



A study of selected characteristics of successful and unsuccessful American Indian students enrolled at Montana State University from September, 1967 to June, 1972  
by Daniel Louis Voyich

A thesis submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree of  
DOCTOR OF EDUCATION  
Montana State University  
© Copyright by Daniel Louis Voyich (1974)

**Abstract:**

The purpose of this study was to investigate selected characteristics that may be related to the success or failure of American Indian students enrolled at Montana State University.

The subjects in this study were divided into two categories (successful and unsuccessful) with three groups listed under each category. The study was based on 182 Indian students enrolled at Montana State University during the five-year period from September, 1967 through June, 1972.

The raw data for this study consisted of information on 16 variables and were tested by using the chi square and the t-test. The statistical difference was considered significant at the .05 level of confidence. The data for the variables were obtained from the personal files of the Indian students which are maintained at the Center for Intercultural Programs, the Registrar's Office, and the Testing and Counseling Service.

Ten of the sixteen variables proved to be statistically significant. The ten variables which were significant are: (1) age; (2) blood quantum; (3) number of living children in family; (4) American Indian Club attendance; (5) marital status; (6) number of credits carried; (7) result of the American Council on Education Psychological Examination for College Freshmen; (8) result of the Cooperative School and College Ability Tests; (9) result of the Ohio State University Psychological test; and (10) high school grade point average.

A STUDY OF SELECTED CHARACTERISTICS OF SUCCESSFUL AND  
UNSUCCESSFUL AMERICAN INDIAN STUDENTS ENROLLED AT  
MONTANA STATE UNIVERSITY FROM SEPTEMBER, 1967  
TO JUNE, 1972

by

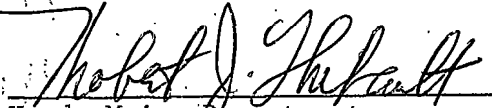
DANIEL LOUIS VOYICH

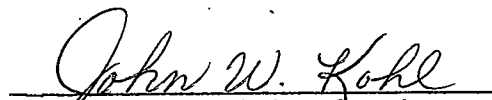
A thesis submitted to the Graduate Faculty in partial  
fulfillment of the requirements for the degree

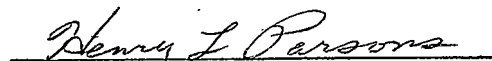
of

DOCTOR OF EDUCATION

Approved:

  
Head, Major Department

  
Chairman, Examining Committee

  
Graduate Dean

MONTANA STATE UNIVERSITY  
Bozeman, Montana

June, 1974

## ACKNOWLEDGMENT

The writer wishes to express his gratitude and appreciation to the members of his committee. This dissertation would not have been possible without their help. I am especially thankful for their patience and consideration.

The writer wishes to express gratitude for the counsel and encouragement of Dr. Elnora A. Old Coyote during the progress of his doctoral program.

Special thanks is given to Dr. John W. Kohl for his excellent guidance and help in arriving at the solution to many of the problems encountered during the course of this dissertation.

The researcher is especially appreciative of the statistical assistance given him by Dr. Albert Suvak, Head of the Testing and Counseling Center.

Finally, the writer dedicates this endeavor to his lovely wife, Marie, and children for their patience, understanding, encouragement, and help during this study, at considerable sacrifice to their own personal welfare and happiness.

D.L.V.

## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION . . . . .	1
Need for the Study . . . . .	2
Definition of Terms . . . . .	4
Statement of the Problem . . . . .	4
General Questions to be Answered . . . . .	12
Limitations of the Study . . . . .	15
Summary . . . . .	15
II. REVIEW OF LITERATURE . . . . .	16
Indian Culture . . . . .	16
Intelligence and Educational Achievement of American Indians . . . . .	21
Indian High School Dropout Problem . . . . .	25
Higher Education of Indian Students . . . . .	29
III. PROCEDURES . . . . .	34
Population . . . . .	34
Methods of Collecting Data . . . . .	34
Hypotheses . . . . .	35
Statistical Methods . . . . .	38
Summary . . . . .	39
IV. ANALYSIS OF DATA . . . . .	40
Variables . . . . .	41
Sex . . . . .	41
Age . . . . .	42
Blood Quantum . . . . .	43
On or Off Reservation . . . . .	44
Type of High School . . . . .	45
Home Reservation . . . . .	47
Bilingualism . . . . .	48
Field of Study . . . . .	49
Number of Children . . . . .	51
Club Attendance . . . . .	52
Marital Status . . . . .	54
Number of Credits . . . . .	55
Cooperative School and College Ability Tests (SCAT) . . . . .	56
American Council on Education Psychological Examination for College Freshmen (ACE) . . . . .	57

