anglo Americans, for purposes of this study, are all persons not included in the Mexican American group, and they all happen to be English speaking and white.

Prejudice is a bias related to ethnic background in the selection of individuals one would choose to work with, play with, or invite to one's home.

Cleavage is a total measure of prejudicial bias in a classroom and therefore could also be considered as a "prejudice score."

Cross ethnic choices are the choices which individuals make when they choose someone from a different ethnic group than their own. The term cross cultural choices will be used synonymously with cross ethnic choices.

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\(^2\)The researcher used the term "Mexican American" as a result of a study which is cited in Appendix A.
Sociometric measure refers to a testing device in which prejudice is inferred by means of tabulating the number of cross ethnic choices which a student makes when he is asked to choose persons for special purposes. This tabulation can be compared with previous ones or it can be compared with chance expectations.

The Culture Group (I) will be identified as treatment group number one. During the study period, this group studied the Mexican culture by means other than small contact groups.

The Integration Group (II) is similar to treatment group three in that its members worked in small inter ethnic groups but it did not study the Mexican culture. It studied a unit on electromagnetism.¹

The Culture-Integration Group (III) studied the Mexican culture and did it in small inter ethnic groups.

Importance of the Study

The United States Supreme Court Ruling of 1955 which ordered schools to integrate with all deliberate speed has given impetus to finding methods for true integration of all Americans.

Yinger,² in A Minority Group in American Society, stated that "some parents who accept the principle of school integration have objected to various means by which it is brought about—transporting


children out of their neighborhood by bus for example." It is not
the intent of this study to evaluate the merits of busing for purposes
of integration. The previous citation was introduced to show that
even when integration is accepted in principle, the success or
failure of the program may hinge upon the methods employed. The
methods, therefore, are extremely important.

Giles\(^1\) in *The Integrated Classroom* states that the elimination
of prejudice demands two things: legislation and education. This
study does not deal with legislation at all but is concerned with
education as a vehicle for reducing prejudice.

It is often suggested, during this time of national concern for
minority groups, that more attention should be given to the histori-
cal contribution of minority members to the total society. Others
suggest that the artistic, musical, and technical contributions of
these persons should be brought to everyone's attention. In effect
these suggestions are based on the assumption that the better a
minority's "culture" is known, the better the members of the minority
will be accepted in the total society. Or, as Yinger\(^2\) puts it, "One
of the most widespread common sense ideas about intergroup rela-
tions is the declaration that 'if people only knew each other better'
there would be less prejudice and hostility." Many schools from

---

University Press, 1959, p. 22.

\(^2\)Yinger, op. cit., p. 118.
elementary through graduate levels, in recent years, have initiated special courses and curricula for the very purpose of getting to know the minority better. This study is therefore very important and relevant because it provides one test of this assumption.

In addition to evaluating the contribution that curriculum might have on reducing prejudices, this study also deals with actual integration of persons as a means of accomplishing the same goal. The present emotionally charged issue of "busing" in the schools is based on the idea that not only are the rights of individuals neglected by segregation in any form but that some form of integration is necessary in order to bring about a greater or more complete integration. The main thesis of Pettigrew's article "Racially Separate or Together" is that the only way to improve integration of minorities is to have some integration. This concept of having contact with the minority groups is also tested in this study, but again with certain limitations.

Finally, the idea is tested that if the two concepts (culture and integration) are combined at the same time, the result will be more than an addition of the component parts. The study is, therefore, timely and important because it can aid educators in making decisions regarding this very important topic of prejudice.

Assumptions

The study will be carried out with some assumptions in three areas. The first is that prejudice will exist in the experimental classes and that the prejudice will be basically ethnic in origin. No attempt will be made to delineate the differences and likenesses between different types of prejudice, such as racial or ethnic. It is assumed that they have enough in common to be considered similar for purposes of this study. The second assumption is that this prejudice will not only be reflected by the sociometric scores but these scores will also indicate the degree of prejudice and a change in prejudice will be reflected by the post scores. The final and major assumption involves the concept that a change in attitude will cause a change in behavior. The behavior change, i.e. cross culture selection on the sociometric measure, will be reflected by the sociometric score and it will be assumed that the behavior change does represent an attitudinal change.

Summary

This chapter began with a recognition that ethnic prejudice exists in our society and that the public school has to help find some means to reduce or eliminate it. The study attempts to add some light to this situation by investigating two means often mentioned as good methods, namely: culture and contact. The procedures of the study were introduced but a more detailed description follows in Chapter III.
CHAPTER II

Review of Related Literature

The purpose of this study was to explore two specific ways in which social cleavage as reflected in interaction could be reduced in an elementary age classroom, namely, study of culture and integration. It was believed that the literature provided ample evidence to warrant further investigation of these two procedures. Of course the evidence was not without question. If it were, there would have been little reason to do further experimentation. The intent, therefore, was to test the theories of culture and integration as means to reduce prejudice. This chapter will attempt to describe why it was theoretically reasonable to conduct this experiment.

Before dealing with the two specific procedures in question, the following should be established: (1) What are attitudes, prejudice, and discrimination? (2) In what ways can attitudes be changed? and (3) Will contact and curriculum act as change factors of attitudes? These aforementioned areas, therefore, become the outline for this chapter.

Attitudes, Prejudice, Discrimination

**Definition of Attitude**

Before one can discuss the ability to change attitude, it is essential that the term "attitude" be clarified and defined. McGuire, in writing on "The Nature of Attitudes and Attitude Change" decided
that Allport's definition of attitude was the best of many proposed over the years. Allport developed his definition after examining sixteen others. McGuire's\(^1\) definition borrowed from Allport, is that an "attitude has at least five aspects: (1) it is a mental and neural state, (2) of readiness to respond, (3) organized, (4) through experience, (5) exerting a directive and/or dynamic influence on behavior."

**History of Attitude Research**

In the period from 1918 to 1930 social psychologists were very interested in attitude research, but during the period from 1930 to 1960 they shifted their emphasis to group dynamics.\(^2\) From 1960 on, they returned to a heavy emphasis on attitude research. There may be many reasons for this shift back to attitude research but this writer believes that this shift may be a matter of semantics. As defined previously, the word "attitude" is so all inclusive that it is almost synonymous with "Social Psychology." Stouffer\(^3\) stated that attitude is too broad a term to measure but one can measure a specific aspect of an attitude, e.g. the behavior of a white person


\(^2\)loc. cit., pp. 36-139.


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sitting next to a black person on a bus. Scott,\(^4\) in discussing measuring attitude stated, "The construct attitude has become so complex that one can no longer talk clearly about measuring an attitude. Rather, one must restrict discussion to procedures for measuring a particular property of an attitude as conceptually defined."

Components of Attitudes

Because of the all inclusiveness of the term attitude, it may be worthwhile to look for a few moments at the structure of attitudes so that we can narrow down our field of concern. McGuire\(^2\) said, "Philosophers at diverse times and places have arrived at the same conclusion, that there are basically three existential stances that man can take with respect to the human condition: knowing, feeling, acting. Throughout the classical tradition, from Plato and Aristotle on, theorists repeatedly proposed the same three components of attitudes under their Latinized names of cognitive, affective, and conative." Simply stated, the cognitive can be described as how one perceives the attitude objective while affective is how one feels about the objective. Behavior toward the objective describes conative. All three or any one of the three, according to McGuire, can be used as a measure of attitude because they are all intercorrelated; however, since behavior is more easily or accurately


\(^{2}\)McGuire, op. cit., p. 155.
measured than perceptions and feelings, it is most likely the best area to use in measuring attitude. Scott\(^1\) also said "Many researchers would maintain . . . that the most appropriate measure of an attitude is provided by a sample of the behavior which is predicted." More will be said in a later section of this chapter on specific measuring devices. It is important at this point to make the transition from a discussion of attitudes to a discussion of prejudice and from there to a discussion of discrimination.

**Prejudice and Discrimination**

At the outset it may be helpful for the reader to realize that most authors make distinctions between the concept of race and ethnic groups but the concept of prejudice can be used for either. More simply stated, there does not appear to be a difference between prejudice toward a racial group or prejudice toward an ethnic group. At the very least it is similar enough so that one could say prejudice is prejudice. Giles,\(^1\) in *The Integrated Classroom*, defined prejudice as follows: "The pre-judging which we call prejudice is attributed to a state of mind, a mind set, which has developed through experiences of such emotional strength as to leave a strong impression which guides future decisions and actions." Note the similarity between this definition of prejudice and the previous definition of prejudice.

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\(^1\)Scott, op. cit., p. 217.

attitude. They are strikingly similar. Both discuss a state of mind developed from experiences and predisposing one to act in a certain way. The action itself, however, is not the same. When action is taken the word discrimination is used.

Harding\(^1\) said, "We shall focus on **attitudes** rather than **actions** (that is, on 'prejudice' rather than 'discrimination')." Giles\(^2\) also described discrimination as an act which is an expression of an attitude (prejudice).

The point of the entire discussion is to show the interrelationship between the terms attitude, prejudice, and discrimination. While it is possible to separate these concepts by definition, in practice there is no such fine distinction. However, it should be clear to the reader that in this experiment it would be much more accurate to say that a degree of discrimination was being measured rather than prejudice or attitudes even though it should be obvious that attitudinal change was the goal. Or as McGuire\(^3\) concluded, a measure in any one of the above mentioned areas is most likely a measure in the other two.

**Changing Attitudes**

The experiment was based on the assumption that attitudes can


\(^2\)Giles, op. cit., p. 181.

\(^3\)McGuire, op. cit., pp. 146-157.
be changed. Some comments will be made in support of this assumption but the major thrust of this section will be concerned with ways in which attitudes can be changed and certain factors that might have an effect on the change.

**Attitudes can be changed**

Thurstone,\(^1\) as far back as 1929, demonstrated in his studies on nationalistic preferences that attitudes could be changed. He used a technique of showing a moving picture to subjects in an attempt to change their attitude toward a particular nationality. He found that he could make significant changes in attitude by means of this medium. His data not only supported the hypothesis that attitudes can be controllably changed, but also that they can be changed in a short period of time.

More recently, Foshay\(^2\) concluded from an action research study that "social attitudes can be structured so as to produce one learning rather than another." He also recognized that while teachers may not be the main force in the development of social attitudes, they are one of several powerful influences.

Giles\(^3\) stated that "Studies by Horowitz have shown that children learn and can unlearn many of their early prejudices by imitation of


their parents or teachers . . . and even by discussion of the subject."

Collins suggested that not only could values be changed but cause and effect in this area could be confused. His exact statement was, "Interpersonal attraction creates a greater similarity of values and attitudes among the group members: but similarity of attitudes and values is probably the major determinant of interpersonal attraction."

**Theories of Changing Attitudes**

This experiment was initiated largely from the theoretical framework of Leon Festinger in regard to attitude change. In his book, *Changing Attitudes Through Social Contact*, Festinger proposed the following two theories: (1) Attitudes can be changed by controlling perception. (2) Attitudes can be changed by bringing persons into social contact with individuals who have different attitudes. These theories would most likely fall into Halpin's Molar concept in that they are very large. Halpin suggests that Molar approaches

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have a function but the Molecular approach is more conducive to re-
search. For example, he said that "a theory can be practical only in a limited sense: it can permit us to declare that if you do X, consequence A will result; if you do Y, consequence B will result."
This experiment attempted to test particular procedures in a specific setting in hope that what was learned, while maybe being molecular, would have a contribution to the molar.

More recently, McGuire,\(^1\) in summarizing theoretical approaches to attitude change, listed four: (1) The Learning Theory, (2) The Perceptual Theory, (3) The Consistency Theory, and (4) The Functional Theory. While these theories elaborate and are an enlargement of Festinger's theories, they are not in any way in conflict with them. It was therefore believed that the theoretical base for the experiment was well founded.

**Age and Group Size as Change Factor**

As has been previously mentioned, studying culture and providing contact with minority groups were the factors being tested in this experiment. However, there were other factors such as age of the students and the size of the minority and majority which should not be ignored. Robinson\(^2\) in a study in which he attempted to change

\(^1\)McGuire, op. cit., p. 266.

attitudes through a Lecture-Discussion workshop, came to the conclusion that his procedure did reduce prejudice especially in the younger adults, giving credence to the ideas that information did help and that the younger the person, the more possible it is to change attitude. This conclusion could also be supported by earlier studies made by Maines\(^1\) in which he found that intergroup education definitely reduced attitudes of discrimination; he postulated from his results that younger children would show even greater gains. At a 1970 conference on ethnic attitude modification Drummond\(^2\) stated that to gain the best advantage, ethnic studies should take place at an early age. He also said that studying minority ethnic cultures might be of greater advantage to the majority culture than to the minority.

Does the size of the ethnic minority in relation to the majority make a difference? This is the question which Lundberg\(^3\) investigated. He found that the ethnocentrism of the majority increased when the minority increased. If the minority was small, there was less ethnocentrism.

\(^1\)Maines, R. "Attitude Change in Intergroup Education Programs," Studies In Higher Education. Purdue University, LXXXIII (August 1954), pp. 87-89.


Other techniques as change factors

There were other studies which used very narrow or specific procedures to produce attitude change. They are mentioned here because they lean toward involving the concepts of culture and contact even though they are testing specific media.

Second grade children were given a number of tests by Litcher,¹ et al., to determine their level of prejudice. One group of children used a multi-ethnic reader while a control group used a non multi-ethnic reader. The group which used the multi-ethnic reader did significantly better on post tests of prejudice.

Television was used as a medium by Rubin.² He found that television was less effective in reducing prejudice than a workshop. Through his measures of rationality and prejudice he concluded that "attitudes toward minority groups were based more heavily upon affective or emotional factors than cognitive factors." As a result of this conclusion he deduced "that the impersonal, one way nature of television may reduce its value as a medium of influence for people whose attitudes are based on more affective vs. cognitive factors."³

The preceding studies have been cited to show that in addition


³ loc. cit., p. 49.
to being able to change attitudes, there are a number of factors and mediums which can be used towards such an end. The two specific factors examined in this study, contact and culture, will now be discussed.

"Contact" as a Change Factor

The evidence of many research projects over a number of years leaves no doubt that contact (integration) can have a positive influence on the attitudes of both minority and majority members. This does not imply that it is one hundred percent successful but rather that it can often be successful. As Yinger\(^1\) stated, "One of the most widespread commonsense ideas about intergroup relation is the declaration that if people only know each other better there would be less prejudice and hostility." He called it his "contact hypothesis."

Thomas Pettigrew\(^2\) cited studies by Stouffer in 1949, Hogrefe in 1952, Wilner in 1955, Kephart in 1957, and others to show that contact was a meaningful condition of attitude change. He concluded from all of these studies that the only explanation for the alteration in attitude was due to contact. More recent and specific studies dealing with contact follow.


In 1961 Webster found that Negro students were more willing to accept the white students after integration than before.

The massive report of Coleman on equality of educational opportunity in 1966 came to the following conclusion:

School investigations of interracial contact found that white pupils have shown a positive change of racial attitude. A recent survey of a metropolitan center in the Northeast indicated that white pupils who have not attended class with Negroes were likely to express a preference for segregated classroom, while those who have been in desegregated classrooms were more likely to prefer desegregated classrooms. Moreover, white students whose interracial education began in the early grades were even more likely to prefer desegregated schools than whites whose first association with Negroes in school was in the upper elementary or secondary grades.

Class competition in physical education classes was used as a vehicle by Nelson in 1968 to see if he could influence the sociometric status of the students. He intentionally inter-mingled "non-cohesive" persons within competitive groups and he found positive changes were brought about. He concluded that (1) positive change can be brought about through organized interaction and, (2) it does not seem to happen by chance in ordinary classrooms.

Trubowitz in 1969 said:


The available research on changes of attitude of white and Negro people toward one another through interracial contact indicates that: (1) Negro and white people who have experienced satisfying interracial contact are more likely to express a preference for further contact; (2) positive change of attitude is more likely when Negro and white people have an opportunity to interact on a personal level; (3) Negro and white people who have contact on an equal status basis are more likely to have a positive change of attitude; (4) Negro and white people who view their peers as approving of interracial contact tend to change positively in an interracial situation; (5) when authority persons communicate that friendly association between races is desirable, positive change of attitude is more likely; and (6) Negro and white people may experience considerable conflict in interracial situations.

As a result of his experiment, Trubowitz\textsuperscript{1} came to the general conclusion that "The findings of the study provide evidence that under certain conditions face-to-face contact between Negro and white pupils exerts a positive influence on racial attitudes."

What are some of the conditions of contact which will exert a positive influence? Trubowitz\textsuperscript{2} states:

Research has shown that positive change is more likely to occur in an interracial contact situation that: (1) compels contact among the participants; (2) enables the participants to focus on concrete tasks requiring common effort; (3) provides opportunity for the individuals to interact on a personal basis; (4) places individuals in positions of social equality, and (5) establishes a social norm of friendly interracial relations.

There is no doubt in this writer's mind that these principles were scrupulously adhered to in this experiment.

Even though it would be rash to say that "contact" alone will reduce prejudice, there is strong evidence that would indicate that

\bibliography{\cite{ibid, loc. cit., p. 130}.}

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it is potentially an extremely important factor. This statement suggests that integration leads to more integration and isolation leads to more isolation. The following studies support this conclusion:

The United States Commission on Civil Rights\(^1\) in a study in Louisville, Kentucky found that (1) Negroes who chose a white majority high school came from integrated junior high schools and/or elementary schools and (2) Negroes who chose a segregated high school came from segregated schools.

Deutsch\(^2\) studied the psychological effect of interracial housing on people and found that as people of different races lived together they became more accepting of each other than people who were housed in separate buildings according to race.

The 1967 report of the United States Commission on Civil Rights\(^3\) also indicated little doubt that children who grew up in integrated communities would be more likely to hold interracial attitudes and live in interracial neighborhoods when they became adults, than those who did not.

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Nelson and Johnson\textsuperscript{1} conducted a study in which they tried to develop a more positive social acceptance of students toward each other by using interaction techniques. They measured their results by the use of sociometric tests and concluded the following: "The findings in this study would appear to warrant the conclusion that positive shifts in social acceptance can be brought about through a conscious effort on the part of the teacher to organize class activities and direct student interaction in light of measured sociometric status."

If it is true that contact is a meaningful way to change attitudes under certain conditions, it follows that (1) the proper conditions should be explored and, (2) the improper conditions or the possibility of avoiding contact should be explored.

Pettigrew,\textsuperscript{2} in the conclusion of his article, "Racially Separate or Together," answered the question of avoiding contact when he said:

Our social psychological examination of separatists' assumptions leads to one imperative: the attainment of a viable, democratic America, free from personal and institutional racism, requires extensive racial integration in all realms of life. To prescribe more separation because of discomfort, racism conflict or autonomy needs is like getting drunk to cure a hangover. The nations' binge of apartheid must not be exacerbated but alleviated.

The question of the conditions under which contact has a positive or negative effect were summarized quite well by Amir\textsuperscript{3}

\begin{footnotes}
\item Nelson, op. cit. p. 634.
\item Pettigrew, op. cit., p. 363.
\end{footnotes}

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in his article entitled "Contact Hypothesis in Ethnic Relations."

Following are the principles which seem to evolve from the studies on contact between ethnic groups:

1. There is increasing evidence in the literature to support the view that contact between members of ethnic groups tends to produce changes in attitude between these groups.

2. The direction of the change depends largely on the conditions under which contact has taken place; "favorable" conditions tend to reduce prejudice, "unfavorable" ones may increase prejudice and intergroup tension.

3. If a change is produced, it does not necessarily follow that the change is in the direction of the attitude. Change may be found in the intensity of the attitude (or in other, not yet explored, dimensions.)

4. In many cases where an attitude change is produced as a result of the contact situation, change is limited to a certain specific area or aspect of the attitude (such as to work situations), but does not generalize to other aspects.

5. Although most of the investigations on the effects of contact on the reduction of prejudice report "favorable" findings, this outcome might be attributed to the selection of favorable experimental situations. It is doubtful whether intergroup contact in real life takes place generally under favorable conditions and whether, therefore, in most cases contact actually reduces prejudice.

6. Some of the favorable conditions which tend to reduce prejudice are (a) when there is equal status contact between the members of the various ethnic groups, (b) when the contact is between members of a majority group and higher status members of a minority group, (c) when an "authority" and/or the social climate are in favor of and promote the intergroup contact, (d) when the contact is of an intimate rather than a casual nature, (e) when the ethnic intergroup contact is pleasant or rewarding, (f) when the members of both groups in the particular contact situation interact in functionally important activities or develop common goals or superordinate goals that are higher ranking in importance than the individual goals of each of the groups.

