DOCUMENT RESUME

ED 022 964 24 VT 006 999

By-Miller, Harold J.
THE EFFECTS OF INTEGRATION ON RURAL INDIAN PUPILS. FINAL REPORT.
North Dakota Univ., Grand Forks.
Spons Agency-Office of Education (DHEW), Washington, D.C.
Bureau No-BR-7-8397
Pub Date Jun 68
Grant-OEG-0-8-078397-1881
Note-163p.
EDRS Price MF-$0.75 HC-$6.60
Descriptors-ACHIEVEMENT, *AMERICAN INDIANS, CULTURAL BACKGROUND, *DISADVANTAGED YOUTH, DISCRIMINATORY ATTITUDES (SOCIAL), GRADE 9, HIGH SCHOOL STUDENTS, *INTEGRATION EFFECTS, INTELLIGENCE, *RACIAL INTEGRATION, RACIAL SEGREGATION, RURAL YOUTH, *SCHOOL ATTITUDES, SOCIAL RELATIONS, STUDENT ATTITUDES, STUDENT CHARACTERISTICS, WORK ATTITUDES

To determine how attending predominantly non-Indian schools affected rural Indian pupils, a study of 12 schools was conducted with specific objectives to: (1) determine differences by type of school attended and sex, (2) isolate and identify cultural conditions related to differences, (3) determine the comparative status of Indian pupils by reservation area, (4) gain insight into the social relationships of Indians with their non-Indian peers, and (5) establish a working background of data for longitudinal studies. Major findings were: (1) There appeared to be a consistent, positive relationship between low cultural, economic, and social levels and low achievement, low intelligence, high alienation, negative attitudes toward school, and low vocational maturity, (2) Integrated Indian pupils appeared to accept the values of the majority non-Indian society to a greater extent than did segregated Indians, and (3) Within each classroom, a segregated situation generally existed. Some educational implications were: (1) Transfer of pupils to integrated schools in Grade 9 may be potentially more harmful than helpful, (2) Grouping classes by achievement, resulting in racial segregation, requires re-examination, and (3) Extensive and inviting adult education programs geared to the needs and problems peculiar to the Indian adult would assist in the transfer of favorable attitudes to the next generation. (DM)

Final Report
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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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Harold J. Miller

University of North Dakota

Grand Forks, North Dakota

June 1968

The research reported herein was performed pursuant to a grant with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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ACKNOWLEDGEMENTS

The author wishes to acknowledge the help and assistance of the administrators and counselors in the twelve public schools who cooperated in this study.

Appreciation is extended to Mr. Arthur Harkins, cultural anthropologist at the University of Minnesota, for his assistance in the construction of the data collecting devices used in the gathering of sociocultural information; Dr. Bernard Spilka, psychologist at the University of Denver, whose instruments were used in the collection of data relating to alienation and attitude toward school; and Dr. H.G. Dilling, whose methodology for determining social acceptance was modified for use in this study.

A special thanks is given to Mrs. Harold J. Miller who assisted in the collection and analysis of the data relating to vocational maturity.

Special appreciation is given to the Bureau of Educational Research and Services and the Center for Research in Vocational and Technical Education, University of North Dakota, for the help and assistance provided in the planning and conducting of the study.

H. J. M.

TABLE OF CONTENTS

LIST OF TABLES

Table

Table | Page

Table

Table | Page

SUMMARY

The Problem

The purpose of this study was to investigate the influence of integrating Indian pupils in predominantly non-Indian schools.

The study had five major objectives:

1. To determine, by type of school attended and by sex, the comparative levels of achievement, intelligence, alienation, attitude toward school, and vocational maturity of integrated Indian pupils, segregated Indian pupils, resident non-Indian pupils, and transfer non-Indian pupils.

2. To isolate and identify cultural conditions which might have been related to differences of integrated Indian pupils as compared with segregated Indian pupils and non-Indian resident and transfer pupils.

3. To determine the comparative status of Indian pupils by Reservation Area.

4. To gain an insight into the social relationships of Indians with their non-Indian peers in a minority setting.

5. To establish a working background of data for each Indian pupil so that, in future studies, his situation may be systematically followed on a longitudinal basis.

Sample

The sample of this study included 704 grade nine pupils located in six Reservation Areas in or adjacent to North Dakota. By name, the

Reservation Areas were: (a) White Earth, (b) Fort Peck, (c) Turtle Mountain, (d) Fort Berthold, (e) Fort Totten, and (f) Standing Rock. By type, the number of pupils included 102 integrated Indian pupils and 107 non-integrated Indian pupils. The sample also included 354 non-Indian pupils who had attended the integrated school for the first eight years of their schooling (i.e. resident non-Indian pupils) and 139 non-Indian pupils who had transferred into the integrated school, mostly from one-room rural schools, at the beginning of grade nine (i.e. transfer non-Indian pupils). Data on all of the pupils were gathered in the fall of their ninth grade year.

Methodology and Procedure

The criterion of achievement, intelligence, alienation, attitude toward school, and social relationships were studied in order to determine any changes which result with the integration of Indian pupils. To control extraneous factors which might make the study less meaningful, a number of cultural background variables were tested for both Indian pupils who had attended integrated (usually public) schools for the first eight years of their schooling (i.e. integrated Indian pupils) and the Indian pupils who had attended Indian (usually Bureau) schools for their first eight years of schooling (i.e. non-integrated Indian pupils). Tests on these cultural variables were also run on the non-Indian pupils sampled. The control of these variables allowed a more confident appraisal of differences which might occur in the basic factors studied as being definite results of the educational environment.

The cultural variables considered in the analyses were:

1. Socio-economic status of those with parental responsibility,

2. Employment status of those with parental responsibility,

3. Home stability,

4. Geographical isolation,

5. Education of father,

6. Education of mother,

7. Age of pupil,

8. Pre-school language,

9. Degree of Indian blood, and

10. Degree of drinking problem of those with parental responsibility.

The primary statistical techniques employed in the analysis of the data included: one-way analysis of variance, *t* tests, chi-square, correlation, and multiple linear regression.

Summary of the Findings

1. *What are the differences in levels of achievement, intelligence, alienation, and attitudes toward school when comparisons are made of ninth grade non-Indian pupils and ninth grade Indian pupils?*

It was concluded that in this sample non-Indian pupils demonstrated greater achievement, higher intelligence, less alienation, and more positive attitudes toward school than did the Indian pupils.

2. *What are the differences in these same factors when comparisons are made of integrated Indian pupils and non-integrated Indian pupils?*

It was concluded that Indian pupils who were integrated for their first eight years of school demonstrated greater achievement and less alienation than the non-integrated Indian pupils. Significant differences were not found in intelligence nor in attitudes toward school between these groups although mean scores favored the integrated Indian

pupils in attitude toward school.

3. *Does sex, as a variable, affect the findings of the first two questions?*

Sex was entered as a factor of analysis to insure the fact that an unequal distribution of boys or girls within the compared groups did not influence findings in one direction or the other. This analysis indicated that the results reported for questions one and two were, in fact, as given, and not a result of unequal distributions by sex within the groups tested. No significant difference, by sex, was found within any pupil group.

4. *What differences exist when comparisons are made between Indian and non-Indian pupils on selected cultural variables?*

Economic status of those with parental responsibility.--A highly significant difference was found favoring the non-Indian pupils.

Employment status of those with parental responsibility.--A highly significant difference was found favoring the non-Indian pupils.

Home stability.--A highly significant difference was found favoring the non-Indian pupils.

Geographic isolation from school.--A significant difference was found showing the non-Indian pupils as being located a greater distance from the schools.

Education of the father.--A highly significant difference was found favoring the non-Indian pupils.

Education of the mother.--A highly significant difference was found favoring the non-Indian pupils.

Age of pupils.--A highly significant difference was found indicating the Indian pupils were older for their grade level placement.

5. *What differences are found when integrated Indian pupils and non-integrated Indian pupils are compared on these same selected cultural variables?*

Three additional variables which are theoretically predisposed to affect the success of Indian pupils in school, were also tested for differences. These three were the pre-school language of the pupil, the degree of Indian blood, and the degree of drinking in the home.

The findings from these comparison groups revealed only two areas where significant differences existed. The non-integrated Indian pupils were found to live farther from school (geographic isolation) than the integrated Indian pupils. The second difference found was that the integrated Indian pupils had a significantly higher socio-economic status than did the non-integrated Indian pupils.

6. *What differences exist between integrated and non-integrated Indians in the degree of within-race, outside-race orientation?*

The findings on this question indicated that there was a trend toward more outside-race orientation (choice of non-Indian pupils) by integrated Indian pupils. The differences found, however, were not significant differences.

7. *What differences exist between resident non-Indian pupils and transfer non-Indian pupils when they are compared on the degree of within-race, outside-race orientation?*

No significant difference existed in the outside-race orientation (choice of Indian pupils) between the two groups of non-Indian pupils in either a social situation or in a work project situation.

8. *What differences exist in the degree of acceptance by non-Indian pupils of integrated Indian pupils compared to non-integrated Indian pupils?*

In a social situation, the non-Indian pupils showed a signifi-

cantly greater propensity to accept the integrated Indian pupils than the non-integrated Indian pupils. An even greater tendency to accept integrated Indian pupils over non-integrated Indian pupils in school work projects was revealed. It is of interest to note that resident and transfer non-Indian pupils selected an equal proportion of Indian pupils.

9. *What cultural variables will best predict achievement placement for integrated Indian pupils and for non-integrated Indian pupils?*

For integrated Indian pupils.--The education of the father was found to be the single best predictor of level of achievement. The pupil's age, as an inverse relationship, and the father's employment status also were found to be good predictors of achievement.

For non-integrated Indian pupils.--Socio-economic status of those with parental responsibility proved to be the single best predictor of level of achievement. Again, the pupil's age and the education of the father were found to be good predictors of achievement.

10. *What cultural variables will best predict alienation levels for integrated Indian pupils and for non-integrated Indian pupils?*

For integrated Indian pupils.--The education of the mother was found to be the best single predictor of the level of alienation. Age of the pupil also proved to be a good predictor. The degree of drinking, pre-school language, home stability, and the education of the father all showed some degree of predictive value.

For non-integrated Indian pupils.--The education of the father proved to be the best single predictor of alienation level. Socio-

economic status also was found to be a strong predictor. The degree of Indian blood, home stability, and education of the mother also showed some degree of predictive value...

11. *What cultural variables will best predict the attitude toward school of integrated Indian pupils and of non-integrated Indian pupils?*

For integrated Indian pupils.--The pupil's age proved to be the best single predictor of attitude toward school. The older the pupil related to his grade placement, the poorer was his attitude toward school. The pre-school language of the pupil was also found to be a rather strong predictor of a pupil's attitude toward school.

For non-integrated Indian pupils.--The education of the father was found to be the best single predictor of attitude toward school. Home stability and the employment status of those with parental responsibility also proved to be good predictors of this criterion.

12. *What cultural variables will best predict the vocational maturity of integrated Indian pupils and of non-integrated Indian pupils?*

For integrated Indian pupils.--The education of the mother was found to be the best single predictor of a pupil's vocational maturity. Another strong predictor of vocational maturity was the socio-economic status.

For non-integrated Indian pupils.--The education of the mother, again, proved to be the best single predictor of vocational maturity. The pre-school language of the pupils also was found to be a rather strong predictor of vocational maturity.

13. *Are differences in vocational maturity evident when comparisons are*

made of integrated Indian pupils, non-integrated Indian pupils, and non-Indian resident and transfer pupils?

Vocational maturity scores were found to significantly favor non-Indian pupils over Indian pupils. Integrated Indian pupils showed significantly higher scores than non-integrated Indian pupils. No significant differences were found between resident and transfer non-Indian pupil scores.

14. *Which cultural variables are related to the vocational maturity of integrated and non-integrated Indian pupils?*

For the integrated Indian pupils, the cultural variables with the greatest relationship to vocational maturity were found to be, in order, the educational level of the mother, the socio-economic status, and the age of the pupil.

For the non-integrated Indian pupils, only the cultural variable relating to the educational level of the mother was found to be significantly related to vocational maturity.

15. *Which of the selected cultural variables, by Reservation Area rankings, are most closely associated with the criterion?*

Achievement.--A higher achievement ranking was most highly related to the educational level of parents. The pre-school language spoken was also rather closely associated with the achievement rankings.

Alienation.--A lower alienation ranking was also most highly related to the educational level of parents. Again, pre-school language spoken was rather closely associated with the alienation rankings.

Attitudes Toward School.--A better attitude toward school ranking was related only to the educational level of the parents to a high posi-

tive degree. The other cultural variables tested showed very little relationship or a negative relationship with attitude toward school.

Vocational Maturity.--A higher vocational maturity ranking was most highly related to the pre-school language spoken. The educational level of the parents, however, was again closely associated with the vocational maturity rankings.

16. *What is the general cultural ranking, from high to low, for the Reservation Areas?*

1. White Earth
2. Fort Peck
3. Turtle Mountain
4. Fort Berthold
5. Fort Totten
6. Standing Rock

Conclusions and Implications

One of the basic assumptions which has been made throughout this investigation is that many Indian pupils will leave the reservations, either for further education or to seek employment, after the completion of their elementary and secondary education. Consequently, one fact that should not be overlooked is that while integrated Indians scored higher than segregated Indians, they did not come anywhere near the achievement level of their non-Indian classmates. Accepting the fact that the standardized tests used are culturally biased against the Indian does not dispose of the problem. If the Bureau objective of having "approximately half of the high school graduates preparing themselves through college work for professional careers" (Nash, 1965) is ever to become a reality, the Indian pupil must be able to compete

academically in a society which is culturally biased against him. The present achievement level of both integrated and segregated Indian pupils, unless drastically improved, will be a handicap which will hinder many of these pupils who desire to leave the reservation.

The organization for the education of Indian pupils in any type of school must take into account the many socio-cultural factors upon which the academic success of Indian pupils is contingent. It would be unrealistic, for example, for a teacher to expect high achievement from an Indian pupil who cannot see any reason for learning the subject matter and who feels that school is a waste of time. Educators in integrated public schools should recognize that Indian pupils have special problems and needs, and that the policy of treating all of the pupils, Indian or non-Indian, alike is not necessarily admirable. This is especially applicable to Indian children who transfer to non-Indian schools. In the present study these pupils were low in achievement, high in alienation, had negative attitudes toward school, and came from culturally deprived homes. It would be most surprising if such pupils, as a group, did not most often have difficulty in adjusting to the public school situation. How can educators treat these Indian pupils the same as integrated Indian pupils or non-Indian pupils? Unless some improvement is made in the preparation for, and in the transition of, Indian pupils to integrated schools, it is the opinion of this investigator that such transfer could well be potentially more harmful than helpful to these pupils. In any event, the chances of success for a pupil transferred as late as grade nine are, at best, questionable.

Teachers need to become more aware of the social relationships

between the Indian and the non-Indian pupils. The present practice in some of the schools of grouping pupils by achievement, resulting in classes divided almost entirely by race, requires immediate reexamination.

The relationship between the criterion and the cultural variables suggests that the education of parents is, perhaps, the most important factor in developing desirable traits and behaviors in Indian pupils. This would indicate that schools responsible for developing this acculturation process would do well to develop extensive and inviting adult education programs geared to needs and problems peculiar to the Indian adult. Home related variables are a great influence on achievement, alienation, attitude toward school, and vocational maturity of the Indian pupil. Funds presently allotted to remedial programs for Indian pupils might well be, in many cases, redirected to well-designed and meaningful adult education.

CHAPTER I

INTRODUCTION

One of the facts of life facing nearly every Indian pupil after he completes his education is that it appears he must leave the reservation if he is to become economically and vocationally successful. A North Dakota Indian, for example, who desires to live on the reservation today will be faced with the hard fact that fifty to ninety per cent of the Indians residing there are unemployed, (Wilson, 1965). Present emphasis by the Bureau of Indian Affairs to encourage industrial development on or near a reservation offers some hope for the distant future, but few expect that this will ever completely solve the unemployment dilemma (Keeler, *et al.*, 1961). The problem then, is one of how best to prepare many Indians for life as a minority group in the dominant White society. The Bureau of Indian Affairs' policy of providing a public school education for Indian youth "wherever possible" seems to reflect the feeling that integrated education may be one answer. Today sixty per cent of the Indian pupils attend public schools, many of which are integrated.

A major portion of the efforts to better understand the consequences of integration for the Indian pupil has been concerned with the effects of one specified variable on educational achievement. Many of these studies have begun with the assumption that better achievement for integrated pupils was an end in itself. More recent studies of the Indian have revealed, however, that the adoption of

external American life, which may lead to higher achievement test scores, is not clearly correlated with accompanying changes in basic Indian attitudes and personalities (Simerenko, 1966). No concrete evidence exists, for instance, that Indian pupils with high achievement scores are most successful in life.

More information is needed on the patterning of various influences affecting Indian attitudes and goals. The pat[illegible]n must necessarily include educational, sociocultural, and family factors prevailing among the separate Indian communities and a particular Indian's relationship to them.

Statement of the Problem

The basic question to be answered was: "What are the effects on rural Indian pupils of attending predominantly non-Indian schools?" To understand the influence of integration on such pupils, comparisons were made with pupils from Indian segregated schools and with non-Indian pupils. Factors which needed to be considered included achievement, intelligence, alienation, attitude toward school, vocational maturity, and social relationships. In addition, cultural variables for each group needed to be isolated and compared.

Objectives of the Study

1. To determine, by type of school attended and by sex, the comparative levels of achievement, intelligence, alienation, attitude toward school, and vocational maturity of integrated Indian pupils, segregated Indian pupils, resident non-Indian pupils, and transfer non-Indian pupils.

2. To isolate and identify cultural conditions which might have

been related to differences of integrated Indian pupils as compared with segregated Indian pupils and non-Indian resident and transfer pupils.

3. To determine the comparative status of Indian pupils by Reservation Area.

4. To gain an insight into the social relationships of Indians with their non-Indian peers in a minority setting.

5. To establish a working background of data for each Indian pupil so that, in future studies, his situation may be systematically followed on a longitudinal basis.

Questions to be Answered

An analysis of the basic objectives revealed the following questions to which answers were sought:

1. Are differences evident, by type of school attended and by sex, when comparisons are made of integrated Indian pupils, segregated Indian pupils, and non-Indian resident and transfer pupils in:

   A. Achievement,

   B. Intelligence,

   C. Alienation,

   D. Attitude toward school, and

   E. Vocational Maturity?

2. Are differences evident when comparisons are made of Indian pupils and non-Indian pupils in the:

   A. Economic status of those with parental responsibility,

   B. Employment status of those with parental responsibility,

   C. Home stability,

   D. Geographical isolation,

   E. Education of father,

   F. Education of mother,

G. Age of pupils, and

H. Vocational maturity?

3. Are differences evident when comparison is made of integrated and segregated Indian pupils in the:

A. Socio-economic status of those with parental responsibility,

B. Employment status of those with parental responsibility,

C. Home stability,

D. Geographical isolation,

E. Education of father,

F. Education of mother,

G. Pre-school language,

H. Degree of Indian blood,

I. Degree of drinking problem of those with parental responsibility, and

J. Age of pupils?

4. Which of the cultural variables are, for integrated and for segregated Indian pupils, the more important predictors of:

A. Achievement,

B. Alienation,

C. Attitude toward school, and

D. Vocational maturity?

5. Are differences evident when pupils are compared by Reservation Areas on achievement, intelligence, alienation, attitude toward school, and vocational maturity?

6. Are differences evident when Indian pupils are compared by Reservation Area on selected cultural variables?

7. What is the relationship, for Indian pupils by Reservation Area, of the criteria rankings to the cultural variable rankings?

8. What are the overall rankings of the Reservation Areas by cultural variables?

9. Are differences evident among:

A. Integrated and segregated Indians in the degree of within-race, outside-race orientation,

B. Resident and transfer non-Indians in the degree of within-race and outside-race orientation,

C. Integrated and segregated Indians in the degree of acceptance by non-Indians, and

D. The acceptance of Indians in social and in work situations?

Definition of Terms

Several key terms, as they were used throughout this study, are defined as follows:

1. Acculturation

The two-way interaction between cultural groups characterized by a slower, less painful, and more democratic process of peaceful adaptation to change in both groups, with the dominant group taking precedence (Vickery and Cole, 1943).