Chapter	Page
Ohio State University Psychological Test (Ohio) . . . . .	58
High School Grade Point Average. . . . .	59
Summary. . . . .	60
V. CONCLUSIONS, OBSERVATIONS, RECOMMENDATIONS, AND SUMMARY. .	62
Conclusions, Observations, and Recommendations . . . . .	62
Summary and Extended Recommendations . . . . .	81
APPENDIX . . . . .	85
LITERATURE CITED . . . . .	94

## LIST OF TABLES

Table	Page
1. Chi Square Analysis of Successful and Unsuccessful Categories of Students Compared As To Sex. . . . .	41
2. Chi Square Analysis of Successful and Unsuccessful Categories of Students Compared As To Age. . . . .	42
3. Chi Square Analysis of Successful and Unsuccessful Categories of Students Compared As To Blood Quantum. . . . .	44
4. Chi Square Analysis of Successful and Unsuccessful Categories of Students Compared As To Living On or Off Reservation. . . . .	45
5. Chi Square Analysis of Successful and Unsuccessful Categories of Students Compared As To the Type of High School From Which the Indians Graduated . . . . .	46
6. Chi Square Analysis of Successful and Unsuccessful Categories of Students Compared As To Their Home Reservation. . . . .	48
7. Chi Square Analysis of Successful and Unsuccessful Categories of Students Compared As To Being Bilingual. . . . .	49
8. Chi Square Analysis of Successful and Unsuccessful Categories of Students Compared As To Field of Study . . . . .	51
9. Comparison of Successful and Unsuccessful Indian Students With the Number of Children in the Family. . . . .	52
10. Chi Square Analysis of Successful and Unsuccessful Categories of Students Compared As To Club Attendance. . . . .	52
11. Chi Square Analysis of Successful and Unsuccessful Categories of Students Compared As To Club Attendance (Second Run) . . . . .	53
12. Chi Square Analysis of Successful and Unsuccessful Categories of Indian Students Compared As To Marital Status . . . . .	54

Table	Page
13. Comparison of Successful and Unsuccessful Indian Students With the Number of Credits Carried . . . . .	55
14. Comparison of Successful and Unsuccessful Indian Students with the SCAT. . . . .	56
15. Comparison of Successful and Unsuccessful Indian Students With the ACE . . . . .	58
16. Comparison of Successful and Unsuccessful Indian Students With Scores on the Ohio Test . . . . .	59
17. Comparison of Successful and Unsuccessful Indian Students With High School Grade Point Average . . . . .	60

ABSTRACT

The purpose of this study was to investigate selected characteristics that may be related to the success or failure of American Indian students enrolled at Montana State University.

The subjects in this study were divided into two categories (successful and unsuccessful) with three groups listed under each category. The study was based on 182 Indian students enrolled at Montana State University during the five-year period from September, 1967 through June, 1972.

The raw data for this study consisted of information on 16 variables and were tested by using the chi square and the t-test. The statistical difference was considered significant at the .05 level of confidence. The data for the variables were obtained from the personal files of the Indian students which are maintained at the Center for Intercultural Programs, the Registrar's Office, and the Testing and Counseling Service.

Ten of the sixteen variables proved to be statistically significant. The ten variables which were significant are: (1) age; (2) blood quantum; (3) number of living children in family; (4) American Indian Club attendance; (5) marital status; (6) number of credits carried; (7) result of the American Council on Education Psychological Examination for College Freshmen; (8) result of the Cooperative School and College Ability Tests; (9) result of the Ohio State University Psychological test; and (10) high school grade point average.

## CHAPTER I

### INTRODUCTION

A rapid rise in the number of American Indian students attending universities is expected during the 1970's due to the increasing number of Indian students graduating from high school, the availability of scholarship money, and an increasing minority awareness in higher education. The Bureau of Indian Affairs maintains a scholarship grant program for Indian students wishing to attend universities. Several states provide scholarships for Indian students attending universities and many Indian tribes maintain scholarship funds from their tribal monies.