7. Some of the unfavorable conditions which tend to strengthen prejudice are (a) when the contact situation produces competition between the groups; (b) when the contact is unpleasant, involuntary, tension laden; (c) when the prestige or status of one group is lowered as a
result of the contact situation; (d) when members of a group or the group as a whole are in a state of frustration (i.e., inadequate personality structure, recent defeat or failure, economic depression, etc.)—here contact with other groups may lead to the establishment of an ethnic "scapegoat"; (e) when the groups in contact have moral or ethnic standards which are objectionable to each other; (f) in the case of contact between a majority and a minority group, when the members of the minority group are of a lower status or are lower in any relevant characteristic than the members of the majority group.

If contact were automatically always a positive influence on changing attitudes, there would have been no reason for this study. There is no doubt, however, that contact as a potential change factor is supported by the literature.

Curriculum As A Change Factor

There is not quite as much research evidence to support curriculum as a change factor in changing attitudes, as contact as a change factor, but in the writer's opinion it certainly is adequate enough to warrant investigation. In support of this contention, Hunter cited a bill in the U.S. Congress which makes it clear that curriculum is considered to be important. He said:

It is proposed that a package of courses substantively examining the societal, historical, political, and economic bases of black-white racism in North America be made a requirement for all incoming college and university freshmen. Teachers-in-training and teachers-in-service would be additional recipients. Similar mandatory packages, with supporting textbooks and curricular materials, would also be developed for use in public school systems from

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kindergarten through twelfth grade. The rationale supporting the proposal is that racism is essentially a manifestation of ethnocentrism, and that educational institutions can and should make inputs designed to change, in turn, perceptions, attitudes, value-systems, behavior, political decision-making, and finally, societal norms. Such an educational systems approach will have long-term generational effects. Along with many other necessary endeavors, it will ultimately help produce an integrated nation based on true justice, equality, and harmony.

Both Hunter\(^1\) and Pettigrew\(^2\) developed the idea that prejudice can be reduced both by law and by education, but Hunter leaned heavily toward the educational approach as evidenced by Figure 1.

\[^1\text{ibid.}\]

\[^2\text{Pettigrew, op. cit., p. 361.}\]
Hunter further stated that:¹

If attitudes change then economy and social change at a wider societal level will surely follow. Hence attention should be focused on institutions that initiate ideas and give shape to our perceptions. Exerting such influences are parents and domestic attitudes, peer group pressures, mass media, and so on. But paramount in terms of its potential influence is the educational system.

The remainder of this chapter can be visualized in two parts. The first part will deal with the general recognition of knowledge, information, etc., as a factor in changing attitudes. The second part will provide examples of both direct and subtle ways to reduce prejudice by means of curriculum.

General Need for Knowledge as a Change Factor

Trager and Radke-Yarrow,² as part of an intensive study of school programs designed to initiate changes in human relations, concluded, "It is apparent that children learn prejudice not only from the larger environment but from the content of the curriculum." It seems logical that if a curriculum can cause prejudice, a different curriculum might help to eliminate prejudice.

Allport³ listed knowledge about a minority group as the first objective in an attempt to resolve inter-group tensions. Contrary to

¹Hunter, op. cit., p. 89.


some modern trends, Drummond, speaking at a conference entitled "Ethnic Modifications of the Curriculum," suggested that the majority group would profit more from studying a minority's culture than the minority would from studying its own culture. Leach, in studying ways in which the schools could teach tolerance, came to the general conclusion that "everybody has prejudice, but education can do much to remove its sting."

In a study dealing with the effects of curriculum on upper elementary school children, Roth cited a number of studies from which he concluded, "There tends to be a positive relationship between the amount of knowledge a person has about a minority group and a more positive attitude toward that minority group."

In regard to curriculum, Hunter said, "What is needed is awareness of the roots and nature of one's own ethnocentrism, and also insights, understandings and respect for the value-system of other groups." Closely related to this concept is the premise of Rokeach.

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2. Leach, Penelope, "Teaching Tolerance - The Role of the School in Furthering Inter-Group Relations." *International Race Education,* X (1964), p. 201.


5. Rokeach, M. "Belief Versus Race as Determinants of Social Distance: Comments on Triandis' Paper." *Journal of Abnormal and Social Psychology,* LXII (March 1961), p. 188.

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that what one believes about another is most likely stronger than the actual facts. As Rokeach\(^1\) put it, "White Americans' rejection of Negro Americans is motivated less by racism than by assumed belief and value differences. In other words, whites generally perceive Negroes as holding contrasting beliefs, and it is perception and not race per se that leads to rejection."

All of these aforementioned studies and articles made it clear that prejudice reduction can and does come about as a result of studying the beliefs, values, traditions, etc., of others.

**Direct and Subtle Curriculum Influences**

Many consider that the best approach to ethnic curriculum development is to teach directly the culture of the group in question. Most of the studies previously cited would be examples of this direct approach. On the other hand, some persons believe that studying a minority culture can be divisive by its very nature. Stressing a minority culture tends to emphasize differences rather than likenesses: hence, division. Defenders of this approach claim that the minority person becomes more proud of his own heritage and therefore improves his own self concept while the majority can be more accepting because they have new insights in regard to the minority's best qualities. Since this experiment used a study of the Mexican American culture, it is obvious that this direct approach was used.

In his article, "Racially Separate or Together," Pettigrew\(^2\)

\(^1\)ibid.

\(^2\)Pettigrew, op. cit., p. 362.
I came to two major conclusions. One of these conclusions dealt with integration, the other with curriculum. In regard to curriculum he said that the minority needs to be provided with an identity but that it should not be one which causes separation. Hernandez's main thesis was similar to Pettigrew's. In his book, *A Forgotten American*, Hernandez proposed many ways to work with Mexican Americans so that they could retain their culture while being acculturated into the American culture. These works have been cited in support of this direct approach.

Studies by Leach and Litcher provide examples of a more subtle type of curriculum influence. Since this approach was not used, these studies will not be dealt with in detail but they will be mentioned merely as further examples of using curriculum (content) to influence attitudes.

Leach attempted to teach tolerance by weaving minority facts in the teaching of biology, reading, history, literature, etc. Litcher's approach was even more subtle and consisted of using multi-ethnic readers as an instrument of influence.

Curriculum is widely accepted as a change factor in attitudes. Very few would claim it to be sufficient by itself and there might be

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2 Leach, op. cit.

3 Litcher, op. cit.
disagreement on the best type of curriculum or at what stage it should happen but there is little doubt that it is a positive factor.

Summary

One of the purposes of this chapter was to provide evidence from the literature that studying culture and integrating students had the potential of reducing social cleavage. In order to do this, a general discussion of attitudes was presented, which was followed by material on ways in which attitudes could be changed. Naturally, the emphasis in changing attitudes led into the two specific procedures, culture and integration, as viable procedures to affect such a change.
CHAPTER III

Research Design, Setting, and Procedures

After a short review of the problem, this chapter will focus on the hypotheses, the research design of the study, the setting, and the procedures used in conducting the field experiment. Included will be the methods used in instrument selection, sample selection, and the administration of the instrument.

Review of the Problem

The primary purpose of this study was to determine if the cleavage between ethnic groups can be lessened to a significant degree by learning about the minority's culture and by interaction between the ethnic groups. Secondary purposes included (1) evaluating each of these factors separately and in combination, and (2) determining if each of the ethnic groups differed in their reactions to these factors.

Three treatment groups and one control group composed of three classes each were established in three different elementary schools. The three schools were all located in Holland, Michigan, and they were comparable in size of the ethnic population (i.e. approximately thirty-five percent Mexican American). All of the fourth through the sixth grades in each of these schools took part in the study. The classes in Treatment Group I studied the Mexican culture with the entire class working as one entity. This group was known as the
"culture" group. Group II studied a science unit in ethnically integrated small groups and they were therefore called the "integrated" group. Both concepts of culture and integration were combined to provide the treatment for Group III in that they studied the Mexican culture in small integrated groups and they were therefore called the "culture-integrated" group. The final group was the control group which received no special treatment. The composition of these four groups is shown in Table 1.

Table 1
Composition of the Four Treatment Groups

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Number and % of Mex. Amer. Children</th>
<th>Number and % of Anglo Amer. Children</th>
<th>Elementary Building Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>22</td>
<td>39</td>
<td>L, L, W 4, 5, 6</td>
</tr>
<tr>
<td></td>
<td>35%</td>
<td>65%</td>
<td></td>
</tr>
<tr>
<td>Group II</td>
<td>20</td>
<td>40</td>
<td>L, W, F 4, 5, 6</td>
</tr>
<tr>
<td></td>
<td>33%</td>
<td>67%</td>
<td></td>
</tr>
<tr>
<td>Group III</td>
<td>21</td>
<td>44</td>
<td>W, W, F 4, 4, 5</td>
</tr>
<tr>
<td></td>
<td>32%</td>
<td>68%</td>
<td></td>
</tr>
<tr>
<td>Group IV</td>
<td>26</td>
<td>41</td>
<td>F, L, W 4, 5, 6</td>
</tr>
<tr>
<td></td>
<td>39%</td>
<td>61%</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL 89 164
35% 65%

*W - Washington School
L - Lincoln School
F - Federal School

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The measure used to determine the degree of cleavage between ethnic groups for both pre and post tests was a sociometric choice test. Choices were made by selecting persons to invite home, work within school, and play with on the playground. Each child made two choices for each area.

Hypotheses of the Study

The hypotheses of the study fall into two major categories. The first is the effect of the different treatments on each group, and the second is a comparison between the groups. There are many sub-hypotheses under each of these categories.

Hypothesis 1

The degree of cleavage between the Mexican Americans and the Anglo Americans in the culture group (Group I) will be significantly reduced from the pre test to the post test.

Sub-hypothesis 1-1

The Mexican American students in Group I will increase their cross ethnic choices to a significant degree from the pre test to the post test.

Sub-hypothesis 1-2

The Anglo American students in Group I will increase their cross ethnic choices to a significant degree from the pre test to the post test.

Sub-hypothesis 1-3

The cross ethnic choices of students in Group I in choosing persons to work with in SCHOOL, will be increased to a significant degree from the pre test to the post test.
Sub-hypothesis 1-4

The cross ethnic choices of students in Group I in choosing persons to invite to their HOME, will be increased to a significant degree from the pre test to the post test.

Sub-hypothesis 1-5

The cross ethnic choices of students in Group I in choosing persons to play with on the PLAYGROUND, will be increased to a significant degree from the pre test to the post test.

Hypothesis 2

The degree of cleavage between the Mexican Americans and the Anglo Americans in the integrated group (Group II) will be significantly reduced from the pre test to the post test.

Sub-hypothesis 2-1

The Mexican American students in Group II will increase their cross ethnic choices to a significant degree from the pre test to the post test.

Sub-hypothesis 2-2

The Anglo American students in Group II will increase their cross ethnic choices to a significant degree from the pre test to the post test.

Sub-hypothesis 2-3

The cross ethnic choices of students in Group II in choosing persons to work with in SCHOOL, will be increased to a significant degree from the pre test to the post test.

Sub-hypothesis 2-4

The cross ethnic choices of students in Group II in choosing persons to invite to their HOME, will be increased to a significant degree from the pre test to the post test.

Sub-hypothesis 2-5

The cross ethnic choices of students in Group II in choosing persons to play with on the PLAYGROUND, will be increased to a significant degree from the pre test to the post test.
Hypothesis 3

The degree of cleavage between the Mexican Americans and the Anglo Americans in the culture-integrated group (Group III) will be significantly reduced from the pre test to the post test.

Sub-hypothesis 3-1

The Mexican American students in Group III will increase their cross ethnic choices to a significant degree from the pre test to the post test.

Sub-hypothesis 3-2

The Anglo American Students in Group III will increase their cross ethnic choices to a significant degree from the pre test to the post test.

Sub-hypothesis 3-3

The cross ethnic choices of students in Group III in choosing persons to work with in SCHOOL, will be increased to a significant degree from the pre test to the post test.

Sub-hypothesis 3-4

The cross ethnic choices of students in Group III in choosing persons to invite to their HOME, will be increased to a significant degree from the pre test to the post test.

Sub-hypothesis 3-5

The cross ethnic choices of students in Group III in choosing persons to play with on the PLAYGROUND, will be increased to a significant degree from the pre test to the post test.

Hypothesis 4

The degree of cleavage between the Mexican Americans and the Anglo Americans in the control group (Group IV) will not be significantly reduced from the pre test to the post test.
Sub-hypothesis 4-1

The Mexican American students in Group IV will not increase their cross ethnic choices to a significant degree from the pre test to the post test.

Sub-hypothesis 4-2

The Anglo American students in Group IV will not increase their cross ethnic choices to a significant degree from the pre test to the post test.

Sub-hypothesis 4-3

The cross ethnic choices of students in Group IV in choosing persons to work with in SCHOOL, will not be increased to a significant degree from the pre test to the post test.

Sub-hypothesis 4-4

The cross ethnic choices of students in Group IV in choosing persons to invite to their HOME, will not be increased to a significant degree from the pre test to the post test.

Sub-hypothesis 4-5

The cross ethnic choices of students in Group IV in choosing persons to play with on the PLAYGROUND, will not be increased to a significant degree from the pre test to the post test.

Hypothesis 5

In each of the three sociometric areas, the students in the treatment groups will exhibit a significant increase in cross cultural choices between the pre test and the post test.

Sub-hypothesis 5-1

In the sociometric area of SCHOOL the students in each treatment group will exhibit a significant increase in cross cultural choices between the pre test and the post test.

Sub-hypothesis 5-2

In the sociometric area of HOME the students in each treatment group will exhibit a significant increase in cross cultural choices between the pre test and the post test.
Sub-hypothesis 5-3

In the sociometric area of PLAYGROUND the students in each treatment group will exhibit a significant increase in cross cultural choices between the pre test and the post test.

Hypothesis 6

In all three experimental treatment groups the Mexican American students will reduce their prejudice to a greater degree than Anglo American students by the end of the experimental treatment, while the control group will not significantly change.

Sub-hypothesis 6-1

In experimental treatment Group I the Mexican American students will reduce their prejudice to a greater degree than Anglo American students by the end of the experimental treatment.

Sub-hypothesis 6-2

In experimental treatment Group II the Mexican American students will reduce their prejudice to a greater degree than Anglo American students by the end of the experimental treatment.

Sub-hypothesis 6-3

In experimental treatment Group III the Mexican American students will reduce their prejudice to a greater degree than Anglo American students by the end of the experimental treatment.

Sub-hypothesis 6-4

In control Group IV the Mexican American students will not reduce their prejudice to a greater degree than Anglo American students by the end of the experimental treatment.

Design of the Study

The design of this study is commonly called a "true experimental
design."\(^1\) It is labeled "true" because the researcher was able to randomly assign subjects to treatment groups. Because the investigator was able to manipulate an independent variable while measuring the concomitant variation on a dependent variable this investigation can aptly be designated as an "experiment." The pre test — treatment — post test sequence with an accompanying control group as used in this experiment is called the "classical design" of research.\(^2\) The research paradigm for the study is shown in Figure 2. Letters "A", "B", "C", and "D" designate the various groups with their accompanying experimental treatments. Representing pre and post test scores are the letters "X" and "Y" respectively.

\[
\begin{array}{cccc}
A & B & C & D \\
X & X & X & X \\
Y & Y & Y & Y \\
\end{array}
\]

Figure 2

The reader will recall that twelve classes of upper elementary children were divided into three treatment groups and one control group and that in each class a sociometric measure was taken to determine cultural prejudice of the Anglo American and the Mexican American. This design made it mandatory that three independent variables be considered. These variables were as follows:


\(^2\)loc. cit., p. 309.
1. The experimental manipulation, _i.e._ the condition which was assigned to each group. Group I was the "culture" group. Group II was the "integrated" group and Group III was the combination of "culture and integration." The fourth group was the control group.

2. The sociometric measure, _i.e._ whether the cross cultural choices varied according to the (a) playground, (b) school, (c) home.

3. The cultural membership, _i.e._ whether the cultural membership of the child in the Mexican American or Anglo American group had any influence on choices made.

Each group was asked to respond to a sociometric measure involving a choice of another student on the playground (a), in the classroom (b), and at home (c). The sociometric measure was given before and after the treatment, thus a $2 \times 4 \times 3 \times 2$ (race X condition X sociometric measure X pre-post) design was used.

Statistical Procedures Used

The molar unit of measurement was the child's choice of 0, 1, or 2 interracial mates. Thus the child had a choice of three response categories and the data were manipulated as categorical data.\(^1\) Hence the non-parametric chi-squared ($X^2$) analysis to test the independence of categorical variables uniformly was employed. The

$X^2$ test is here used, as prescribed, "to determine the significance of the differences among $k$ independent groups."¹ This test has two primary assumptions, (1) The expected frequencies should rarely fall below five and never below one for each category in the analysis.² (2) All categories in the analysis should be independent (exclusive). The error involved in violating the second assumption is referred to as "an inflated $N,$" or the probability level of the finding is based on a larger number of degrees of freedom than actually exists in the sample. The result is a probability level less than actually exists. The second assumption is violated in these analyses, but to no consequence, as all conclusions are based on non-significant (high) probability levels.

Yate's correction for continuity is not used in these analyses, as it appears to be superfluous.³

In addition a $t$ test was made as a second method of evaluating the effectiveness of the experimental treatment on each group. An analysis of variance test was also used to compare the reaction of each ethnic group to the experimental treatment.


Research Paradigm

The independent variable was the treatment procedures used in each of the four groups. The criterion measure employed to collect the data on the dependent variable was the score on the sociometric measure. All of the classes were separated by grade and then randomly divided by lottery to each treatment group (i.e. each of the 4 fifth grade classes was randomly assigned to each of the treatments). This procedure insured a distribution of treatments according to grade level while at the same time maintaining the randomness of selection which is required for experimental treatments. As an added precaution, the data examination included a measurement of differences between classes. If any incorrect selection procedures were used, they would have been evident through this procedure. Figure 3 shows the four conditions and how each group was partitioned by selection of choices in the area of school, home, and playground. The rows signify partitioning by class and ethnic group. This kind of partitioning made it possible to: compare one treatment group with another, compare the Mexican American choices with the Anglo American choices within a treatment group, compare the choices in home, school, and playground within a class, etc.

The Setting

The setting for this experiment was Holland, Michigan. Three schools located near the downtown area of the city were used. These
three schools were chosen because of their similarity of ethnic

TREATMENT GROUPS

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* Columns - S-School, H-Home, P-Playground, T-Total
**Rows - MA - Mexican American, AA - Anglo American, A, B, C - Classes

Figure 3

composition. Each of these schools had about a thirty-five percent Mexican American population with the remaining population being Anglo American.

According to the 1970 United States Census\(^1\) the vast majority of Holland's Spanish speaking persons have lived in the United States for at least two generations, and almost ninety percent are native born Americans. Simply stated, they are Americans of Mexican descent. These figures give additional support for the use of the term Mexican American.

\(^{1}\)United States Census, 1970.
Procedures

In the Fall of 1971 the Superintendent and Curriculum Coordinator of the Holland Public Schools were contacted for the purpose of obtaining permission to conduct the experiment in their schools. They readily agreed to it with the one provision that the principal of each school would have the right to reject or accept the proposal. After meeting with each principal and outlining the procedures for pre testing, treating and post testing, approval was granted by the principals but again with the provision that each teacher had to willingly accept the study. While recognizing the reasons for such a provision, it did cause the researcher some concern, because a refusal by any one teacher would have created serious problems affecting the design of the study. Fortunately after meeting with each of the teachers, permission was granted by all to conduct the study. At one point it was suggested by one of the principals that maybe the parents should give their permission but the teachers did not feel that it was necessary because the treatments in the experiment were of such a nature that no parent would have any reason to be concerned.

No attempt was made to put undue pressure on any teacher to accept participation in the experiment by asking for an immediate answer. After having the procedures and responsibilities explained to them, the teachers were told that they could either accept or reject this experiment and that they had a week to consider it. They were instructed to give their answer to their principal. It was...
made clear that an acceptance included agreeing to the following conditions:

1. They could be assigned to any of the four conditions.
2. They had to devote at least one hour a day during the period of February 28, 1972 through March 24, 1972 to the study.
3. They had to limit their treatment to the procedures established for each condition.
4. They had to conduct the pre test and post test according to the researcher's prescribed procedures.
5. They had to provide the researcher with a class list in which the Mexican American children were identified.¹

Selection of the Sample

Upper elementary children were chosen for this experiment for two major reasons: (1) The literature indicated that the younger a child is the better is the chance for influencing a change in attitude. (2) Former studies also indicated that sociometric measures of lower elementary children are not as stable as those of older children. In addition there are the obvious difficulties in giving the test to children who cannot read. It would not have been impossible, but it certainly would have been a complicating factor.