2. Alienation

A state of cultural disorganization and deregulation in which the individual is unable to refer his behavior and that of his fellows to any stable set of standards (Durkheim, 1960).

3. Indian

In addition to fullblooded Indians, persons of mixed White and Indian blood were included in this category if they were enrolled on an Indian agency roll or if the proportion of Indian blood was at least

one-sixteenth.

4. Integrated Indian Pupil

An integrated Indian pupil was one who had attended schools with over fifty per cent non-Indian students in grades one through eight.

5. Non-Indian Pupil

Non-Indian pupils, for purposes of this study, were considered to be members of the Caucasian race.

6. Predominantly Indian Schools

Predominantly Indian schools were those where over fifty per cent of the pupils were Indian.

7. Predominantly Non-Indian Schools

Predominantly non-Indian schools were those where over fifty per cent of the pupils were non-Indian.

8. Reservation Area

A Bureau of Indian Affairs administrative subjurisdiction, defined by geographical boundaries.

9. Resident Non-Indian Pupil

A resident non-Indian pupil was one who had attended his present school, with predominantly non-Indian pupils, in grades one through eight.

10. Segregated Indian Pupil

A segregated Indian pupil was one who had attended schools with over fifty per cent Indian pupils in grades one through eight.

11. Socio-economic Status

The position that a family occupied with reference to the prevailing standard of cultural possessions, effective income, material possessions, and participation in the group activities of the community.

12. Transfer Non-Indian Pupil

A transfer non-Indian pupil was one who had transferred, after attending predominantly a non-Indian school, to his present school at the start of grade nine.

13. Vocational Maturity

The place reached on the continuum of vocational development from exploration to decline.

Limitations of the Study

This study was restricted to ninth grade pupils attending predominantly non-Indian schools which were located on or near the following Reservation Areas: (1) Fort Berthold, (2) Fort Peck, (3) Fort Totten, (4) Standing Rock, (5) Turtle Mountain, and (6) White Earth. Any generalizations drawn from the results were made in the light of the restrictive criteria imposed in the selection of the grade level and the schools to be studied.

The study was further restricted in terms of time and financial considerations which placed practical limitations upon the scope of the research conducted. More precise specification of background variables other than socio-economic status and level of acculturation was not attempted. Related areas which were not a primary concern of this study included: role conflict, child-rearing practices and independence training, and teachers' attitudes and values.

This study was further restricted by the extent to which the instruments utilized were able to measure the attitudes, abilities, and achievements of the pupils involved. A great deal of caution was necessary when using standardized tests with bicultural students. This con-

cern is well founded in that, from a technical standpoint, the reliability, validity, and norming of standardized tests have been established for the general population rather than for a particular bicultural group. The establishment of local norms does not entirely solve the problem in that reliability is still uncontrolled, and the spread of scores may be too little to differentiate among the students.

Since pupils from some cultures do poorly on standardized intelligence tests, some measurements have been developed to be "culturally fair". Such tests, however, have found limited use as they have not correlated highly with academic achievement (Snider, 1961).

Significance of the Study

1. The results of this study, which will be made available to school personnel involved in the education of Indian students, may prove useful in appraising curricula which appear not precisely suited to the needs of Indian youth, and may also open the way to better understanding of their Indian pupils.

2. The results of this study, made available to all educators now concerned with the problems of schools with predominantly Indian enrollment, may be helpful in the search for answers to such questions as whether or not some special emphasis should be incorporated in curricula to prepare Indian youth for transition to full integration with the non-Indian population.

3. It is expected that the results of this study will be submitted for publication to research journals for the benefit of educators and others concerned with the cultural advancement of minority groups other than Indians. At the present time there exists a significant

dearth of information on the positive and negative effects of education in a racially integrated environment.

4. The author has designed this study to provide for a follow-up study, on a longitudinal basis, of the students involved. It is expected that the follow-up will reveal the effects of integration upon previously segregated students. In this phase of the study there will be an effort made to identify factors which may serve as predictors of the Indian pupil's success in adult life.

CHAPTER II

REVIEW OF RELATED LITERATURE

While many articles and research studies having some relationship to the problem of this study have been included in the survey of the literature, it should not be assumed that the number is exhaustive; nevertheless, those cited may be taken as representative. A list of specific research studies from among those selected, but considered most valuable from the standpoint of providing background information for definition and delimitation of the problem, is presented first.

Of the available studies special reference is made to the following:

1. "The Indian Child Goes to School" (Coombs, *et al.*, 1958).
2. The Indian Research Study, (Zintz, 1957-1960).
3. Formal Education in an American Indian Community, (Wax and Wax, 1964).
4. "The Sioux Indian Student: A Study of Scholastic Failure and Personality Conflict" (Bryde, 1965).
5. "Achievement, Educational Adjustment, and Alienation Among the Sioux" (Spilka, 1966).
6. Socio-Economic Variables in the Acculturation Process, (Simerenko, 1966).

The information presented in this chapter is concerned primarily with the comparative status of integrated Indian pupils, segregated Indian pupils, and non-Indian pupils on the interrelated facets of:

(1) academic achievement, (2) intelligence, (3) cultural and environmental antecedents, (4) alienation, (5) vocational maturity, and (6) interracial social acceptance of pupils. In order, they are discussed on the following pages.

The Comparative Status of Indian and Non-Indian Pupils

Comparison of Groups: Achievement

Widespread criticism of Indian education brought about "The Meriam Survey" (1928), the first major research on the subject. As a result of this study, educational policy underwent three basic modifications:

1. The concept of boarding schools as a climate for acculturation gave way to the idea that children should be educated within their home environment.

2. The school program of half work - half instruction was abandoned in favor of a policy of full-time instruction.

3. The use of native language was no longer forbidden; the Indian pupil was encouraged to have pride in his heritage.

In 1943 the Bureau of Indian Affairs undertook to learn how the educational achievement of Indians compared with that of non-Indian children. The resultant monograph by Peterson (1944) recorded the first fullscale evaluation of the school work of Indian children. The findings showed a wide variation among Indians of various cultural backgrounds and home environments, but Indian pupils attending public schools with non-Indian children did better on reading, arithmetic, and language tests than Indian children attending other types of schools. A follow-up study by Anderson and others (1953) established that achievement from highest to lowest was (1) Indians in public schools, (2) Indians

in parochial schools, and (3) Indians in Federal schools. In an extension of the Anderson study by Coombs *et al.*, (1958), 23,000 pupils (forty-two per cent White) were tested to determine what relationship existed between the academic achievement of Indian children and selected environmental factors. On the basis of achievement the hierarchy consistently found integrated Indian pupils somewhere between the higher achievement White pupils and the Indian pupils in Federal schools. Branchaud (1953), Rupiper (1960), and Wilson (1965) confirmed these findings. Coombs *et al.*, (1958) and Bryde (1964) also indicated a deceleration in the achievement of Indian children with these pupils scoring near the norms in the fourth and fifth grades but dropping further from the norm with each successive level. The Indian pupil who reached the college level was also revealed as one having had inadequate academic preparation. (Artichoker and Palmer, 1959; Lundeman, 1960)

In a three-year study of Indian pupils in New Mexico, Zintz (1960) indicated that the three major problem areas blocking the improvement of Indian education were (1) cultural differences, (2) language barriers, and (3) remedial education. For all types of Indian pupils, primary deficiencies were found in reading and in any subjects related to language, with certain facets of arithmetic often following close behind.

In the investigation of sex differences in the academic achievement of pupils, little information directly related to Indians was available. Bryde (1964) at the elementary and secondary school level and McGrath (1962) at the college level found no significant difference between the educational achievement of Indian boys and girls.

The controversy over sex differences in the student population

in general has existed for some years, especially in the fields of reading and arithmetic. Gates (1960), for example, conducted a comprehensive study on reading abilities, and the findings confirmed by the study showed that on the average girls' reading abilities excelled boys' reading abilities. Reference to other recent studies on sex differences pointed out the possibility of fallacies having been propagated for some years. Alexander (1962) found that "significant sex differences did not appear to exist in the ability to solve verbal arithmetic problems." Parsley (1963) with regard to both reading and arithmetic achievement also concluded that there were no significant differences between the sexes.

Comparison of Groups - Intelligence

Early measurement of the intelligence of Indians consistently showed that Whites scored substantially higher than Indians (Rowe, 1914; Goodenough, 1926; Telford, 1932). Current psychologists agreed that such findings were directly related to cultural differences. As early as 1928 Jamieson had shown that the learning capacity that required verbal facility discriminated against the Indian. Investigations testing Indian groups previously divided by degree of Indian blood consistently showed that the degree of Indian blood correlated negatively with intelligence. (Hanson, 1937; Garth, *et al.*, 1927). Additional support of cultural and environmental variables as the basis for lower Intelligence Quotient scores among Indian children was demonstrated by Rohrer (1942). In testing 235 Osage children who lived in circumstances similar to their White neighbors and who were on a par with them educationally, economically, and culturally, he found no signi-

ficant difference between the Indian children as a whole with the White group nor did he find any significant relationships within degrees of blood. More recently, Hunt (1961) and Klineberg (1963) have very clearly developed the position that intelligence is not primarily a genetically determined entity but rather a function which develops in and through the process of interaction with the environment.

In summary, investigations of the capacity of Indian pupils showed almost universally lower intelligence quotients when compared to White pupils. Most researchers agreed that cultural, not genetic, factors accounted for these differences and that American Indian pupils had about the same innate equipment for learning as had the White children.

Comparison of Groups: Cultural and Environmental Factors

Various speculations had been advanced pertaining to the factors that were in operation to produce differences in the achievement of Indian children in the different areas, in different types of schools, and in contrast to non-Indian children in public schools. Why the "under-education" of the Indian pupils in general, and why their better performance in integrated schools in particular? It might have been supposed that the instructional program in integrated (usually public) schools was superior to that in segregated (usally Bureau) schools. While this may have been true at one time, recent evidence (Coombs, *et al.*, 1966) indicates that efforts by the Bureau of Indian Affairs to provide schools technically comparable to public schools in the same area have been successful. Another fact stands as a bar

to the conclusion that inferior Bureau schools were the reason for lower achievement by segregated pupils. If the instructional program of the school alone controlled the level of achievement of pupils, why did Indian children who attended only public schools not achieve as high as did white children who attended these same schools (Coombs, *et al.*, 1958)? Clearly then, factors other than the instructional adequacy of the schools attended needed to be explored.

Some evidence existed that greater contact with the dominant culture by the Indian pupil may have resulted in improved academic achievement. Havighurst, *et al.* (1962) reported that Indian groups with the greatest degree of contact with modern culture did best on achievement tests. He further found that Indian children who did not live on an Indian reservation did generally better than Indian children who lived on a reservation. Earlier, results of the analysis by Anderson, *et al.* (1953) made a strong case for the statement: "The greater contact of the Indian child with the White man's culture, the higher he scores on achievement tests." Snider (1966) found evidence to support the hypothesis that Nezperce Indian pupils having experiential backgrounds similar to that of the modal non-Indian population would experience little difference in educational achievement. McGrath (1962) concluded that "Indian students who are most successful in higher education have committed themselves to learning and accepting the dominant culture or have completely identified with White society."

The Acculturation of Indian Pupils.--Education officials of the Bureau of Indian Affairs had long contended that the Indian pupils in Bureau schools scored lower on achievement tests because these pupils

had basic cultural and environmental differences from Indian pupils who enrolled in public schools (Coombs, *et al.*, 1966). Basic to their belief had been the evidence that Bureau schools enrolled more pupils who were from "less-acculturated" homes and communities.

Thompson (1961) reported that eighty per cent of the Indian pupils in Bureau schools were "Fullbloods," most of whom came from totally non-English speaking backgrounds. This is particularly significant since Coombs, *et al.* (1958) found that the best indices of the degree of acculturation, and the related level of educational achievement, were the degree of Indian blood and preschool language used. Peterson (1948) had earlier pointed out that the ratio of "Fullbloods" in any geographical area had a direct relationship to the non-use of English in the home. Anderson, *et al.* (1953) noted that the educational achievement of "Mixedbloods" was clearly higher than that of "Fullbloods," not because of blood quantum, but because of differences in cultural experience. MacGregor (1946) pointed out that "Mixedbloods" and "Fullbloods" were actually sociological rather than biological groups, standing for a way of living according to Indian or White patterns rather than actual degree of blood.

Dr. Ben Reifel (1956), an American Indian and a member of the United States House of Representatives from South Dakota, emphasized, "A point that needs qualification is that public school graduates just seem to do better than others. Most of the Indians who get into public schools are usually Mixedbloods and live near White people."

The Attitudes of Indian Pupils.--All in all, sociological literature is characterized by the belief that a greater degree of

acculturation will be accomplished when Indian pupils attend integrated public schools. To determine if this is so, efforts were made to ascertain whether or not Indians had a tendency to adopt the attitudes and values of Whites in a situation where the two groups attended the same school. If such tendencies did exist, it was hypothesized, Indian children should have become more like their White counterparts the longer they were in school together. Havighurst (1957), however, noted that "Indian children compared more favorably with white children in the elementary grades than in high school." Considerable evidence existed that achievement and grade level appeared to be negatively correlated with Indian pupils in all types of schools (Bryde 1964; Coombs, *et al.*, 1958; Zintz 1960). Similar findings had been reported on the achievement of Negro children in New York (Decter, 1964). Simirenko (1966), in a pilot study of two Washo Indian communities, questioned the traditional sociological belief that the American educational system was effectively promoting the acculturation of minority group members. He concluded that "Our Indian educational system is not geared properly towards the acculturation of minority group members," and that "the most significant part played by our system of education seems to come only after the individual has been assimilated and has abandoned his minority community." Simirenko encouraged more research on the subject: "Additional studies have to be performed to give more definite answers as to the relationship between the number of years attended in a public school and the influence of these school years on the acculturation and assimilation of minority group members." A Bureau report on the

current status of the Navajo Bordertown Program (1965) offered related evidence: "The assumption that Navajo youth through attendance in Bordertown Public schools 'will learn the habits, customs, and practices of the general population' is not proving out as expected." Of particular significance may have been the fact that the Navajo students chosen to attend these predominantly non-Indian Bordertown schools were selected on the basis of adequate achievement and academic aptitude. Earlier research seemed to have assumed that normal achievement on standardized tests was all-important to an Indian's ultimate success in a White society. Lesser (1961) noted that ". . . the adoption of externals to American life is not neatly correlated with accompanying changes in basic attitudes. . ." Officer (1963) asked some pointed questions:

> Do we know for certain that youngsters educated in a segregated boarding school environment are necessarily less likely to adjust to the general society than, let us say, children educated in integrated public schools near their homes? In the latter instance, we may be able to show at any given time that Indian youngsters in public schools are doing better on standardized achievement tests than children in Federal boarding schools. But what happens to them after they leave school?

Vogt (1957) reviewed the hypotheses which have been advanced to account for the persistence of Indian culture. He contended that the view that American Indian acculturation had been slow because of inadequate public education, mass communication, and contact with members of the wider society ". . . failed to account for the many cases of Indian groups which have been subjected to a great deal of contact, yet who continued to maintain many of their old patterns."

Comparison of Groups: Alienation

The failure of many American Indians to acculturate to the demands of the twentieth century, industrialized American society was well documented (Havighurst, 1957). Indian people have retained many aspects of their original culture for generations after other minority groups have become acculturated. Vogt (1957) stated that ". . . by the mid-twentieth century it had become apparent to social scientists studying the American Indian that the Indian population was markedly increasing and that the basic rate of acculturation to the White American ways was incredibly slower than our earlier assumptions led us to believe." Dozier, *et al.* (1958) added that unlike other minorities, Indians did not appear to assimilate as groups.

Havighurst (1957) suggested that the Indian may be viewed as a man of two cultures, the Indian and the White. Spilka (1966), in discussing the Sioux, hypothesized that ". . . these Indians found and continue to find themselves caught between two cultures," being outside of and between both the Indian and White culture. No longer were stable values provided by the Indian heritage nor could they adopt those of the middle class White culture. Bryde (1964) commented that:

> unlike aboriginal people free to exercise their values on their own ecological basis, the Indian must live in the white man's world, on the white man's ecological basis. He is geographically and physically immersed in the white man's world with daily, face-to-face contact with white people. Any exercise of his values which vary with the white man's must be regarded as deviations. This is the unique cultural conflict of Indian and white cultures.

Bernardoni (undated) listed some of the cultural conflicts that needed to be resolved if the Indian pupil was to succeed in school:

Indian Cultural Values	Values Needed in School
1. Co-operation	1. Competition
2. Time not important	2. Time consciousness
3. Docileness	3. Aggressiveness
4. Live day-by-day	4. Live for the future
5. Follow tradition	5. Question tradition
6. Live with nature	6. Manipulate environment
7. Live like others	7. "Get ahead" of others

This confrontation in the school setting contributed to the conflicting situation in which the present-day Indian pupil might find himself. As a result these pupils often appeared to be showing characteristics frequently regarded as anomic or alienated in nature (Durkheim, 1960; MacGregor, 1946).

Recent writers in the field of psychology and sociology have shown increased concern with the concept of alienation, which is the psychological counterpart of Durkheim's sociological construct of anomie (Durkheim, 1958). Anomie is an indication that moral rules or norms governing social life in a group are losing their social force, their certainty, and authority. A person caught in such circumstances is theorized to respond by developing the psychological state of alienation.

Seeman (1959) identified the individual components of alienation as:

1. Powerlessness, a feeling of futulity or lack of control over dominant social forces.

2. Normlessness, a lack of perceived rules and standards.

3. Meaninglessness, a low probability of successfully predicting

the outcomes of one's behavior.

4. Social isolation, a feeling of detachment from others.

5. Self-estrangement, the feeling that an individual's behavior is directed toward ends which appear alien to him.

It may be theorized that this clashing of cultural values and the resultant state of alienation should have adverse effects on the personalities and educational performance of Indian pupils. Spilka (1966) hypothesized that the academic failure of Sioux Indians at higher age and grade levels resulted from growing alienation from the cultural norms of the dominant American culture, with this alienation directly related to Sioux child-rearing practices. Zintz (1960) had also indicated that the different cultural values of Indian pupils might have caused maladjustment and under-achievement in the classroom. Gill and Spilka (1962) in a study of Mexican-American achievers and under-achievers found that under-achievers revealed more hostility than did achievers. Matthies (1965) found a clear indication of greater hostility in Indian pupils. MacGregor (1946) wrote that the Sioux child found the world quite hostile. Hagen and Shaw (1960) characterized the Sioux of today as being "passive, apathetic, and hostility dependent." Hoyt (1962) suggested that alienation might be responsible for the high rate of crime, delinquency, alcoholism, truancy, and mental disturbance found among Indians.

Comparison of Groups: Vocational Maturity

Current Economic Conditions.--However fortunate some tribes and individual Indians may be, the economic condition and employment status

of the vast majority of the American Indians have been little affected by attempts of individuals and the government to aid them in uplifting their economic and social well-being. Currently chronic unemployment on the reservation runs six or seven times higher than the national average, with over fifty per cent of all Indians jobless. Wilson (1965), for example, disclosed that in the Fort Totten Reservation Area only thirty per cent of the persons with parental responsibility were employed, nearly one-half of these by the government. This is triple the unemployment in Appalachia. The unemployment and under-employment of Indians has resulted in an average income for reservation dwellers which is one-third to one-fourth the national average, with about 500,000 Indians earning below $1,000. (U.S. Census 1960). Roughly seventy-five per cent of the Indians' income is derived from public funds.

Off the reservation conditions similar to those on the reservation prevail. Indians migrating to the cities after World War II to escape the reservation poverty and to seek a better life found instead a mirage. For example, a study conducted by the League of Women Voters (1968) of Indians in Minneapolis indicated that up to 8,000 Indians, many of whom are unemployed, subsisted on poverty-level incomes and lacked high school educations. The study pointed out that the "city slums" in which these Indians are existing may well be the worst in the city. Earlier Dale (1955) noted that "a minority of individuals of families who leave the reservations become successful members of the community they enter." Eicher (1961) reported that formal Bureau of Relocation Projects have met with less than success, and he suggested the need for individual appraisal of Reservation Areas with solutions

proposed only after the most careful understanding is gained of the unique political, cultural, social, and economic forces endemic to each reservation.