As more Indian students graduate from high school, and as more attention is being paid to minorities in America, post-secondary educators are becoming increasingly aware of minorities' further educational needs. University administrators are responding by tailoring existing programs to meet Indian students' needs.

In 1970 Havighurst concluded his national study of American Indian education. In this study Havighurst stated:

There has been a rapid increase in the numbers of Indian college students during the decade from 1960 to 1970. Approximately 8,000 Indian students are now in college. . . . The proportion of Indian youth who go to college has probably multiplied five-fold between 1960 and 1970.<sup>1</sup>

---

<sup>1</sup>Havighurst, Robert J., The Education of Indian Children and Youth, Office of Community Programs, University of Minnesota, Minneapolis, Minnesota, 1970, p. 39.

The high attrition rate of American Indian students has become a major concern of university administrators on many campuses. For this reason universities are beginning to respond to the special needs of American Indians enrolled on their campuses.

Indian studies programs have been developed on several American campuses and appear to be expanding. Since 1967 the three largest universities in Montana have begun Indian studies programs in an effort to provide meaningful programs and methods to meet the needs of the Indian students. The American Indian students come to the university from a variety of family and tribal experiences and often need help and guidance in adjusting to unfamiliar university requirements and expectations. Since the current trend is toward a greater percentage of American Indian students attending universities, there is a definite need for studies of the American Indian university student which might facilitate a higher percentage of degree completions.

#### Need for the Study

A review of the literature revealed that a considerable amount of research has been done on Indian education. However, a goodly portion of this research was done in relation to grades one through twelve. Those studies on Indians in higher education have shown that Indian university students, perhaps because of their varied backgrounds, encountered certain unique difficulties within their university

experiences, and many dropped out of school, although reasons for discontinuance have not thoroughly been examined.

In 1967 Montana State University acknowledged the unpreparedness of American Indian students for university experiences by establishing the position of an advisor to American Indian students. That office is to help and guide American Indians enrolled at Montana State University. In 1970 a Professor of Indian Studies and Coordinator of American Indian Programs was appointed. Efforts to develop an American Indian studies program with the full participation of all Montana Indian tribes are currently underway.

Each year Indian students who are poorly equipped academically and/or culturally to make the adjustment necessary to succeed in the campus environment enroll at Montana State University. Because of Indians' difficulties with university courses and their high dropout rate, there is a need for more information about the Indian students' cultural background.

The major purpose of this study was to obtain further knowledge and information regarding the Indian students at Montana State University which would enable the university to better understand the Indian students and to do a better job in helping the students adjust to the campus environment and thus succeed academically.

### Definition of Terms

Successful student. For the purpose of this study a successful student was defined as: (1) one who had graduated from Montana State University; or (2) one who was enrolled and had a satisfactory cumulative grade point average, that is a 2.00; or (3) one who had dropped out of school but had a satisfactory cumulative grade point average at the time of leaving school.

Unsuccessful student. For the purpose of this study an unsuccessful student was defined as: (1) one who had been suspended due to low academic achievement; or (2) one who had dropped out of school voluntarily but had an unsatisfactory cumulative grade point average (less than 2.00); or (3) one who was enrolled and had an unsatisfactory cumulative grade point average.

### Statement of the Problem

The problem of this study was to investigate selected characteristics that may be related to the successful and/or unsuccessful American Indian student enrolled at Montana State University. These characteristics included the following:

Sex. Since both sexes attend Montana State University, it was desirable to know the success failure ratio of each sex. Aurbach and Fuchs' study of Indian education indicated virtually no difference in

the amount of schooling completed (in 1960) by Indian men and Indian women.<sup>2</sup> However, a somewhat higher proportion of men (7 per cent) than women (5 per cent) had post-secondary school education. Bryde, in comparing the achievement of Indian eighth grade boys with Indian eighth grade girls from the fourth grade to the eighth grade, found that for each year the girls achieved slightly higher but none of the differences was significant.<sup>3</sup>

Age. This variable was considered because the age range was wide (17-48) and the study might reveal an optimum age for Indian students to succeed in a university. In 1962 McGrath, who studied Indians in higher education in the Southwest, found that the Indian university students' age was significantly related to grade point average in a positive direction suggesting that the older the student is the better chance he has of making satisfactory grades in a university.<sup>4</sup>

Blood quantum. The Montana State University Indian students were divided into four degree-of-Indian blood groups: (1) less than one-quarter Indian blood; (2) one-quarter to less than one-half Indian

---

<sup>2</sup>Aurbach, Herbert A., and Fuchs, Estelle, The Status of American Indian Education, Pennsylvania State University, University Park, Pennsylvania, 1970, p. 33.