After all twelve of the teachers agreed to participate, the

¹Criterion for identifying a student as Mexican American was having one or more parent who was from a Spanish speaking culture.
researcher randomly assigned a treatment to each class. The twelve classes were composed of 4 fifth grades, 5 fourth grades and 3 sixth grades. Since there were 4 fifth grades, each class was randomly assigned to one of the four treatments, but it was not possible to do that with the fourth and sixth grades. Four of the 5 fourth grades were assigned to each treatment. The remaining fourth grade was put with the sixth grade group, thereby making a group of four, which permitted a random assignment of each class in this group to a different treatment. This procedure provided a proper method of random sampling since each member of the population (each class) had an equal chance of being selected for any one treatment. It also assured the researcher that the treatments were distributed, to a reasonable degree, among the different schools and grades.

**Preparation for the Experiment**

After the assignment of treatments the following materials were distributed to the teachers:

Group I (culture) and group III (culture-integrated) were given part of an elementary level unit entitled "Learning About Mexico." This unit consisted of four major parts: Geography, Economics, Culture, and History and Government. The third section on "Culture" was the section used for this experiment. The "Culture" section was subdivided to include the following topics: How the Mexican People

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2. See Appendix B.
Live, and Arts and Crafts of Mexico. In addition, each teacher in these two treatment groups was given material on how teachers and administrators should work with Mexican American children. This material was excerpted from the booklet entitled *Mexican Americans: A Handbook for Educators.* A copy of this material can be found in Appendix C.

Group II (Integration) was given a science unit entitled "Electromagnets" which was taken from Edward Victor's book entitled "Science For the Elementary School." A copy of this unit can be found in Appendix D.

These aforementioned units could be aptly described as resource units. As such they provided the teacher with a good deal of flexibility; however, it was made clear that each teacher had to use the prescribed method for his or her treatment group. Subsequent unannounced visitations by the researcher confirmed adherence to the proper procedure.

While not a requirement, it was strongly urged that each teacher plan for some type of culminating activity such as a performance or display. The purpose of this suggestion was to provide assurance that the prescribed studies not be limited to a token effort but rather be a serious teaching effort.

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Administration of the Instrument

Just prior to the experimental period each teacher was given an appropriate number of "sociogram cards" along with a sheet entitled "Instructions to the Teacher" which detailed the procedures for having the children complete the sociograms. A copy of these instructions, including the post test instructions, and the sociogram cards can be found in Appendix E.

The sociogram cards were standard five by eight cards on which were printed six lines for recording choices and a line at the top for the name of the person making the choices. The six choice lines were in groups of two each for home, playground and school. There were three forms of these cards. Each form listed the categories of home, school, and playground in a different order. For the pre test four classes received form A, four classes received form B, and four classes received form C. For the post test each class received a form different from the one which they received for the pre test.

A class list of all the children in each of the classes was provided the researcher. From these class lists, charts were made so that a child's cross ethnic choices could be recorded. These charts can be found in Appendix F. In addition, the choices were recorded as a home, playground, or school choice. These charts (one for each class) were used to punch the necessary information on the computer cards. The responses from those students who did not complete both a pre and a post test were discarded. There were ten such cases in six different classes, or 2.5% of the total of two
hundred fifty-three children.

Selection of the Instrument

Since the area to be measured in this experiment was the degree of acceptance between ethnic groups, the sociometric test was used because, by definition, the sociometric test is a measure of the social structure of a group. Gronlund\(^1\) states it thus, "This technique for evaluating the extent to which pupils are accepted by their peers and for determining the internal social structure of the group is called a sociometric test." Jennings\(^2\) said, "Sociometry is the study of the interrelations between people and the process of their measurement."

The reader may be misled into thinking that the sociometric test is a particular test. In a sense it is not a test at all, but rather a technique. Moreno\(^3\) was the first one to use the term "sociometric test." He used it in an effort to prevent confusing it with various other methods of diagnosis which he developed in the general area of sociometry. The sociometric test requires individuals to choose a given number of persons for some group situation or activity. The kind and number of criteria of choices varies according to the situation and purposes.


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It was decided that the criteria for the sociometric test should include choices in three areas in the event that there might be a difference of selection in these different areas. For example, a person might choose a person from another ethnic group to play with but not consider inviting that person to his home as a guest. In an effort to determine if there was a difference in these areas and in order to obtain as complete an analysis as possible of their cross ethnic choices, each child chose two persons with whom he would play, two persons with whom he would work in school, and two persons whom he would invite to his home. These criteria are described by Gronlund\(^1\) as general and appropriate for use at any school grade level. In regard to general areas he said, "It will be noted that choices on general criteria imply a desire for social proximity in the major area of the pupil's life sphere." This statement indicates that findings from a school sociometric test, which is general in nature, may certainly have some application in a more broad general area of life and society. The sociometric test, therefore, was considered to be a good way to measure the degree of prejudice (defined earlier as an ethnic bias measured by cross ethnic choices) for both the pre and post test.

It was decided that a sociometric test would be the best measuring device for the purpose of this study; therefore, the following section of this chapter will deal with the literature's support of such a choice. The framework for such a discussion will be: (1) a

\(^{1}\)Gronlund, op. cit., p. 41.
definition of sociometric measure, (2) general reasons for choosing such a measure, (3) techniques of using sociometric tests, and (4) the validity and reliability of sociometric measures.

Definition

Barclay\(^1\) defined sociometry "as a method of discovering and analyzing patterns of friendship within a group setting." Lindzey\(^2\) defined it as follows:

"In simplest terms, a sociometric measure is a means of assessing the attractions, or attractions and repulsions, within a given group. It usually involves each member of the group privately specifying a number of other persons in the group with whom he would like to engage in some particular activity. . ." Remmers\(^3\) said, "The sociometric 'test' is a technique for eliciting responses from members of a defined social group about each other." This writer likes to define sociometry as a measure of the social structure of a group.

All of these definitions can be traced back in their origins to a single man. That man is J. L. Moreno,\(^4\) commonly endowed with the title of "the Father of Sociometry." He earned this title as a


\(^{4}\)Moreno, op. cit.
result of his publication entitled, *Who Shall Survive*, which is generally accepted as the first publication in the development of sociometry.

For clarification purposes it may be helpful to mention that frequently the terms sociometry and sociograms are incorrectly used as synonymous terms. A sociogram is the diagram frequently developed, by teachers especially, to depict the findings of a sociometric test. Sociometry is a broader term which essentially means to measure the social situation of a group.

**General reason for using sociometric measures**

The opening paragraph of Lindzey and Byrne's¹ chapter on measuring social choices in *The Handbook of Social Psychology* is so appropriate that it is repeated here.

The web of interpersonal relations, the attractions, repulsions, and indifferences that characterize individuals in interaction, the informal organization of groups, the social status of individuals -- all these are of interest to the social psychologist, and aspects of all may be measured effectively through the use of sociometric techniques and related devices. These instruments are designed specifically to provide a sensitive and objective picture of the interpersonal relations existing within a group and between pairs of individuals. Consequently, they are of singular importance to the empirically oriented social psychologist.

Remembering that underlying the experiment was the hope that a way for improving the acceptance of a minority group would be found, it is appropriate to look at sociometry in a very practical way as Gronlund² does in his book, *Sociometry in the Classroom*.

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¹Lindzey and Byrne, op. cit., p. 451.
²Gronlund, op. cit., p. 15.
He suggests that using sociometric tests could be helpful in improving the social structure of a group by providing "an objective basis for identifying interpersonal conflicts and for improving the interpersonal relations of group members." He also said that they can be used to "identify cleavages between racial, religious, rural-urban, or socioeconomic groups." Gronlund concluded this section with the following statement:

Like any diagnostic tool it merely identifies the present situation. However, it does provide a graphic presentation of interpersonal relations among pupils which is not available by other methods. Combined with classroom observation and other diagnostic information, the sociometric test serves as a firm base for improving the social structure of a group.

Jennings supported this statement when she said, "The chief significance of a sociogram lies in its comprehensive revelations of the group structure at one time in its development."

Since the sociogram measures the social situation at one point in time it was considered appropriate to use it before and after the experiment and to assume, in general, that differences were caused by the experimental treatment.

Barclay in an article concerning the using of sociometric tests by school counselors, made a plea for increasing the use of this

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1 ibid.
2 ibid.
3 Jennings, op. cit., p. 12.
4 Barclay, op. cit., p. 1067.
device. His opening comment was:

Though sociometry has been used for some years in both educational, psychological, and military settings, it is the argument of this article that it should be used more by elementary counselors and school psychologists as a technique both to assess social desirability in students and as an interim criterion of behavior modification.

He expressed the opinion that it was an absolute necessity for measuring changes in students and evaluating procedures which were utilized in the hope of making such changes possible.

In Foundations of Behavioral Research, Kerlinger\(^1\) said, "Whenever a choosing process between people is involved . . . sociometric methods can be used and often should be used."

Of course, no matter how well a device measures, it would lose much of its value for research purposes if it could not be translated into numerical evaluations which could be treated statistically. Sociometric measures can be translated into meaningful numbers, or, as Barclay\(^2\) said, "It is the contention of this writer that sociometric scores are a means of translating behavioral acts into a numerical continuum."

In concluding this section in defense of using sociometric tests, it may be appropriate to consider the expertness of the raters in using such a device. Lindzey's\(^3\) comments in this area are as follows:

Everyone is an experienced or expert rater when it comes

\[^2\text{Barclay, op. cit., p. 1071.}\]
\[^3\text{Lindzey, op. cit., p. 510.}\]
to social judgments. Each of us has a vast body of experience in deciding with whom we wish to interact and whom we wish to avoid. Liking and disliking, accepting and rejecting are part of the process of daily living. Given the past experience of these raters and the meaningfulness of the activities they are engaged in, it is small wonder sociometric devices have proven a powerful measurement tool in the hands of social scientists. One might say that the individual who uses these techniques is taking advantage of the largest pool of sensitive and experienced raters that is anywhere available.

Techniques in collecting sociometric data

The term sociometric test is misleading because it implies a specific test. In most cases when this term is used it would be more accurate to say the sociometric procedure because it really is a procedure. However, Moreno\(^1\) began using the term sociometric test and presumably it has been carried down over the years for no other reason. We, therefore, will continue to use it, but, since it is possible to vary the procedure, it is important to know what techniques were used in this experiment and, more importantly, why they were used.

Moreno's\(^2\) principles for sociometric testing are as follows:

1. The group should be well defined and choices and rejections limited to the members of the group.

2. The subjects should be given a chance to choose or reject as many of the group members as they wish.

3. The subjects should be provided with a definite criterion upon which to base their choices and rejections.

\(^1\)Moreno, op. cit., p. 92.

\(^2\)ibid.
4. The sociometric data should actually be used to restructure the group, and the group members should be informed of this fact.

5. The group members should be allowed to make their choices in private.

6. The questions should be prepared in such a way as to be readily understandable to the group members.

As Remmers\textsuperscript{1} stated, "few . . . studies reported in the literature have employed the sociometric test in exactly the way specified by Moreno's six requirements." The present study was no exception. Items one, three, four, five and six were adhered to but a variation of item two was employed.

Because of the statistical procedures used, it was deemed advisable that all participants be asked to make two choices in three areas, or a total of six choices. It was a distinct possibility that there could be a difference in choices according to the area in question. For example, it was thought that a child might choose a classmate from a different ethnic group to play with, but might not choose him as a working partner in the classroom or a guest in his home. To avoid having the results of one area cancel out another and thereby destroy the meaning of the choices, it was necessary to keep the choices distinct by area and number.

The writer believes that Gronlund's\textsuperscript{2} book, Sociometry in the Classroom, supports this approach. He said, "Since the crux of the sociometric techniques is based on the individual's choice of

\textsuperscript{1}Remmers, op. cit., p. 350.

\textsuperscript{2}Gronlund, op. cit., p. 40.
associates, the selection of the criteria of choice is the most important consideration in the development of a sociometric test."

In discussing the criteria of choice Gronlund\footnote{Gronlund, op. cit., p. 46.} went on to say:

A sociometric criterion will provide the most valid results for both interpreting the social structure of the group and for evaluating the social acceptability of individual group members, if it possesses the following characteristics:

1. Clearly indicates the nature of the activity or situation for which the individual is choosing associates.

2. Is based on an activity or situation familiar to the group members and one on which they have real opportunity for association.

3. Is general enough to minimize the influence of situational factors and skills associated with specific activities.

4. Is based on relationships that are strong, fundamental, and relatively permanent.

5. Provides for reciprocal choices and mutual association among the group members.

To explain or interpret each of these characteristics would be extremely time consuming and would not be meaningful. What is important is that the criteria for this experiment did conform in every aspect to them.

Reliability and validity of sociometric tests

To what degree are sociometric tests reliable and valid? This question has to be answered positively, to a significant degree, if the results of an experiment using sociometric tests is to be of any
value. The usual measures of reliability, as Brigham and Weissbach\(^1\) pointed out, are its stability (consistency over a period of time) and the degree to which it is internally consistent. In the area of validity, three common components of validity evaluation are: face validity, correlation validity, and construct validity. These areas will be discussed in the following section.

As Gronlund\(^2\) stated, "The extent to which sociometric results have any practical meaning is determined, in part, by the constancy of the sociometric scores. On the other hand, perfect consistency from one test to another is neither expected nor desirable, owing to the dynamic nature of social relations." This apparent dichotomy of expected results causes some problems in regard to reliability measure.

Remmers\(^3\) pointed out that "the principal difficulty involved in test re-test coefficients lies in the problem of memory and those of real change." On the other hand, Jennings\(^4\) found a correlation of .93 to .96 when the test re-test interval was four days. Gronlund\(^5\)

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\(^2\)Gronlund, op. cit., p. 117.

\(^3\)Remmers, op. cit., p. 348.


\(^5\)Gronlund, op. cit., p. 152.
supported Jennings' findings in general by concluding, "Studies of the stability of sociometric results have indicated a significant degree of stability over varying periods of time, for all age levels from the nursery school through the college level." Lindzey and Byrne\(^1\) also said, "It should be noted that even with relatively long time periods, test re-test reliability coefficients remain statistically significant: .57 for a three month period, and .56 for a three year period."

Internal consistency measures are rare in sociometric tests, according to Lindzey and Byrne.\(^2\) This is true because consistency measure is not appropriate when an investigator is using a cumulative sociometric score made up of the combined total of responses to two or more separate items. Lindzey and Byrne\(^3\) cited a study by Byrne and Nelson in 1965 in which they obtained a split-half reliability of .85 for a two item instrument. Gronlund\(^4\) supported this finding when he stated, "Studies of the internal consistency of sociometric results have reported generally high reliability coefficients."

In conclusion, one could say with a fair degree of confidence that, when using standard measures of reliability, sociometric tests

\(^1\) Lindzey and Byrne, op. cit., p. 477.
\(^2\) loc. cit., p. 479.
\(^3\) ibid.
\(^4\) Gronlund, op. cit., p. 151.
do show a high degree of reliability. However, there are factors which can influence the reliability of the test and they are listed here because it is the opinion of the writer that these factors were considered in the design and execution of the study, and therefore should indicate that the results should be reliable.¹

1. The stability of sociometric results tends to decline as the time span between tests is increased.

2. There is a tendency for the stability of sociometric results to increase as the age of the group members increases.

3. Sociometric status scores based on general criteria tend to be more stable and more consistent over various situations than those based on specific criteria.

4. Composite sociometric status scores based on several sociometric criteria tend to be more stable than sociometric status scores based on a single sociometric criterion.

5. The use of an unlimited number of sociometric choices, five positive choices, and three positive and three negative choices tends to provide similar sociometric results. The use of fewer choices provides less reliable sociometric results.

6. The social structure of a group tends to be less stable than the sociometric status of the individual group members.

Validation of a test may take several forms. Generally, a test is valid to the extent that it measures what it purports to measure. Reliability is, of course, a necessary but not sufficient condition for validity. Brigham and Weissbach,² as well as many others, list three forms of validity: face, correlation, and construct. Lindzey

¹loc. cit., p. 153.

²Brigham and Weissbach, op. cit., p. 78.
and Byrnes use the terms content, criterion, and construct validity.

Since, by definition, the sociometric test is limited to a measure of choice behavior, and since there are no inferential jumps to be made, it seems logical to assume that it has a high degree of face validity.

Lindzey and Byrne suggest that criterion-related validity can be evaluated by measuring the difference between choice behavior and overt choice behavior. While some studies have shown little or no relationship between sociometric responses and overt behavior, there are many more in which moderately high correlations have been reported.

Finally, there is construct validity. Construct validity requires a careful translation from the usually vague terms such as prejudice to the concrete operations that are used to measure the construct. In this experiment prejudice was operationally defined as cross ethnic choices so there is little doubt of the validity of those choices. However, the question could be raised as to the correctness of this operational definition. In any event, the test would be valid for cross ethnic choices. If the reader does not accept cross ethnic choices as a measure of prejudice, then it would not be valid.

In the final analysis, the question is, does the sociometric

\[1\] Lindzey and Byrnes, op. cit., p. 480-482.

\[2\] ibid.
test measure prejudice in a stable way? Gronlund's conclusion answers this question:

In general, studies have shown that sociometric results are significantly related to the actual behavior of pupils, to teachers' judgements of pupils' social acceptance, to adults' ratings of pupils' social adjustment, to the reputations pupils hold among their peers, to specific problems of social adjustment, and, within limits, to problems of personal adjustment.

A more detailed analysis of the research findings indicates that sociometric results are more closely related to measures of social adjustment than they are to measures of personal adjustment. The observations and ratings of both adults and peers show consistently close agreement between sociometric results and other evidence of social adjustment.

In conclusion Barclay said, "Sociometric scores and teachers' ratings can be used as a criterion of behavior change particularly in response to an experimental procedure introduced into the classroom setting to improve the social behavior of individuals."

Summary

In essence the emphasis of this chapter dealt with the questions, what, how, and why. The "what" was the listing of specific hypotheses which were tested in the study. The "how" was principally explained in the sections on design, setting, and procedures. The "why" overlapped many sections but in general it was a defense of the purpose of the study and a defense of the procedures and tools utilized.

The following chapter deals with the findings of the study.

1Gronlund, op. cit., p. 183.
2Barclay, op. cit., p. 1068.
This chapter includes the presentation and analyses of the data which were collected to carry out the objectives of this experiment. The primary objective was to determine whether studying the culture of a minority group in situations involving inter-ethnic contact would reduce prejudice on the part of the majority or minority group. Many sub-objectives were detailed in Chapter III but all of them were elaborations of the main objective. The purpose of these sub-objectives was to provide an opportunity for analyzing factors that could explain the findings of the main objective.

The organization of this chapter will be in two parts. The first part deals with baseline data used as a foundation for the experimental comparisons. The second part, of course, deals with the data directly appropriate to the hypothesis. This latter section will be presented in sequential fashion according to the major hypotheses presented and will therefore be subdivided into three groupings. The first set of hypotheses (I-IV) deals with the effect of the experimental manipulation: i.e., did the different conditions make a difference on the prejudice level? The second set of hypotheses (V 1, 2, and 3) deals with the variations of choices for home, school, and playground, between the four conditions. The final hypothesis (VI) examines the effect of cultural membership on choices: i.e., did the Mexican American choices differ from the Anglo American
choices in any significant way?

Results of Baseline Statistical Data

The response unit on the sociometric test was the number of cross cultural choices the child made. There was an opportunity for each student to make a maximum of six cross cultural choices or a minimum of zero.

Preliminary to speaking about prejudice change as a function of an experimental treatment is the specification of the level of prejudice prior to the experimental treatment. Table 2 indicates the number of cross cultural choices for all four conditions prior to the experiment. Prejudice would be indicated by excessively high "0" or "1" cross cultural choices, and excessively low "5" and "6" choices. Purely by chance one would get approximately 14% in each column.

Table 2 also shows the results of comparing the seven response categories (0-6) for each condition prior to the experimental treatment, using the $X^2$ test. As was predicted, prejudice did exist, and it was borne out by the significant $X^2$ coefficients which were due primarily to a high number of zero and one choices and a low number of five and six choices. The data indicate that in each condition prejudice existed but to varying significant degrees. Treatment Group III was the highest with a probability level of .001 while treatment Group I was the lowest with a probability level of .05. Treatment Group II and control Group IV were both at the .01 significance level.
Table 2
Pre Treatment Cross Cultural Choices and $X^2$ Coefficients by Conditions (Pre Treatment Prejudice)

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<td>7%</td>
<td>18%</td>
<td>8%</td>
<td>7%</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>33</td>
<td>10</td>
<td>4</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>74.4</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>52%</td>
<td>16%</td>
<td>6%</td>
<td>14%</td>
<td>1%</td>
<td>1%</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>20</td>
<td>6</td>
<td>11</td>
<td>15</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>21.6</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>33%</td>
<td>10%</td>
<td>18%</td>
<td>25%</td>
<td>8%</td>
<td>0%</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It may be helpful to reduce the large quantity of figures in Table 2 to a more easily understood table by combining the two highest and the two lowest categories. Table 3 is such a simplification.