Factors Related to Current Conditions.--The most obvious factor which has contributed to the current economic conditions facing the reservation Indian is that nearly all of the Indian lands are in economically depressed areas, which yield incomes ranging between one-quarter and one-third those of non-Indian families in the same region. These are lands to which the Indians were removed because non-Indians succeeded in getting the more desirable areas. The Bureau of Indian Affairs (1963) has estimated that even full practical utilization of reservation lands today would provide a livelihood for less than half the population now residing on them. Kelly (1957) reported that there were over 20,000 "excess" families on Indian Reservations. He explained that the reason for this "overpopulation" was the inadequacy of reservation resources and the absence of industrial and business establishments. As discussed earlier, the attempts by the Bureau of Indian Affairs to alleviate these crowded conditions have resulted in only limited success.

The Bureau of Indian Affairs has long stressed the need for increased and improved education as the primary way in which the conditions of the Indians could be improved. Former Commissioner Nash (1966) pointed out:

> While education is not the only answer to the problems of disadvantaged youth, it is a major factor in improving the conditions under which they live. Without training, education, and marketable skills, there is no place to go and no alternative

way of life. Our goal in education, then, is to enable the Indian people to gain that priceless freedom of choice.

Despite intensive efforts by the Bureau, today the average young Indian adult has not advanced beyond the eighth grade in school, in a country where the national average is close to twelve. In North Dakota Indians twenty-five years old and over had completed 8.4 years as compared to nearly 10.5 for the non-Indian (Wilson, 1965). The national high school drop-out rate for Indian pupils continued to be over fifty per cent (Nash, 1966). Dale (1955) in a study of the effectiveness of the Pine Ridge Reservation Area found that two per cent of those Indians beginning grade one completed high school and entered college. Only about twenty-five per cent of those who started high school actually completed the four year program.

Some evidence exists that Indian pupils have not reached the vocational maturity of non-Indian pupils. Hoyt (1961) found that Indian children knew relatively little about the jobs that might be open to them and the preparation needed for such jobs. In contrast, "the confusion of White children was rather in the direction of having so many alternatives that they could not choose." Bernadoni (undated) found in a survey of one group of Indian pupils that they had but hazy notions about careers and specific job opportunities. In questions directed toward vocational choices the Indian pupils responded generally that they would "like to go with Relocation", "work for the Bureau", or "take a job with Public Health." The student responses indicated a serious lack of understanding about occupations. Van Erdewyk (1965) found that urban non-Indian boys showed higher levels of occupational aspir-

ations than did Indian boys. McCrystal (1967) found that Indians scored significantly lower than non-Indians on the Crites Vocational Development Inventory. This author concluded that the lower vocational maturity of Indian pupils was the result of cultural conflict.

Reifel (1963) listed four differences between the American and the Indian way of life which are related to the vocational problems faced by many Indians:

1. In the American way of life the emphasis is on future orientation, while the Indian culture is oriented to the present.

2. Time, in the sense of measuring duration by clocks and days-of-the-week calendars, is not important to the person with the Indian way of life.

3. Saving as a means to achieve economic development has not been a part of the economic life of the Indian.

4. Habituation to hard work in order to make a living has not been a part of the Indian system, particularly for the men.

Kelly (1957) contended that "wage work, in contrast with profit-earning enterprises where the Indian must accept non-Indian patterns and values, represents an accepted mode of economic adjustment for all Indians", but that "Indian interests and attitudes, however, stand in their way when there is an opportunity to step up to permanent skilled or semiskilled employment."

From research not directly related to Indians, some general conclusions have been drawn as to the culturally related factors which may be significantly related to an individual's vocational orientation. Considerable evidence existed that occupational and educational achieve-

ment are influenced strongly by the position a person occupies as a result of the position of his family in the larger social system. Haller and Butterworth (1960) commented on this: "There is a certain amount of evidence to show that attitude toward education is correlated with ethnic origin," and that "differences in levels of occupational and educational aspiration may be attributed to differences in socialization." Final conclusions of Sewell, Haller, Straus (1957) also supported the sociological claim that values specific to different status positions are important influences upon an individual's educational and occupational aspiration. Beilin (1956), Hyman (1956), Lipsett (1962) and Hollingshead (1959) all agreed that social class is an important factor in vocational development, and that familial-educational backgrounds were the best predictors of social class.

The Concept of Vocational Maturity.--For a half century or more the predominant conception of vocational choice was essentially a nondevelopmental one. Emerging from counseling experience with "matching men and jobs" (Patterson, 1949) and founded upon propositions and procedures developed for "trait and factor" theory (Pepinsky and Pepinsky, 1954) it emphasized resolving of the problem of choosing a vocation as a point in time event, before or after entry into the world of work, when an individual consciously and rationally went through a number of more or less automatic processes: (1) appraisal of his personal assets and abilities, (2) surveying of employment opportunities open to him, and (3) choosing of the opportunity which offered him the greatest chance for satisfaction on the job and ultimate

success.

The staticity of the nature of how and when people select occupations soon demanded that looking anew at the process was essential and that focusing upon new conceptions of vocational choice was necessary.

As early as 1940, and especially since 1950, hypotheses have been advanced on the formation of vocational attitudes through a developmental process (Carter, 1940). More recent explanation of career choice emphasized vocational explorations and establishment through life stages of not one, but a series of related decisions which culminated in an eventual selection of occupation and entry into it. (Dysinger, 1950; Ginzberg, *et al.*, 1951; Super, 1953).

A relatively new concept is that of vocational maturity, which evolved from both the early work on vocational interest measurement and the more recent theory construction on vocational development. It was not until 1955, however, that explicit statement of the concept of vocational maturity was made. At that time Super (1955) offered a theoretical definition of vocational maturity: "the place reached on the continuum of vocational development from exploration to decline." Super continued by listing five dimensions along which vocational behavior might mature during early adolescence and for which measures might be formulated:

1. Orientation to vocational choice,
2. Information and planning,
3. Consistency of vocational choice,
4. Crystallization of traits, and

5. Wisdom of vocational choice.

Herein is the apparent theory, that the concept of vocational maturity must include not only the selection of an occupation but also these other values of attitude toward decision making, understanding job requirements, planning activity and ability, and further development of vocational capabilities.

Elaborating on formulations made by Super and Overstreet (1960) of the multidimensional variability of vocational maturity, Crites (1964) proposed that the various dimensions such as "orientation to vocational choice", "information and planning", and "crystallization of traits" could be further analyzed into several different kinds of choice "attitudes." On the basis of these "attitudes" toward vocational development he devised his Vocational Development Inventory.

Comparison of Groups: Social Acceptance

The social acceptance of integrated Indian pupils by non-Indian pupils and the social acceptance of non-Indian pupils by Indian pupils is a relatively unexplored area. Zintz (1960) recommended additional research in this area:

> These studies might include extensive use of various sociometric techniques in order to reveal the extent of interaction of children in classrooms. Do they accept each other? What behavior characteristics affect acceptance or non-acceptance of an individual?

Anderson, *et al.* (1953) shed some light on whether or not there were differences in the degree of cross-cultural acceptance between Indians and non-Indians. At the grade eight level, 94.3 per cent of the Indians had some non-Indian friends but only 84.7 per cent of the non-Indians had some Indian friends.

Coombs, *et al.* (1958) could reach no solid conclusion that propinquity created interracial friendships:

> What is revealing is the evidence that the integration of the children of two races in a school in the bare sense of attendance does not necessarily lead, immediately, at least, to a type of social integration which will cause pupils to choose friends without regard to race.

Evidence of the influence of time on the cross-cultural choice of friends was conflicting. For example, Gronlund (1959) stated that where racial integration had been in effect for some time, children's sociometric choices freely crossed race lines, while Dilling (1965) stated that social acceptance of Indians was better in the primary grades than it was in the higher grades.

Factors which have been found to be significantly related to social acceptance of Indians by non-Indians include:

1. Skill in extra-curricular activities (Gronlund, 1959).
2. Similarity in language (Artichoker and Palmer, 1959; Evans, 1962).
3. Intelligence (Gronlund, 1959; Evans, 1962).
4. Deportment (Evans, 1962).

A study of dropouts by the United States Bureau of Indian Education (1959) revealed that the dropout was a poor achiever and tended to exhibit an inability to get along with school associates. Wax and Wax (1964) also found evidence of this and added that for the Sioux Indian child in modern White schools tensions arising in the school situation were ". . . not so much between the child and the school as between the child and his peer group." McGrath (1962) listed difficulty in participation in social affairs and difficulty

in making both non-Indian and Indian friends as significantly related to academic achievement by Indian college students. Wilson (1965) indicated that a major problem facing the Fort Totten Sioux Indians was that they were a minority group in virtually all situations once they left the reservation, resulting in employment and social problems. He suggested that this situation could be improved with a greater rate of integration of Indians in White schools. Ray (1962), in discussing Alaskan native secondary school dropouts, suggested that ". . . if they meet with serious discrimination . . . it is probable that their motivation to strive for the symbols of success in our society will be greatly reduced." Thus, it appeared from these findings that it was most important for the individual to regard himself as well accepted if maximum achievement was to be come a reality.

In an examination of the possibility of creating new industries on the Turtle Mountain Reservation in North Dakota, the American Scientific Report (1963) included the statement that, "Insofar as prejudice is concerned, we feel that any prejudice existing is in reverse in that many of the Indians want no part of the benefits of this study to inure to non-Indians."

CHAPTER III

METHODOLOGY AND PROCEDURES

This chapter contains a description of the population included in this study, a discussion of the procedures and the instruments used in data collecting, and an examination of the methods used in the analysis of the data.

Description of the Population Studied

Included in the study were four types of grade nine pupils, all currently enrolled in predominantly non-Indian schools:

1. Integrated Indians: those Indian pupils who had attended schools with predominantly non-Indian pupils in grades one through eight.

2. Segregated Indians: those Indian pupils who had attended schools with predominantly Indian pupils in grades one through eight.

3. Resident non-Indians: those non-Indian pupils who had attended their present school, with predominantly non-Indian pupils, in grades one through eight.

4. Transfer non-Indians: those non-Indian pupils who had transferred, after attending predominantly non-Indian schools, to their present school at the start of grade nine.

The lists of Reservation Areas, schools, and number of pupils are all presented in their respective categories in Appendix A. A brief

summary of the information contained therein is presented here.

Seven-hundred four pupils from twelve public schools located in six Reservation Areas were included in the study. The total number of pupils, by type, was: (1) integrated Indians - 102, (2) segregated Indians - 107, (3) resident non-Indians - 355, and (4) transfer non-Indians - 140. Those Indian pupils who had, as determined from school records, transferred from one situation to another during the first eight years in school were eliminated from the study.

All of the twelve schools included in the study were geographically located within or adjacent to the State of North Dakota. These schools were unique to the extent that each (1) was located on the edge of a Reservation Area, thus enrolling both Indian and non-Indian pupils, (2) had a ninth grade Indian pupil enrollment of under fifty per cent and over ten per cent, and (3) had a ninth grade enrollment of at least five Indian pupils.

Collection and Preliminary Treatment of Data

Since Indian pupils from segregated elementary schools joined integrated pupils and non-Indian pupils for the first time at the ninth grade level, all of the groups were studied during the month of October in predominantly non-Indian school settings.

Twelve schools were selected for inclusion in the study. Each of these schools agreed to participate, and the school administrators delegated to the school counselor the responsibility for cooperation. For each counselor a special orientation was arranged wherein he was informed as to the purposes of the study and the procedures to be followed in the collection of the data.

Collection and Treatment of Data - Achievement

The Iowa Tests of Educational Development (Lindquist, 1958) were used to gather data relating to educational achievement. This instrument had been widely and regularly employed in reservation schools, and the resulting data were available. The fact that every year during the month of October the secondary schools in North Dakota and South Dakota used this instrument in a statewide testing program made comparisons and continuity possible.

For the four schools located in Minnesota and Montana a special testing session was arranged.

No preliminary treatment of the data was necessary as the machine-scored results included the composite standard scores which were used directly in the analysis.

Collection and Treatment of Data - Intelligence

Each school counselor administered the Lorge Thorndike Intelligence Test, Level F, (Lorge, Thorndike, and Hagen, 1964) during the last week in October. Multi-level test booklets were provided to the schools, at no cost, through the cooperation of the North Dakota Department of Public Instruction.

Raw-scores on the combined verbal-nonverbal Lorge Thorndike Intelligence Test, Level F were transformed into mental age equivalents and then to intelligence quotients based on chronological age to the nearest month at the date of testing.

Collection and Treatment of Data - Alienation

The data relating to the levels of alienation were obtained by employing an instrument recently developed by Spilka (1966).

This device was originally developed to be used with low educational level Anglo-Saxons, Spanish-Americans, and Negroes who participated in a job training program. The scale was revised from an original 177 items to 116 items for use with Indian children. The remaining items were examined in terms of vocabulary, reading, and cultural relevance for seventh grade pupils on the Pine Ridge Reservation. This examination resulted in the elimination of an additional twenty-nine items. The final instrument completed and validated by Spilka, was an objective type questionnaire of eighty-seven items.

Spilka based his "Theoretical General Alienation" scale on items which derived from the theoretical notions of Dean (1960), Elmore (1963), Srole (1956), and others. These items were designed to assess the following characteristics: (1) powerlessness, (2) normlessness, (3) psycho-social isolation, (4) self-estrangement, (5) hopelessness, (6) meaninglessness, and (7) alienation from institutional settings.

This instrument was administered during a regular class period the first week in November. Only the first eighty-seven items of the scale were designed to measure alienation. The last twenty-five items related to the pupil's attitude toward school. Both this phase of the study and that related to attitude toward school relied heavily on the personal advice and assistance of Spilka.

The scores on this test were arranged so that the groups with the higher means indicate a higher degree of alienation.

Collection and Treatment of Data
Attitude Toward School

The data concerning the attitude toward school of the pupils in the study were obtained by employing a scale of twenty-five objective

type items. This device was developed by Spilka (1966) in a similar manner to the measure relating to alienation, as described above. Components of the scale included: (1) school continuation vs. rejection, (2) teacher acceptance or rejection, (3) school uselessness, and (4) "rational" dislike of school.

This instrument was administered during a regular class period the first week in November. The scores were arranged so that the groups with the higher means indicated a "poorer" attitude toward school.

Collection and Treatment of Data - Vocational Maturity

Used to gather data relating to vocational maturity was the Crites Vocational Development Inventory (VDI). This scale consists of a fifty-item, true-false type inventory measuring an adolescent's (1) involvement in the process of vocational choice, (2) orientation toward the problem of vocational choice, (3) independence in decision making, (4) preferences for factors in vocational choice (Crites, 1965).

Crites' instrument was developed in an attempt to improve on the few measures on vocational maturity that had been devised previous to its inception. The VDI attempts to accomplish three things: (1) to strengthen the general system used for classification of pupils who took the test, (2) to provide a more objective method than the interview notes and protocals used by Super (1955) and Nelson (1956), and (3) to measure other behaviors than those that instruments already devised could measure.

This design which attempts to elicit the attitudinal or disposi-

tional response tendencies in vocational maturity, it was hoped, was stronger than Nelson's (1956) categories which were restricted to evaluation of choice realism and Super's (1955) indexes which were limited to the appraisal of orientation to vocational choice.

The major field testing of the VDI was done in Iowa (Crites 1961-62). Here 2,448 pupils in grades seven to twelve were tested. The results showed that generally VDI scores improved with higher grade levels, with ninth grade pupils obtaining a mean score of 36.5.

The only known instance of use of the instrument in the testing of Indians was that done in a study by McCrystal (1967). The results of this study found the mean VDI scores of the Indian pupils significantly lower than those of the Iowa pupils for each grade level. At the grade nine level the Indian pupils recorded a mean score of 29.8.

This instrument was administered during a regular class period in October. The scores on the test were arranged so that the groups with the higher means indicate a higher level of vocational maturity.

The Crites Inventory was supplied free of charge for use in this study. The results will be used by Crites for use in further over-all norming of the instrument.

Collection and Treatment of Data - Cultural Variables

Because of both the difficulty and importance of obtaining valid socio-cultural information, the instrument used in the collection of data for this phase of the study was developed with the assistance of Harkins, an ethnographer who is currently involved in a study of Indian pupils on the White Earth Reservation. Three data collecting devices (Appendix B) were constructed for this study: (1) "The Pupil Background

Information Form", (2) "The Student Report Form", and (3) "The Socio-Economic Status Form".

The "Pupil Background Information" is a brief, one page form, and each pupil's responses to the items provided the personal information needed in the analysis of the data. In addition, the answers to several of the questions served as a basis for cross-checking the accuracy of the data obtained from school records. The last two questions were added to provide a "sociometric test" as discussed below under "Collection of Data - Social Relationship". The "Student Report Form" is a brief, one page form which was completed by the school counselor. Most of the information requested was available from school records. The "Socio-Economic Status Form" is discussed below under "Economic Status".

The data for several of the cultural variables required transformation before the information could be coded and placed on optical scanner forms. Those items which required special treatment are discussed below.

Employment Status.--The present employment status of those with parental responsibility was determined from the "Student Report Form". In cases where this information conflicted with that found on the form providing "Pupil Background Information", a personal conference with local school officials was held to determine which information was accurate. Employment was then coded into three categories: (1) fully employed, (2) partially-irregularly employed, and (3) unemployed. As a result, the pupil groups showing the lower mean scores indicated more "fully" employed parents.

Personnel from the Center for Research in Vocational and Tech-

nical Education of the University of North Dakota assisted in the placement of the subjects into their respective categories. Early attempts at analyzing employment status through the use of North-Hatt scores, developed by the Bureau of Census (1960), were not successful. These occupational ratings were found to be non-applicable to the geographical areas involved in this study.

Home Stability.--The present home stability for each pupil was determined from responses on the "Student Report Form". This information was checked for accuracy in a manner identical to that for "Employment Status". Home stability was then coded into the following categories: (1) living with both parents, (2) living with father only, (3) living with mother only, (4) living with relatives, and (5) living with others. As a result, pupils' groups with the lowest mean scores were considered to have the most "home stability". Pupils who were from homes with a mother only or a father only were given equal home stability scores.

Geographical Isolation.--A pupil was considered to be more geographically isolated the further he lived from a "town". Since pupils in this study were from rural areas, a "town" was considered to be any community where over 100 people lived. This figure was selected in order to eliminate several areas which had only a few people, a country elevator, and a post office. Scores were coded so that the pupil groups who lived closest to "town" would receive the lowest mean scores.

Pre-School Language.--The ability of a pupil to speak a language other than English prior to enrolling in a school was determined from

information provided on the "Pupil Background Information" form. The pupils were advised that they were not to list a language in which they were able to say only a few words like "hello" and "mother". Coding was arranged so that those pupil groups with the lower mean scores were more likely to have spoken "English only" before enrolling in school.

Degree of Indian Blood.--The degree of Indian blood for the Indian pupils was determined through a cross-check of information provided on the "Student Report Form" and the "Pupil Background Information" form. In all cases where conflicting results were obtained a final determination was made through examination of the records at each Bureau of Indian Affairs office. Coding was arranged so that those pupil groups with the lowest mean scores showed the least degree of Indian blood.

Degree of Drinking.--Preliminary discussion with school officials indicated that excess drinking by both Indian pupils and parents was considered to be a serious problem in at least some of the Reservation Areas. The rating of the "extent to which drinking is a problem for those assuming parental responsibility" utilized the "Socio-Economic Status Form" (Appendix B). The selection of raters and the methods followed are discussed below under "Socio-Economic Status". The coding was arranged so that the pupil groups with the lowest mean ratings would be considered to have the more severe parental drinking problems.

Age of Pupils.--The age of the pupils to the nearest year was reported on the "Student Report Form". The coding was arranged so that the pupil groups with the lowest mean would include the younger pupil.

Socio-Economic Status.--The general economic level of each home was determined by having the school counselor, in consultation with other school personnel, indicate on the "Student Report Form" the economic condition which best described the people who brought up the pupil or who were most responsible for him. These conditions, taken from Wax and Wax (1964), were:

1. They are quite well off and can afford to help this pupil with money for clothes and other things needed for school.

2. They are not well off, but they can manage to help at least with some money for clothes and things this pupil needs for school.

3. They are really having a hard time, and they can hardly get any money at all to help this pupil get clothes and things for school.

While the above measurement of economic levels seemed adequate in establishing the relative status of Indians to non-Indians, preliminary investigation of the data clearly indicated that a more refined scale for the measurement of the socio-economic status of Indian pupils was essential. Not only economic factors, but also social and cultural conditions needed to be determined. In addition, the rating of Indian and non-Indian pupils on the same scale did not provide the necessary discrimination between integrated and segregated Indian pupils.