<sup>3</sup>Bryde, John F., The Indian Student: A Study of Scholastic Failure and Personality Conflict, Dakota Press, Vermillion, South Dakota, 1970, p. 43.

<sup>4</sup>McGrath, G. D., and others, Higher Education of Southwest Indians with Reference to Success and Failure, Arizona State University, Tempe, Arizona, 1962, p. 268.

blood; (3) one-half to less than three-quarter Indian blood; and (4) three-quarter or more Indian blood. This variable was considered to determine if a relationship existed between Indian blood quantum and success in higher education. McGrath's study indicated that there was a slight tendency for full-blooded Indian students to be less successful than those of some degree of mixed blood.<sup>5</sup> Bryde's study of eighth grade Sioux Indian students revealed that the differences in means and standard deviations among the four degree-of-Indian blood groups (one-quarter blood, one-half blood, three-quarter blood, and full bloods) were so small that no significant differences in achievement were found.<sup>6</sup>

Grew up on or off the reservation. Some reservations are very remote and the contact with non-Indian people is often minimal. It was desirable to determine the effect of Indian/non-Indian socialization experiences. Do those Indian students who grow up off reservations have more success in universities?

Type of high school from which the Indian graduated (public, church related or federal). Since there are three main types of secondary schools in which Indian students are educated, it was desirable to determine whether or not a relationship existed between the type of school the Indian student graduated from and success at

---

<sup>5</sup>Ibid., p. 268.

<sup>6</sup>Bryde, op. cit., p. 43.

Montana State University. Beatty stated:

There is a good deal of evidence to indicate that Indian children attending public schools do very well in this school environment, and in many cases exceed the academic accomplishment of Indian children in attendance at federal schools. Superficially, this would indicate that the most satisfactory educational environment for Indians is a typical American public school. . . . It would be erroneous to conclude that public schools have been uniformly successful in dealing with Indian children. For example, there is evidence that in some areas of Montana a great many of the Indian children who entered some of the schools were non-English speaking children from full-blood or half-blood homes, and made a very slow adaptation to the English language. As a result they dropped out of school long before mastering the academic subjects of the elementary grades.<sup>7</sup>

In 1948, Peterson made the following statement:

It should also be pointed out that no single type of school consistently demonstrated the highest quality of achievement in all regions, thereby indicating that other factors may be of equal or greater importance than the type of school. Most of the differences between the achievement of students in the different regions were relatively large, too large to have occurred by chance.

Home reservation. Since there are several reservations from which Indian students come to attend Montana State University, it was desirable to determine if a relationship existed between the home reservation of the Indian student and success at Montana State University.

---

<sup>7</sup>Beatty, Willard D., Education for Cultural Change, U. S. Department of Interior, Washington, 1953, p. 181.

<sup>8</sup>Peterson, Shailer. How Well Are Indian Children Educated? Bureau of Indian Affairs, Department of Interior, Washington, D. C., 1948, p. 13.

Bilingualism. Because many Indian students are bilingual, this variable was considered important to determine whether a relationship existed between being bilingual and success in higher education. Spang wrote:

Because of language barriers the Indian child is faced with a serious problem in communicating. The child comes to school speaking his native language and he predicates all of his concept formations, vocabulary, etc., upon his language. Once in the classroom and in the system, he experiences the difficulties of communicating adequately. A child may know what he wants to communicate but finds it difficult, if not impossible, to communicate this to the counselor, or teacher in English, since it is not his major language. His fear of making a mistake--using the wrong word, pronouncing it wrong, etc.--may be so great that he does not even attempt to express himself.<sup>9</sup>

McGrath's study showed that there seemed to be a definite but not striking tendency for those students who come from homes where English was never spoken to do better than students who had come from homes where English was spoken.<sup>10</sup>

Number of living children in family. Because of the wide range of number of living children in the family (one to eighteen), it appeared that this variable might show a relationship between the number of children in the family and success at Montana State University. Selinger, studying American Indian high school graduates, observed that the average number of children in the family of the

---

<sup>9</sup>Spang, Alonzo T., "Understanding the Indian," Personnel and Guidance Journal, Vol. 50, No. 2:99, October, 1971.