Table 3
Percentage of Students Making High or Low Cross Cultural Choices on Pre Treatment Sociometric Measure

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Low (0 or 1)</th>
<th>High (5 or 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>45%</td>
<td>17%</td>
</tr>
<tr>
<td>II</td>
<td>48%</td>
<td>19%</td>
</tr>
<tr>
<td>III</td>
<td>68%</td>
<td>10%</td>
</tr>
<tr>
<td>IV</td>
<td>43%</td>
<td>5%</td>
</tr>
</tbody>
</table>

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The absence of any prejudice would be shown by an even distribution at both the high and low level in Table 3. Since there is a high percentage of zero or one cross cultural choices and a correspondingly low percentage of five and six choices, in each condition it is obvious that prejudice did in fact exist in each group.

Summary of Baseline Data

The study was predicated on the assumption that prejudice existed in all of the condition groups and that the experimental treatment would decrease this prejudice to a significant degree in the treatment groups. The data cited in Tables 2 and 3 clearly show that prejudice did, in fact, exist in each and every condition group but not to an equal degree. Group III was the combined treatment group and, therefore, according to theoretical expectations would be affected most by the treatment, but it will be noted that it was the group with the highest statistically significant degree of prejudice of all the groups (p. of .001). This meant that, even though each condition was randomly assigned, they were not equal in prejudice, and that the group in which the greatest change was expected was the one that might presumably be the most difficult to change.

Post Test Data on Experimental Treatments

Effect of Studying Culture (Group I)

The first hypothesis dealt with the effect of studying culture to reduce prejudice. This hypothesis is subdivided into five
sub-hypotheses.

Sub-hypothesis 1-1:

The Mexican American students in Group I will increase their cross cultural choices to a significant degree from the pre test to the post test.

Data appearing in Table 4 indicate that the Mexican American students in Group I did not increase their cross cultural choices to a significant degree from the pre test to the post test. Using the chi-square test, a coefficient $X^2$ equalling 0.30 and a probability of .85 were found.

Table 4

Effect of Studying Culture (Experimental Group I) on Cross Cultural Choices of Mexican Americans

<table>
<thead>
<tr>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1</td>
<td>2-3</td>
<td>4-6</td>
</tr>
<tr>
<td>Pre</td>
<td>7</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Post</td>
<td>7</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

Sub-hypothesis 1-2:

The Anglo American students in Group I will increase their cross cultural choices to a significant degree from the pre test to the post test.

A chi-square coefficient equalling 1.18 and a probability level of .55 for the Anglo American group also indicate that no significant
change occurred from the pre test to the post test. (See Table 5)

Table 5
Effect of Studying Culture (Experimental Group I) on Cross Cultural Choices of Anglo Americans

<table>
<thead>
<tr>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>( X^2 )</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>0-1: 20  2-3: 12  4-6: 6</td>
<td>1.18</td>
<td>.55</td>
</tr>
<tr>
<td>Post</td>
<td>22  8  8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sub-hypothesis 1-3:
The cross cultural choices of students in Group I in choosing persons to work with in SCHOOL, will be increased to a significant degree from the pre test to the post test.

Data appearing in Table 6 indicate that the students in Group I did not increase their cross cultural choices to a significant degree when choosing persons to work with in school. Using the chi-square test, a coefficient \( X^2 \) equalling .98 and a probability of .61 were found.

Sub-hypothesis 1-4:
The cross cultural choices of students in Group I in choosing persons to invite to their HOME will be increased to a significant degree from the pre test to the post test.

This sub-hypothesis was also not supported. The data show that a \( X^2 \) of .96 and a probability of .62 were found. (See Table 6)
Table 6

Effect of Studying Culture (Experimental Group I) on Cross Cultural Choices According to Sociometric Areas

<table>
<thead>
<tr>
<th>Sociometric Areas</th>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>X^2</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>School</td>
<td>Pre</td>
<td>21</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>26</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>Home</td>
<td>Pre</td>
<td>23</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>28</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>Playground</td>
<td>Pre</td>
<td>28</td>
<td>25</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>27</td>
<td>21</td>
<td>12</td>
</tr>
</tbody>
</table>

Sub-hypothesis 1-5:

The cross cultural choices of students in Group I in choosing persons to play with on the PLAYGROUND will be increased to a significant degree from the pre test to the post test.

The final sub-hypothesis, like the others, did not receive positive statistical support. The X^2 coefficient was 1.68 and the probability score was .56. (See Table 6)

Effect of Integration (Group II)

The second hypothesis dealt with the effect of integration to reduce prejudice. This hypothesis is also subdivided into five sub-hypotheses.

Sub-hypothesis 2-1:

The Mexican American students in Group II will increase their cross cultural choices to a significant degree from the pre test to the post test.
Data appearing in Table 7 indicate that the Mexican American students in Group II did not increase their cross cultural choices to a significant degree from the pre test to the post test. Using the chi-square test, a coefficient $X^2$ equalling 0.10 and a probability of .75 were found.

Table 7

Effect of Integration (Experimental Group II) on Cross Cultural Choices of Mexican Americans

<table>
<thead>
<tr>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-3</td>
<td>4-6</td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>9</td>
<td>11</td>
<td>0.10</td>
</tr>
<tr>
<td>Post</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Note - This table has been collapsed to four cells to avoid violating the assumption that more than 25% of the cells cannot have less than five in a cell.

Sub-hypothesis 2-2:

The Anglo American students in Group II will increase their cross cultural choices to a significant degree from the pre test to the post test.

A chi-square coefficient equalling 0.65 and a probability level of .72 for the Anglo American group also indicates that no significant change occurred from the pre test to the post test. (See Table 8)

Sub-hypothesis 2-3:

The cross cultural choices of students in Group II in choosing persons to work with in SCHOOL, will be increased to a significant degree from the pre test to the post test.
Table 8

Effect of Integration (Experimental Group II) on Cross Cultural Choices of Anglo Americans

<table>
<thead>
<tr>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1</td>
<td>2-3</td>
<td>4-6</td>
</tr>
<tr>
<td>Pre</td>
<td>27</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Post</td>
<td>24</td>
<td>11</td>
<td>5</td>
</tr>
</tbody>
</table>

Data appearing in Table 9 indicate that the students in Group II did not increase their cross cultural choices to a significant degree when choosing persons to work with in school. Using the chi-square test, a coefficient $X^2$ equalling 1.44 and a probability of 0.51 were found.

Sub-hypothesis 2-4:
The cross cultural choices of students in Group II in choosing persons to invite to their HOME will be increased to a significant degree from the pre test to the post test.

This sub-hypothesis was also not supported. The data show that a $X^2$ of 1.24 and a probability of .54 were found. (See Table 9)

Sub-hypothesis 2-5:
The cross cultural choices of students in Group II in choosing persons to play with on the PLAYGROUND, will be increased to a significant degree from the pre test to the post test.

The final sub-hypothesis, like the others, did not receive positive statistical support. The $X^2$ coefficient was 0.00 and the probability score was 1.00. (See Table 9)
Table 9

Effect of Integration (Experimental Group II) on Cross Cultural Choices According to Sociometric Areas

<table>
<thead>
<tr>
<th>Sociometric Area</th>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>(X^2)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>Pre</td>
<td>24</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>22</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Home</td>
<td>Pre</td>
<td>22</td>
<td>26</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>28</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Playground</td>
<td>Pre</td>
<td>32</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>32</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Effect of Culture and Integration (Group III)

The third hypothesis dealt with combining the treatments of culture and integration in an effort to reduce prejudice.

Sub-hypothesis 3-1:

The Mexican American students in Group III will increase their cross cultural choices to a significant degree from the pre test to the post test.

Data appearing in Table 10 indicate that the Mexican American students in Group III did not increase their cross cultural choices to a significant degree from the pre test to the post test. Using the chi-square test, a coefficient \(X^2\) equalling 2.32 and a probability of .32 were found.
Table 10
Effect of Culture and Integration (Experimental Group III) on Cross Cultural Choices of Mexican Americans

<table>
<thead>
<tr>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1</td>
<td>2-3</td>
<td>4-6</td>
</tr>
<tr>
<td>Pre</td>
<td>9</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Post</td>
<td>9</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Sub-hypothesis 3-2:
The Anglo American students in Group III will increase their cross cultural choices to a significant degree from the pre test to the post test.

A chi-square coefficient equalling 0.18 and a probability level of .90 for the Anglo American group also indicate that no significant change occurred from the pre test to the post test. (See Table 11)

Table 11
Effect of Culture and Integration (Experimental Group III) on Cross Cultural Choices of Anglo Americans

<table>
<thead>
<tr>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1</td>
<td>2-3</td>
<td>4-6</td>
</tr>
<tr>
<td>Pre</td>
<td>33</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Post</td>
<td>33</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

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Sub-hypothesis 3-3:

The cross ethnic choices of students in Group III in choosing persons to work with in SCHOOL will be increased to a significant degree from the pre test to the post test.

Data appearing in Table 12 indicate that the students in Group III did not increase their cross cultural choices to a significant degree when choosing persons to work with in school. Using the chi-square test, a coefficient $X^2$ equalling 2.96 and a probability of .22 were found.

Table 12

<table>
<thead>
<tr>
<th>Sociometric Area</th>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>School</td>
<td>Pre</td>
<td>39</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>45</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Home</td>
<td>Pre</td>
<td>39</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>39</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Playground</td>
<td>Pre</td>
<td>45</td>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>40</td>
<td>13</td>
<td>11</td>
</tr>
</tbody>
</table>

Sub-hypothesis 3-4:

The cross cultural choices of students in Group III in choosing persons to invite to their HOME will be increased to a significant degree from the pre test to the post test.

This sub-hypothesis was also not supported. The data show that
a $X^2$ of .35 and a probability of .84 were found. (See Table 12)

Sub-hypothesis 3-5:
The cross cultural choices of students in Group III in choosing persons to play with on the PLAYGROUND will be increased to a significant degree from the pre test to the post test.
The final sub-hypothesis, like the others, did not receive positive statistical support. The $X^2$ coefficient was 1.76 and the probability score was .58. (See Table 12)

Effect of No Treatment (Control Group)
The fourth hypothesis dealt with the control group in which no unusual treatment was applied.

Sub-hypothesis 4-1:
The Mexican American students in Group IV will not increase their cross cultural choices to a significant degree from the pre test to the post test.

Data appearing on Table 13 indicate that the Mexican American students in Group IV did not increase their cross cultural choices to a significant degree from the pre test to the post test. Using the chi-square test, a coefficient $X^2$ equalling 0.39 was a probability of .54 were found.

Sub-hypothesis 4-2:
The Anglo American students in Group IV will not increase their cross cultural choices to a significant degree from the pre test to the post test.
Table 13
Effect of No Treatment (Control Group IV) on Cross Cultural Choices of Mexican Americans

<table>
<thead>
<tr>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>X²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-3</td>
<td>4-6</td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>10</td>
<td>11</td>
<td>0.39</td>
</tr>
<tr>
<td>Post</td>
<td>8</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

Note - Table collapsed to four cells for same reason as stated for Table 7.

A chi-square coefficient equalling 0.25 and a probability level of .62 for the Anglo American group also indicate that no significant change occurred from the pre test to the post test. (See Table 14)

Table 14
Effect of No Treatment (Control Group IV) on Cross Cultural Choices of Anglo Americans

<table>
<thead>
<tr>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>X²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-3</td>
<td>4-6</td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>27</td>
<td>12</td>
<td>0.25</td>
</tr>
<tr>
<td>Post</td>
<td>29</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Note - Table collapsed to four cells for same reason as listed for Table 7.

Sub-hypothesis 4-3:
The cross cultural choices of students in Group IV in choosing persons to work with in SCHOOL will not be increased to a
significant degree from the pre test to the post test.

Data appearing in Table 15 indicate that the students in Group IV did not increase their cross cultural choices to a significant degree when choosing persons to work with in school. Using the chi-square test, a coefficient $X^2$ equalling .62 and a probability of .74 were found.

Sub-hypothesis 4-4:

The cross cultural choices of students in Group IV in choosing persons to invite to their HOME will not be increased to a significant degree from the pre test to the post test.

This sub-hypothesis was also accepted. The data show that a $X^2$ of .97 and a probability of .62 were found. (See Table 15)

Table 15

<table>
<thead>
<tr>
<th>Sociometric Area</th>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>School</td>
<td>Pre</td>
<td>24</td>
<td>28</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>28</td>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td>Home</td>
<td>Pre</td>
<td>32</td>
<td>22</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>28</td>
<td>26</td>
<td>6</td>
</tr>
<tr>
<td>Playground</td>
<td>Pre</td>
<td>29</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>30</td>
<td>23</td>
<td>7</td>
</tr>
</tbody>
</table>

Sub-hypothesis 4-5:

The cross cultural choices of students in Group IV in choosing

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persons to play with on the PLAYGROUND will not be increased to a significant degree from the pre test to the post test.

The final sub-hypothesis, like the others, was not rejected. The $X^2$ coefficient was .18 and the probability score was .91. (See Table 15)

**Summation of Post Test Data on Experimental Treatments**

Table 16 is a non-statistical summation of Tables 4, 5, 7, 8, 10, 11, 13, and 14. An examination of the total column shows that two Mexican American and one Anglo American subgroups decreased their cross cultural choices very slightly, and two Mexican American and two Anglo American subgroups increased their cross cultural choices very slightly, while one Anglo American subgroup stayed the same. One does not need statistical treatment to see that the experimental conditions did not cause any meaningful change.

Further support for the conclusion that the experimental treatments had no significant influence was found when a student $t$-test was made of the data. Table 17 compares the change scores between each of the conditions. Significance at the .05 level would be indicated by a score of 2.00. As can be seen from the table, no single condition obtained the significance level.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Test Time</th>
<th>Number of Cross Cultural Choices</th>
<th>Total Cr. Cult. Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0 1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>Pre</td>
<td>4 3 3 3 3 5</td>
<td>1 61</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>4 3 2 5 1 4</td>
<td>2 58</td>
</tr>
<tr>
<td>A.A.*</td>
<td>Pre</td>
<td>11 9 3 9 2 1</td>
<td>3 73</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>10 12 2 6 4 2</td>
<td>2 66</td>
</tr>
<tr>
<td>Group II</td>
<td>Pre</td>
<td>1 1 3 4 3 2</td>
<td>6 77</td>
</tr>
<tr>
<td>M.A.</td>
<td>Post</td>
<td>1 2 1 6 5 1</td>
<td>4 71</td>
</tr>
<tr>
<td></td>
<td>Pre</td>
<td>20 7 1 7 2 2</td>
<td>1 54</td>
</tr>
<tr>
<td>A.A.</td>
<td>Post</td>
<td>20 4 5 6 1 2</td>
<td>2 58</td>
</tr>
<tr>
<td>Group III</td>
<td>Pre</td>
<td>7 3 2 4 0 0</td>
<td>4 43</td>
</tr>
<tr>
<td>M.A.</td>
<td>Post</td>
<td>6 3 2 3 2 1</td>
<td>3 47</td>
</tr>
<tr>
<td></td>
<td>Pre</td>
<td>26 7 2 5 1 1</td>
<td>2 47</td>
</tr>
<tr>
<td>A.A.</td>
<td>Post</td>
<td>28 5 2 4 0 0</td>
<td>5 51</td>
</tr>
<tr>
<td>Group IV</td>
<td>Pre</td>
<td>2 2 6 7 3 0</td>
<td>1 53</td>
</tr>
<tr>
<td>M.A.</td>
<td>Post</td>
<td>3 5 0 4 6 1</td>
<td>2 58</td>
</tr>
<tr>
<td></td>
<td>Pre</td>
<td>18 5 4 8 2 0</td>
<td>2 57</td>
</tr>
<tr>
<td>A.A.</td>
<td>Post</td>
<td>17 4 8 6 2 1</td>
<td>1 57</td>
</tr>
</tbody>
</table>

*M.A. -- Mexican American  
*A.A. -- Anglo American
Table 17

Student \( t \)-tests of Mean Change Scores (Pre to Post) Between All Conditions

<table>
<thead>
<tr>
<th>Cond.</th>
<th>N</th>
<th>mean</th>
<th>sd</th>
<th>( \text{md}^+ )</th>
<th>( t )</th>
<th>( \text{md} )</th>
<th>( t )</th>
<th>( \text{md} )</th>
<th>( t )</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>60</td>
<td>-0.12</td>
<td>1.22</td>
<td>-0.09</td>
<td>-0.33</td>
<td>-0.25</td>
<td>-1.14</td>
<td>-0.19</td>
<td>-0.74</td>
</tr>
<tr>
<td>II</td>
<td>60</td>
<td>-0.03</td>
<td>1.50</td>
<td></td>
<td></td>
<td>-0.16</td>
<td>-0.67</td>
<td>-0.10</td>
<td>-0.37</td>
</tr>
<tr>
<td>III</td>
<td>64</td>
<td>0.13</td>
<td>1.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.06</td>
<td>0.24</td>
</tr>
<tr>
<td>IV</td>
<td>59</td>
<td>0.06</td>
<td>1.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+ difference between means (row minus column)
* none of the \( t \) values are significant at the .05 level since they are all considerably smaller than the cut off at 2.000 for 60 df

In essence the analysis of data could stop at this point because the data clearly show that using culture and integration, as they were defined and practiced in this experiment, did not reduce prejudice. If, in a study, a significant finding is made, it is usually helpful to examine the factors that caused the significance, but if no significant finding is made it is largely inappropriate to look for the causes of significance; however, the remainder of the chapter will examine the sociometric areas and the influence of ethnic membership.

Influence of Sociometric Areas

Hypothesis five dealt with examining each sociometric area to see if there was a significant difference in any of the treatment groups.
Sub-hypothesis 5-1:

In the sociometric area of SCHOOL the students in each condition will exhibit a significant increase in cross cultural choices between the pre test and the post test except for the control group.

Table 18 shows that in each condition the students did not significantly increase their cross cultural choices from the pre test to the post test when making SCHOOL choices. The probability levels, in order of groups, are .61, .51, .22, and .74.

Table 18

Cross Cultural Choices in the Sociometric Area of SCHOOL According to Conditions

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Test Time</th>
<th>Cross Cultural Choices 0</th>
<th>Cross Cultural Choices 1</th>
<th>Cross Cultural Choices 2</th>
<th>( x^2 )</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Pre</td>
<td>21</td>
<td>30</td>
<td>9</td>
<td>.98</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>26</td>
<td>25</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Pre</td>
<td>24</td>
<td>20</td>
<td>16</td>
<td>1.44</td>
<td>.51</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>22</td>
<td>20</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Pre</td>
<td>39</td>
<td>18</td>
<td>7</td>
<td>2.96</td>
<td>.22</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>45</td>
<td>10</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Pre</td>
<td>24</td>
<td>28</td>
<td>8</td>
<td>.62</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>28</td>
<td>24</td>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sub-hypothesis 5-2:

In the sociometric area of HOME, the students in each condition will exhibit a significant increase in cross cultural choices between the pre test and the post test except for the control
When making HOME choices the students in each condition did not significantly increase their cross cultural choices from the pre test to the post test, as shown in Table 19. The probability levels, in order of groups, are .92, .54, .84, and .62.

Table 19
Cross Cultural Choices in the Sociometric Area of HOME According to Conditions

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Test Time</th>
<th>Cross Cultural Choices</th>
<th>X²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>Pre</td>
<td>23</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>28</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>II</td>
<td>Pre</td>
<td>22</td>
<td>26</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>28</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>III</td>
<td>Pre</td>
<td>39</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>39</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>IV</td>
<td>Pre</td>
<td>32</td>
<td>22</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>28</td>
<td>26</td>
<td>6</td>
</tr>
</tbody>
</table>

Sub-hypothesis 5-3:
In the sociometric area of PLAYGROUND, the students in each condition will exhibit a significant increase in cross cultural choices between the pre test and the post test except for the control group.

Table 20 also shows that in each condition the students did not significantly increase their cross cultural choices from the pre test to the post test when making PLAYGROUND choices. The probability
levels, in order of groups, are .56, 1.00, .58, and .91.

Table 20
Cross Cultural Choices in the Sociometric Area of PLAYGROUND According to Conditions

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Test Time</th>
<th>Cross Cultural Choices</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Pre</td>
<td>28 25 7</td>
<td>1.68</td>
<td>.56</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>27 21 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Pre</td>
<td>32 18 10</td>
<td>.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>32 18 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Pre</td>
<td>45 13 6</td>
<td>1.76</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>40 13 11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Pre</td>
<td>29 25 6</td>
<td>.18</td>
<td>.91</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>30 23 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In each of the sociometric areas of SCHOOL, HOME, and PLAYGROUND, there was no significant change from the pre test to the post test. This means that the treatment applied in the experiment did not cause the students to increase their cross cultural choices to a significant degree in any of the three areas. One might have logically expected that one area could conceivably change more than either of the others. Since no significant change occurred in any one of the areas there would be little to be gained by making comparisons among the three areas.