"The Socio-Economic Status Form", used to measure the socio-economic status of Indian pupils, was designed so that key-informants could rate the pupils on a scale ranging from one (low) to seven (high). Three raters who were familiar with the Indian population were selected in each community: (1) a [illegible]e school staff member, (2) a male businessman, and (3) a female Indian. Socio-economic status was defined to mean

"the position that an Indian family occupies in relation to other Indian families with reference to the prevailing standard of cultural possessions, effective income, material possessions, and participation in the group activities of the community."

After the local ratings were completed, an individual from the County Welfare Office reviewed the findings. For those pupils where all three raters closely agreed with each other and with the judgment of the welfare worker, the average rating was used. For those pupils where the raters showed wide deviations, the welfare worker made the final rating, and the opinion of the local people was disregarded. A total of eleven pupils had their rating revised in this manner.

The rating of an Indian family's socio-economic status was designed to be a meaningful measurement only within each Reservation Area. No comparisons between Reservation Areas were possible for this variable.

Because of the complexity of the problems involved in the measurement of socio-economic status, prior to accepting the above procedures an attempt was made to adapt from research, tools which had shown evidence of success in their use with rural populations. A preliminary study was conducted using the Socio-Economic Status Scale (Sewell, 1940). This once widely accepted scale for rural areas was originally designed to measure the socio-economic level of Oklahoma farm families. After visiting the homes of fourteen Indian pupils, a decision was made against using this instrument because many of the items on the scale were out-dated. The revisions which would have been required were so extensive that the use of the original scale would have been questionable. A conference with Sewell, the author of this device, indicated that no known attempt had been made to revise this

scale since 1940.

In an effort to measure both the socio-economic status and the related degree of acculturation of Indians with the dominant White society, an attempt was made to apply the criteria developed by Malan and Powers (1960). This method had previously been applied in dividing Crow Creek Indian families into "traditional" and "modern" groups. The attempts of Malan to revise his criteria to meet the needs of this study ended with his accidental death in the summer of 1967.

Other methods of determining cultural levels which were examined and rejected for the purpose of this study were those of Warner (1957) and Wax and Wax (1964).

Collection and Treatment of Data - Social Acceptance

The "sociometric test" was presented to the pupils, not as a special test, but simply as two extra questions attached to the "Pupil Background Information Form". For this reason, and because Indians were not mentioned, it was hoped that the pupils would remain virtually unaware of the special nature of the test and that they would not be tempted toward "socially desirable" responses. The two questions asked a pupil to list as many school mates as he wished for a general social situation outside the school ("any kind of party") and in a work group in the classroom. The data were then summarized for analysis on a socio-matrix.

Three basic devisions by "Degree of Social Acceptance" were established: (1) high acceptance - selected by eleven per cent to one hundred per cent of the resident non-Indians, (2) medium acceptance -

selected by one per cent to ten per cent of the resident non-Indians, and (3) low acceptance - not accepted by any resident non-Indian.

An individual Indian pupil's percentage of acceptance was calculated by dividing the total number of times an Indian was a selection of resident non-Indians by the total number of such ninth grade resident non-Indians in each school. Transfer non-Indians were excluded when social acceptance computations were made.

Methods Used in the Analysis of Data

The nature of the questions which this research attempted to answer necessitated the use of five major statistical techniques: (1) analysis of variance, (2) *t* test, (3) multiple linear regression, (4) zero-order correlation, and (5) chi-square.

For comparison among the four types of pupils involved in the study, single classification analysis of variance techniques were applied individually on the following variables:

1. Achievement, as measured by the composite score on The Iowa Tests of Educational Development.

2. Intelligence, as measured by the combined verbal-nonverbal Intelligence Quotient on the Lorge Thorndike Intelligence Test, Level F.

3. Alienation, as measured by the "Theoretical General Alienation" score on the scale developed by Spilka.

4. Attitude toward school, as measured by the "Theoretical Attitude Toward School" score on the scale developed by Spilka.

5. Vocational maturity, as measured by the Crites Vocational Development Inventory.

Those comparisons which yielded a significant F ratio were further analyzed through the use of Dunn's *c* test so that specific dif-

ferences existing between the means could be located. This procedure was selected because (1) the researcher was able to limit *a priori* the number of comparisons to be made, and (2) the use of the traditional *t* test in making multiple comparison violated probability levels and therefore was not a valid technique (Lindquist, 1953).

The one-way analysis of variance technique was further used in the investigation of Indian pupil difference by Reservation Area. In the analysis of cultural variables the multiple comparison methodology developed by Scheffe was applied to test the means two at a time.

The *t* test was applied to the evaluation of cultural differences between (1) Indians and non-Indians, and (2) integrated and segregated Indians.

Multiple linear regression techniques were utilized to determine the total contribution of the cultural variables to (1) achievement, (2) intelligence, (3) alienation, (4) attitude toward school, (5) vocational maturity, and (6) social acceptance. The reason for using this technique rather than the randomized blocks was that the unequal and nonproportional cell frequencies would have resulted in a wasteful use of the data; whereas the regression techniques utilized all the information. Zero-order correlations were found for all of the variables included in the study and inter-correlation matrices were calculated. Rank correlation techniques were used in the analyses relating to Reservation Areas.

Chi-square tests were used with all hypotheses relating to social acceptance, as the data were determined to be distribution-free. Except for the data relating to within and outside race orientation, all of the hypotheses were tested separately for each of two criteria: (1) acceptance in a general social situation outside school, and (2) acceptance in a work situation at school.

CHAPTER IV

ANALYSIS AND RESULTS

The analysis and results of this study are presented in the order of the questions proposed in Chapter I. According to a common convention, these questions were transformed into testable hypothesis stated in the null form. The data used in testing each hypothesis are followed by a summary of the results.

Analysis of Achievement, Intelligence, Alienation Attitude, and Vocational Maturity

The first question asked if differences are evident among integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians in achievement, intelligence, alienation, attitude toward school, and vocational maturity. Tables 1 through 16 present a summary of means and F ratios for each of these variables. All selected comparisons of means were made by employing Dunn's c test at the .01 and and .05 significance levels.

Hypothesis No. 1

Null Hypothesis.--The means of the achievement test scores of integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians are equal.

Summary Analysis.--Since the F ratio, as shown in Table 1, was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate the significant

factors.

TABLE 1

ANALYSIS OF VARIANCE OF ACHIEVEMENT TEST SCORES ACHIEVED BY INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS AND TRANSFER NON-INDIANS

Variable	Integrated Indians	Segregated Indians	Resident Non-Indians	Transfer Non-Indians
Achievement				
N	102	107	355	140
Mean	10.26	8.65	13.64	13.46
F 43.52				

Significance level established at 3.83, .01 level

Difference Between Means.--Four selected comparisons of group means were made (Table 2). The differences between the means favored non-Indians over Indians, and resident non-Indians over integrated Indians at the .01 level of significance. The means of the integrated Indians were significantly higher than those of the segregated Indians at the .05 level. No significant difference was found when comparing the means of non-Indian resident and transfer pupils. Table 2 thus indicates that the significant F ratio in Table 1 arises from the higher achievement status of non-Indians to Indians, with integrated Indians scoring significantly higher than segregated Indians.

TABLE 2

COMPARISON OF MEANS ON ACHIEVEMENT TEST SCORES BY INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS AND TRANSFER NON-INDIANS

Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Combined Resident and Transfer Non-Indians	Combined Integrated and Segregated Indians	4.10	1.61	.01
Integrated Indians	Segregated Indians	1.61	1.55	.05
Resident Non-Indians	Transfer Non-Indians	.18	1.13	NS
Resident Non-Indians	Integrated Indians	3.38	1.54	.01

Hypothesis No. 2

Null Hypothesis.--The means of the Intelligence Quotients of integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 3, was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate the significant factors.

Comparison between Means.--Four selected comparisons of group means were made (Table 4). The differences between the means favored non-Indians over Indians, and resident non-Indians over integrated Indians at the .01 level of significance. The mean differences favored integrated Indians over segregated Indians, and transfer non-Indians over resident non-Indians; however, these differences were not found to be significant at the .05 level. Table 4 thus indicates that the sig-

nificant F ratio in Table 3 arises from the higher status of non-Indians to Indians.

TABLE 3

ANALYSIS OF VARIANCE OF INTELLIGENCE QUOTIENTS ACHIEVED BY INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT INDIANS, AND TRANSFER NON-INDIANS

Variable	Integrated Indians	Segregated Indians	Resident Non-Indians	Transfer Non-Indians
Intelligence				
N	102	107	355	140
Mean	97.61	95.81	106.86	106.93
F 32.67				

Significance established at 3.83, .01 level

TABLE 4

COMPARISON OF MEANS ON INTELLIGENCE QUOTIENTS OF INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT INDIANS, AND TRANSFER NON-INDIANS

Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Combined Resident and Transfer Non-Indians	Combined Integrated and Segregated Indians	10.19	4.47	.01
Integrated Indians	Segregated Indians	1.80	4.33	NS
Transfer Non-Indians	Resident Non-Indians	.07	3.13	NS
Resident Non-Indians	Integrated Indians	9.25	4.32	.01

Hypothesis No. 3

Null Hypothesis.--The means of the alienation scale scores of integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 5, was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate the significant factors.

TABLE 5

ANALYSIS OF VARIANCE OF ALIENATION SCALE SCORES ACHIEVED BY INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS, AND TRANSFER NON-INDIANS

Variable	Integrated Indians	Segregated Indians	Resident Non-Indians	Transfer Non-Indians
Alienation				
N	102	107	355	140
Mean	205.66	215.24	196.21	192.76
F 19.43				

Significance level established at 3.83, .01 level

Comparison between Means.--Four selected comparisons of group means were made (Table 6). The differences between the means favored Indians over non-Indians, and integrated Indians over resident non-Indians at the .01 level. Segregated Indians scored significantly higher than integrated Indians at the .05 level. The mean difference between resident and transfer non-Indian pupils was found to be non-

significant. Table 6 thus indicates that the significant F ratio in Table 5 arises primarily from the higher alienation scale scores of Indians, with segregated Indians contributing more than integrated Indians to this score.

TABLE 6

COMPARISON OF MEANS OF ALIENATION SCALE SCORES BY INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS AND TRANSFER NON-INDIANS

Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Combined Integrated and Segregated Indians	Combined Resident and Transfer Non-Indians	15.97	9.42	.01
Segregated Indians	Integrated Indians	9.58	9.13	.05
Resident Non-Indians	Transfer Non-Indians	3.45	6.60	NS
Integrated Indians	Resident Non-Indians	9.45	9.06	.01

Hypothesis No. 4

Null Hypothesis.--The means of the "attitude toward school" scores of integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 7 was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate the significant factors.

TABLE 7

ANALYSIS OF VARIANCE OF ATTITUDE TOWARD SCHOOL SCALE SCORES ACHIEVED BY INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS, AND TRANSFER NON-INDIANS

Variable	Integrated Indians	Segregated Indians	Resident Non-Indians	Transfer Non-Indians
Attitude Toward School				
N	102	107	355	140
Mean	43.60	45.06	40.27	38.51
F	17.34			

Significance level established at 3.83, .01 level

Comparison between Means.--Four selected comparisons of group means were made (Table 8). The differences between the means favored Indians over non-Indians, and integrated Indians over resident non-Indians at the .01 level. While the mean differences favored segregated over integrated Indians and resident over transfer non-Indians, significance could not be established at the .05 level. Table 8 thus indicates that the significant F ratio in Table 7 arises from the higher scores (poorer school attitudes) of Indians to non-Indians.

Hypothesis No. 5

Null Hypothesis.--The means of the vocational maturity scores of integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 9, was significant beyond the .01 level, the overall null hypothesis was re-

jected, and the analysis was contined to isolate significant factors.

TABLE 8

COMPARISON OF MEANS ON ATTITUDE TOWARD SCHOOL SCALE SCORES BY INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS, AND TRANSFER NON-INDIANS

Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Combined Integrated and Segregated Indians	Combined Resident and Transfer Non-Indians	3.94	2.93	.01
Segregated Indians	Integrated Indians	1.46	2.85	NS
Resident Non-Indians	Transfer Non-Indians	1.76	2.05	NS
Integrated Indians	Resident Non-Indians	3.33	2.81	.01

TABLE 9

ANALYSIS OF VARIANCE OF VOCATIONAL MATURITY SCORES ACHIEVED BY INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS, AND TRANSFER NON-INDIANS

Variable	Integrated Indians	Segregated Indians	Resident Non-Indians	Transfer Non-Indians
Vocational Maturity				
N	102	107	355	140
Mean	29.69	27.87	32.18	33.18
F 28.7				

Significance level established at 3.83, .01 level

Comparison between Means.--Four selected comparisons of group means were made (Table 10). The difference between the means favored

non-Indians over Indians and resident non-Indians over integrated Indians at the .01 level, and integrated Indians over segregated Indians at the .05 level. Table 10 thus indicates that the significant F ratio in Table 9 arises primarily from the higher scores of non-Indians to Indians with segregated Indians contributing the most to the lower Indian vocational maturity scores.

TABLE 10

COMPARISONS OF MEANS ON VOCATIONAL MATURITY TEST SCORES BY INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS, AND TRANSFER NON-INDIANS

Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Combined Resident and Transfer Non-Indians	Combined Integrated and Segregated Indians	3.90	1.92	.01
Integrated Indians	Segregated Indians	1.82	1.75	.05
Transfer Non-Indians	Resident Non-Indians	1.00	1.30	NS
Resident Non-Indians	Integrated Indians	2.49	1.89	.01

Hypothesis No. 6

Null Hypothesis.--The means of the achievement test scores of integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians are equal when each group is divided by sex.

Summary of Analysis.--Since the F ratio, as shown in Table 11, was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate the significant factors.

TABLE 11

ANALYSIS OF VARIANCE OF ACHIEVEMENT TEST SCORES OF INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS, AND TRANSFER NON-INDIANS: BY SEX

Variable	Integrated Indians		Segregated Indians		Resident Non-Indians		Transfer Non-Indians	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Achievement								
N	51	51	54	53	188	167	70	70
Mean	10.10	10.53	8.46	8.45	13.84	13.41	13.19	13.74
F	18.86							

Significance level established at 2.69, .01 level

Comparison between Means.--Seven selected comparisons of group means were made (Table 12). None of the comparisons made was found to be significant. Table 12 indicates that the significant F ratio in Table 11 arises from the higher status of non-Indians to Indians, rather than from differences which may be related to sex.

Hypothesis No. 7

Null Hypothesis.--The means of the Intelligence Quotients of integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians are equal when each group is divided by sex.

Summary of Analysis.--Since the F ratio, as shown in Table 13, was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate the significant factors.

TABLE 12

COMPARISON OF MEANS ON ACHIEVEMENT TEST SCORES BY INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS, AND TRANSFER NON-INDIANS: BY SEX

Higher Mean	Lower Mean	Difference in Means	P
All Girls (combined) 11.63	All Boys (combined) 11.37	.26	NS
All Indian Girls 9.69	All Indian Boys 9.23	.45	NS
Non-Indian Girls 13.57	Non-Indian Boys 13.51	.06	NS
Integrated Indian Girls 10.53	Integrated Indian Boys 10.10	.43	NS
Segregated Indian Girls 8.85	Segregated Indian Boys 8.46	.39	NS
Resident Non-Indian Boys 13.84	Resident Non-Indian Girls 13.41	.43	NS
Transfer Non-Indian Girls 13.74	Transfer Non-Indian Boys 13.19	.55	NS

Significance level established at 1.05, .01 level; .88, .05 level

Comparison between Means.--Seven selected comparisons of group means, identical to those made in Table 12, were made. None of the comparisons made was found to be significant at the .05 level. This would again indicate that the significant F ratio in Table 13 arises from the higher status of non-Indians to Indians, rather than from differences which may be related to sex.

TABLE 13

ANALYSIS OF VARIANCE OF INTELLIGENCE QUOTIENTS OF INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS, AND TRANSFER NON-INDIANS: BY SEX

Variable	Integrated Indians		Segregated Indians		Resident Non-Indians		Transfer Non-Indians	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Intelligence								
N	51	51	54	53	188	167	70	70
Mean	96.51	98.71	95.37	96.26	106.92	106.79	106.17	107.69
F 14.15								

Significance level established at 2.69, .01 level

Hypothesis No. 8

Null Hypothesis.--The means of the alienation scale scores of integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians are equal when each group is divided by sex.

Summary of Analysis.--Since the F ratio, as shown in Table 14, was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate the significant factors.

Comparison between Means.--Seven selected comparisons of group means, identical to those made in Table 12, were made. None of the comparisons made was found to be signficant at the .05 level. This would indicate, as in the analysis pertaining to Hypothesis No. 6 and No. 7, that the significant F ratio in Table 14 arises from the higher alienation status of non-Indians to Indians, rather than from the differ-

ences which may be related to sex.

TABLE 14

ANALYSIS OF VARIANCE OF ALIENATION SCALE SCORES OF INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS, AND TRANSFER NON-INDIANS: BY SEX

Variable	Integrated Indians		Segregated Indians		Resident Non-Indians		Transfer Non-Indians	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Alienation								
N	51	51	54	53	188	167	70	70
Mean	203.96	207.35	216.41	214.06	196.36	196.04	190.54	194.99
F	18.52							

Significance level established at 2.69, .01 level

Hypothesis No. 9

Null Hypothesis.--The means of the "attitude toward school" scale scores of integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians are equal when each group is divided by sex.

Summary of Analysis.--Since the F ratio, as shown in Table 15, was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

Comparison between Means.--Seven selected comparisons of group means, identical to those made in Table 12, were made. None of the comparisons made was found to be significant. This would once again indicate that the significant F ratio in Table 15 arises from the higher

status of non-Indians to Indians, rather than from differences which may be related to sex.

TABLE 15

ANALYSIS OF VARIANCE OF ATTITUDE TOWARD SCHOOL SCALE SCORES OF INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS AND TRANSFER NON-INDIANS: BY SEX

Variable	Integrated Indians		Segregated Indians		Resident Non-Indians		Transfer Non-Indians	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Attitude Toward School								
N	51	51	54	53	188	167	70	70
Mean	44.29	42.90	45.39	44.72	41.24	39.17	39.54	37.49
F 8.74								

Significance level established at 2.69, .01 level

Hypothesis No. 10

Null Hypothesis.--The means of the vocational maturity scores of integrated Indians, segregated Indians, resident non-Indians, and transfer non-Indians are equal when each group is divided by sex.

Summary of Analysis.--Since the F ratio, as shown in Table 16, was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate the significant factors.

Comparison between Means.--Seven selected comparisons of group means, identical to those in Table 12, were made. While none of the comparisons made was found to be significant, the girls did score

consistently higher than the boys. The significant F ratio in Table 16, however, arises primarily from the status of non-Indians to Indians, rather than from differences which may be related to sex.

TABLE 16

ANALYSIS OF VARIANCE ON VOCATIONAL MATURITY TEST SCORES OF INTEGRATED INDIANS, SEGREGATED INDIANS, RESIDENT NON-INDIANS, AND TRANSFER NON-INDIANS: BY SEX

Variable	Integrated Indians		Segregated Indians		Resident Non-Indians		Transfer Non-Indians	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Vocational Maturity								
N	51	51	54	53	188	167	70	70
Mean	28.98	30.39	27.78	27.96	31.28	33.19	32.71	33.64
F 14.70								

Significance level established at 2.69, .01 level

Analysis of Cultural Backgrounds of Indian and Non-Indian Pupils

The second question asked if differences are evident when comparisons are made of Indian and non-Indian pupils in the following selected cultural variables:

1. Economic status of those with parental responsibility,
2. Employment status of those with parental rresponsibility,
3. Home stability,
4. Geographical isolation,
5. Education of father,
6. Education of mother, and

7. Age of pupils.

The non-Indian means were "more favorable" than the Indian means for all of the variables but one. In the comparison of the groups for geographical isolation, the Indian pupils were found to live closer to town than the non-Indian pupils.

Table 17 presents a summary of the means, standard deviations, *t* values, and probabilities obtained in the testing of all of the hypotheses.