<sup>10</sup>McGrath, op. cit., p. 268.

Indian high school graduate was 7.8, as compared to 2.3 in the typical American family.<sup>11</sup> He found no relationship between the size of the family and whether the male Indian graduate proceeded into a post-high school education. However, Selinger found that the size of the family did affect the chances of the Indian female continuing her education. The smaller the family, the more likely the Indian female was to continue her post-high school education.

Field of study. This variable was considered in this study because Indian students at Montana State University are enrolled in many different curricula. It appeared to be desirable to determine the curricula which are most popular and the success/failure ratio of each. Selinger found that the most popular program entered by Indian females at the universities was liberal arts, followed by education.<sup>12</sup> For Indian males the most popular programs were business education and education. However, Selinger did not establish a success ratio.

Montana State University American Indian Club attendance. Since a large number of Indian students at Montana State University are active in the American Indian Club, it was desirable to ascertain whether or not a relationship existed between club attendance and academic success. If it did, then encouragement to join such organizations might serve to

---

<sup>11</sup>Selinger, Alphonse D., The American Indian Graduate: After High School, What? Northwest Educational Laboratory, Portland, Oregon, 1968, p. 79.

<sup>12</sup>Ibid., p. 24.

integrate the Indian students into university activities such as building a float and participating in homecoming activities, putting on an Indian dancing and Indian singing program for the student body and having a yearly Indian youth conference at Montana State University.

Marital status. Because both single and married Indian students attend Montana State University, it was desirable to ascertain the success/failure ratio of each group. Mueller's study of non-Indian married university students observed that in age and in academic grades the married students are little if any ahead of the single students but a much larger proportion of them are employed; and the typical married student lives under constant and withering financial stress.<sup>13</sup>

Number of credits carried. This variable was considered important because the number of credits carried may be an indicator of success at Montana State University. For many Indians time is a relative thing. Indians tend to judge time by their readiness or need rather than by the measure on the clock. Anderson says time orientation or "Indian time" is not too problematic, but it still affects the student's academic record.<sup>14</sup> He states that there are cultural differences in time interpretation found among Indian college students. These differences are exasperating to the professor who does not

---

<sup>13</sup>Mueller, Kate H., "The Married Student on Campus," College and University, Vol. 35, No. 2:156, Winter, 1960.

<sup>14</sup>Anderson, Ned, "I Broke the Barrier," Indian Programs, University of Arizona, Tucson, Vol. 1, No. 4:1, Winter, 1970.

understand tardiness and inattention to such things as conference appointments. Perhaps Montana State University Indian students need more than four years to complete a four-year degree program.

Results of the American Council on Education Psychological Examination for College Freshmen (ACE). The purpose of including this variable was to determine if there was a relationship between the scores on this standardized test and success at Montana State University. The ACE is a psychological test of mental abilities.

Results of the Cooperative School and College Ability Tests (SCAT). The purpose of this variable (as with the ACE) was to determine if there were significant differences at Montana State University in successful and unsuccessful university Indian students with respect to their scores on the Cooperative School and College Ability Tests. Since the SCAT was designed to aid in estimating the capacity of a student to undertake additional schooling, it was desirable to determine if there was a relationship between the scores and success.

Results of the Ohio State University Psychological Test (Ohio). Since the score from this test is postulated to indicate aptitude for college level learning, this variable was considered to determine the relationship between the score of this test and success of Indian students at Montana State University. For many years designers of intelligence tests have been besieged by the criticism that such instruments do not really measure innate potential but rather are loaded

with the cultural biases of middle-class Western society.<sup>15</sup> There have been several unsuccessful attempts to develop a "culture free" intelligence test.

High school grade point average. Since past academic performance is often a good indicator of future academic performance, this variable was included to determine whether a significant relationship existed between high school grade point average and success in college. McGrath observed in his study that high school rank in class for Indian students was only slightly related to college grade point average.<sup>16</sup>

#### General Questions to be Answered

The researcher attempted to answer the following questions:

1. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to sex?
2. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to age?
3. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to blood quantum.

---

<sup>15</sup>Aiken, Lewis, Psychological and Educational Testing, Allyn and Bacon, Boston, 1971, p. 140.

<sup>16</sup>McGrath and others, op. cit., p. 269.

4. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to growing up on or off reservation?

5. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to the type of high school from which the Indians graduated (public, church related, federal)?

6. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to the reservation on which they are enrolled.

7. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to being bilingual?

8. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to the number of living children in the family?

9. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to the number of credits carried?

10. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to MSU Indian Club attendance.

11. Are there significant differences at Montana State

University in successful and unsuccessful university Indian students with respect to marital status?

12. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to field of study?

13. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to their scores on the American Council on Education Psychological Examination for College Freshmen?

14. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to their scores on the Cooperative School and College Ability Tests?

15. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to their scores on the Ohio State University Psychological Test?

16. Are there significant differences at Montana State University in successful and unsuccessful university Indian students with respect to high school grade point average?

### Limitations of the Study

The limitations of this study were as follows:

1. This study was limited to include only those Indian students who completed at least one quarter at Montana State University during the period from September, 1967 to June, 1972.
2. This study was limited to the information from the files of the Indian students, maintained at the Center for Intercultural Programs, the Testing and Counseling Service, and the Registrar's Office.

### Summary

Although more American Indian students are attending universities now than ever before, many are encountering a variety of problems and the discontinuance rate is high. Many universities have initiated programs in an effort to help Indians complete their university education. More data is needed to identify and make allowances for Indian characteristics that contribute to the success of Indian students attending Montana State University.

This study was intended to provide some of these data.

## CHAPTER II

### REVIEW OF LITERATURE

The review of literature appropriate to this study included the following areas: Indian culture, intelligence and educational achievement of American Indians, Indian high school dropout problems, and higher education of Indian students.

#### Indian Culture

Education properly used can perform, and has performed, an important role in reconciling cultural differences and in developing mutual respect between Indians and their non-Indian neighbors.<sup>1</sup>

Cultural barriers have been removed for countless numbers of individual Indians through education and association with non-Indians.

Havighurst wrote:

The conclusion which is drawn by most social scientists from the data on Indian cultures and Indian intelligence is that the American Indians of today have about the same innate equipment for learning as have the white children of America. But in those Indian tribes which have preserved their traditional cultures to some extent, there is a limited motivation of children for a high level performance in schools and colleges.<sup>2</sup>

---

<sup>1</sup>Thompson, Hildegard, "Education Among American Indians: Institutional Aspects," The Annals of the American Academy of Political and Social Science, Vol. 311:95, May, 1957.

<sup>2</sup>Havighurst, Robert J., "Education Among American Indians: Individual and Cultural Aspects," The Annals of the American Academy of Political and Social Science, Vol. 311:113, May, 1957.

Zintz stated:

Language is an integral part of a people's culture. It is the means by which the attitudes and feelings of the group are made known. Anthropologists and linguists have clearly stated this interdependence of culture and language . . . . Languages are socially determined. Their uses, form and content mirror physical setting, historical events, contacts, cultural level, mental climate, and cultural history . . . . Inadequate command of language retards cultural development and acquisition.<sup>3</sup>

American Indians as individuals do not all conform to one general category. Some Indians fit the traditional patterns while other Indians have become bi-cultural.

Regarding the Indian as a man of two cultures, Havighurst wrote:

Education is always a process of teaching a culture and the education provided by the whites for the Indians has always been aimed at teaching the white culture or at least some elements of it to people who have been reared in another culture. In the period of "Americanization" of the Indians the whites' education was more explicitly aimed at making "white men" out of Indians than it has been since 1930. . . . Therefore, the Indian who is subjected to white education becomes a man of two cultures. Sometimes the Indian culture predominates and sometimes the white culture wins.<sup>4</sup>

The Spindlers have grouped Indians into four main classes of Indians or four levels of acculturation.<sup>5</sup> The first level refers to those Indians who were raised as an Indian and had only marginal

---

<sup>3</sup>Zintz, Miles V., "Problems of Classroom Adjustment of Indian Children in Public Elementary Schools in the Southwest," Science Education, Vol. 46:268, April, 1962.

<sup>4</sup>Havighurst, op. cit., p. 107.