Influences of Ethnic Membership

Before the study was begun it was anticipated that one ethnic group might be influenced to a greater degree than the other by the
experimental treatment. All data were tabulated so that it could be determined whether or not one ethnic group did, in fact, change its prejudice more than the other. Since no significant results were obtained by examining the different conditions, it was suspected that there would be no significant difference between the ethnic groups. An analysis of variance was made of the change scores of each ethnic group in each condition.

Hypothesis 6 stated that, in all three experimental treatment groups, the Mexican Americans will reduce their prejudice to a greater degree than the Anglo American students by the end of the experimental treatment while the control group would not. Table 21 is a table of F values which show that each ethnic group in each condition did not make a significant change score when compared with each other. Simply stated, this means that the experimental conditions did not affect either ethnic group in such a way as to cause a significant difference. At the .05 significance level the F value for 38df would have to be greater than 2.02 and for 82df the F value would have to be greater than 2.00. As can be seen from the table, no group was at the significance level.

When an analysis between the total group of Mexican Americans is compared with the total group of Anglo Americans, it is found that relative to a chance expected value, the Mexican American students, on the pre test, made significantly fewer cross cultural choices than did the Anglo American students. Table 22 shows this information. The figure of -0.99 indicates that each Mexican American student made approximately one less cross cultural choice of Anglo Americans
Table 21
Between Group F Values of Change Scores (Pre to Post)
Mexican Americans and Anglo Americans

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>No.</th>
<th>I MA*</th>
<th>AA*</th>
<th>II MA</th>
<th>AA</th>
<th>III MA</th>
<th>AA</th>
<th>IV MA</th>
<th>AA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA 22</td>
<td></td>
<td>0.56</td>
<td></td>
<td>0.57</td>
<td>-0.21</td>
<td>-0.54</td>
<td>-0.30</td>
<td>-0.51</td>
<td>0.08</td>
</tr>
<tr>
<td>AA 38</td>
<td></td>
<td></td>
<td>0.17</td>
<td>-0.85</td>
<td>-1.13</td>
<td>-1.05</td>
<td>-1.03</td>
<td>-0.56</td>
<td></td>
</tr>
<tr>
<td>MA 20</td>
<td></td>
<td></td>
<td>-0.80</td>
<td>-1.00</td>
<td>-0.98</td>
<td>-0.88</td>
<td>-0.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AA 40</td>
<td></td>
<td></td>
<td>-0.33</td>
<td>-0.06</td>
<td>-0.39</td>
<td>0.33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MA 20</td>
<td></td>
<td></td>
<td>0.35</td>
<td>-0.10</td>
<td>0.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AA 44</td>
<td></td>
<td></td>
<td>-0.41</td>
<td>0.45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MA 20</td>
<td></td>
<td></td>
<td></td>
<td>0.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AA 39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*MA stands for Mexican American  *AA stands for Anglo American
The F value for 82df at the .05 level of significance is 2.00

than would have been expected by chance; i.e., instead of choosing 2.5 Anglo Americans, they chose 1.5. Chance was defined as the number of possible cross cultural choices divided by the number of possible choices. The Anglo Americans made -0.53 or approximately one half less cross cultural choices of Mexican Americans. A comparison of these two scores results in a t value of 1.97 which is significant at the .05 level. This means that the Mexican Americans made significantly fewer cross cultural choices than did the Anglo
Americans, prior to the experiment. The \( t \) value for the post test score was not significant at the .05 level but the degree of change from the pre test score to the post test score was definitely not significant, since the \( t \) score was 0.30 and a score of 1.96 would have been necessary for significance. Simply stated, the data in Table 22, show that there is a big difference between the two ethnic groups on the post test but that the difference is most likely attributable to the pre test difference since the change scores of both groups was negligible.

<table>
<thead>
<tr>
<th></th>
<th>Pre Test</th>
<th>Post Test</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA</td>
<td>-0.99</td>
<td>-0.94</td>
<td>+0.05</td>
</tr>
<tr>
<td>AA</td>
<td>-0.53</td>
<td>-0.49</td>
<td>-0.01</td>
</tr>
<tr>
<td>( t )</td>
<td>1.97</td>
<td>1.82</td>
<td>0.30</td>
</tr>
<tr>
<td>df</td>
<td>241</td>
<td>241</td>
<td>241</td>
</tr>
<tr>
<td>( p )</td>
<td>.05</td>
<td>N.S.</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

*\( t \) value for significances at the .05 level is 1.96

Subjective Results Determined From Teacher Comments

In addition to the statistical data, it may be meaningful to examine the effects of this study through the eyes of the teachers. While such information is not statistically meaningful, there are times in which it may be valuable.
At the conclusion of this study each teacher was asked to make some written comments in regard to the degree of prejudice between the Mexican American and the Anglo American students before and after the study. It is interesting to note that in all cases the teachers said that the degree of prejudice did not change. Most of the teachers added the comment that they felt this was true because there was no significant amount of prejudice in the beginning which, of course, was not true. This inability of the teachers to determine prejudice that is not blatantly aggressive should be noted by the professional educator. In general, most professional educators consider the subjective opinions of classroom teachers, in analyzing their students, as being quite accurate. Apparently in the area of prejudice, this is not true.

Summary of Findings

It was the contention of the researcher that prejudice toward a minority group could be reduced by a better understanding of the culture of the minority and by some form of interaction between the majority and the minority groups. This position was a result of reading the literature on prejudice and from a professional assessment of this topic. In order to test this two-pronged approach, sociometric devices were employed, which meant that the sociometric measures themselves had to be evaluated. It also was necessary to consider the possibility that one cultural group might change and not the other. These thoughts led to the development of three major questions:
1. Would studying the culture, integrating the cultures, and combining these two concepts, reduce prejudice?

2. Would there be a difference in the degree of prejudice in different sociometric areas (home, school, playground) after the treatment?

3. Would prejudice be reduced in either or both of the cultural groups?

As a result of this study it must be stated that there is no evidence to support the idea that studying a minority culture either with or without an integrated situation will have a meaningful effect.

From most of the common educational measures for evaluating "units," one would conclude that the "units" used in this study were good ones. The time allotted to teaching the "units" was certainly reasonable according to common classroom practice. Taking these factors into account and considering the lack of any meaningful results in the experiment, one has to question the efficacy of "units" designed to help the teacher promote understanding between cultural groups.

This conclusion should not be construed as implying that "unit" teaching never has this effect or that it is of no value. It may be suspected that in classes where the degree of prejudice is much stronger to begin with, a "unit" which "informs" could be of great value in reducing prejudice, although there is some evidence in this study to indicate that this may not be true. It may also be of value at a different grade level or in situations where a sudden mixing of cultures takes place. In addition, there are many other
values received through "unit" teaching. These results should in no way discourage teachers from using the "unit" method, but they should caution the teacher in using this procedure as a primary tool for reducing prejudice.

The contact or integration group also made no significant gains in reducing prejudice. One, therefore, is forced to conclude that the answer to the first major question (does studying the culture and integrating a minority group reduce prejudice?) has to be no. It appears to have no significant influence, at least under the circumstances applied in this experimental situation.

The second question, in regard to differences in various social situations, also has to be answered in the negative. It appears that none of the three types of educational experience of either the Mexican Americans or the Anglo Americans changed their preference in a positive direction for choosing persons in the other culture, either on the playground, in the school, or in their home.

According to the baseline data it was determined that the Mexican Americans made significantly fewer cross cultural choices than the Anglo Americans. However, this situation remained essentially static, indicating that the experimental treatment had no significant effect on either group.

The following chapter attempts to examine the absence of positive support for the hypotheses by developing alternate explanations, re-examining the study, and by looking at the theory in detail. It will also include some recommendations for educators and researchers.
CHAPTER V

SUMMARY, CONCLUSIONS, EXPLANATIONS, AND RECOMMENDATIONS

The final chapter of this dissertation contains a review of the problem and procedures, a summarization of the major findings, and some possible explanations of these findings. Also included are recommendations to school personnel and recommendations for further research.

Review of the Problem

The primary purpose of this study was to determine if a pattern of homogeneous sociometric friendship choices within an ethnic group could be positively altered to a significant degree by learning about the minority's culture and by interaction between the ethnic groups. Secondary purposes included (1) evaluating each of these factors separately and in combination, and (2) determining if each of the ethnic groups differed in their reactions to these factors.

Review of the Procedures

Three treatment groups and one control group composed of three classes each were established in three different elementary schools. The classes in Group I studied the Mexican culture with the entire class working as one entity. This group was known as the "culture" group. Group II studied a science unit in ethnically integrated
small groups and they were, therefore, called the "integrated" group. Both concepts of culture and integration were combined to provide the treatment for Group III in that they studied the Mexican culture in small integrated groups and they were, therefore, called the "culture-integrated" group. The final group was the control group, which received no special treatment. The measure used to determine the degree of cleavage between ethnic groups for both pre and post tests was a sociometric choice test. Choices were made by selecting persons to invite home, to work with in school, and to play with on the playground. Each child made two choices for each area. A chi-square analysis, an analysis of variance, and a \( t \) test were applied to determine statistical significance.

Summary of the Findings

The sum and substance of this study is contained in the answers to three all-inclusive questions.

1. Would studying the culture, integrating the cultures, and combining these two concepts, reduce prejudice?

The findings of the study unequivocally indicate that there is no evidence to support the idea that studying a minority culture either with or without an integrated situation will have a meaningful effect.

2. Would there be a difference in the degree of prejudice in different sociometric areas (home, school, playground) after the treatment?
There were no significant differences in the degree of prejudice elicited in the sociometric areas of home, school, or playground.

3. Would prejudice be reduced in either or both of the cultural groups?

While there were some isolated instances in which one cultural group was statistically significant from the other, an examination of all the data indicates that the difference existed in the precondition and did not result from the experimental treatment.

Discussion of Results

Introduction

Every study is based upon certain concepts, theories, and assumptions. The researcher in turn uses certain procedures to critically examine or test these ideas. If upon completion of a study the results do not materialize as theoretically postulated, there is no need for apologies. There is only a need to re-examine the theoretical framework upon which the study was designed and carefully evaluate the procedures used. Upon completion of this task, the researcher should offer possible explanations for his findings. This is done not as an excuse, but as a guide for future researchers.

Possible causes for obtaining negative results can be broadly classified into four major categories: (1) the basic theories are in error or parts of them are incorrect, (2) the application of the
theories was inappropriate, (3) the procedures used were faulty or inappropriate, and (4) the methods used to measure the results were not accurate or appropriate. These four points will form the outline for the remainder of this section dealing with an explanation of results. Each theory or procedure will be generally subdivided into three parts: (1) a short review of the theory or procedure, (2) consideration of ways the theory or procedure might be in error, and (3) consideration of how this could conceivably have affected the results.

Concept of Attitudes

Review of the Concept of Attitude

The reader may recall that early in the second chapter of this study the components of attitude were discussed. McGuire\(^1\) was cited as presenting the conception of attitude as a three-sided figure. The sides of this triangular figure are knowing, feeling, and acting or using their Latinized names, cognitive, affective, and conative. Simply stated, he suggested that the cognitive could be described as how one perceives the attitude objective while affective is how one feels about the objective. Behavior toward the objective constitutes the conative. All three or any one of the three, according to McGuire,\(^2\) can be used as a measure of attitude because they are


\(^{2}\)loc. cit., p. 157.
all intercorrelated; however, since behavior is more easily or accurately measured than perceptions and feelings, it is most likely the best area to use in measuring attitude. The reader should read this last sentence again because it contains two concepts which if incorrect could possibly explain the negative results of this study. The two concepts are (1) that all three or any one of the three can be used as a measure of attitude, and (2) that the three are intercorrelated (not just interrelated). It would be most meaningful to examine this latter idea of intercorrelation first and to follow it with the "trinity" concept.

### Interrelation vs Intercorrelation

According to Webster\(^1\) interrelation means to have a mutual relationship while correlation means to have a reciprocal or a causal relationship. Many researchers would add that correlation alerts the analyst to the possibility of a statistical causal relationship. This distinction is extremely important because in a situation in which there is an interrelationship, one element can be changed without necessarily affecting, in any measurable way, the other element of the relationship. On the other hand, an intercorrelated relationship would mean that a change in one element would cause a change in the other element. An analogy may help to

clarify the distinction between these terms.

If one side of a scalene triangle is lengthened it would not be necessary to change the other two sides in order for it to remain a scalene triangle. All of the sides were related to each other but a change in one did not cause a change in the others; however, if one side of an equilateral triangle were changed, the other two sides would have to be changed to an equal degree in order for it to remain an equilateral triangle. In this last example the sides were intercorrelated. Naturally, as in all analogies, the analogy is not perfect, but it is hoped that the reader will recognize that while the terms interrelated and intercorrelated appear to be quite similar, there is a major difference between them.

"Trinity" Concept of Attitudes

There is no argument with the three-sided concept of attitudes, but in light of the previous statements on intercorrelatedness, one has to challenge the statement that, "a measure of any one of the three components of attitude, can be used as a measure of attitude," as not being completely accurate. Returning to the analogy of the triangles, it can be easily seen that if line A were changed on the scalene triangle, it would be impossible to determine such a change by measuring line B because there was no causal relationship and, therefore, nothing would have happened to line B. If line A of the equilateral triangle were changed one could determine such a change by measuring line B, assuming of course that it remained an equilateral triangle, because line B would have changed due to the change in line A.
The Effect of Changing Intercorrelated to Interrelated

It will be remembered that one of the main purposes of this study was to reduce prejudice (an attitude) and that such a reduction would be measured by a change in discrimination (an action). If the basic assumption that these two factors are inter-correlated is not true, then obviously the measure used would only be a measure of discrimination, and not a measure of prejudice. It is, therefore, possible that the procedures used did, in fact, reduce prejudice even though the statistical results were negative. Of course, it is just as possible that it did not reduce prejudice.

Other factors may have intervened to influence the results. Harding\(^1\) cited studies by LaPiere in 1934, Minard in 1952, and Saenger and Gilbert in 1950 in which the lack of correlation between ethnic attitudes and behavior could be explained by (1) other factors which were stronger than the ethnic attitude and (2) relationships of very brief durations. If these conditions existed in the experimental situation, it would explain why a measure of behavior would not necessarily be a measure of the other aspects of attitude.

---

Changing Attitudes

Review of the "Ability to Change Attitudes"

There was more than ample evidence cited (Harding, Giles, McGuire, Thurstone, Foshay, Collins, and Festinger) to demonstrate that attitudes could be changed. The fact that this experiment did not result in a predicted attitude change does not prove that they cannot change, but rather that the variables used apparently did not have this effect. The variables will be discussed later in this chapter but the reader should be aware of the reason for underlining the word apparently. It is the writer's

1 loc. cit., p. 2.


contention that it is possible, even though it wasn't supported, that attitudes were changed, but for a number of reasons such a change was not detected.

**Attitude Complexity**

It must be remembered that the construct, attitude, is exceptionally complex. Because of this it is extremely difficult for the researcher to attempt to change something so complex by altering one or two variables. The only argument in favor of the procedure is that, if one does make a significant change under these circumstances, it can be assumed that the variable is truly meaningful; the converse is not true, however.

McGuire\(^1\) stated that, "Attitudes not only fill many functions, but also the appropriate procedures for changing attitudes depend on the functions these attitudes play." As an example, he cites the "ego-defensive function,"\(^2\) which in essence states that certain attitudes may help some people with inner conflicts and really have little to do with the characteristics of the attitude objective. In this instance the attitude is not very logical but rather emotional. This kind of an attitude may be impervious to conventional informational approaches.

Contrary to the emotional approach, Getzels\(^3\) cited Rosen's

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\(^1\)McGuire, op. cit., p. 157.

\(^2\)loc. cit., p. 160.

studies of 1956 and 1959, and Bronfenbrenner's study of 1958, as examples in which social class influenced the academic goals of the members. A cognitive approach would, presumably, influence an academically oriented group more than a group that was not academically oriented.

Hovland\(^1\) stated that the strength of membership in a group will determine whether or not a person will change his behavior. The more dependent a person is upon a group, the greater will be his motivation to conform to group standards. In addition to this factor, one's position in a group (i.e., leader - follower) will influence his ability to change his behavior. The follower, or lower echelon member of a group, is much less likely to change behavior than the leader would be. Hovland\(^2\) also suggested that, in addition to these external variations, there are the individual personality characteristics of each member of a group that will cause them to react in different ways to the same stimulus. A particular stimulus may be adequate or sufficient to change his behavior while the same stimulus will not cause a change in another person because his threshold for changing that particular behavior is different. Not only is one person's threshold for a particular behavior change different from another's, but it also varies within the individual because of other intervening factors.


\(^2\)loc. cit., p. 174.
All of these variables have been cited to demonstrate that a single approach, under certain circumstances, may cause a particular person to change his behavior, but, if it is the only approach used, the chances of producing a significant statistical change for a group would be very slim.

The Effect of the Complexity of Attitudes

Once again, an analogy might be in order. Too often the researcher has the "mind set" of the diamond cutter. The diamond cutter studies the diamond's many facets and, based upon this study, places his cleaver in a specific location and with one blow obtains the desired result. The researcher, too, likes to find one major "fault" so that he too can obtain a significant result.

The marble sculptor is similar to the diamond cutter. He too studies the marble and makes a decision as to where he should strike his blows. After making such a decision, he rains his blows in a certain pattern which to a casual observer might appear to be fruitless because of no apparent change in the marble. However, at some point, one blow will have the desired effect but only because of the many blows which preceded it. Each blow undoubtedly has its effect, even though it was not apparent or measurable but each blow was necessary to reach the culmination. The analogy again is not perfect but perhaps the researcher has to recognize that some results are not readily apparent but in time may be a factor in causing a change. In relation to this study, the results may be insignificant, but in time who can say what will be the effect of many similar well planned "blows."

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Harding cited studies by J. A. Fishman in which he stated, "The typical initial reaction of white residents to Negro immigration is a pattern of withdrawal behavior and negative attitude change; however, continuous experience in the inter-racial neighborhood leads eventually to a limitation of this withdrawal." This means that more of one thing may eventually bring about a change, but, due to the complexity of attitudes and their relationship to behavior, it is most likely necessary to have several things (i.e., a multi-method approach) over a long period of time.

Contact Hypothesis

Review of the "Contact" Hypothesis

One of the two major hypotheses under examination in this study was the idea that contact between prejudiced people would have the result of reducing the prejudice. There is an abundance of research evidence previously cited to support this theory (Yinger, Pettigrew, 

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1 Harding, op. cit., p. 45.


Webster, Coleman, Trubowitz, and Amir, but, disconcertingly, there is some evidence which is in contradiction. In the second chapter it was mentioned that some of the research evidence did not support this hypothesis, but that one of the purposes of this study was to test this hypothesis. It appears from the results of this study that, under the conditions of this experiment, the findings offer no support for the hypothesis. This statement does not mean that prejudice would be reduced by a lack of contact or even that contact did not reduce prejudice but, rather, that this study produced no evidence to show that it helped.

Contradictions Within "Contact" Hypothesis

If studies in which contact did not help reduce prejudice are examined, one will come, almost invariably, to the same conclusion. That conclusion is, that the contact must be under favorable conditions in order for positive results to occur. It was for this


reason that the contact conditions recommended by Amir were scrupulously adhered to whenever possible. Since positive results were not obtained in this study, one must ask, how important are these favorable conditions in order for prejudice to be reduced? The approach of using favorable conditions of contact to reduce prejudice seems so logical that it is difficult to imagine that it would not be effective, but maybe the error is in assuming that behavior which appears to be logical to one person is also logical to all others. The logical assumption is that overt behavior derives from internalized beliefs and, therefore, if we change the beliefs we will change the behavior. Festinger's dissonance theory implies that causality may flow in the reverse direction. "Specifically, Festinger makes much use of the notion that attitude change tends to follow action change, so that by eliciting forced compliance with minimal justification one can produce an internalized belief change." This theory seems to be finding support in cases where forced integration has taken place. The recipients of such action appear to accept it because they can not do otherwise and therefore proceed to find positive reasons for their change in behavior so that they may maintain some semblance of internal attitude consistency. Similar to Festinger's theory, Hovland also

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2 McGuire, op. cit., p. 270.

3 Hovland, op. cit., p. 215.

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found that when persons verbalize an idea to others they become more inclined to accept it themselves. This happened in studies in which persons were asked to make speeches on points of view that were contrary to their own.