TABLE 17

t TEST OF THE DIFFERENCES BETWEEN MEANS DERIVED FROM RATINGS ON SELECTED SOCIO-CULTURAL VARIABLES OF INDIAN PUPILS TO NON-INDIAN PUPILS

Variable	Indian Pupils			Non-Indian Pupils			*t*	P
	N	Mean	SD	N	Mean	SD		
Economic Status	209	2.19	.79	495	1.60	.56	11.80	.01
Employment Status	209	1.77	.89	495	1.05	.29	16.03	.01
Home Stability	209	1.85	1.24	495	1.10	.46	11.64	.01
Geographical Isolation	209	2.20	1.58	495	2.46	1.60	1.98	.05
Education of Father	209	9.17	2.67	495	10.41	4.21	3.93	.01
Education of Mother	209	9.84	2.43	495	11.24	2.47	6.91	.01
Age of Pupils	209	2.82	.94	495	2.24	.59	9.82	.01

Significance established at 2.59, .01; 1.97, .05 level (two tailed)

To determine if Indian and non-Indian pupils differed in their cultural backgrounds, the null hypothesis that there was no difference between the two groups was tested for each of the cultural variables. Table 17 indicates that the null hypothesis was rejected for all of

the variables. As indicated in Chapter III, the items relating to "economic status," "employment status," "home stability," "geographical isolation," and "age of pupils," the higher the mean the poorer the economic level, the lower the employment status, the less home stability, the greater the distance of a pupil's home from town, and the older the pupil. The coding relating to "education of father" and "education of mother" followed the natural order in that higher education levels resulted in higher means.

Analysis of Cultural Backgrounds of Integrated and Segregated Indians

The third question asked if differences are evident when comparisons are made of integrated and segregated Indian pupils in the following selected cultural variables:

1. Socio-economic status of those with parental responsibility,
2. Employment status of those with parental responsibility,
3. Home stability,
4. Geographical isolation,
5. Education of father,
6. Education of mother,
7. Pre-school language,
8. Degree of Indian blood,
9. Degree of drinking of those with parental responsibility, and
10. Age of pupils.

Table 18 presents a summary of the means, standard deviations, t values, and probabilities obtained in the testing of all of the hypotheses.

To determine if Indian integrated and segregated pupils differed in their cultural background, the null hypothesis that there was no difference between the two groups was tested for each of the cultural variables. Table 18 indicates that the segregated Indians lived significantly (.01 level) further from town (geographical isolation) than integrated Indians, and that integrated Indians ranked significantly (.05 level) higher than segregated Indians in their "socio-economic status." While no significant difference was found between the groups for any of the other variables, the means, without exception, "favored" the integrated Indian pupils.

TABLE 18

t TEST OF THE DIFFERENCES BETWEEN MEANS DERIVED FROM RATINGS ON SELECTED SOCIO-CULTURAL VARIABLES OF INTEGRATED INDIAN PUPILS TO SEGREGATED INDIAN PUPILS

Variable	Integrated Indians N	Mean	SD	Segregated Indians N	Mean	SD	*t*	P
Socio-Economic Status	102	4.50	1.84	107	3.94	1.97	2.10	.05
Employment Status	102	1.66	.85	107	1.87	.91	1.74	NS
Home Stability	102	1.78	1.20	107	1.92	1.28	.82	NS
Geographical Isolation	102	1.75	1.32	107	2.63	1.68	4.18	.01
Education of Father	102	9.43	2.65	107	8.92	2.67	1.39	NS
Education of Mother	102	9.84	2.30	107	9.83	2.55	.03	NS
Pre-School Language	102	1.19	.44	107	1.29	.53	1.53	NS
Degree of Indian Blood	102	3.80	1.88	107	3.60	1.69	.83	NS
Degree of Drinking	102	2.41	.72	107	2.25	.80	1.51	NS
Age of Pupils	102	2.90	.93	107	2.75	.94	1.11	NS

Significance established at 2.60, .01 level; 1.97, .05 level (two tailed)

Analysis of Cultural Predictors of the Criterion Measures

The fourth question sought to determine, for integrated and segregated Indian pupils, which of the cultural variables were the most important predictors of achievement, alienation, attitude toward school, and vocational maturity. Scores obtained on the scales designed to measure the cultural factors were correlated with the scores obtained from each of the criterion measures. In addition the zero-order correlations for each variable with every other variable were computed and arranged in intercorrelation matrices (Appendix C).

The data were further analyzed through the use of multiple correlation and regression analysis in order to valuate the contribution of the factors, collectively and separately, to the various criteria. Backward elimination procedures were employed in the identification of the most important predictors.

Analysis of the Correlations

Although a correlation was obtained for each variable with every other variable, the correlations of greatest interest to the study were those relating to the criterion measures. The correlation of each cultural variable with each criterion is presented for integreated Indians in Table 19 and for segregated Indians in Table 20. Interpretations of correlation as being negative or positive may require a review of the coding procedures discussed earlier.

Integrated Indian pupils.--Appreciable correlation coefficients were found between achievement and the variables relating to socio-economic status, employment status, education of father, education of

TABLE 19

CORRELATION AMONG TEN CULTURAL VARIABLES AND SEVEN CRITERION MEASURES FOR INTEGRATED INDIAN PUPILS

Variable	Achievement	Intelligence	Alienation	Attitude	Vocational Maturity	Acceptance Social	Acceptance Work
Socio-Economic Status	.45*	.48*	-.16	-.10	.39*	.41*	.35*
Employment Status	-.28*	-.24	.08	-.02	-.13	-.26*	-.18
Home Stability	-.11	-.05	-.03	00	-.11	-.21	-.11
Geographical Isolation	.11	.06	-.01	.08	-.07	-.05	-.05
Education of Father	.35*	.32*	-.05	-.06	.27*	.17	.17
Education of Mother	.33*	.38*	-.26*	-.12	.39*	.27*	.21
Pre-School Language	-.20	-.25	.18	.18	-.21	-.11	-.09
Degree of Indian Blood	.19	.13	-.13	-.08	.18	.31*	.20
Degree of Drinking	.26*	.34*	-.21	-.06	.21	.21	.18
Age of Pupils	-.40*	-.46*	.25	.19	-.31*	-.27*	-.20

*Significant at .01 level

TABLE 20

CORRELATION AMONG TEN CULTURAL VARIABLES AND SEVEN CRITERION MEASURES FOR SEGREGATED INDIAN PUPILS

Variable	Achievement	Intelligence	Alienation	Attitude	Vocational Maturity	Acceptance Social	Acceptance Work
Socio-Economic Status	.13	.69*	-.15	-.11	.10	.11	.01
Employment Status	-.27*	-.25*	.15	-.16	-.14	-.02	-.07
Home Stability	-.11	-.06	-.09	.20	-.05	-.21	-.29*
Geographical Isolation	.16	00	-.05	.02	-.05	-.27*	-.28*
Education of Father	.30*	.26*	-.23	-.22	.19	.20	.20
Education of Mother	.30*	.34*	-.19	-.17	.32*	.09	.00
Pre-School Language	-.13	-.16	.12	00	-.22	-.22	-.18
Degree of Indian Blood	.22	.22	-.15	00	.23	.13	-.05
Degree of Drinking	.16	.21	.12	-.13	.05	.17	.05
Age of Pupils	-.29*	-.28*	.08	.02	-.20	.00	-.05

*Significant at .01 level

mother, degree of parental drinking, and age of pupils. Intelligence was significantly related to socio-economic status, education of father, education of mother, degree of parental drinking, and age of pupils. Alienation was reliably related only to the education of the mother. Vocational maturity was significantly related to socio-economic status, education of father, education of mother, and age of pupils. Acceptance in a social situation was related to socio-economic status, employment status, education of mother, degree of Indian blood, and age of pupils. The criterion score for acceptance in a work situation was reliably related only to socio-economic status. The factors pertaining to geographical isolation and to home stability were not significantly related to any of the criterion measures at the .01 level.

Segregated Indian Pupils.--Significant correlation coefficients were found between achievement and employment status, education of father, education of mother, and age of pupils. Intelligence was appreciably related to socio-economic status, employment status, education of father, education of mother, and age of pupils. Vocational maturity was related only to the education of mother. Acceptance in a social situation was significantly related to geographical isoaltion, while acceptance in a work situation was related to home stability and geographical isolation. Alienation and attitude toward school were not significantly related to any of the cultural variables. The degree of parental drinking was not reliably related to any of the criterion.

Analysis of the Regressions

The magnitude of the zero-order correlation coefficients cannot be used to select the cultural variables most important as predictor

variables since the relationship of each variable is not considered, a variable with a small correlation to the criterion variable may prove a significant predictor variable while a higher correlation may prove to be not significant. This situation may come about when the variable is strongly related to the criterion variable.

In order to determine which are the most important predictor variables for integrated and segregated Indian pupils, the first regression runs included all of the cultural variables. The resultant "full models" for the criterion of achievement, alienation, attitude toward school, and vocational maturity are presented for integrated Indians in Table 21 and for segregated Indians in Table 22.

TABLE 21

MULTIPLE CORRELATION COEFFICIENTS AND F RATIOS OF TEN VARIABLES AND FOUR CRITERION MEASURES FOR INTEGRATED INDIAN PUPILS

Criterion	R	R^2	SE	F for R	P
Achievement	.57	.32	3.33	4.97	.01
Alienation	.37	.14	30.04	1.62	NS
Attitude toward school	.30	.09	8.76	1.00	NS
Vocational Maturity	.52	.27	4.51	3.72	.01

Significance level established at 2.62, .01 level; 1.98, .05 level

For integrated Indians, the multiple correlations for the ten cultural variables resulted in a significant F ratio for the criterion measure of achievement and vocational maturity, while for segregated Indians significance was found only for achievement. This indicated

TABLE 22

MULTIPLE CORRELATION COEFFICIENTS AND F RATIOS OF TEN VARIABLES AND FOUR CRITERION MEASURES FOR SEGREGATED INDIAN PUPILS

Criterion	R	R^2	SE	F for R	P
Achievement	.46	.21	2.74	2.59	.01
Alienation	.32	.10	28.67	1.13	NS
Attitude toward school	.37	.14	8.87	1.52	NS
Vocational Maturity	.39	.15	5.21	1.73	NS

Significance level established at 2.52, .01 level; 1.93, .05 level

that the cultural factors taken collectively could reliably predict these criterion.

In an attempt to determine the single best cultural predictors of the criteria, new multiple correlation coefficients were computed, dropping one variable at a time, until only the best predictor remained (backwards elimination procedure). On each separate run the variable with the lowest computed t value was dropped.

For expediency in Table 23 through 30, which follow, the abbreviations, found in brackets following each variable below, were used:

Socio-economic status of those with parental responsibility (Socio-E)

Employment status of those with parental responsibility (Empl)

Home stability (Home)

Geographical isolation (Geog I)

Education of father (Ed of F)

Education of mother (Ed of M)

Pre-school language used (Pre-S L)

Degree of Indian blood (Blood)

Degree of parental drinking (Drink)

Age of pupils (Age)

Predictors for Integrated Indians.--The best predictor of educational achievement for integrated Indian pupils was clearly the socio-economic status of those with parental responsibility. Factors other than socio-economic status and age of pupils contributed little to the total multiple correlation. The best cultural predictor for alienation was the education of the mother, while age and pre-school language used were the best predictors of a pupil's attitude toward school. The education of the mother was the best predictor of vocational maturity, with education of mother and socio-economic status the best combination of predictors.

TABLE 23

MULTIPLE CORRELATION OF COMBINATIONS OF THE TEN VARIABLES WITH ACHIEVEMENT TEST SCORES FOR INTEGRATED INDIAN PUPILS

R	Variables
.45	Socio-E
.53	Socio-E, Age
.56	Socio-E, Age, Ed of F
.57	Socio-E, Age, Ed of F, Pre-S L
.57	Socio-E, Age, Ed of F, Pre-S L, Geog I
.57	Socio-E, Age, Ed of F, Pre-S L, Geog I, Empl
.57	Socio-E, Age, Ed of F, Pre-S L, Geog I, Empl, Drink
.57	Socio-E, Age, Ed of F, Pre-S L, Geog I, Empl, Drink, Ed of M
.57	Socio-E, Age, Ed of F, Pre-S L, Geog I, Empl, Drink, Ed of M, Blood
.57	Socio-E, Age, Ed of F, Pre-S L, Geog I, Empl, Drink, Ed of M, Blood, Home

TABLE 24

MULTIPLE CORRELATION OF COMBINATIONS OF THE TEN VARIABLES WITH ALIENATION SCALE SCORES FOR INTEGRATED INDIAN PUPILS

R	Variables
.26	Ed of M
.32	Ed of M, Age
.34	Ed of M, Age, Drink
.35	Ed of M, Age, Drink, Pre-S L
.36	Ed of M, Age, Drink, Pre-S L, Home
.37	Ed of M, Age, Drink, Pre-S L, Home, Ed of F
.37	Ed of M, Age, Drink, Pre-S L, Home, Ed of F, Blood
.37	Ed of M, Age, Drink, Pre-S L, Home, Ed of F, Blood, Empl
.37	Ed of M, Age, Drink, Pre-S L, Home, Ed of F, Blood, Empl, Geog I,
.37	Ed of M, Age, Drink, Pre-S L, Home, Ed of F, Blood, Empl, Geog I, Socio-E

TABLE 25

MULTIPLE CORRELATION OF COMBINATIONS OF THE TEN VARIABLES WITH ATTITUDE TOWARD SCHOOL SCORES FOR INTEGRATED INDIAN PUPILS

R	Variables
.19	Age
.26	Age, Pre-S L
.28	Age, Pre-S L, Geog I
.29	Age, Pre-S L, Geog I, Empl
.30	Age, Pre-S L, Geog I, Empl, Socio-E
.30	Age, Pre-S L, Geog I, Empl, Socio-E, Drink
.30	Age, Pre-S L, Geog I, Empl, Socio-E, Drink, Ed of F
.30	Age, Pre-S L, Geog I, Empl, Socio-E, Drink, Ed of F, Home
.30	Age, Pre-S L, Geog I, Empl, Socio-E, Drink, Ed of F, Home, Ed of M
.30	Age, Pre-S L, Geog I, Empl, Socio-E, Drink, Ed of F, Home, Ed of M, Blood

TABLE 26

MULTIPLE CORRELATION OF COMBINATIONS OF THE TEN VARIABLES WITH VOCATIONAL MATURITY SCORES FOR INTEGRATED INDIAN PUPILS

R	Variables
.39	Ed of M
.46	Ed of M, Socio-E
.48	Ed of M, Socio-E, Age
.49	Ed of M, Socio-E, Age, Geog I
.50	Ed of M, Socio-E, Age, Geog I, Pre-S L
.51	Ed of M, Socio-E, Age, Geog I, Pre-S L, Ed of F
.51	Ed of M, Socio-E, Age, Geog I, Pre-S L, Ed of F, Empl
.52	Ed of M, Socio-E, Age, Geog I, Pre-S L, Ed of F, Empl, Blood
.52	Ed of M, Socio-E, Age, Geog I, Pre-S L, Ed of F, Empl, Blood, Drink
.52	Ed of M, Socio-E, Age, Geog I, Pre-S L, Ed of F, Empl, Blood, Drink, Home

Predictors for Segregated Indians.--The best single predictor of educational achievement for segregated Indian pupils was the education of the father, with the age of the pupils and the employment status of those with parental responsibility also making significant contributions to the multiple correlation. The education of the father was also the single most important predictor of alienation and for the attitude toward school. The best combination of predictors for this attitude were the education of the father, home stability, and the employment status of those with parental responsibility. The education of the mother was the best predictor of vocational maturity, with the socio-economic status also making a significant contribution.

TABLE 27

MULTIPLE CORRELATION OF COMBINATIONS OF THE TEN VARIABLES WITH ACHIEVEMENT TEST SCORES FOR SEGREGATED INDIAN PUPILS

R	Variables
.30	Ed of F
.40	Ed of F, Age
.44	Ed of F, Age, Empl
.45	Ed of F, Age, Empl, Ed of M
.45	Ed of F, Age, Empl, Ed of M, Drink
.46	Ed of F, Age, Empl, Ed of M, Drink, Geog I
.46	Ed of F, Age, Empl, Ed of M, Drink, Geog I, Socio-E
.46	Ed of F, Age, Empl, Ed of M, Drink, Geog I, Socio-E, Pre-S L
.46	Ed of F, Age, Empl, Ed of M, Drink, Geog I, Socio-E, Pre-S L, Home
.46	Ed of F, Age, Empl, Ed of M, Drink, Geog I, Socio-E, Pre-S L, Home, Blood

TABLE 28

MULTIPLE CORRELATION OF COMBINATIONS OF THE TEN VARIABLES WITH ALIENATION SCALE SCORES FOR SEGREGATED INDIAN PUPILS

R	Variables
.23	Ed of F
.26	Ed of F, Socio-E
.28	Ed of F, Socio-E, Blood
.30	Ed of F, Socio-E, Blood, Home
.32	Ed of F, Socio-E, Blood, Home, Ed of M
.32	Ed of F, Socio-E, Blood, Home, Ed of M, Empl
.32	Ed of F, Socio-E, Blood, Home, Ed of M, Empl, Age
.32	Ed of F, Socio-E, Blood, Home, Ed of M, Empl, Age, Drink
.32	Ed of F, Socio-E, Blood, Home, Ed of M, Empl, Age, Drink, Pre-S L
.32	Ed of F, Socio-E, Blood, Home, Ed of M, Empl, Age, Drink, Pre-S L, Geog I

TABLE 29

MULTIPLE CORRELATION OF COMBINATIONS OF TEN VARIABLES WITH ATTITUDE TOWARD SCHOOL SCORES FOR SEGREGATED INDIAN PUPILS

R	Variables
.22	Ed of F
.29	Ed of F, Home
.34	Ed of F, Home, Empl
.35	Ed of F, Home, Empl, Blood
.36	Ed of F, Home, Empl, Blood, Ed of M
.36	Ed of F, Home, Empl, Blood, Ed of M, Socio-E
.37	Ed of F, Home, Empl, Blood, Ed of M, Socio-E, Age
.37	Ed of F, Home, Empl, Blood, Ed of M, Socio-E, Age, Geog I
.37	Ed of F, Home, Empl, Blood, Ed of M, Socio-E, Age, Geog I, Drink
.37	Ed of F, Home, Empl, Blood, Ed of M, Socio-E, Age, Geog I, Drink, Pre-S L

TABLE 30

MULTIPLE CORRELATION OF COMBINATIONS OF TEN VARIABLES WITH VOCATIONAL MATURITY SCORES FOR SEGREGATED INDIAN PUPILS

R	Variables
.39	Ed of M
.46	Ed of M, Socio-E
.48	Ed of M, Socio-E, Age
.49	Ed of M, Socio-E, Age, Geog I
.50	Ed of M, Socio-E, Age, Geog I, Pre-S L
.51	Ed of M, Socio-E, Age, Geog I, Pre-S L, Ed of F
.51	Ed of M, Socio-E, Age, Geog I, Pre-S L, Ed of F, Empl
.52	Ed of M, Socio-E, Age, Geog I, Pre-S L, Ed of F, Empl, Blood
.52	Ed of M, Socio-E, Age, Geog I, Pre-S L, Ed of F, Empl, Blood, Drink
.52	Ed of M, Socio-E, Age, Geog I, Pre-S L, Ed of F, Empl, Blood, Drink, Home

Analysis of Criterion Scores of Indians by Reservation Area

The fifth question asked if differences are evident when Indian pupils are compared by Reservation Area in achievement, intelligence, alienation, attitude toward school, and vocational maturity. Tables 31 through 38 present a summary of means and F ratios for each of these criterion. All selected comparisons of means were made by employing Dunn's *c* test at the .01 and .05 significance levels.

Hypothesis No. 1

Null Hypothesis.--The means of the achievement test scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 31, was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

The Reservation Areas are identified on the summary tables by the following numerical designations: (1) Fort Totten, (2) Fort Berthold, (3) Turtle Mountain, (4) White Earth, (5) Fort Peck, and (6) Standing Rock.