<sup>5</sup>Spindler, George D., and Louise S., "American Indian Personality Types and Their Sociocultural Roots," Annals of the American Academy of Political and Social Science, Vol. 311:154-157, May, 1957.

contacts with whites and white culture. They live in a world perceived and patterned by the symbols and motivation of the traditional culture. These people have changed very little over time, maintaining a life style and belief pattern very similar to that of their ancestors. They think and act as their ancestors did. The second level consists of Indians who were raised Indian and frequently by grandparents, but have experienced wide and intensive contact with the white culture. They are moving out of the traditional Indian life style but have not fully accepted the non-Indian customs. They are ambivalent about whites and white culture and have some doubts about personal adequacy in the Indian as well as in the white man's world. A third level refers to those Indians who are between the white and Indian ways of life. They accept new social patterns and move into the white American lower-class society. They are marginal people and they constitute a sizeable portion of most tribes today. The fourth level consists of Indians who are acculturated and have acquired the attitudes and values of the success-oriented, middle-class, non-Indian society. Indians in the fourth level are not represented in many reservation communities today.

The Indian population is gradually becoming acculturated, but they are encountering problems.

Misiaszek wrote:

Today's society in which American Indians find themselves is based on an economy that calls for highly competitive ability with the ultimate goal understood to be financial success and upward social mobility. It follows that an entirely new set of standards and values is imposed on Indian people today, and there is some doubt in their minds if they want to accept these new standards especially because it means that they must repudiate all the deeply ingrained values of their culture if they are to conform to the new. It is safe to state that many are going through the motions outwardly, but they have not really accepted these modern values.<sup>6</sup>

The American Indian can be assisted in making an adjustment to today's society through education. All children must be assured of a sense of belonging from those around them. They must be provided with a feeling of self-worth as a means of achieving the level of aspiration they sense from their family and others. To a school teacher who has had little experience with Indians, perhaps the most baffling aspect of Indian behavior is their apparent shyness and fear of making a mistake.<sup>7</sup>

Wax and Thomas wrote:

Social discourse is one of the areas Indians and whites most easily misunderstand each other. Placed in an informal social gathering such as a small party where he knows only the host, the Indian will usually sit or stand quietly, saying nothing and seeming to do nothing. He may do this so naturally that he disappears into the background, merging with the wall fixtures. If addressed directly he will not look at the speaker; there may be considerable delay before the reply and this may be pitched so softly as to be below the hearing threshold of the white

---

<sup>6</sup>Misiaszek, Lorraine, "The Cultural Dilemma of American Indians," Social Education, Vol. 6:438, April, 1969.

<sup>7</sup>Greenberg, Norman C., and Gilda M., Education of the American Indian, Brown Book Company, Dubuque, Iowa, 1964, p. 14.

interlocutor; he may even look desperately away and give no response at all.<sup>8</sup>

Indians differ from each other as do Americans or any other group.

Greenberg wrote:

Individual differences in level of acculturation as well as other kinds of individual differences are well known to teachers in Indian schools. It is difficult, however, to distinguish between personality traits and cultural traits with the result that the child of an acculturated Indian family will appear to be extra bright and diligent when compared with his fellow student from an unacculturated home and thus be given an unfair advantage.<sup>9</sup>

Roessel concerning the Indian child living between two worlds wrote:

Education is the vehicle that may be used by the Indian to acquire the fruits and blessings of the white man's way of life. In order for educators to reach the Indian child and to instill within that child a desire to learn, it is necessary for that educator to have a basic understanding of the culture of the Indian.<sup>10</sup>

In summary, the difficulties which the Indian students experience in school have usually been attributed to differences within the Indian culture. The importance of culture to the group life of a people cannot be overestimated.

---

<sup>8</sup>Wax, Rosalie H., and Thomas, Robert K., "American Indians and White People," Phylon, Vol. 22:305, No. 4, 1961.

<sup>9</sup>Greenberg, op. cit., p. 19.

<sup>10</sup>Roessel, Robert A., Handbook for Indian Education, Amerindian Publishing Company, Los Angeles, 1962, p. 19.

Intelligence and Educational Achievement  
of American Indians

A number of studies concerning the intelligence and educational achievement of American Indians have been conducted. Havighurst said that studies of intelligence of Indian children may be divided into two groups--those reported before and after 1935.<sup>11</sup> He said that prior to 1935, studies of intelligence of American Indians tended to show that American Indians appeared to be less intelligent than white children. After 1935 research studies tended to show that there appeared to be no difference in average intelligence between Indian and white children, except for such differences as were explainable on the basis of cultural differences.