**Effect of Different Contact Approaches**

Since both favorable and unfavorable contact have been shown to work, one comes to the conclusion that they are not contradictory but alternate ways to obtain an end. It, therefore, implies that Amir's\(^1\) favorable conditions for contact are not an essential element in producing attitude change, since the same goal can be reached under "unfavorable conditions." Taking all the conditions inherent in this study into account, it would be rash to say that supportive results from contact might have been obtained if a negative contact in conditions II and III were used. However, the fact that supportive results were not obtained should make one consider what might have happened if the alternative procedure were used.

**Knowledge Hypothesis**

**Review of the "Knowledge" Hypothesis**

The "knowledge" hypothesis is synonymous with the learning theory of attitude change. It is among the early theories and as

\(^1\)Amir, op. cit., p. 35.
such has much research to support it (Trager, Allport, Dunfee, Roth, Rokeach). The basic assumption is that if a person "knows" another person or culture he will have less prejudice toward that person or culture.

Knowledge as Single Cause of Attitude Change

If there is any individual vulnerable spot in this theory, it would appear that it would be in the assumption that knowledge in and of itself is adequate to cause an attitude change. Over the years the theory produced most positive results when it was used in conjunction with some other aspect of attitude change. It was for this reason that both contact and knowledge were used as complementary or cross-fertilizing approaches, rather than just one or the other in complete isolation.

Effect of These Factors on "Knowledge" Hypothesis

If one contemplates the possible pitfalls in this theoretical

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5 Rokeach, M. "Belief Versus Race as Determinants of Social Distance: Comments on Triandos' Paper." Journal of Abnormal and Social Psychology, (March 1961), p. 188.

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approach, it is not too difficult to produce a number of them. For example, (1) Does it make any difference what material is learned? (2) How well does the material have to be learned? (3) Is learning at one age better than another? (4) Is there a difference in learning about yourself or your own background as compared with someone else? (5) Is a direct type of learning situation better than a more subtle type? Obviously the wrong approach in dealing with any one of these questions could conceivably affect the results of a study. These questions were considered in the design of the study and, whenever possible, available research results were used to determine the procedure. For example, most research data indicate that the younger the age the more susceptible a person is to changing his attitudes (Robinson, Maines, Dunfee). Those questions which were not answerable from former research were considered as an element of this study. For example, would studying a minority culture have a different effect on the minority group than the majority group? To determine the answer to this question, the data for each ethnic group were tabulated separately.

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2 Maines, R. "Attitude Change in Intergroup Education Programs," Studies In Higher Education. Purdue University, LXXXIII (August 1954).

The potential detrimental influencing factors that could affect the results previously presented are not the major concern. The real problem is the unknown factors. Because of the high number of known factors which could have an influence on the results, there is a growing doubt created in one's mind that there may be other factors of which he is unaware which could influence the results. To cite another analogy, we can think of a leaky garden hose. If one leak existed, the owner could repair the leak and with a good deal of confidence turn on the water fully expecting the repairs to be complete. If, however, one discovered five or six leaks and repaired them, he would not be the least bit surprised to find, when he turned the water on, that there were more leaks that were not obvious at first.

The previous section reviewed the basic theoretical approaches upon which this study was based, to determine if there were any flaws in these theories that might explain the negative results of the study. This section also reviewed the possibility of inappropriate application of the theories. Of course there were possible flaws and possible inappropriate application of the theories. The writer attempted to draw attention to them and their possible influence on the study. In discussing these theories, some mention was made of procedures and measuring instruments used, but the following section deals more specifically with these areas.

Questionable Procedures and Measuring Devices

The most obvious problem with a study of this type is controlling
the variables. As in all field experiments one can rarely duplicate
the controls which are the hallmark of the "laboratory" approach.
It is believed, and this belief is based upon observation and
conversations with the teachers, that the experimental groups did
adhere to the experimental conditions during the time of the study;
however, it was not feasible under this experimental procedure to
control teacher attitude toward the ethnic minority as an independent
variable, nor was it possible to control teaching methods for that
part of the day which was not part of the experiment. How much this
lack of control had upon the study is unknown.

Another questionable procedure was the amount of time spent on
the experiment each day; i.e., one hour per day for one month. It
is this researcher's belief that this was an adequate amount of time,
especially in view of ordinary public school practices, to have a
reasonable influence on the students. Other studies have shown
positive results in much shorter periods of time but, since the
question is debatable, it is mentioned (Thurstone,\textsuperscript{1} Allport\textsuperscript{2}).
Other factors previously cited, such as complexity of attitudes,
varying thresholds, strength of group membership, etc., were not
controlled in this experiment and could conceivably have had an
effect on the results.

\begin{flushleft}
\textsuperscript{1}Thurstone, L. L., \textit{The Measurement of Values}. Chicago:
University of Chicago Press, 1959, p. 87.
\textsuperscript{2}Allport, Gordon, \textit{The Resolution of Intergroup Tensions}. New
\end{flushleft}
Almost every study available shows that the strength of influence in regard to attitude change increases in an inverse order according to age. While this may be true, it would be unrealistic to assume that attitudes could not be altered after the second grade. For example, it was certainly reasonable to presume success at the upper elementary level even though it was recognized that younger children might have been more easily influenced.

The "knowledge" hypothesis presumed some learning taking place, as opposed to merely being exposed to another culture. The device used to insure learning was to encourage some type of culminating activity in which each of the experimental groups would make a school display or make a school wide presentation of their work. The school display cases, the programs presented (some even appeared in the local newspaper), and the researcher's professional judgement indicated that the material which was studied was meaningful to the students and was presumably learned by them. It would have been possible to compose some type of test to determine the degree of learning, but it is doubtful that any such test would have been more reliable than the methods used.

The degree of children's prejudice was determined for both the pre and the post test by a sociometric measure. It was believed by this researcher that there is adequate evidence (Gronlund,1 Remmers,2

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Kerlinger\textsuperscript{1}, to support the concept that the sociometric test is a sensitive and accurate measure. However, it has become increasingly questionable whether it is a measure of attitude when attitude is considered separately from discrimination. This statement is based upon the ideas that there may not be a causal statistical relationship between the three components of attitude and that a one to one relationship is an oversimplification of the concept of attitude complexity.

It is, therefore, the conclusion of the writer that, while some of the methods and measures used for this study were possibly inadequate, they were in general sound.

Suggestions to Educators

Experimental Study Results and Effect on Schools

The basic purpose of research is to find answers and hopefully to determine cause and effect. The lack of substantiating evidence usually means that cause and effect cannot be stipulated, but it can still be of some value. Knowing what to do may be the best, but knowing what not to do is better than not knowing at all. The fact that this study did not substantiate the hypotheses does not, therefore, preclude any possible value to the practicing educator. The following section of this chapter deals with suggestions for the

school administrators which were determined from the results of this study.

**Using Culture and Integration**

The basic purpose of the study was to test the theory that studying the culture of a minority and integrating the minority would reduce prejudice. Since the results do not support these hypotheses, the school administrator and teacher should be wary of using these procedures as a sole means of fulfilling this purpose. The prudent educator should consider alternate means to obtain this end, and should consider a plan in which they could further test some of the factors which might have influenced the results.

**Teachers as Evaluators of Prejudice**

As stated previously, all twelve teachers who took part in this study stated that there was little or no prejudice between the ethnic groups in their class. According to the sociometric measures, prejudice existed to a statistically significant degree in eleven of the twelve classrooms. Does this mean that teachers are inaccurate evaluators? Most professional educators would say, "No, most teachers are quite accurate at making subjective evaluations." But apparently teachers are not accurate evaluators of prejudice, and it is suspected that the problem is a semantic one. It is very possible, in this day of violence and protesting in relation to minority problems, that teachers in general do not consider something to be prejudice unless there is a blatant or gross evidence of discrimination. This could
be serious because, just as some of the most serious personality problems in the classroom are not the outspoken or vociferous children but the quiet reserved children, perhaps the most serious kind of prejudice is the quiet, subtle type which is seething under a blanket of tranquility. The purpose in mentioning this situation is not to criticize teachers, but to recognize that in this area other evaluation measures may need to be taken. It is impossible to correct a problem of which there is no awareness. To depend upon accidental solutions is unthinkable, so it becomes extremely important for schools to realistically determine whether or not, or to what degree, prejudice exists before solutions can be proposed.

**School District Sociometric Tests**

It is suggested that school systems consider adopting a policy of giving systematic sociometric tests. This procedure could be used by the classroom teacher for self-analysis in determining whether or not procedures and curricula were in fact aiding or inhibiting the social development of the children. In addition, the sociometric test has been shown to be of great value in assisting the school counselor or guidance person in working with children who have personality problems. Both of these benefits could be accrued by individual classroom teachers giving the sociometric test, but if the school system required it of all classes, a data bank would be available that could lead to many other benefits. Not only would the school system become aware of its own situation, but it could start to develop programs to improve its situation. By continuing
to give the tests over long periods of time, efforts could be measured by longitudinal studies which, in the opinion of many, are past due in the field of education.

Previous mention was made of the problem of doing field experiments in comparison to laboratory experiments. If the data of sociometric measures were accumulated over a period of years, it would even be possible in a school system to do good *ex post facto* research in addition to establishing field experimental studies. If a number of districts were to give sociometric tests, the possibilities for research are excitingly apparent. All of this could be done at a cost to the school district of "next to nothing."

Theory and Procedures for Further Research

Before making recommendations for further research it becomes almost mandatory to suggest a revision of the theoretical basis upon which the research is to be based. It also becomes necessary to consider revisions in procedures as a result of the different theory. The following section of this chapter will deal with these matters.

Revised Theory

The theory being proposed is a revision of previously used theories with a changed emphasis. First, the concept of attitude will be outlined and, secondly, suggested ways in which one can change an attitude will be mentioned.
**Concept of Attitude**

The term attitude has to be recognized as a simple term, apparently understood by most persons, but which in reality is extremely complex. Practically everything which can be said about it is an oversimplification. In spite of these logical limitations, some of its characteristics can be outlined.

1. It can be conceived of as being comprised of three components: cognitive, affective, and conative.

2. There is an association among these three areas. The association is more than an interrelationship but less than an intercorrelation. Under this idea a massive change in one of the three areas will affect the other two in a measurable way, while a minor change in one area will also affect the other two but conceivably in a non-measurable way.

3. Because of individual personality differences, a change in attitude can only be brought about by a "personalized" method (i.e., a method which is appropriate for the individual. It may be applied to a number of individuals at the same time, so it is not necessarily individualized and may not be the only method applied).

**Changing Attitudes**

Changing attitudes becomes difficult because the concept of attitude is already complex and the procedures for changing attitudes are also complex. When the complex concept of attitudes and the
complex procedures for changing attitudes are brought together, the effect is multiplicative rather than additive. Two major approaches can be taken in trying to change attitudes. These two approaches can be labeled "multiple" and "single." The multiple approach is one in which an attempt is made to cause a change by using all three areas (cognitive, affective, and conative) as a vehicle. The single approach is one in which the most viable approach for a particular individual or group is decided upon and then a massive dose of that approach is applied.

Once again an analogy may help to clarify the concept of attitudes and the concept of changing attitudes. The term attitude can be likened to the ability to read. Reading is a complex combination of many skills, such as phonetics, structural analysis, comprehension, and symbolism. Changing attitudes can be likened to procedures for the teaching of reading. Reading can be taught by many methods — verbal, kinesthetic, visual, etc.

To teach children to read, two major approaches can be used. One approach could be to teach all of the skills by using all of the different methods. Another way would be to teach all of the skills by using one best method. Other variations, of course, are also possible; e.g. one skill — three methods, or three methods — four skills. But for present purposes it may be best to keep to the major two approaches.

Good diagnosis is essential in determining which one method of teaching would be best for a child — i.e. verbal, visual, etc.
The "shotgun approach," i.e., using all methods, is less efficient but it does not demand prior diagnosis.

If these two approaches are applied to the area of changing attitudes, it becomes obvious that for research purposes the one method (one variable) approach would be best. The difficulty, of course, is diagnosing a person or group to determine which method might be the best one. It would also be difficult to do it as a field experiment.

The "shotgun" approach, while less sophisticated and more difficult to use as a research device, is most likely more applicable to field experiments in the public schools and to the process of education in the public schools.

Further Research

The method of changing attitudes by using one method is not going to be recommended for school use even though there may be ways in which it could be applied. The one variable approach is likely to be as ineffective as a pitcher who has only one good pitch. That one pitch may be adequate to prevent a particular player from getting a hit, but it may not be adequate to prevent other players from getting hits. With certain persons, a single changing attitude approach may be adequate, but in general it is not effective enough for the total population concerned. This approach may be the major problem with much research on attitudes. Everyone is looking for one way for all people. If individuals could be properly diagnosed and a determination made that this person would change his attitude the
fastest by using a cognitive approach, and that this one by an affective approach, this method could be applied, but the tools for such diagnosis are not available. The danger, therefore, in using this approach is that, unless it is the appropriate method, positive measurable results could not be expected.

The multiple method is the method to be recommended. In order for it to be used for research purposes certain qualifications have to be made. (1) The study should be established on a longitudinal basis. (2) It should use all of the approaches for changing attitudes. (3) It should involve frequent, systematic, and multiple methods of evaluation.

Diagramatically this proposed research could be as a 3 X 3 matrix. The rows represent the three aspects of attitude and the columns represent measuring each of the same three aspects. Each row and each column could be subdivided. See Figure 4.

While every detail of this proposed future research will not be "spelled out," the items listed in the diagram will be explained.

**Attitudes**

The entire area of cognitive influence is related to the "Learning Theory"\(^1\) of attitude change. It is suggested that two forms of teaching be applied. The direct type is one in which a minority culture would be studied. The subtle type is one in which definite attempts would be made by the teacher to show both the minority and

\[^{1}\text{McGuire, op. cit., p. 265.}\]
majority cultures in everyday life. An example of these would be to use a multi-ethnic reader.

Influencing the affective aspects of attitude is related to the "Perceptual Theory" of attitude change. Opportunity would be provided for children to role-play situations in which they could empathize with the minority or the majority. This too could be considered a rather direct approach. In other occasions the teacher would suggest,
through private conversations with the leaders of both minority and majority groups, that they work with opposite ethnic group persons. This more subtle type of influence would be aimed at changing perceptions by means of leader example.

Changing the conative attitudes could come under the theory of "Contact," "Consistency," or "Dissonance,"\(^1\) depending upon the viewpoint and the technique. Integrated behavior would be elicited through cooperative or forced means. In one situation integrated behavior would be encouraged by mixing ethnic groups in as harmonious a way as possible. In the other situation, integrated behavior would be expected regardless of compatibility. If persons in a group were not compatible, they would have to work out their problems.

**Measuring Devices**

Cognitive information could be obtained by paper and pencil tests, evaluation of projects, inclusion of art forms, etc.

Affective data could be gathered by means of evaluating role-playing situations by observational methods but a number of attitude scales could also be used.

The behavioral area would be measured by sociometric tests and by controlled observation of behavior in a number of different situations, such as the classroom, the playground, and the lunch room.

The purpose of these aforementioned techniques is to systematically try to change attitudes by a multiple approach and to attempt

\(^1\)loc. cit., p. 269.
to measure the attitude change by a multiple approach.

Conclusion

The purpose of testing is to make an evaluation of the status of a situation. The purpose of this experiment was to test the hypotheses that "contact" with and "knowledge" of a minority group would reduce the prejudice between the majority and minority group. The results of this "test" can be tabulated into two categories, answers and new questions.

Answers

While it should be remembered that the "conditions" of this experiment were not unusual practices in the public schools, each answer as it is read should be prefixed by the statement, "under the conditions of this experiment."

1. Contact between the ethnic groups during the experimental conditions did not reduce for a significant number of persons or to a significant degree the amount of prejudice exhibited prior to the experiment.

2. Knowledge of the minority culture did not reduce for a significant number of persons or to a significant degree the amount of prejudice exhibited prior to the experiment.

3. The combination of "contact" and "knowledge" did not reduce for a significant number of persons or to a significant degree the amount of prejudice exhibited prior to the experiment.
4. There was no statistical difference on the various sociological measures of home, school, and playground when compared with each other.

New Questions

As is so often the case when looking for an answer, one frequently develops more questions than answers. No attempt will be made to list all of the possible questions engendered by this experiment, because many of them were stated or implied previously, but the more encompassing questions are:

1. What can the educator who is faced with a classroom of students and with decisions on curriculum do to reduce prejudice towards minority or majority ethnic groups?

2. What can the researcher do to help the educator develop diagnostic tools in the area of attitudes which would enable the educator to apply this knowledge in a systematic way so that he can reduce prejudice?

In summary it can be stated that the public schools should not rely upon a "unit of study" to reduce prejudice in and of itself. They should recognize that the first job of the schools is to measure the degree of prejudice within them and that they should take affirmative actions to reduce the prejudice if it is found. The opinion of this writer is that the best way to reduce the prejudice should be determined by extensive field experimentation which should be carried out by the schools and that whenever possible laboratory experimentation should be used to provide clues for further field experimentation.
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APPENDIX A

Reason For Using the Term "Mexican American"

At the outset of this study it became apparent that a decision would have to be made in regard to naming the group generally referred to as "Spanish speaking." It was not difficult to identify the group, only to find an appropriate name. No matter what name was used, it brought forth some criticism. In order to solve this dilemma it was decided that a survey would be made of the Spanish speaking group to determine their title preference. The results of the survey would determine the name to be used.

A total of 74 Spanish speaking people were contacted. They identified themselves according to age groups and places of birth. They were asked to make first and second choices of the title they preferred from a list of seven titles. The titles listed were: Spanish, Latin American, Spanish American, Mexican, Mexican American, American, Chicano, Spanish speaking, and other. The order of these titles was varied on the answer sheets. If they could not read or write in English, the list was interpreted for them in Spanish. While there was no attempt to be discriminatory in contacting people, it could also be said that the choice was not completely random because the persons contacted were working or employed as teacher aides, Upward Bound students, day care center employees, or factory employees.
The result of the survey clearly showed that the most popular title was Mexican American. It is for this reason that this term was chosen as the one to be used in this study. Other results of the survey, for the interest of the reader, are shown in the following table. As stated earlier, the data were collected with age and birthplace identification but there appeared to be no pattern of preference in either category except for the title "Chicano." Every person choosing this title was under 25 years of age.

**Title Preference of Spanish Speaking Persons**

<table>
<thead>
<tr>
<th>Title</th>
<th>Total of first choices</th>
<th>Total of second choices</th>
<th>Total of both choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexican American</td>
<td>26</td>
<td>18</td>
<td>44</td>
</tr>
<tr>
<td>Chicano</td>
<td>22</td>
<td>8</td>
<td>30</td>
</tr>
<tr>
<td>Latin American</td>
<td>8</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Mexican</td>
<td>10</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Spanish</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Spanish American</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Spanish Speaking</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

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APPENDIX B

UNIT ON MEXICO

The Mexican People and How They Live

Background Information for the teacher

The ways in which the people of Mexico live depend upon several factors: their income, their profession, and whether they live in rural or urban areas. While elements of the cultural pattern of the nation prevail through all segments of Mexican society, certain aspects of daily living often differ from one group to another.

The family unit

The family unit throughout Mexico is basically the same as in the United States. The father is the head of the household, however the mother also holds a highly respected position. Married children generally leave the family home, but in some instances a married son and his family live with his parents to help support them. Grandparents are highly revered by the family.

The Mexican home

Homes in Mexico range from small village mud huts to large, luxurious Mexico City apartments. The more recent homes in the city are built in the "California style" with white stucco walls and red-tiled roofs. Since they are built very close to the sidewalk, they do not have front yards. Doors and windows facing the street are often enclosed with decorative iron grillwork. The centrally located patio, which can be entered by each room in the house, provided a beautiful, private play or relaxation area.

The modern Mexican city home is built to be fairly cool in the daytime and warm at night. The floors are often covered with red tile rather than wood. These homes are usually comfortably furnished and often have most of the modern conveniences.

Houses in the rural villages of the northern and plateau areas are generally built of adobe brick with red tile roofs. They also make use of the central patio. Bamboo and thatching are the most common building materials used in Southern Mexico.
While many Mexican families enjoy modern modes of living similar to those found in the United States, the majority of Mexicans, primarily low-income Indians and mestizos, still lack modern housing and furnishings. Their furniture, which is simple and usually handmade, consists of only the necessary table, chairs, stools and crude beds made of ropes strung on a wooden frame and covered with straw. Hammocks are still used by many Indians. Straw mats, or petates, are often placed on the dirt floors for sleeping. Light is obtained from candles or oil lamps. Meals are frequently cooked over cement or metal braziers or over open fires. The metate, a three-legged stone and rolling-pin, is still used, as it was before the Conquest, to grind corn. Ollas, or pottery water jugs, are used to carry water from the village well since indoor plumbing is often non-existent.