TABLE 31

ANALYSIS OF VARIANCE OF ACHIEVEMENT TEST COMPOSITE SCORES ACHIEVED BY INDIAN PUPILS: BY RESERVATION AREA

Variable	Reservation Area					
	Fort Totten (1)	Fort Berthold (2)	Turtle Mountain (3)	White Earth (4)	Fort Peck (5)	Standing Rock (6)
Achievement						
N	24	19	16	46	57	47
Mean	7.96	10.00	8.31	10.02	10.53	8.47
F 3.55						

Significance level established at 3.11, .01 level

Comparison between Means.--Four selected comparisons of group means were made (Table 32). The six Reservation Areas were combined into two categories according to their relative rating on each of the following cultural variables: (1) degree of Indian blood, (2) pre-school language used by the pupils, (3) home stability, and (4) employment status of those with parental responsibility.

TABLE 32

COMPARISON OF MEANS ON ACHIEVEMENT TEST SCORES BY INDIAN PUPILS: BY RESERVATION AREA*

Variable	Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Degree of Indian Blood	Areas 3,4,5	Areas 1,2,6	.81	1.20	NS
Pre-School Language	Areas 2,3,4,5	Areas 1,6	1.50	1.45	.01
Home Stability	Areas 1,2,5,6	Areas 3,4	.07	1.20	NS
Employment Status	Areas 2,3,4,5	Areas 1,6	1.50	1.45	.01

*The Reservation Areas are identified on page 74

The divisions of the Reservation Areas according to the pre-school language used by the pupils resulted in mean differences favoring those areas where the pre-school language was more often English over those areas where the pre-school language was more often Indian. These differences were found to be significant at the .01 level. Classification according to the employment status of those with parental responsibility resulted in a division of the Reservation Areas which was

identical to that relating to pre-school language. As a result, significance was again established at the .01 level, with the group showing the higher mean being from homes where "full" employment was most common. Areas arranged by "degree of Indian blood" resulted in a mean difference favoring those Reservation Areas in which pupils showed a lower degree of Indian blood, but significance could not be established at the .05 level. Reservation Areas divided according to the stability of the homes of the pupils showed almost identical achievement score means and no significant difference was found at the .05 level.

Hypothesis No. 2

Null Hypothesis.--The means of the Intelligence Quotients of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 33, was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

Comparison between Means.--Four selected comparisons of group means, identical to those made in the analysis relating to Hypothesis No. 1, were made (Table 34). Significant differences, at the .05 level, were found when the Reservation Areas were combined by the relative status of the pre-school language of the pupils and the employment status of the pupils' parents. No significant difference could be established, at the .05 level, when Reservation Areas were arranged according to the degree of pupil Indian blood and home stability.

TABLE 33

ANALYSIS OF VARIANCE OF INTELLIGENCE QUOTIENTS
OF INDIAN PUPILS: BY RESERVATION AREA

Variable		Reservation Area: Fort Totten (1)	Fort Berthold (2)	Turtle Mountain (3)	White Earth (4)	Fort Peck (5)	Standing Rock (6)
Intelligence							
N		24	19	16	46	57	47
Mean		89.17	100.63	92.06	100.22	97.25	96.38
F	3.43						

Significance level established at 3.11, .01 level

TABLE 34

COMPARISON OF MEANS ON INTELLIGENCE QUOTIENTS
OF INDIAN PUPILS: BY RESERVATION AREA*

Variable	Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Degree of Indian Blood	Areas 3,4,5	Areas 1,2,6	1.12	4.23	NS
Pre-School Language	Areas 2,3,4,5	Areas 1,6	4.76	4.23	.05
Home Stability	Areas 3,4	Areas 1,2,5,6	.28	4.23	NS
Employment Status	Areas 2,3,4,5	Areas 1,6	4.76	4.23	.05

*The Reservation Areas are identified on page 74

Hypothesis No. 3

Null Hypothesis.--The means of the alienation scale scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 35, was not significant at the .05 level, the overall null hypothesis was retained.

TABLE 35

ANALYSIS OF VARIANCE OF ALIENATION SCALE SCORES ACHIEVED BY INDIAN PUPILS: BY RESERVATION AREA

Variable	Reservation Area					
	Fort Totten (1)	Fort Berthold (2)	Turtle Mountain (3)	White Earth (4)	Fort Peck (5)	Standing Rock (6)
Alienation						
N	24	19	16	46	57	47
Mean	222.38	206.37	219.25	209.07	204.74	211.81
F 1.56						

Significance level established at 3.11, .01 level

Hypothesis No. 4

Null Hypothesis.--The means of the "attitude toward school" scale scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 36, was not significant at the .05 level, the overall null hypothesis was retained.

TABLE 36

ANALYSIS OF VARIANCE OF ATTITUDE TOWARD SCHOOL SCALE SCORES ACHIEVED BY INDIAN PUPILS: BY RESERVATION AREA

Variable	Reservation Area					
	Fort Totten (1)	Fort Berthold (2)	Turtle Mountain (3)	White Earth (4)	Fort Peck (5)	Standing Rock (6)
Attitude Toward School						
N	24	19	16	46	57	47
Mean	46.83	45.05	47.00	45.54	42.44	43.02
F 1.59						

Significance level established at 3.11, .01 level

Hypothesis No. 5

Null Hypothesis.--The means of the vocational maturity test scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 37. was significant beyond the .01 level. the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

Comparison between Means.--Preliminary investigations indicated that the White Earth Area rated highest and the Standing Rock and Fort Totten Areas lowest on the overall cultural level. Two comparisons, based on these tentative cultural ratings, were made (Table 38).

TABLE 37

ANALYSIS OF VARIANCE OF VOCATIONAL MATURITY SCALE SCORES ACHIEVED BY INDIAN PUPILS: BY RESERVATION AREA

Variable		Reservation Area: Fort Totten (1)	Fort Berthold (2)	Turtle Mountain (3)	White Earth (4)	Fort Peck (5)	Standing Rock (6)
Vocational Maturity							
N		24	19	16	46	57	47
Mean		24.83	28.26	27.69	30.30	29.96	28.34
F	4.63						

Significance level established at 3.11, .01 level

TABLE 38

COMPARISON OF MEANS ON VOCATIONAL MATURITY TEST SCALE SCORES ACHIEVED BY INDIAN PUPILS: BY RESERVATION AREA

Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
White Earth	Standing Rock	1.96	2.33	NS
White Earth	Fort Totten	5.47	3.83	.01

The difference between the means favored the White Earth Area over the Fort Totten Area at the .01 level. Table 38 thus indicates that the significant F in Table 37 arises primarily from the lower vocational maturity scores of the Indian pupils in the Fort Totten Reservation Area.

Analysis of Cultural Background of Indians by Reservation Area

The sixth question asked if differences are evident by Reservation Area when comparisons are made for selected cultural variables. The variables considered were identical to those listed in Table 18, except that the variable relating to socio-economic status was not considered. A summary of the means and F ratios for each of these factors is presented in Tables 39 through 55. All comparisons of means were made by employing Scheffe's test at the .01 and .05 levels of significance.

Hypothesis No. 1

Null Hypothesis.--The means of the "employment status" scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 39 was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

Comparison of Means.--The differences between the means which proved to be significant favored the Fort Totten and the Standing Rock Reservations over the other areas (Table 40). This indicates that the significant F ratio in Table 39 arises primarily from the higher "employment status" scores (implying poorer employment situations) in these two Reservation Areas.

TABLE 39

ANALYSIS OF VARIANCE ON EMPLOYMENT STATUS RATINGS FOR THE PARENTS OF INDIAN PUPILS: BY RESERVATION AREA*

Variable	Reservation Area 1	2	3	4	5	6
Employment Status						
N	24	19	16	46	57	47
Mean	2.17	1.53	1.31	1.43	1.72	2.20
F 6.28						

Significance level established at 3.11, .01 level

*Reservation Areas are identified on page 74

TABLE 40

COMPARISON OF MEANS ON EMPLOYMENT STATUS RATINGS FOR THE PARENTS OF INDIAN PUPILS: BY RESERVATION AREA*

Variable	Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Employment Status	Area 1	Area 2	.64	.59	.05
	Area 1	Area 3	.86	.84	.01
	Area 1	Area 4	.74	.68	.01
	Area 6	Area 2	.67	.52	.05
	Area 6	Area 3	.89	.75	.01
	Area 6	Area 4	.77	.53	.01
	Area 6	Area 5	.48	.36	.05

*Reservation Areas are identified on page 74

Hypothesis No. 2

Null Hypothesis.--The means of the "home stability" scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 41 was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

TABLE 41

ANALYSIS OF VARIANCE ON HOME STABILITY FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Reservation Area 1	2	3	4	5	6
Home Stability						
N	24	19	16	46	57	47
Mean	2.21	2.37	1.19	1.35	1.82	2.19
F 4.51						

Significance level established at 3.11, .01 level

*Reservation Areas are identified on page 74

Comparison between Means.--The differences between the means which proved significant favored the Fort Totten, Fort Berthold, and Standing Rock Reservations over the other areas (Table 42). This indicates that the significant F ratios in Table 41 arises primarily from the higher "home stability" scores (implying less home stability) in these three Reservation Areas.

TABLE 42

COMPARISON OF MEANS ON HOME STABILITY RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Home Stability	Area 1	Area 3	1.02	.88	.05
	Area 1	Area 4	.86	.68	.05
	Area 2	Area 3	1.18	.93	.05
	Area 2	Area 4	1.02	.75	.05
	Area 6	Area 3	1.00	.78	.05
	Area 6	Area 4	.84	.75	.01

*Reservation Areas are identified on page 74

Hypothesis No. 3

Null Hypothesis.--The means of the "geographical isolation" scores of Indian pupils for each Reservation Area are equal.

Summary of the Analysis.--Since the F ratio, as shown in Table 43 was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

Comparison between Means.--The differences between the means which proved to be significant found the Fort Peck Reservation Area lower than the other areas (Table 44). This indicates that the significant F ratio in Table 43 arises primarily from the lower "geographical isolation" (implying residence closer to town) in this Reservation area.

TABLE 43

ANALYSIS OF VARIANCE ON GEOGRAPHICAL ISOLATION RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Reservation Area 1	2	3	4	5	6
Geographical Isolation						
N	24	19	16	46	57	47
Mean	2.75	2.89	2.50	2.61	1.47	2.00
F 5.04						

Significance level established at 3.11, .01 level

*Reservation Areas are identified on page 74

TABLE 44

COMPARISON OF MEANS ON GEOGRAPHICAL ISOLATION RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Geographical Isolation	Area 1	Area 5	1.28	1.18	.01
	Area 2	Area 5	1.42	1.28	.01
	Area 3	Area 5	1.03	.95	.05
	Area 4	Area 5	1.14	.93	.01

*Reservation Areas are identified on page 74

Hypothesis No. 4

Null Hypothesis.--The means of the "education of father" scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 45 was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

TABLE 45

ANALYSIS OF VARIANCE ON EDUCATION OF FATHER RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Reservation Area 1	2	3	4	5	6
Education of Father						
N	24	19	16	46	57	47
Mean	9.25	10.42	6.56	9.02	9.88	8.79
F 5.40						

Significance level established at 3.11, .01 level

*Reservation Areas are identified on page 74

Comparison between Means.--The differences between the means which proved to be significant found the Turtle Mountain Reservation to be lower than the other areas (Table 46). This indicates that the significant F ratio in Table 45 arises primarily from the lower "education of father" scores in this Reservation Area.

Hypothesis No. 5

Null Hypothesis.--The means of the "education of mother" scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 47

was significant beyond the .01 level, the overall null hypothesis was rejected and the analysis was continued to isolate significant factors.

TABLE 46

COMPARISON OF MEANS ON EDUCATION OF FATHER RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Education of Father	Area 1	Area 3	2.69	2.55	.01
	Area 2	Area 3	3.86	2.71	.01
	Area 2	Area 6	1.63	1.58	.05
	Area 4	Area 3	2.46	2.30	.01
	Area 5	Area 3	3.32	2.24	.01
	Area 6	Area 3	2.23	1.65	.05

*Reservation Areas are identified on page 74

TABLE 47

ANALYSIS OF VARIANCE ON EDUCATION OF MOTHER RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Reservation Area 1	2	3	4	5	6
Education of Mother						
N	24	19	16	46	57	47
Mean	9.21	10.10	8.81	10.78	10.26	8.96
F 4.19						

Significance level established at 3.11, .01 level

*Reservation Areas are identified on page 74

Comparison between Means.--The differences between the means which proved to be significant favored the White Earth and Fort Peck Reservations over the other areas (Table 48). This indicates that the significant F ratios in Table 47 arises primarily from the higher "education of mother" scores of these two Reservation Areas.

TABLE 48

COMPARISON OF MEANS ON EDUCATION OF MOTHER RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Education of Mother					
	Area 4	Area 1	1.57	1.33	.05
	Area 4	Area 3	1.97	1.56	.05
	Area 4	Area 6	1.82	1.43	.01
	Area 5	Area 6	1.30	1.04	.05

*Reservation Areas are identified on page 74

Hypothesis No. 6

Null Hypothesis.--The means of the "pre-school language" scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 49 was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

Comparison between Means.--The differences between the means which proved to be significant favored the Fort Totten and Standing

Rock Reservations over the other areas (Table 50). This indicates that the significant F ratio in Table 49 arises primarily from the higher "pre-school language" scores (implying more pupils who could speak a language other than English) in these Reservation Areas.

TABLE 49

ANALYSIS OF VARIANCE ON PRE-SCHOOL LANGUAGE RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Reservation Area 1	2	3	4	5	6
Pre-School Language						
N	24	19	16	46	57	47
Mean	1.46	1.16	1.13	1.09	1.04	1.60
F	11.31					

Significance level established at 3.11, .01 level

*Reservation Areas are identified on page 74

Hypothesis No. 7

Null Hypothesis.--The means of the "degree of Indian blood" scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 51 was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

Comparison between Means.--The differences between the means which proved to be significant found the means of the Fort Totten and Standing Rock Reservations to be lower than the other areas (Table 52).

TABLE 50

COMPARISON OF MEANS ON PRE-SCHOOL LANGUAGE RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Pre-School Language	Area 1	Area 3	.33	.32	.05
	Area 1	Area 4	.37	.34	.01
	Area 1	Area 5	.42	.31	.01
	Area 6	Area 2	.44	.37	.01
	Area 6	Area 3	.47	.37	.01
	Area 6	Area 4	.51	.28	.01
	Area 6	Area 5	.56	.28	.01

*Reservation Areas are identified on page 74

TABLE 51

ANALYSIS OF VARIANCE ON DEGREE OF INDIAN BLOOD RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Reservation Area 1	2	3	4	5	6
Degree of Indian Blood						
N	24	19	16	46	57	47
Mean	3.00	3.53	4.38	5.26	3.97	2.04
F 26.66						

Significance level established at 3.11, .01 level

*Reservation Areas are identified on page 74

This indicates that the significant F ratio in Table 51 arises primarily from the lower "degree of Indian blood" scores (implying more Indian blood) in these Reservation Areas.

TABLE 52

COMPARISON OF MEANS ON DEGREE OF INDIAN BLOOD RATINGS FOR INDIAN PUPILS: BY RESERVATION AREA*

Variable	Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Degree of Indian Blood	Area 1	Area 6	.94	.81	.05
	Area 2	Area 6	1.49	1.21	.01
	Area 3	Area 1	1.38	1.04	.05
	Area 3	Area 6	2.34	1.26	.01
	Area 4	Area 1	2.26	1.12	.01
	Area 4	Area 2	1.73	1.21	.01
	Area 4	Area 5	1.29	.87	.01
	Area 4	Area 6	3.22	.87	.01
	Area 5	Area 1	.97	.81	.05
	Area 5	Area 6	1.93	1.93	.01

*Reservation Areas are identified on page 74

Hypothesis No. 8

Null Hypothesis.--The means of the "degree of drinking" scores of Indian pupils of each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 53, was not significant at the .05 level, the overall null hypothesis was retained.

TABLE 53

ANALYSIS OF VARIANCE ON DEGREE OF DRINKING RATINGS FOR PARENTS OF INDIAN PUPILS: BY RESERVATION AREA*

Variable		Reservation Area 1	2	3	4	5	6
Degree of Drinking							
N		24	19	16	46	57	47
Mean		2.54	2.53	2.50	2.30	2.37	2.06
F	1.99						

Significance level established at 3.11, .01 level

*Reservation Areas are identified on page 74

Hypothesis No. 9

Null Hypothesis.--The means of the "age of pupils" scores of Indian pupils for each Reservation Area are equal.

Summary of Analysis.--Since the F ratio, as shown in Table 54 was significant beyond the .01 level, the overall null hypothesis was rejected, and the analysis was continued to isolate significant factors.

Comparison between Means.--The differences between the means which proved to be significant found the White Earth Reservation lower than the other areas (Table 55). This indicates that the significant F ratio in Table 54 arises primarily from the lower "age of pupils" score (implying younger pupils) for this Reservation Area.

TABLE 54

ANALYSIS OF VARIANCE ON THE AGE OF INDIAN PUPILS: BY RESERVATION AREA*

Variable		Reservation Area 1	2	3	4	5	6
Age of Pupils							
	N	24	19	16	46	57	47
	Mean	2.83	2.90	2.69	2.09	3.09	3.21
	F	10.09					

Significance level established at 3.11, .01 level

*Reservation Areas are identified on page 74

TABLE 55

COMPARISON OF MEANS ON THE AGE OF INDIAN PUPILS: BY RESERVATION AREA*

Variable	Higher Mean	Lower Mean	Difference in Means	Critical Ratio	P
Age of Pupils	Area 1	Area 4	.74	.65	.01
	Area 2	Area 4	.81	.72	.01
	Area 3	Area 4	.60	.54	.05
	Area 5	Area 4	1.00	.53	.01
	Area 6	Area 4	1.12	.53	.01

*Reservation Areas are identified on page 74

Comparison of Criteria Rankings to Cultural Variable Rankings by Reservation Areas

The seventh question sought to determine the relationship, by Reservation Areas, of the rankings on the selected criteria to the rankings on each of five cultural variables. These variables were selected since they appear to be theoretically predisposed to affect the selected measures of success in the acculturation of Indian pupils. The data were analyzed through the use of the Spearman rank correlation procedure.

Table 56 reports the rankings, by Reservation Areas, on the criterion of achievement and on the five cultural variables. The r_s is reported on each cultural variable as a rank correlation coefficient indicating a measure of association for each variable ranking with the achievement ranking.

TABLE 56

RATINGS OF RESERVATION AREAS ON ACHIEVEMENT AND FIVE CULTURAL VARIABLES

Ranking on Achievement	Education of Parents	Pre-School Language	Degree of Blood	Employment Status	Home Stability
1. Fort Peck	1	1	3	4	3
2. White Earth	3	2	1	2	2
3. Fort Berthold	2	4	4	3	6
4. Standing Rock	5	6	6	6	4
5. Turtle Mountain	6	3	2	1	1
6. Fort Totten	4	5	5	5	5
r_s	.77	.71	.43	.14	.14

Table 56 indicates that the highest positive relationship was found between the rankings, by Reservation Areas, for achievement and parental educational level. It also indicates that a high positive relationship existed between achievement rankings and the rankings on pre-school language.

Table 57 reports the rankings, by Reservation Areas, on the criterion of alienation and on the five cultural variables. The r_s is, again, reported on each cultural variable as a rank correlation coefficient indicating a measure of association for each variable ranking with the alienation ranking.

TABLE 57

RANKINGS OF RESERVATION AREAS ON ALIENATION AND FIVE CULTURAL VARIABLES

Ranking on Alienation	Education of Parents	Pre-School Language	Degree of Blood	Employment Status	Home Stability
1. Fort Peck	1	1	3	4	3
2. Fort Berthold	2	4	4	3	6
3. White Earth	3	2	1	2	2
4. Standing Rock	5	6	6	6	4
5. Turtle Mountain	6	3	2	1	1
6. Fort Totten	4	5	5	5	5
r_s	.83	.60	.26	.09	-.09

Table 57 indicates that the highest positive relationship was found between the rankings, by Reservation Areas, for alienation and parental educational level. It also indicates that a high positive relationship existed between alienation rankings and the rankings on pre-school language.

Table 58 reports the rankings, by Reservation Areas, on the criterion of attitude toward school and on the five cultural variables. The r_s is reported on each cultural variable as a rank correlation coefficient indicating a measure of association for each variable rankings with the attitude toward school ranking.