Food

The diet of the Mexican people varies according to their income and geographic location. A Mexican citizen may buy canned or frozen foods from a supermarket in Mexico City or fresh fruits and vegetables from an open-air market in a rural village.

The diet of the low-income city and rural dwellers is very simple, consisting primarily of the three basic foods, corn, beans and squash. These foods are usually home grown and are, at times, supplemented by other vegetables. Wild fruits such as papayas, mangoes and bananas are eaten if available.

The most traditional item in the Mexican diet is, of course, the tortilla which is eaten throughout the nation by both rich and poor alike. Frequently tortillas are made from corn flour, or masa, which has been ground by hand then patted and shaped by hand and cooked over a small brazier or open fire. In some families the tortilla serves a utilitarian purpose since it is used in place of a spoon to scoop up other foods.

To Mexicans of low income, milk is an expensive luxury. In its place children often drink aguamiel or "honey water," which is the rather sour tasting juice of the maguey plant. This juice is very rich in vitamins which makes it an excellent supplement to their often meager diet. Pulque, the fermented juice of the same plant, is a common drink among adults. Mexicans also drink coffee and chocolate which is usually flavored with spices and beaten until frothy.

Mexican people are fond of rich, sweet desserts. Oajeta, which is caramelized goat's milk and tastes like butterscotch sauce, is very popular. Sweet rolls and fruits are also eaten as desserts.
Some of the other common items in the Mexican diet are:

Atole - a gruel made of cornmeal
Chile peppers - raw or pickled
Enchilada - meat, cheese, onions and chili rolled in a tortilla and baked in spicy sauce.
Frijoles fritos - black or brown beans, boiled and then fried
Goat cheese
Guacamole - a salad made of avocados crushed and mixed with herbs
Iguanas - roasted lizards
Nopal Cactus - the small, spiny fruit is eaten as well as the leaves
Taco - chopped meat wrapped in a tortilla and fried
Tamale - meat, chili and masa steamed in corn husks or banana leaves
Turkey mole - Turkey boiled in a sauce made of chocolate, chili and spices
White slugs and maguey worms - eaten fried crisp

Mexican people in both urban and rural areas generally begin the day with a heavy breakfast then have their large dinner about two o'clock in the afternoon. At the end of the day, a light meal of sweets and coffee or chocolate is served.

Clothing

People who live in the modern urban areas of Mexico dress in very much the same manner as the people in the United States. However, clothing worn in rural areas is quite different. Many Indians still dress in traditional tribal costumes. The customary clothing of village men and boys consists of white trousers of heavy cotton, white muslin shirts worn open at the collar, a wide-brimmed sombrero and a serape or poncho. Women and girls usually wear blouses and long, full skirts of colorful cotton. The rebozo, a shawl about four yards long with fringed ends, serves many purposes: it protects the head from sun or rain, it covers the head in church, and it can be used as a sling for carrying the baby. Huaraches, handmade leather sandals, are worn by men, women and children.

During fiestas and holidays, the traditional china poblana is worn by women while the men dress in the old charro costume.

Recreation

As in the United States, Mexican families are fond of various forms of recreation in which they can participate as a family unit. Afternoon picnics and evening promenades are popular with most families.
City dwellers take advantage of commercial forms of entertainment such as concerts, movies and television while rural families often have to rely upon themselves for entertainment.

Mexican children, as do children all over the world, have their favorite games to play. "A La Vibora" (To the Snake) is very much like "London Bridge," and "Leap-donkey" is played in place of "Leap-frog." A favorite game of the boys is to imitate the famous bullfighters and perform mock bullfights.

Baseball and basketball are also played in Mexico, but soccer is more popular. The old Spanish game of jai-alai, which is played in the fronton or stadium, draws large crowds of observers. This game is similar to handball; players use wicker baskets strapped to their wrists to catch a hard ball and fling it against a wall.

The two outstanding national sports of Mexico are horseback riding and bullfighting, both of which were introduced by the Spanish. Mexican charros, or horseback riders, take great pride in their ability on a horse. Annual festive rodeos are held in each state during which the charros display their skill. The sport of bullfighting is, of course, well-known in both Spain and Mexico.

Customs

The customs of the Mexican people are many and are largely based upon Indian or Spanish traditions or a mixture of the two. The traditions of Mexico are expressed in the clothing the people wear, their recreation, their food, their holidays and in many facets of their everyday lives.

Certainly one of the most well-known customs in Mexico is the siesta. Some of the large cities in Mexico have eliminated this tradition, but people in the rural towns and villages still leave work to rest during the noon hours. Since this is the hottest part of the day, Mexicans feel they can work better if they rest during these hours.

Customary and traditional also is market day which is held once each week in most villages and towns. On this day, basket makers, weavers, potters, farmers and others bring their goods to the village to exchange in the plaza. By custom, buyers and sellers are not supposed to agree on the first price asked for an article but are supposed to engage in a few moments of bargaining before the sale is closed. This is a time of enjoyment and a time to catch up on all the local news.

An unusual custom in clothing is found among the various Indian tribes in rural villages. Each tribe wears a specific type of clothing which is distinct from the clothing of other tribes. Great pride is taken in these individual costumes.
An old Spanish custom which still prevails in many parts of Mexico is the Sunday evening stroll or promenade. In the cool of the evening, villagers casually stroll around the plaza while the village band plays in the middle of the square. The men usually walk in one direction while the ladies stroll in the opposite direction.

**Holidays**

The dominant religion of Mexico is Roman Catholicism. For this reason, holidays and fiestas are often centered around religious beliefs. Certain features of these religious holidays are a mixture of Christian and Indian religions. As in the United States, the Mexican also celebrates a number of patriotic holidays.

A traditional aspect of Mexican holidays is the fiesta in which the entire town or village participates. Fiesta revelry often lasts for days with much eating, drinking and dancing.

A number of traditional dances are performed during fiestas. Among them is the Dance of the Flying Men. This dance begins with men dressed as birds at the top of a tall pole, their ankles tied with ropes which are attached to the pole. As musicians play a stirring tune, these men fling themselves out and away from the pole to simulate the flight of a bird. The dance continues until the ropes have slowly slipped down the pole, and the men are able to touch the ground.

Another dance is the Dance of the Christians and the Moors which enacts the days of the Crusades in which the Christians drove the Moors out of the Holy Land.

The Dance of the Old Men is done by men who are made to look very old. Some wear happy masks, and others wear sad ones. At the beginning of the dance, the "old men are not very agile, but, as the dance progresses, they regain some of their youthful vigor. For a while the dance is quite lively, but soon old age catches up with the "old men" and they slowly hobble away.

The Feather Dance is perhaps the most beautiful dance one could see in Mexico. The most spectacular feature of this dance is the performers' huge circular headdresses of brilliant plumes that combine all the colors of the rainbow and are studded with mirrors and imitation jewels.

A traditional feature of most fiestas is the castillos or fireworks castles which provide a happy ending to the festivities. One man is chosen to make fireworks displays resembling animals, people, and
national or religious symbols. The fireworks are arranged on a wooden framework to form a very tall castle which in some cases is taller than most buildings in the town. The fireworks display is lighted at night at the bottom and burns its way up the castillo until it reaches the top where a final surprising display is ignited.

Some of the most popular religious and national holidays in Mexico are:

The **Day of the Patron Saint** is celebrated in almost every village and town in Mexico. On this day the people honor the saint for whom their town is named or the saint who provides for their good fortune. This holiday does not fall on the same date for each village, but their fiesta observances are similar.

The **Burning of Judas** is an event which occurs on the day before Easter. A papiermache figure is made of Judas, the disciple who betrayed Christ, and is filled with goodies and gifts. The Judas is hung in a prominent place and is then outlined with fireworks. When the fireworks explode, the figure catches fire and the gifts and goodies for the children fall to the ground.

**All Saints (All Souls) Day and Day of the Dead** are two holidays which have been grouped together because they occur on two successive days, November 1 and 2. On All Saints Day the Mexican people honor all the saints of the Catholic Church with observances similar to those of the Day of the Patron Saint. The Day of the Dead on the following day honors those who have died and who supposedly return to earth on this day. To honor the dead, gifts and fine foods are taken to the cemeteries. This is a day of great rejoicing to have departed loved ones back for a visit. These two holidays show how Christian and Indian rituals are sometimes combined and influence each other.

Christmas (Navidad), as in the United States, is a very special time for the people of Mexico. The celebration of Christmas starts on December 16. On the night of the sixteenth, the townspeople parade through the village streets carrying the figures of Mary, Joseph, and the donkey on a small platform. They enact the Holy Family's search for shelter or posada. For eight nights they are refused entrance and are turned away with cries of, "No room!" On the ninth night the Holy Family is accepted at a home, and the people are invited in for a pinata party.

**Pinatas** are of many shapes and sizes. One of the most popular ones is a Christmas star. They are most often gaily decorated clay jars filled with gifts and candies. The object of the pinata party is to have some child break the pinata and release the goodies inside. This is not easy because the child is blindfolded and the pinata is manipulated up and down with a rope to make the task that much harder.
Eventually, the pinata is broken, and the children scramble for its contents which become their Christmas presents.

However, the Christmas celebration does not end here. On January 6, the Mexican children receive Christmas presents. Their choices for gifts are well-known because they write letters to the Magi or Wise-men who in turn bring the gifts.

**Independence Day** is celebrated in Mexico on September 16. It is celebrated much like our Fourth of July with parades, fireworks, and a great deal of noise. At 11 P.M. the president of Mexico rings a bell to recall the time when Father Hidalgo rang a bell to summon the Indians to fight the Spanish. The people then shout, "Long live independence! Long live Mexico!" It is indeed a day of great patriotism and national pride.

**Cinco de mayo** or May 5 is a special patriotic holiday which is celebrated somewhat like Independence Day. On this day the people of Mexico honor Benito Juarez's victory over the French in the city of Puebla on May 5, 1862.

**UNDERSTANDINGS TO BE DEVELOPED**

The family unit is important in Mexican culture.

The ways in which people live - their food, clothing, homes and experiences - differ in rural and urban areas.

There are similarities and differences between the lives of people in Mexico and the United States.

Customs and traditions of the past affect the lives of many Mexican people today.

Many Mexican holidays are based upon a combination of Indian and Spanish traditions and religions while others are patriotic.

Climate, topography and income affect the diet of the Mexican people.

Mexican people enjoy participating in sports and fiestas.

**SUGGESTED ACTIVITIES**

**Introductory Activities**

Discuss the daily activities of the students and their families.
List some of the activities common to most families. Discuss how the students' daily lives might differ if they lived on a farm. List the activities which are common to people throughout the world.

Prepare for the study of the ways in which the people of Mexico live by listing those aspects of living about which the students want to gather more information:

What languages do the people of Mexico speak?

What kinds of homes do the Mexican people live in?

What kinds of food do they eat?

What kinds of clothing do they wear?

What are the duties of the members of the family?

In what ways do they enjoy themselves?

What holidays do they celebrate?

What kinds of stores do they have?

How do farm families live differently from city families?

Review with the students the sources they may use to gain the information they are seeking. Encourage students to look through books, magazines and newspapers at home to gather information.

Developmental Activities

Make available for student use as many of the following sources of information as possible: library and reference books, pictures, films, filmstrips, magazines, newspapers and resources persons.

Divide the class into committees to study the aspects of life in Mexico listed as questions in the Introductory Activities.

Collect commercial pictures which illustrate the clothing, food, buildings, furniture, sports, celebrations, etc. of Mexico.

Add new words, such as the following, to the vocabulary lists or "Word Bank" prepared in previous lessons.

| patio | custom |
| tile  | tradition |
| bamboo | religion |
| hammock | also special words listed on page 40 (from the unit on "Social Studies in Grade Three - Learning About Mexico). |
Create original stories about various phases of life in Mexico.

Enjoying a Mexican Fiesta
Christmas in Mexico
Living in a Mexican Home
Visiting Mexico City
Life on a Hacienda

Create original plays about life in Mexico.

Bargaining in a Mexican Market
A Farm Family Visits Mexico City
Visiting Indian Ruins

List aspects of rural and urban Mexican life which are similar and different to rural and urban life in the United States.

Prepare recipe booklets of popular Mexican dishes.

Learn Spanish words and expressions. Refer to Resource Units issued by the Foreign Language Department for use in Grade Three.

Learn Mexican games such as "A La Vibora" and "Leap-donkey." A variation of soccer may be played on the playfield.

List aspects of Mexican culture which are derived from Indian traditions.

Discuss reasons for certain Mexican traditions such as the siesta, evening promenade, and market day.

Tell or read about the legend at the china poblana.

**Culminating Activities**

Present brief oral or written committee reports prepared by students during their study.

Read original stories written by the students.

Present original plays to the class, to other classes or to parents.
Prepare a mural of a Mexican village illustrating various activities in village life.

Prepare a divided bulletin board with original pictures contrasting life in Mexico City with life in a rural village.

With parents help prepare a Mexican luncheon for the students. Food may be homemade or canned. Some of the Mexican restaurants and delicatessens in Holland will cater a luncheon for a small charge.

Present conversations in Spanish between two or more students. Conversations between a Mexican child and an American tourist may be held.

If it is near Christmas, prepare a pinata and hold a "pinata party."

Create original dolls wearing Mexican costumes. These may be made from colored construction paper, rolled newspaper, papier mache or stuffed muslin. (Although students may all use a basic pattern for construction the form of the doll, the teacher should encourage creative ideas among students in order that each may develop his own individual doll.)

Construct a model Mexican village on a covered table. Buildings may be made from cardboard and figures may be modeled from clay.

Weave Mexican mats with yarn or strips of colored construction paper.

Construct an "adobe village" using milk cartons painted brown. Small boxes or popsicle sticks can also be used as molds for making small bricks from clay and straw. Buildings may be made from these bricks.

Make a papier-mâché piggy bank or painted pig from a balloon or acorn squash covered with strips of newspaper or paper towel. Legs and ears can be made from rolled tagboard.

Make Mexican costumes for students to wear while presenting plays or conversations. (Students should be encouraged to strive for originality in design rather than stereotyped costumes.)

Add pictures, stories, news items etc., to the class notebook constructed earlier in this study of Mexico.
Arts and Crafts of Mexico

Background information for the teacher

One of Mexico's greatest cultural contributions to the world is in the field of arts and crafts. Whether they are working in fine arts or in simple handicrafts, Mexican people like to create beauty with their hands. In Mexico the crafts have lived because they are, in truth, arts. The arts and crafts of Mexico are influenced by a number of ethnic sources. The Indian and Spanish strains are the most powerful, but the influence of France and other European countries and the United States can also be seen. Some forms of arts and crafts have remained pure while others have blended to produce a newer culture which is more truly Mexican.

Art

Painting is the most popular of the arts in Mexico today. With the revolution of government in Mexico, there was also a revolution in art. A new group of young painters began attracting attention. The leaders in this new art movement were Jose Clemente Orozco, Diego Rivera and David Alfara Siqueiros. These artists have revived the art of mural painting and have helped to make it popular again. In the large cities, new office buildings and schools often feature beautiful large mosaic murals depicting events in Mexican history. Nowhere else in the world can the people of a country see so much of their own story told pictorially on the big walls of their public buildings.

Mexico also has a large number of artists who work in other media. Museums all over the world display examples of Mexican paintings and sculpture many of which utilize primitive Indian techniques.

Handicrafts

The most popular weaving craft in Mexico is making items of straw. There are several kinds of reed and marsh grass which are fine for weaving because they are both pliable and strong. The most popular articles made of straw are hats, baskets, and a special kind of mat used for sleeping called a petate. Many toys and furniture are also woven of straw.

Mexico's finest weaving is done in cloth. Some cloth is still made of maguey or palm fiber, which is used for making such items as grain bags, coarse capes worn by the poorest peons, and carrying-cloths which are handy for carrying produce to market. Cotton and wool are also woven to make articles of apparel such as hats, belts, serapes and rebozos.

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The Spanish brought to Mexico the art of drawn work, which is still popular and extremely fine and beautiful. This type of needlework is used on altar cloths, table linens, handkerchiefs, bedspreads, fancy jackets and peasant skirts, many of which are sold to tourists.

There are numerous pottery making villages in Mexico, and each village makes its own distinctive kind of pottery. Some towns are famous for toys, some for vessels for religious offerings, some for distinctive clay decorations and others for cookingware. Perhaps the Talavera pottery, made in Puebla, is the most well-known type of pottery made in Mexico today.

Glass making is a wholly Spanish craft with nothing more from the Indian past than an influence on style. There are perhaps a dozen small glass "factories" in Mexico at present. They are all located in either Puebla, Guadalajara or Mexico City. The expert glass blowers in these small factories make many lovely objects such as dinner sets, ornaments and miniature figures.

Lacquerwork, which to this day is one of Mexico's most distinctive and popular crafts, is an Indian art upon which the Spanish have had very little influence. It is still being done in only two small areas, one around Uraupan and Patzcuaro, and the other around the village of Olinala. The lacquer is usually applied to wood and gourds, and such articles as chests, plaques, jars and games are made.

The uses for tin and iron were brought to Mexico by the Spanish conquerors and the crafts of wrought iron and tinwork are purely Spanish crafts. The most common uses of iron for decorative purposes are in fancy wrought iron fences, gates, balconies and stairway balustrades.

The craft of tinsmithing has greatly increased in the last few years. Such items as serving trays, fruit bowls, candlesticks, picture frames, masks, Christmas trees, lampshades, rattles, kitchen and garden tools, dishware, and lanterns are now made by these craftsmen. The town of Taxico is one of the most famous for tinwork. Many of these articles are exported to countries all over the world.

Mexican leatherwork is most noted for its decorations. Saddles are embroidered with heavy threads of contrasting colors, and belts, coats and pouches are decorated in this fashion also. The most common method of decorating leather is by tooling. In the large cities of Mexico there are many leather shops where one can buy luggage of all types, handbags, billfolds, belts, boxes and other novelties.

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One of Mexico's most important crafts is silver working. The Mexicans work gold too, but not nearly as much as silver, for much of the gold mined in Mexico is exported. The most important and famous silver working town in Mexico is Taxico, which is surrounded by silver mines. Much of the silver jewelry is made in modern designs or overelaborate imitations of Indian designs to please the tourists. Jewelry is often set with opals, turquoise, amethyst and jade. In addition to jewelry, many other silver articles are made such as silver plates, flatware, bowls and boxes.

Architecture

Mexico today exhibits many forms of architecture. Simple, colorful adobe or bamboo Indian houses can be seen in rural towns and villages along with early colonial Spanish buildings. In large cities, the French influence can be seen in buildings constructed during the period when Mexico patterned its arts after the French. The Spanish influence is also strongly felt in large cities however, most of the new construction is extremely modern and functional in style.

The most wonderful of all the colonial architecture in Mexico is found in the churches. The baroque style, with its elaborately carved facades, spiral columns, and niches for stone figures of the saints, was a favorite in Mexico for more than a century. A little while before the Mexican War for Independence, architects grew tired of the elaborate styles, and the buildings erected during that period are more like the old Greek and Roman temples which are called "classical."

The use of the patio, while originally Spanish, has become more typical of Mexico than of Spain now. Houses of all styles usually include a patio area.

Music

After the Spanish conquered Mexico, many changes were made in the music of that land. The Spanish introduced a number of new instruments such as the Spanish flute, the violin and the guitar which, combined with such old Indian instruments as drums, maracas, marimbas and conchas (wood reinforced armadillo shells with strings for plucking), have produced music which is typically Mexican rather than Spanish or Indian. While Mexican songs, like those of Spain, are lilting, gay and fast or slow and mournful, they use a little different rhythm which indicates the Indian influence. Because Mexico has a rich musical background of its own, extremes in modern American music have not been as prevalent in Mexico as in other countries. On the other hand, the influence of Mexican music can be heard in many popular songs written in the United States.
Mexicans love classical music as much as they do the melodious popular songs. Mexico has produced several good composers, among them Silvestre Revueltas and Carlos Chavez. Chavez, who organized the Mexican Symphony Orchestra and is its conductor, is deeply interested in the Indian heritage of this country. While his music contains much of the delicacy and melody of Spanish music, it is essentially Indian in character.

Dance

Dancing is one aspect of Mexican culture which has prevailed through the years. At fiestas one may see both Indian and Spanish dances performed by Mexicans in beautiful costumes. Many of the Indian dances are now a part of Christian worship, but in some parts of Mexico quite a few of the old dances are presented the same as they were in the distant past with the same chants to the same gods for the same reasons. Many of the old Spanish dances have been adopted in Mexico and have become Mexican folk dances. Among these are the jota, the bolero and many versions of the huapango. The jarabe tapatio, (Mexican hat dance) which is Mexico's national dance, is in the Spanish style. Some of the other well-known folk dances are la raspa, la bamba, chiapaneca, Dance of the Old Men, the Feather dance, Dance of the Christians and Moors and the Dance of the Flying Men.

Literature

Mexico has a wealth of what is known as folk literature and legends many of which date back to early Aztec times. One kind of folk literature that is very popular in Mexico consists of songs that are like the old ballads that were once sung in England and the United States. These songs are called corridos, which is a good name for them since they sometimes run on and on telling long, involved stories with very little change in the tune. Some are very sad, others are dramatic and exciting and others are humorous. There are hundreds of corridos sung in Mexico.

Some of the best novels written in Mexico are those concerned with Mexican social problems. The Mexicans have always liked poetry, and the country has produced many fine poets whose works rank with the best in the world. Two of Mexico's most widely read poets are Alfonso Reyes, and Martin Luis Buzman.

UNDERSTANDING TO BE DEVELOPED

Many Mexican people are artistic and like to create beauty with their hands.
An important contribution made by Mexico to the culture of the world is in the field of the arts.

The arts and crafts of Mexico are largely a mixture of Indian and Spanish cultural influences.

Many of the arts and crafts have been carried on since early times in Mexico.

Mexico has many modern artists, musicians and writers.

SUGGESTED ACTIVITIES

Introductory Activities

Discuss the role of art, music, and literature in the lives of people in all countries. These activities provide pleasure for man and help perpetuate the culture of a nation. Discuss the ways in which the students' lives are enriched through the arts. Present familiar examples for discussion.

Discuss the relationship of the fine arts to handicrafts, folk music and legends. Explain that the folk arts of Mexico had their origin in both the Indian and Spanish cultures of long ago but are still popular today in the Mexican culture.

Relate how the people of Mexico are particularly fond of creating beauty with their hands and that examples can be seen in their buildings, clothing, utensils, etc.

List ways in which students can gather information about the arts and crafts of Mexico:

Bring to class objects made in Mexico.
Collect pictures showing examples of Mexican art.
Read library and reference books.
Listen to records of Mexican music.
Learn Mexican songs and dances.
Read Mexican folk tales and learn Mexican poems.
View films, filmstrips and television programs about Mexico.
Invite resource persons who know about Mexican arts and crafts to speak to the class.
Developmental Activities

Use some of the resources mentioned above to help students gain an understanding of the arts and crafts of Mexico.

Add new words, such as the following, to the vocabulary the students are building in connection with their study of Mexico.

- handicraft
- pottery
- lacquerwork
- leatherwork
- embroidery
- folk music
- legend
- also special words listed on page 12

Read and discuss folk tales and legends of Mexico. These may be read orally by students or by the teacher. Several activities may be used in connection with these folk tales.

- Create brief original stories based upon folk tales read.
- Make illustrations depicting an episode from their favorite story.
- Create an original play or present a puppet show centered about a Mexican legend.

Read and discuss Mexican poems or poems about Mexico. This activity may be expanded in several ways:

- Learn and recite poems about Mexico as individual or choral readings.
- Write original poems about Mexico.

Listen to recordings of Mexican music. After listening carefully to the music, other activities may be used with the records.

- Develop creative rhythmic activities that express the feeling of music.
- Use finger paints or colored chalks to create original designs while listening to music.

Learn Mexican songs.

Discuss how the songs of Mexico were often created around some activity of daily living such as grinding corn, making tortillas or going to market. Students may wish to perform these activities while singing.
Learn some of the common dances of Mexico such as the Donkey Dance or La Raspa.

Use instruments such as castanets, clappers, jingle sticks, tambourines and maracas to beat out Mexican rhythms.

Make Mexican maracas using balloons covered with papier-mâché. (Some teachers use old light bulbs, but this is considered dangerous.) Rolled tagboard handles may be attached with masking tape, and small pebbles may be placed inside after balloon has been popped. Tambourines may be made by attaching bottle caps to gaily decorated paper plates.

Show "Treasure Chests" of Mexican articles.

Exhibit and label articles from Mexico brought to class by the students. Distinguish between manufactured articles and handicrafts such as embroidery, leatherwork, lacquerwork and pottery.

Suggest to the students that they might like to visit some of the shops in Seattle which specialize in articles imported from Mexico.

Make handicrafts articles, such as the following using the bold, gay colors found in Mexican designs.

- Bowls, candle holders, and figures made from clay.
- Plaster of paris wall plaques
- Beads made from seeds or macaroni
- Corn husk dolls
- Mosaic pictures illustrating activities of Mexico. Small pieces of colored construction paper may be used.
- Mats, belts, serapes woven from yarn, raffia or construction paper

**Culminating Activities**

Present a Mexican program to the class or to other classes or parents. Such a program may be centered about the following activities:

- Read original stories or poems created during the study of Mexico.
- Perform original plays or puppet shows.
Show original models or pictures made by students and explain their purpose or meaning.

Sing and dance Mexican songs and dances.

Perform in a "Mexican Band" playing instruments made in class.

Add a section on arts and crafts to the growing class notebook about Mexico. Prepare a mural depicting Mexican artists and craftsmen at their work. Prepare a bulletin board containing samples illustrating typical Mexican art forms.
Suggestions to the Teacher

1. The teacher should determine the reading, spelling and reasoning levels of his Mexican American students. Such an evaluation could consist of reading a short story aloud to the class and then asking students to select from a choice of words written on the board those which best describe what the story is about. During this period of testing, the teacher must be alert to the student who cannot write down these words without first consulting his neighbor or his neighbor's work. Another test of student ability can be given after the teacher has become familiar with the special patterns of certain students. Completely an individual type of evaluation, it consists of inconspicuously approaching a child and, through conversation, assessing his understanding of subject matter, directions, general vocabulary and American idiomatic expression.

2. Most Mexican American youngsters have by the eighth grade developed defense techniques that allow them to function adequately in most classroom situations. Despite their adequacy, the teacher must not be deluded into thinking such students are able to apply what they learn, for there is no true reinforcement of this "learning." It must be remembered that many of these children return at the end of the school day to Spanish speaking homes, to Mexican culture, to a system which does not encourage an exchange with their elders which might enrich the material they have been taught in school.

3. In a classroom where a majority of the students are Mexican American, a teacher must develop within the established curriculum a program meaningful to these youngsters. Such a program will stimulate the children to participate orally in the material they are being taught, to summarize what they have learned and to discuss key words and concepts. The hope is that they will internalize what they have learned through such determined and varied reinforcement.

4. Considering the variety of Mexican American students, it is almost inevitable that the teacher will face the question of control. Knowledge of the Mexican culture should indicate that these children generally respond best to a disciplined situation with overtones of formality. A Mexican American child is trained to see a teacher as a person equal in authority.

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to his father, regardless of the sex of the teacher. But the teacher's role is to see to it that the authority reflects understanding, fairness and acceptance. A great disservice is done to a child when the teacher displays leniency towards habits that fail to conform to classroom or school routines--tardiness, neglect of deadlines, failure to come to class prepared.

5. A matter which could lead to complete breakdown of communications between the teacher and his Mexican American students is the "embarrassment" of the child by the teacher. It is useful to note that the Spanish language has no equivalent for the English word "embarrass." For instance, in Spanish a person who is embarasada (past participle acting as an adjective) is pregnant. There are also expressions for turning red as a result of receiving a compliment (ruborizarse), for getting into an awkward situation (comprometerse); otherwise, to embarass is literally to dishonor (deshonorar, insultar, infamar) or to shame (avergonzar). The fact that there is no Spanish word for "embarrass" should indicate that the speakers of the language do not treat lightly loss of stature. Thus, when a teacher finds it necessary to discipline by heaping guilt on a youngster, he should never do it in front of the youngster's peers. Such disciplinary action must always remain an individual confrontation, handled without witnesses.

6. Many Mexican American children develop a negative self-image which comes from too many experiences of failure. These children rarely have a reservoir of success which makes it possible for them to cope with failures that may result from lack of application or knowledge. A teacher must create opportunities for these youngsters to achieve. A teacher must find methods of evaluating that are not dependent wholly on the basic skills. A teacher must understand that these youngsters are developing in two cultures, that they are learning two languages, that they are functioning in two worlds, that they are making adjustments and decisions in order to achieve acceptance by the dominant culture. Teachers must not overlook the fact that compromises are sometimes made by these young people in order to function more adequately in two cultures that have many opposing values and patterns of behavior, and that the compromises they make bring them into conflict with their families, peers, school or whoever comes to play a part in determining the direction they will take.

7. It is strongly recommended that the positive approach be used rather than those approaches that immediately punish for lack of conformity. Teachers must teach the "new" values and standards in somewhat the same manner as a new skill is taught. If a youngster is constantly tardy he must be taught the
importance of punctuality, rather than automatically be punished because he was not in his seat on time. Most youngsters will respond to explanations or lessons that teach the value of such things as punctuality, preparedness, participation, individual response, neatness, and so forth.

8. A teacher should take advantage of those experiences the Mexican American youngster has outside of school to build concepts, to illustrate, to relate. These youngsters are not culturally disadvantaged; they are culturally different. This suggestion carries the implication that a teacher must go into the community and get acquainted with and, if necessary, even participate in community functions. Knowledge of the students' background and experiences is rarely to be found in the school record. It is difficult for these young people to answer questions relative to their home life or community, for they do not understand the "why" of the questioning.

9. Teachers approaching the parents of these children must be aware of their limitations with the English language, ignorance of school procedure and the mysteries of teaching. Unless the teacher has established a rapport with a particular youngster that gives the teacher the proper entree, he is advised to work through a home-school coordinator or liaison person to make the initial contacts. All schools should have home-school contact people who come from the community. These people should have a mutual acceptance from both the community and the school. In approaching a Mexican American home it is important to follow familial protocol; the father is the head of the family, therefore teachers and school personnel must direct themselves to him first.

10. Established curricula should be expanded to include the culture, heritage and other contributions of the Mexican and Mexican American to the American scene. Electives should be established that lead to better knowledge and understanding of this minority. A greater emphasis should be placed on its role in the local community as well as in the national and international communities. A change of perspective will contribute greatly to the development of a more positive self-image, which in turn will create greater motivation, the key to learning and achievement. Those programs of a school that contribute to developing pride among Mexican Americans could easily become the springboards to participation, acceptance and ambition. However, caution must be exercised lest the new image created is not one that reflects the "folksy" stereotype typical of textbook illustrations, advertisements and fiesta days: i.e.,
the lazy male, the non-hygienic female, the sombrero, the huaraches, the burro. The Mexican people take a great pride in the new Mexico born of a great social revolution, and teachers should emphasize this newborn pride.
APPENDIX D

UNIT ON ELECTROMAGNETS

I. Objectives

A. Key Science Concepts and Understandings

1. When electric current passes through a wire, there is a magnetic field with lines of force around the wire.
2. When the wire carrying an electric current is wound into a coil, the coil acts just like a bar magnet, with a north-seeking and a south-seeking pole.
3. Placing a bar of soft iron inside the coil greatly increases the strength of this magnet which is called an electromagnet.
4. An electromagnet is a temporary magnet, its magnetism continuing only as long as electric current flows through the wire.
5. Soft iron is almost always used as the core of an electromagnet because it magnetizes easily and loses its magnetism just as easily.
6. When the connections of the wire to the source of electric current are reversed, the electromagnet's poles are reversed.
7. Increasing the number of turns of wire in the coil will make the electromagnet stronger.
8. Increasing the strength of the electric current flowing through the wire will make the electromagnet stronger.
9. An electromagnet is like a permanent magnet in that it has a magnetic field and two poles, it will attract only magnetic materials, and its magnetic force will pass through nonmagnetic materials.
10. An electromagnet is different than a permanent magnet in that its magnetism can be turned on or off, its poles can be reversed, it can be made stronger or weaker, and its core is made of soft iron whereas the magnet is usually made of steel.
11. Electromagnets are used in such communication devices as the telegraph, telephone, radio, and television.
12. Electromagnets are used in industry in such devices as the motor, generator, transformer, and crane.
13. Electromagnets are found in the home in bells, buzzers, chimes, circuit breakers, some electrical appliances, and many electric toys.
B. Behavioral Outcomes

1. Skill in analyzing.
2. Skill in applying previous knowledge to new situations.
3. Skill in communicating.
4. Skill in deduction.
5. Skill in experimenting.
7. Skill in induction.
8. Skill in keeping records.
10. Skill in measuring.
11. Skill in noting similarities and differences.
12. Skill in observing and describing.
13. Skill in predicting.
15. Skill in using numbers of experiments.
16. Attitude of curiosity.
17. Attitude of open-mindedness.
18. Attitude of reluctance to generalize on the basis of one experiment.
19. Attitude of suspended judgment.
20. Attitude of willingness to change one's mind in the light of new evidence.

C. Anticipated Pupil Objectives or Problems

1. Why does a wire carrying an electric current act like a magnet?
2. What do the lines of force around the wire look like?
3. What will happen if we put the wire over a compass? Under a compass?
4. What will happen if we arrange the wire into a coil?
5. What do the lines of force around the coil look like?
6. What will happen if we put an iron nail inside the coil?
7. Why do we use soft iron instead of steel inside the coil?
8. What will happen if we use a steel core in an electromagnet?
9. What will happen if we disconnect one wire from the dry cell?
10. How can we tell which end of an electromagnet is the north seeking pole?
11. What will happen if we reverse the connections of the wires to the dry cell?
12. How can we make an electromagnet stronger?
13. How are electromagnets like permanent magnets?
14. How are electromagnets different from permanent magnets?
15. How are electromagnets used in industry? In the home?
II. Activities

A. Initiating Activities

1. Set up a bulletin board displaying an electromagnet, devices that use electromagnets, and so forth, with appropriate materials on a nearby table.
2. Show a film, or parts of it, on electromagnets with the sound turned off.
3. Show selected frames from a filmstrip on electromagnets.
4. Spread books, pictures, and other printed materials about electromagnets on the library table.
5. Make an electromagnet and use it to pick up magnetic materials. Ask, "What kind of magnet is this?"
6. Use a wire carrying an electric current to pick up iron filings. Ask, "Why does the wire act like a magnet?" Repeat, arranging the wire into a coil.
7. Stop the flow of electricity through an electromagnet. Ask, "Why did the electromagnet lose its magnetism?"
8. Ask the class to suggest ways to find out how it can tell which end of an electromagnet is a north seeking pole.
9. Reverse the connections of an electromagnet's wires to a dry cell. Ask, "What effect will this have on the electromagnet?"
10. Ask the class to suggest what to make an electromagnet stronger.
11. Ask the class how electromagnets are similar to and different from permanent magnets.
12. Bring in devices like the bell, buzzer, telegraph, motor, etc. Ask class to locate the electromagnet in each device. Ask, "How does the electromagnet work in this device?"

B. Learning Activities

1. Connect the bare ends of a length of copper bell wire to the terminals of a dry cell and pick up iron filings with the middle part of the wire. Disconnect one end of the wire from the dry cell and try again to pick up the filings.
2. Bring a compass near a wire carrying an electric current. Place the wire over, then under, the compass. Observe the deflection of the needle.
3. Run a piece of bell wire through a hole in a square of white cardboard. Place four compasses on the cardboard, arranging them into north, east, south, and west positions about two inches from the wire. Connect the bare ends of the wire to the terminals of a dry cell. Observe the new positions of the needles.
4. Remove the compasses and instead place iron filings on the cardboard. Connect the bare ends of the wire to the terminals of the dry cell, then tap the edge of the cardboard lightly. Note the pattern made by the filings.

5. Wind about 2 feet of bell wire around a pencil to make a coil. Remove the pencil and attach the bare ends of the wire to the terminals of a dry cell. Try to pick up iron filings and tacks with each end of the coil.

6. Bring a compass near one end of a coil of wire carrying an electric current. Note the position of the needle. Bring the compass near both ends of the coil and determine which is the north seeking and south seeking pole of the coil.

7. Sprinkle some iron filings on a piece of white cardboard. Rest a coil of wire carrying an electric current on the cardboard and tap the edge of the cardboard.

8. Wind some bell wire in a coil around a large iron nail. Connect the bare ends of the wire to the terminals of a dry cell. Try to pick up iron filings and tacks with one end of the nail. Observe any difference in strength now that the coil has a core of iron in it. Repeat activities No. 6 and No. 7 with this electromagnet.

9. Make an electromagnet, using a large iron bolt instead of a nail.

10. Make a horseshoe electromagnet. Compare the strength of this electromagnet with a straight one.

11. Make an electromagnet having 30 turns of wire and count how many tacks it will pick up. Now make an electromagnet with 60 turns of wire and note the number of tacks this electromagnet will pick up. Relate the number of tacks this electromagnet will pick up. Relate the number of tacks to the number of turns.

12. Compare the number of tacks an electromagnet will pick up, using first one dry cell and then two dry cells which are connected in series.

13. Wrap about 100 turns of thin insulated copper wire around a hollow cardboard mailing tube. Place a steel knitting needle inside the tube. Attach the bare ends of the wire to the terminals of two dry cells connected in series. After a few seconds disconnect the wire from the dry cells and remove the needle. Test the needle for magnetism over a period of days. Note the permanence of this knitting needle magnet.

14. Make a simple telegraph set.

15. Set up a two-way telegraph system.
C. Enrichment Activities

1. Show how an electric buzzer works. Make an electric buzzer.
2. Show how a bell works. Make a simple electric bell.
3. Show how electric chimes work.
4. Show how a circuit breaker works.
5. Show how a telephone transmitter and receiver work.
6. Show how a St. Louis motor works. Make a simple motor.
7. Show how a generator works. Make a simple generator.
8. Read and report on Hans Christian Oersted and his early experiments on electromagnetism.
9. Read and report on Samuel Morse and the invention of the telegraph and Morse code.
10. Read and report on the laying of the first telegraph cable across the Atlantic ocean.
11. Read and report on Guglielmo Marconi and the invention of the wireless telegraph.

D. Culminating Activities

1. Show films or filmstrips on electromagnetism.
2. Have a classroom "science fair" of experiments, demonstrations, and models that the pupils made during the unit.
3. Have fast learners give reports, accompanied by demonstrations or experiments.
4. Have pupils make a list of appliances and other devices in the home or in industry that make use of electromagnets.
5. Visit a museum of science and industry that make use of electromagnets.
6. Visit a telephone or telegraph company.

E. Evaluating Activities

1. Observation by the teacher for indications of pupil development of scientific skills, attitudes, appreciations, and interests.
2. Objective-type tests.
3. "Thought" questions, such as:
   a. What would happen if you used a steel core in an electromagnet?
   b. What advantages does an electromagnet have over a permanent magnet?
   c. What advantages does a permanent magnet have over an electromagnet?
   d. When a telegraph key is connected to an electric bell or buzzer circuit and pressed like a push-button, why is there only one sound instead of
repeated sounds as with the bell or buzzer.

III. Bibliography

A. Teacher Bibliography


B. Pupil Bibliography

6. Schneider, Herman, and Nina Schneider. *Your Telephone and how it Works*.

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House, 1967.

IV. Materials

A. Science Supplies and Equipment

dry cells
insulated bell wire (#18)
thin insulated wire (#28)
iron filings
compasses
white cardboard square
iron tacks
paper clips
large iron nails
roofing nails
large iron bolts
screw eyes
metal washers
pins
cardboard mailing tube
steel knitting needle
wood boards
metal strips
buzzer
bell
chimes
circuit breakers
telephone transmitter and receiver
St. Louis motor
simple generator

B. Films

5. Magnetism. Coronet. 11 min.
C. Filmstrips


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APPENDIX E

SOCIOGRAM

Instructions To The Teacher:

Usually children do not object to listing persons with whom they have a positive feeling, but they frequently want to know why they are being asked to make choices. The teacher can usually satisfy their curiosity by making some statement similar to this, "At times I will want to form groups in which we will work or play. In order for me to know the persons with whom you would like to be, would you please answer the following question. No other children will see your list and we may do this at other times during the year."

At this point the blank forms can be distributed and the following statements or questions can be made:

Put your name on the top line where it says "My Name." First and last names please.

Where it says, playground, will you put the names of any two persons in this class whom you would choose to play with if you could only choose two. First and last names please, (spell the names as best you can).

Where it says, school, will you put the names of any two persons in this class whom you would choose to work with you on some school project. They may be the same or different persons from the ones you choose for playground playmates. First and last names please.

Where it says, home, will you put the names of any two persons in this class whom you would invite to your home if you were given permission to invite two people to your home after school. They may be the same or different persons from either of the two previous lists. First and last names please.
<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Class Identification</th>
<th>Ethnic Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>School</td>
<td>Home</td>
</tr>
<tr>
<td></td>
<td>Play-ground</td>
<td>PRE TEST</td>
</tr>
<tr>
<td></td>
<td></td>
<td>POST TEST</td>
</tr>
<tr>
<td>School</td>
<td></td>
<td>TOTAL</td>
</tr>
<tr>
<td>Home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play-ground</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Identification</td>
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</tbody>
</table>