TABLE 58

RANKINGS OF RESERVATION AREAS ON ATTITUDE TOWARD SCHOOL AND FIVE CULTURAL VARIABLES

Ranking on Attitude Toward School	Education of Parents	Pre-School Language	Home Stability	Degree of Blood	Employment Status
1. Fort Peck	1	1	3	3	4
2. Standing Rock	5	6	4	6	6
3. Fort Berthold	2	4	6	4	3
4. White Earth	3	2	2	1	2
5. Fort Totten	4	5	5	5	5
6. Turtle Mountain	6	3	1	2	1
r_s	.66	.14	-.31	-.31	-.54

Table 58 indicates that the only high positive relationship found was between the rankings, by Reservation Areas, for attitude toward school and parental educational level.

Table 59 reports the rankings, by Reservation Areas, on the criterion of vocational maturity and on the five cultural variables. The r_s is reported on each cultural variable as a rank correlation coefficient indicating a measure of association for each variable ranking with the vocational maturity ranking.

TABLE 59

RANKINGS OF RESERVATION AREAS ON VOCATIONAL MATURITY AND FIVE CULTURAL VARIABLES

Ranking on Vocational Maturity	Pre-School Language	Education of Parents	Home Stability	Degree of Blood	Employment Status
1. White Earth	2	3	2	1	2
2. Fort Peck	1	1	3	3	4
3. Standing Rock	6	5	4	6	6
4. Fort Berthold	4	2	6	4	3
5. Turtle Mountain	3	6	1	2	1
6. Fort Totten	5	4	5	5	5
r_s	.54	.49	.31	.14	.09

Table 59 indicates that the highest positive relationship was found between the rankings, by Reservation Areas, for vocational maturity and pre-school language. It also indicates that a high positive relationship existed between vocational maturity rankings and the rankings on parental educational level.

Summary

The preceding rank correlation analyses indicate that the only cultural variable which consistently demonstrated a high positive relationship to all of the selected measures of Indian acculturation was the educational level of parents. Pre-school language also indicates a high relationship to all of the criteria with the exception of attitude toward school These findings furnish further evidence of previous results and suggest, again, the advisability of adult education programs as a most effective step toward accomplishing successful acculturation progress for Indian pupils.

Overall Ranking of Reservation Areas by Cultural Variables

The eighth question sought to ascertain the overall agreement among the ranking of the Reservation Areas by selected cultural variables. An application of the Kendall Coefficient of Concordance:W was made (Table 60).

TABLE 60

RANKS OF SIX RESERVATION AREAS BY SEVEN CULTURAL VARIABLES

Variable	1	2	3	4	5	6
Employment Status	5	3	1	2	4	6
Home Stability	5	6	1	2	3	4
Education of Father	3	1	6	4	2	5
Education of Mother	4	3	6	1	2	5
Pre-School Language	5	4	3	2	1	6
Degree of Indian Blood	5	4	2	1	3	6
Age of Pupils	3	4	2	1	5	6
Σ	30	25	21	13	20	38

S 377.5; W : 42, Significant at .01 level

Table 60 thus indicates that there is a significant asscciation among the ranking of the Reservation Areas by the variables.

In applying the standard method of ordering entities according to the sum of the ranks, the following overall cultural ranking from high to low for the Reservation Areas was:

1. White Earth

2. Fort Peck
3. Turtle Mountain
4. Fort Berthold
5. Fort Totten
6. Standing Rock

Analysis of Social Acceptance

Question nine asked if differences were evident between the pupil groups in: (1) the degree of within-race and outside-race orientation, (2) the acceptance of integrated and segregated Indians by non-Indians, and (3) the acceptance of Indians by non-Indians in social and in work situations.

Single "yes-no" frequencies based on whether or not each type of pupil chose a person from the other race were used in the testing of the hypotheses relating to within-race and outside-race orientation. All other analysis was based on a "degree of social acceptance," as explained earlier.

Hypothesis No. 1

Null Hypothesis.--The actual within-race and outside-race choices made by integrated and by segregated Indian pupils in a general social situation outside school are equal to the expected choices.

Summary of Analysis.--Using the observed frequencies in Table 61, $\chi^2=3.28$ for one degree of freedom. This was within the region of acceptance at the .05 level, and the null hypothesis was retained. A trend ($P<.10$) toward more outside-race orientation by integrated pupils in a general social situation was indicated.

TABLE 61

SOCIAL CHOICE MADE BY INDIAN PUPILS FROM INTEGRATED AND SEGREGATED SCHOOLS FOR AT LEAST ONE INDIVIDUAL FROM THE OTHER RACE IN A GENERAL SOCIAL SITUATION OUTSIDE SCHOOL

Choice of at Least One from the Other Race	No. of Pupils		
	Integrated	Segregated	Total
Yes	68 (66.7%)	60 (53.6%)	128 (60.0%)
No	34 (33.3%)	52 (46.4%)	86 (40.0%)
Total	102 (100.0%)	112 (100.0%)	214 (100.0%)

$\chi^2=3.28$, $p>.05$

Hypothesis No. 2

Null Hypothesis.--The actual within-race and outside-race choices made by integrated and by segregated Indian pupils in a work situation in school are equal to the expected choices.

Summary of Analysis.--Calculations from the frequences in Table 62 yielded a $\chi^2=2.54$ for one degree of freedom. This was within the region of acceptance at the .05 level, and the null hypothesis was retained. Inspection of the data revealed, however, that integrated Indians did make more outside-race selections than did segregated Indians.

TABLE 62

SOCIAL CHOICE MADE BY INDIAN PUPILS FROM INTEGRATED AND SEGREGATED SCHOOLS FOR AT LEAST ONE INDIVIDUAL FROM THE OTHER RACE IN A WORK SITUATION IN SCHOOL

Choice of at Least One from the Other Race	No. of Pupils		Total
	Integrated	Segregated	
Yes	63 (61.8%)	56 (50.0%)	119 (55.6%)
No	39 (38.2%)	56 (50.0%)	95 (44.4%)
Total	102 (100.0%)	112 (100.0%)	214 (100.0%)

$\chi^2=2.54$, $p>.05$

Hypothesis No. 3

Null Hypothesis.--The actual within-race and outside-race choices made by resident and by transfer non-Indians in a general social situation outside school are equal to the expected choices.

Summary of Analysis.--The frequencies from Table 63 yielded a $\chi^2=.03$ for one degree of freedom. This was well within the region of acceptance at the .05 level, and the null hypothesis was retained. No statistically reliable difference could be found between the within-race and outside-race orientation of resident and transfer non-Indians in a general social situation outside school.

TABLE 63

SOCIAL CHOICES MADE BY NON-INDIAN RESIDENT AND TRANSFER PUPILS FOR AT LEAST ONE INDIVIDUAL FROM THE OTHER RACE IN A GENERAL SOCIAL SITUATION OUTSIDE SCHOOL

Choice of at Least One from the Other Race	No. of Pupils		
	Resident	Transfer	Total
Yes	123 (34.7%)	49 (36.0%)	172 (35.1%)
No	231 (65.3%)	87 (64.0%)	318 (64.9%)
Total	354 (100.0%)	136 (100.0%)	490 (100.0%)

χ^2=.03, p>.05

Hypothesis No. 4

Null Hypothesis.--The actual within-race and outside-race choices made by resident and by transfer non-Indians in a work situation in school are equal to the expected choices.

Summary of Analysis.--Since χ^2=1.73 for one degree of freedom was not significant at the .05 level, the null hypothesis was retained (Table 64). No significant difference could be found between the within-race and outside-race orientation of resident and transfer non-Indians in a work situation.

TABLE 64

SOCIAL CHOICES MADE BY NON-INDIAN RESIDENT AND TRANSFER PUPILS FOR AT LEAST ONE INDIVIDUAL FROM THE OTHER RACE IN A WORK SITUATION IN SCHOOL

Choice of at Least One from the Other Race	No. of Pupils		
	Resident	Transfer	Total
Yes	82 (23.2%)	40 (29.4%)	122 (24.9%)
No	272 (76.8%)	96 (70.6%)	368 (75.1%)
Total	354 (100.0%)	136 (100.0%)	490 (100.0%)

$\chi^2=1.73$, $p>.05$

Hypothesis No. 5

Null Hypothesis.--The actual choices made by resident non-Indian pupils of integrated Indian pupils and of segregated Indian pupils in a general social situation outside school are equal to the expected choices.

Summary of Analysis.--From Table 65, the frequencies yielded a $\chi^2=6.67$ for two degrees of freedom. Since this was significant beyond the .05 level, the null hypothesis was rejected. Inspection of the frequencies indicates that segregated Indians were not accepted as well as integrated Indians.

TABLE 65

DEGREE OF SOCIAL ACCEPTANCE BY NON-INDIAN RESIDENT PUPILS OF INDIAN PUPILS FROM INTEGRATED AND SEGREGATED SCHOOLS IN A GENERAL SOCIAL SITUATION OUT-SIDE SCHOOL

Degree of Acceptance	No. of Pupils		
	Integrated	Segregated	Total
High	14 (13.6%)	13 (12.3%)	27 (12.9%)
Medium	32 (31.1%)	12 (11.3%)	44 (21.1%)
Low	57 (55.3%)	81 (76.4%)	138 (66.0%)
Total	103 (100.0%)	106 (100.0%)	209 (100.0%)

$\chi^2=6.67$, $p<.05$

Hypothesis No. 6

Null Hypothesis.--The actual choices made by resident non-Indian pupils of integrated Indian pupils and of segregated Indian pupils in a work situation at school are equal to the expected choices.

Summary of Analysis.--The test for the observed frequencies from Table 66, yielded a $\chi^2=12.12$ for two degrees of freedom. Since this was significant beyond the .01 level, the null hypothesis was rejected. Integrated Indians showed a higher "degree of acceptance" than segregated Indians.

TABLE 66

DEGREE OF SOCIAL ACCEPTANCE BY NON-INDIAN RESIDENT PUPILS OF INDIAN PUPILS FROM INTEGRATED AND FROM SEGREGATED SCHOOLS IN A WORK SITUATION AT SCHOOL

Degree of Acceptance	No. of Pupils		
	Integrated	Segregated	Total
High	5 (5.0%)	4 (3.8%)	9 (4.4%)
Medium	39 (38.6%)	18 (17.3%)	57 (27.8%)
Low	57 (56.4%)	82 (78.9%)	139 (67.8%)
Total	101 (100.0%)	104 (100.0%)	205 (100.0%)

$\chi^2=12.12$, $p<.01$

Hypothesis No. 7

Null Hypothesis.--The degree to which Indian pupils are accepted by resident non-Indian pupils in a work situation at school is independent of the degree to which they are accepted in a general social situation outside school.

Summary of Analysis.--The null hypothesis was rejected, with a $\chi^2=10.48$ significance beyond the .01 level for two degrees of freedom, and it was concluded that the two criteria were related. Reference to Table 67 reveals Indian pupils were more readily accepted in a social situation than in a work situation, especially in the high "degree of acceptance" category.

TABLE 67

DEGREE OF SOCIAL ACCEPTANCE OF INDIAN PUPILS BY NON-INDIAN PUPILS IN A GENERAL SOCIAL SITUATION OUTSIDE SCHOOL AND IN A WORK SITUATION AT SCHOOL

Degree of Acceptance	No. of Indian Pupils		Total
	Social Situation	Work Situation	
High	27 (12.9%)	6 (4.4%)	36 (8.7%)
Medium	44 (21.1%)	57 (27.8%)	101 (24.4%)
Low	138 (66.0%)	139 (67.8%)	27[illegible] (66.9%)
Total	209 (100.0%)	205 (100.0%)	414 (100.0%)

$\chi^2=10.48$, $p<.01$

Analysis of Indian Pupils who were "Highly Accepted"

Eight of the twelve schools who were included in the study had at least one pupil who was accepted in a social situation by over twenty-five per cent of the resident non-Indians. In one school all of the Indian pupils were highly accepted by the non-Indian pupils. In the other seven schools, a total of fourteen Indian pupils were in the highly accepted category. Of these, ten were found to have a degree of Indian blood of less than one-fourth. Only one of the highly accepted Indian pupils had over one-half Indian blood. Twelve of the fourteen highly

accepted Indian pupils had fathers who were fully employed, and none of these pupils were listed as coming from the lowest socio-economic level.

Without exception, the Indian pupils who were highly accepted also accepted some non-Indian pupils in both work and social situations.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

As has been stated in Chapter I, the purpose of this study was to determine the effects on Indian pupils of attending integrated schools. While one must be mindful that it is often too easy to come to unjustified conclusions and to make broad generalizations about groups at the expense of individual pupils, the following general statements seemed pertinent both from an examination of the statistical results and from personal observations.

General Conclusions

The Influence of Cultural Deprivation

The most obvious conclusion of the study was that there appeared to be a consistent, positive relationship between low cultural, economic, and social levels and low achievement, low intelligence, high alienation, and negative attitudes toward school, and less vocational maturity. This finding held true regardless of race, geographical location, or type of school attended. Evidence of this was found in the comparison of Indians to non-Indians. Non-Indian pupils clearly had higher achievement and intelligence scores, lower levels of alienation, and more positive attitudes toward school. As expected, a comparison of Indians to non-Indians on various socio-cultural variables found that the Indians rated substantially lower on every measure. Non-Indians simply enjoyed great cultural advantages with respect to such things as economic

level, motivation, and out-of-school learning opportunities. The pattern for Indians was consistent from reservation to reservation, from tribe to tribe, and from culture to culture. This finding was in agreement with Honigman's (1961) conclusion that a high degree of psychological homogeneity characterized the American Indian. The thread that ties all of the Indian cultures together may well be the "culture of poverty." With this in mind, it may be appropriate to compare the standardized test performance of Indians to non-Indians to determine the magnitude of cultural deprivation to be overcome.

The Influence of Quality of Instruction

Early explanations that the Indian pupil types differed in achievement merely because they had attended schools with different quality of instruction were not supported by this study. If only the quality or the type of school attended is behind achievement score differences, why, in every school, did non-Indian pupils score higher than those Indian pupils with whom they had shared the same classrooms and teachers in grades one through eight? In addition, if instructional quality were the only factor influencing achievement scores, would it not be reasonable to expect some differences between resident non-Indians and non-Indians who attended one-room rural schools in grades one through eight? Yet no such differences were found. Clearly, then, the quality of instruction or the type of school attended could not alone be responsible for the different performances of the pupil groups.

The Influence of the Social Composition of the School

In view of the strong influence of socio-cultural factors on

pupil attitude and performance, can the educational situation really make much difference? The findings of Coleman (1966) strongly indicated that physical and economic school factors appear to be relatively unimportant to pupil learning:

> "Differences in school facilities and curriculum . . . are so little related to differences in achievement levels of students, that, with few exceptions, their effects fail to appear in a survey of this magnitude."

Coleman stressed that the factors most highly correlated with student achievement were the student's home environment, the social composition of the student body, and the quality of the teachers.

Peterson (1948), Anderson, *et al.* (1953), and Coombs, *et al.* (1958) reported that Indian pupils in integrated public schools scored consistently higher in achievement than Indian pupils in Bureau schools. Coombs contended, however, that the pupils attending Bureau schools were from "less accultured" homes, and that this, rather than the type of school attended, accounted for the achievement score differences. The results of the present study found integrated Indian pupils to be significantly higher in achievement and lower in alienation than segregated Indian pupils. If the conclusions of Coombs are applicable, these differences might well be the result of factors related to pupil backgrounds, rather than to the social composition of the school attended. If the best indices of acculturation are, as Coombs stated, degree of Indian blood and pre-school language, differences in these two cultural variables could logically be expected between the integrated and segregated Indian pupils included in this study. No such differences, however, were evident. In fact, while the results consistently favored the integrated Indian pupil, only on the variable

relating to sccio-economic status were segregated Indian pupils rated on a significantly lower level. It was the conclusion of this investigator that the higher achievement, lower alienation, and higher vocational maturity of integrated Indian pupils is directly related not only to socio-cultural differences, but also to the exposure of these pupils, primarily through the school, to integrated circumstances. A relevant finding may be that while significant differences were found between integrated and segregated Indian pupils in achievement, no such differences could be found between those same pupils in intelligence.

Socio-cultural factors being similar, an Indian pupil attending an integrated school will be more likely to show a higher level of achievement, a lower level of alienation, a more positive attitude toward school, and higher level of vocational maturity than an Indian pupil attending a segregated school. Integrated Indian pupils appeared to accept the values of the majority non-Indian society to a greater extent than did segregated Indians.

The Influence of Integration on Social Acceptance

Since resident non-Indian pupils and integrated Indian pupils were in school together in grades one through eight, it was one of the purposes of this study to determine if friendships and social acceptance would tend to form more on the basis of common interests rather than by ethnic group membership. Is integration really taking place, or is it in name only?

The enrollments of the schools included in this study were relatively small, with the number of ninth grade pupils ranging

from 121 to 24. Ten of the schools enrolled ninth grade Indian pupils who had attended integrated schools in grades one through eight, and these pupils made up seventeen per cent of the total ninth grade enrollment. In these integrated schools, Indians and non-Indians had attended the same elementary school, usually in the same room. They were in daily contact with each other, both within and outside the school. At the start of grade nine these pupils were joined by non-Indian pupils who had attended non-Indian elementary schools, with little or no personal and social contact with Indians. After less than a month, the two types of non-Indian pupils selected classmates for a social and a work situation. An examination of the total pupil selections revealed that not only did non-Indians select integrated Indians at a rate lower than would be mathematically expected, but that resident non-Indians selected those Indian pupils only to the same extent (seven per cent) as did transfer non-Indians. Surprisingly, the attendance of the same school for eight years did not increase the acceptance of the Indians by their non-Indian classmates. The finding that resident and transfer non-Indians showed no significant difference in their within-race, outside-race orientation may be further evidence of this.

Anderson, *et al.* (1953) found that eighty-four per cent of the non-Indians had some Indian friends, while the results of the present study indicated that in ten schools, considering only the pupils who have been in school together for eight years, only forty-three per cent of the non-Indians selected at least one Indian classmate. These obviously conflicting results may be due to the different methods used

in determining social acceptance. Anderson asked that the pupils check an appropriate space indicating if a pupil had friends who were: (1) all white, (2) mostly white with some Indians, (3) mostly Indian by some white, and (4) all Indian. The present study had the pupils actually list the names of as many classmates as they desired for a social situation. It was hoped that this would result in more realistic findings by minimizing "socially-desirable" responses. Using Anderson's method, it may well be that non-Indians selected "mostly whites with some Indians" as the choice that society would hope that they would make. Despite some apparent weaknesses of the technique used in the present study, the results seem to be a better description of the true situation.

It was the conclusion of the author that for the non-Indian integration is truly in name only, and that within each classroom a segregated situation generally exists. This is not to imply, however, that outward racial antagonism between Indians and non-Indians existed. As one school counselor put it, "They just seem to leave each other alone."

Indian pupils, from both integrated and segregated schools, were inclined to accept non-Indian pupils in both work and social situations, but no significant difference was found between integrated and segregated Indians in within-race and outside-race orientation. The type of school attended did not appear to make much difference.

Educational Implications

One of the basic assumptions which has been made throughout

this investigation is that many Indian pupils will leave the reservations, either for further education or to seek employment, after the completion of their elementary and secondary education. Consequently, one fact that should not be overlooked is that while integrated Indians scored higher than segregated Indians, they did not come anywhere near the achievement level of their non-Indian classmates. Accepting the fact that the standardized tests used are culturally biased against the Indian does not dispose of the problem. If the Bureau objective of having "approximately half of the high school graduates preparing themselves through college work for professional careers" (Nash, 1965) is ever to become a reality, the Indian pupil must be able to compete academically in a society which is culturally biased against him. The present achievement level of both integrated and segregated Indian pupils, unless drastically improved, will be a handicap which will hinder many of these pupils who desire to leave the reservation.

The organization for the education of Indian pupils in any type of school must take into account the many socio-cultural factors upon which the academic success of Indian pupils is contingent. It would be unrealistic, for example, for a teacher to expect high achievement from an Indian pupil who can not see any reason for learning the subject matter and who feels that school is a waste of time. Educators in integrated public schools should recognize that Indian pupils have special problems and needs, and that the policy of treating all of the pupils, Indian or non-Indian, alike is not necessarily admirable. This is especially applicable to Indian children

who transfer to non-Indian schools. In the present study these pupils were low in achievement, high in alienation, had negative attitudes toward school and came from culturally deprived homes. It would be most surprising if such pupils, as a group, did not most often have difficulty in adjusting to the public school situation. How can educators treat these Indian pupils the same as integrated Indian pupils or non-Indian pupils? Unless some improvement is made in the preparation for, and in the transition of, Indian pupils to integrated schools, it is the opinion of this investigator that such transfer could well be potentially more harmful than helpful to these pupils. In any event, the chances of success for a pupil transferred as late as grade nine are, at best, questionable.

Teachers need to become more aware of the social relationships between the Indian and the non-Indian pupil. The present practice in some of the schools of grouping pupils by achievement, resulting in classes divided almost entirely by race, requires immediate reexamination.

One of the findings of this study was that the education of the parents is the most important factor in developing desirable traits and behaviors in Indian pupils. This would indicate that schools responsible for developing this acculturation process would do well to initiate extensive and inviting adult education programs geared to the needs and problems peculiar to the Indian adult. Home related variables are a great influence on achievement, alienation, attitude toward school, and vocational maturity of the Indian pupil. Funds presently allotted to remedial programs for Indian pupils might well be, in many cases,

redirected to well-designed and meaningful adult education.

APPENDIX A

1. Summary of the total population of the study shown by school, Reservation Area, race, and kind of school attended.

2. Frequencies and percentages, by Reservation Area, for the pupils on the cultural variables.

TABLE 68

TOTAL POPULATION OF THE STUDY SHOWN BY SCHOOL, AREAS, RACE, AND KIND OF SCHOOL ATTENDED

School	Area	Pupil Type				Total
		Indian Integrated	Indian Segregated	Non-Indian Resident	Non-Indian Transfer	
Maddock	Fort Totten	0	15	39	2	56
Warwick	Fort Totten	4	5	13	2	24
Halliday	Fort Berthold	0	8	26	1	35
New Town	Fort Berthold	10	1	38	4	53
Dunseith	Turtle Mountain	3	13	24	3	43
Mahnomen	White Earth	9	13	46	32	100
Waubun	White Earth	9	14	33	23	79
Poplar	Fort Peck	29	8	25	8	70
Wolf Point	Fort Peck	18	4	56	43	121
McIntosh	Standing Rock	8	5	21	5	39
McLaughlin	Standing Rock	10	15	28	6	59
Solen	Standing Rock	3	7	5	10	25
		103	108	354	139	704

TABLE 69

FREQUENCIES AND (PERCENTAGES), BY RESERVATION AREA, FOR ALL OF THE PUPILS ON SEVEN CULTURAL VARIABLES

Variable	Reservation Area* 1	2	3	4	5	6
Pre-School Language						
English only	68 (85)	85 (97)	40 (93)	177 (99)	189 (99)	89 (72)
Both English and Other	10 (13)	3 (3)	3 (7)	0 (0)	2 (1)	33 (27)
Indian Only	2 (2)	0 (0)	0 (0)	2 (1)	0 (0)	1 (1)
Geographical Isolation						
In Town	27 (34)	50 (57)	14 (33)	67 (37)	131 (68)	75 (61)
Under 2 miles from town	8 (10)	2 (2)	4 (9)	16 (9)	5 (3)	6 (5)
2 to 5 miles from town	16 (20)	3 (3)	9 (21)	36 (20)	14 (7)	7 (6)
5 to 10 miles from town	15 (19)	12 (14)	7 (16)	33 (19)	13 (7)	15 (12)
More than 10 miles from town	14 (17)	21 (24)	5 (2)	27 (15)	28 (15)	20 (16)
Education of Father						
Less than grade 7	2 (3)	6 (7)	8 (18)	7 (4)	7 (4)	10 (8)
Grade 7 completed	0 (0)	1 (1)	4 (9)	8 (4)	2 (1)	9 (7)
Grade 8 completed	38 (48)	30 (34)	15 (35)	77 (43)	55 (29)	49 (40)
Grade 9 completed	9 (4)	3 (3)	4 (9)	10 (6)	8 (4)	8 (7)
Grade 10 completed	5 (6)	8 (9)	2 (5)	12 (7)	7 (4)	5 (4)
Grade 11 completed	6 (7)	4 (5)	1 (2)	5 (3)	10 (5)	4 (3)
Grade 12 completed	20 (25)	26 (30)	4 (9)	42 (23)	66 (35)	26 (21)
Grade 13-15 completed	6 (7)	2 (2)	3 (8)	8 (4)	18 (9)	7 (6)
College graduate	0 (0)	7 (9)	2 (5)	10 (6)	18 (9)	5 (4)

	1	2	3	4	5	6
Education of Mother						
Less than grade 7	1 (1)	1 (1)	6 (14)	1 (1)	3 (2)	5 (4)
Grade 7 completed	1 (1)	2 (2)	1 (2)	2 (1)	0 (0)	5 (4)
Grade 8 completed	25 (31)	19 (22)	9 (21)	42 (23)	32 (17)	39 (31)
Grade 9 completed	9 (11)	5 (6)	2 (5)	12 (7)	7 (4)	8 (7)
Grade 10 completed	5 (6)	5 (6)	6 (14)	12 (7)	6 (3)	8 (7)
Grade 11 completed	3 (4)	5 (6)	6 (14)	10 (6)	21 (11)	9 (7)
Grade 12 completed	25 (32)	33 (38)	10 (23)	77 (43)	82 (43)	35 (28)
Grade 13-15 completed	7 (9)	14 (16)	2 (5)	11 (6)	22 (11)	8 (7)
College graduate	4 (5)	3 (3)	1 (2)	12 (6)	18 (9)	6 (5)
Age of Pupils						
13	2 (3)	0 (0)	1 (2)	25 (14)	1 (1)	0 (0)
14	57 (71)	47 (53)	26 (61)	141 (79)	90 (47)	72 (59)
15	16 (20)	35 (40)	13 (30)	11 (6)	73 (38)	29 (23)
16	5 (6)	6 (7)	3 (7)	2 (1)	24 (12)	13 (11)
17 or over	0 (0)	0 (0)	0 (0)	0 (0)	3 (2)	9 (7)
Home Stability						
Living with both parents	64 (80)	76 (87)	40 (93)	167 (93)	164 (86)	96 (77)
Father or mother only	10 (13)	8 (9)	1 (2)	9 (5)	20 (9)	18 (15)
Relatives	4 (5)	2 (2)	2 (5)	0 (0)	8 (4)	8 (7)
Others	2 (2)	2 (2)	0 (0)	3 (2)	1 (1)	1 (1)
Employment Status						
Fully employed	64 (80)	76 (86)	40 (93)	162 (91)	167 (87)	82 (67)
Irregularly employed	1 (1)	6 (7)	1 (2)	11 (6)	7 (4)	15 (12)
Unemployed	15 (19)	6 (7)	2 (5)	6 (3)	17 (9)	26 (21)

*Reservation Areas are identified on page 74

TABLE 70

FREQUENCIES AND (PERCENTAGES), BY RESERVATION AREA, FOR THE INDIAN PUPILS ON THREE VARIABLES

Variable	Reservation Area* 1	2	3	4	5	6
Acceptance - Social Situation						
Accepted by no non-Indians	74 (93)	73 (83)	43 (100)	160 (89)	168 (88)	115 (94)
Accepted by 1-10%	2 (3)	8 (9)	0 (0)	10 (6)	19 (10)	7 (5)
Accepted by over 10%	4 (4)	7 (8)	0 (0)	9 (5)	4 (2)	1 (1)
Acceptance - Work Situation						
Accepted by no non-Indians	74 (93)	74 (84)	43 (100)	162 (91)	167 (87)	115 (94)
Accepted by 1-10%	2 (3)	14 (16)	0 (0)	14 (8)	22 (12)	8 (6)
Accepted by over 10%	4 (4)	0 (0)	0 (0)	3 (1)	2 (1)	0 (0)
Degree of Indian Blood						
Full	6 (8)	6 (7)	0 (0)	1 (0)	5 (3)	30 (24)
7/8	3 (4)	1 (1)	0 (0)	0 (0)	3 (2)	3 (3)
3/4	2 (2)	0 (0)	0 (0)	2 (1)	9 (5)	8 (7)
1/2	1[illegible] (15)	6 (7)	11 (26)	3 (2)	21 (11)	1 (1)
1/4	0 (0)	1 (1)	4 (9)	17 (10)	10 (5)	3 (2)
Less than 1/4	1 (1)	5 (6)	1 (2)	23 (13)	10 (5)	3 (2)
Non-Indian	56 (70)	69 (78)	27 (63)	133 (74)	133 (69)	75 (61)

*Reservation Areas are identified on page 74

APPENDIX B

1. Pupil Background Information Form completed by the pupils.
2. Student Report Form completed by the school counselors.
3. Instructions for Student Report Form.
4. Socio-Economic Status Form completed by local raters.

PUPIL BACKGROUND INFORMATION

(1) Name _____ (2) Boy _____ Girl _____
First Middle Last

(3) Are you Indian _____ or White _____?

(4) If Indian, degree of blood? Full 7/8 3/4 1/2 1/4 1/8

(5) What language could you speak when you first started school?

_____English only
_____Indian only
_____Both English and Indian
_____Both English and _____
_____Only _____

(6) Do you live in town or in the country? (Circle one) Town Country

(7) If you live in the country, how far from the nearest town do you live?

_____Less than 2 miles
_____2 to 5 miles
_____5 to 10 miles
_____More than 10 miles

(8) What was the last grade your father finished in school?

1 2 3 4 5 6 7 8 9 10 11 HS Grad 13 14 15 College Grad

(9) What was the last grade you mother finished in school?

1 2 3 4 5 6 7 8 9 10 11 HS Grad 13 14 15 College Grad

(10) Does your father or mother have a job now?____ If yes, what kind of work does he (she) do?_____

(11) Are you now living with:

_____Both a father and a mother
_____Father only
_____Mother only
_____Relatives
_____Others

(12) Name the schoolmates (from the ninth grade in this school) you would like to invite to your home for any kind of a party. (Write both first and last names).

(13) Name the schoolmates (from the ninth grade in this school) you would like to have in a work group in school. (Write both first and last names).

STUDENT REPORT FORM

SCHOOL ______________________

PERSON REPORTING ______________________
TITLE ______________________

(1) NAME OF PUPIL	(2) AGE	(3) PUPIL TYPE	(4) ECONOMIC STATUS	(5) INDIAN BLOOD	(6) HOME STABILITY	(7) EMPLOYMENT

INSTRUCTIONS FOR STUDENT REPORT FORM

1. Full name of student

2. Age to the nearest year

3. Type of Pupil. For each pupil, indicate the type of pupil by placing the correct number in Column 3.

   1 = Attended this school in grades 1-8.

   2 = Attending this school this year for the first time after attending a school with mostly Indian pupils.

   3 = Attending this school this year for the first time after attending a school with mostly white pupils.

   4 = Transferred to this school for the first time at the start of grade 6 or 7.

   5 = Does not fit any of the above categories, but attended mostly this school in grades 1-8.

   6 = Does not fit any of the above categories, but attended mostly another school in grades 1-8.

4. Economic Status. For each pupil, indicate the condition which best describes the people who brought up this pupil or who are most responsibile for him. Place the correct number in Column 4.

   1 = They are quite well off and can afford to help this pupil with money for clothes and other things needed for school.

   2 = They are not well off, but they can manage to help at least with some money for clothes and the things this pupil needs for school.

   3 = They are really having a hard time and they can hardly get any money at all to help this pupil get clothes and things for school.

5. Degree of Indian Blood. For each pupil, indicate the degree of Indian blood by placing the correct number in Column 5.

   1 = Full
   2 = 7/8
   3 = 3/4
   4 = 1/2
   5 = 1/4
   6 = Some, but less than 1/4
   7 = None

6. Home Stability. For each pupil, indicate with whom he is presently living by placing the correct number in Column 6.

1 = Parents	3 = Mother
2 = Father	4 = Relatives
	5 = Others

7. Position of Regular Employment. For each pupil, indicate the position of the regular employment of the person assuming parental responsibility. (Indicate "None" if unemployed).

SOCIO-ECONOMIC STATUS FORM

NAME OF PUPIL	SOCIO-ECONOMIC STATUS OF THOSE ASSUMING PARENTAL RESPONSIBILITY							EXTENT TO WHICH DRINKING IS A PROBLEM FOR THOSE ASSUMING PARENTAL RESPONSIBILITY		
		Lowest		to		Highest		Severe	Moderate	Little or None
	1	2	3	4	5	6	7	1	2	3
	1	2	3	4	5	6	7	1	2	3
	1	2	3	4	5	6	7	1	2	3
	1	2	3	4	5	6	7	1	2	3
	1	2	3	4	5	6	7	1	2	3
	1	2	3	4	5	6	7	1	2	3
	1	2	3	4	5	6	7	1	2	3
	1	2	3	4	5	6	7	1	2	3
	1	2	3	4	5	6	7	1	2	3

APPENDIX C

1. Inter-correlation matrices of the cultural variables and the criterion measures.

TABLE 71

INTER-CORRELATION MATRIX OF TWELVE VARIABLES FOR 704 NINTH GRADE PUPILS ATTENDING TWELVE INTEGRATED PUBLIC SCHOOLS

Variables	2	3	4	5	6	7	8	9	10	11	12
1. Economic Status	.52*	.26*	.01	-.21*	-.28*	.17*	-.32*	-.25*	.19*	.24*	-.18*
2. Employment Status		.42*	-.07	-.19*	-.28*	.33*	-.31*	-.30*	.19*	.17*	-.22*
3. Home Stability			-.02	-.09	-.15*	.28*	-.22*	-.17*	.11	.07	-.19*
4. Geographical Isolation				-.15*	-.13*	-.06	-.03	-.02	.01	.02	-.03
5. Education of Father					.45*	-.09	.29*	.24*	-.11	-.16*	.16*
6. Education of Mother						-.20*	.35*	.35*	-.21*	-.22*	.25*
7. Age of Pupils							-.31*	-.40*	.20*	.16*	-.24*
8. Achievement								.80*	-.37*	-.36*	.50*
9. Intelligence									-.35*	-.35*	.49*
10. Alienation										.57*	-.47*
11. Attitude Toward School											-.38*
12. Vocational Maturity											

*Significant at .01 level (two tailed)

TABLE 72

INTER-CORRELATION MATRIX FOR TWELVE VARIABLES FOR 354 NINTH GRADE RESIDENT NON-INDIAN PUPILS ATTENDING TWELVE INTEGRATED PUBLIC SCHOOLS

Variables	2	3	4	5	6	7	8	9	10	11	12
1. Economic Status	.31*	.18*	.04	-.11	-.24*	.02	-.20*	-.15*	.07	.17*	-.06
2. Employment Status		.45*	-.15*	-.10	-.09	.16*	-.07	.10	.02	.03	.00
3. Home Stability			-.10	-.06	-.09	.18*	-.07	.10	.01	.03	-.04
4. Geographical Isolation				-.15*	-.15*	.00	-.02	-.07	.01	.04	-.07
5. Education of Father					.43*	-.01	.19*	-.15*	-.03	-.12	.07
6. Education of Mother						-.01	.29*	.26*	-.14	-.18*	.18*
7. Age of Pupils							-.16*	-.28*	.09	.10	-.07
8. Achievement								.80*	-.28*	-.33*	.48*
9. Intelligence									-.24*	-.31*	.43*
10. Alienation										.51*	-.48*
11. Attitude Toward School											-.31*
12. Vocational Maturity											

*Significant at .01 level (two tailed)

TABLE 73

INTER-CORRELATION MATRIX FOR TWELVE VARIABLES FOR 139 NINTH GRADE TRANSFER NON-INDIAN PUPILS ATTENDING TWELVE INTEGRATED PUBLIC SCHOOLS

Variables	2	3	4	5	6	7	8	9	10	11	12
1. Economic Status	.08	.01	.14	-.14	-.07	.21	-.06	-.04	.13	.20	-.01
2. Employment Status		.03	-.14	-.18	-.16	.04	-.04	.00	.07	.06	-.10
3. Home Stability			-.05	-.03	-.08	.01	-.08	-.07	.23	.17	-.15
4. Geographical Isolation				-.28*	-.21	-.02	-.18	-.09	.02	.06	-.04
5. Education of Father					.48*	-.05	.43*	.32*	-.14	-.18	.15
6. Education of Mother						-.01	.25	.24	-.02	-.13	.08
7. Age of Pupils							-.21	-.37*	.12	.03	-.18
8. Achievement								.82*	-.36*	-.26*	.39*
9. Intelligence									-.30*	-.18	.38*
10. Alienation										.54*	-.35*
11. Attitude Toward School											-.20
12. Vocational Maturity											

*Significant at .01 level (two tailed)

TABLE 74

INTER-CORRELATION MATRIX OF SEVENTEEN VARIABLES FOR 103 NINTH GRADE INTEGRATED INDIAN PUPILS ATTENDING TWELVE INTEGRATED PUBLIC SCHOOLS

Variables	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Socio-Economic	-.33*	.15	.01	.36*	.45*	-.19	.16	.54*	-.29*	.45*	.48*	-.16	-.10	.39*	.41*	.35*
2. Employment Status		.29*	-.23	-.35*	-.35*	.09	-.26*	-.15	.30*	-.28*	-.24	.08	.02	-.13	.26*	-.18
3. Home Stability			-.13	-.06	-.13	.08	-.40*	-.01	.15	-.11	-.05	-.03	.00	-.11	-.21	-.11
4. Geographical Isolation				.06	-.04	-.02	.11	-.04	-.17	.11	.06	-.01	.08	-.07	.05	.05
5. Education of Father					.47*	-.14	.10	.06	-.17	.35*	.32*	-.05	-.06	.27*	.17	.17
6. Education of Mother						-.34*	.22	.28*	-.33*	.33*	.38*	-.26*	-.12	.39*	.27*	.21
7. Pre-School Language							-.37*	-.15	.07	-.20	-.25	.18	.18	-.21	.11	-.09
8. Degree of Indian Blood								-.26*	-.25	.19	.13	-.13	-.08	.18	.31*	.20
9. Degree of Drinking									-.24	.26*	.34*	-.21	-.06	.21	.21	.18
10. Age of Pupils										-.40*	-.46*	.25	.19	-.31*	-.27*	-.20
11. Achievement											.73*	-.33*	-.26*	.44*	.21	.22
12. Intelligence												-.43*	-.32*	.41*	.23	.22
13. Alienation													.59*	-.51*	-.21	-.16
14. Attitude Toward School														-.46	-.11	-.09
15. Vocational Maturity															.34*	-.27*
16. Acceptance-Social																.88*
17. Acceptance-Work																

*Significant at .01 level (two tailed)

TABLE 75

INTER-CORRELATION MATRIX OF SEVENTEEN VARIABLES FOR 108 NINTH GRADE SEGREGATED INDIAN PUPILS ATTENDING TWELVE INTEGRATED PUBLIC SCHOOLS

Variables	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Socio-Economic	-.31*	-.08	.10	.07	.00	-.15	.19	.68*	-.01	.13	.69*	-.15	-.11	.10	.11	.01
2. Employment Status	.22	-.08	-.15	-.26*	.29*	-.50*	-.42*	.21	-.27*	-.25*	.15	-.16	-.14	.02	.07	
3. Home Stability		-.22	-.03	-.04	.20	-.20	-.02	.25*	-.11	-.06	-.09	.20	-.05	.21	.29*	
4. Geographical Isolation			.28*	-.17	-.13	.07	-.09	-.03	.16	.00	-.05	.02	-.05	.27*	.28*	
5. Education of Father				.40*	-.17	.09	.04	-.07	.30*	.26*	-.23	-.22	.19	.20	.20	
6. Education of Mother					-.20	.27*	.06	-.30*	.30*	.34*	-.19	-.17	.32*	.09	.00	
7. Pre-School Language						-.57*	-.15	.26*	-.13	-.16	.12	.00	-.22	-.22	-.18	
8. Degree of Indian Blood							-.34*	-.41*	.22	.22	-.15	-.00	.23	.13	.05	
9. Degree of Drinking								-.09	.16	.21	-.12	-.13	.05	.17	.05	
10. Age of Pupils									-.29*	-.28*	.08	.02	-.20	.00	-.05	
11. Achievement										.69*	-.34*	-.51*	.36*	.04	.02	
12. Intelligence											-.26*	-.33*	.41*	.24	.14	
13. Alienation												.51*	-.23	.06	.01	
14. Attitude Toward School													-.35*	.05	-.10	
15. Vocational Maturity														.01	-.04	
16. Acceptance-Social															.72*	
17. Acceptance-Work																

*Significant at .01 level (two tailed)

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