In a 1944 study, Havighurst administered a shortened form of the Grace Arthur Point Performance Scale to 670 Indian children.<sup>12</sup> The Arthur Test was non-verbal and was especially suited for non-English speaking children. Havighurst concluded:

The results of this study indicate that Indian children do about as well as white children on a performance test of intelligence and that differences exist from tribe to tribe and among communities within a tribe--differences of the sort that are found

---

<sup>11</sup>Havighurst, Robert J., "Education Among American Indians: Individual and Cultural Aspects." The Annals of the American Academy of Political and Social Science, Vol. 311:110, May, 1957.

<sup>12</sup>Havighurst, Robert J., and Hilkevitch, Rhea R., "The Intelligence of Indian Children as Measured by a Performance Scale," Journal of Abnormal and Social Psychology, 39:419-433, October, 1944.

among groups of white children in various communities.<sup>13</sup>

In another study the Goodenough Draw-a-Man Test was administered to 325 Indian children from six tribes.<sup>14</sup> The results of this study showed that cultural differences may be in effect as Indian children were found to do considerably better than white children on this test which requires drawing a figure of a man.

Concerning educational achievement of Indian children, Havighurst wrote:

When comparisons of Indian and white pupils are made at various grade levels it is found that the Indian children compare more favorably with white children in elementary grades than in high school. This is probably due to the fact that the material taught in elementary grades is closer to the life experience of the Indian children--more practical--than is the more abstract teaching of the high school. Thus the home and community life of the Indian child tends to aid him in learning the simple mental skills taught in elementary school but they contribute little toward helping him with high school subjects.<sup>15</sup>

Regarding educational achievement of American Indians, Aurbach and Fuchs wrote:

Among children enrolled in school in 1960, a much higher proportion of Indian than whites or Negroes were likely to be a year or more below the grade level expected for their age group . . . . Indian children start school later and by age 7 half of

---

<sup>13</sup>Ibid., p. 431.

<sup>14</sup>Havighurst, Robert J., Gunther, Minna K., and Pratt, Inez E., "Environment and the Draw-A-Man Test: The Performance of Indian Children," Journal of Abnormal and Social Psychology, 41:50-63, January, 1946.

<sup>15</sup>Havighurst, Robert J., "Education Among American Indians: Individual and Cultural Aspects," The Annals of the American Academy of Political and Social Science, Vol. 311:114, May, 1957.

them are below grade 2 as compared to one out of three whites and blacks. The proportion of Indians at the expected grade level decreases at every age level, so that by age 13 only three in ten reached grade 8 and by age 17 less than two in ten are in their last year of high school. Moreover, by age 17 over four out of ten Indians are at least two grades below the expected level for that age group.<sup>16</sup>

Bryde's study of Oglala Sioux students on the Pine Ridge Reservation found that apart from an initial native shyness, Sioux children are perfectly normal in their emotional responses when they first come to school.<sup>17</sup> Bryde says it takes the young Sioux student about three years to become acclimated to this new situation. During this time which comprises the first three grades, the Sioux Indian students as a group do not come even close to national norms on standardized achievement norms. However, Bryde says their I.Q.'s are perfectly normal.

Then with dramatic suddenness at the fourth grade the Indian students achieve and even exceed standardized norms. Bryde calls this the "golden age" of achievement which often lasts until the students are in the seventh grade.

About the seventh and eighth grades Bryde found that there begins a steady decline in achievement, and this continues to the twelfth grade and is accompanied by a 60 per cent dropout rate. In addition,

---

<sup>16</sup>Aurbach, Herbert A., and Fuchs, Estelle, The Status of American Indian Education, Pennsylvania State University, University Park, Pennsylvania, 1970, p. 37.

<sup>17</sup>Bryde, John F., The Indian Student: A Study of Failure and Personality Conflict, Dakota Press, Vermillion, South Dakota, 1970.

by the twelfth grade, most Sioux Indian groups were as far as two years behind in achievement.

Coombs in his exhaustive study on achievement of Indian students pointed out that there are differences in average achievement among groups of pupils of different races attending different types of schools.<sup>18</sup> He found the following clear-cut general hierarchy: (1) white pupils in public schools; (2) Indian pupils in public schools; (3) Indian pupils in federal schools; and (4) Indian pupils in Mission schools. However, before valid interpretation of this hierarchy can be made, Coombs cautioned:

There is a popular off-hand assumption that the quality of a school can be determined by the amount its pupils learn in a given period of time by comparison with other pupils and other schools. This assumption is both persistent and pervasive. It is indulged in not only by the lay public, but also by teachers who should know better. It is as though all pupils were considered to be equally blank and equally impressionable sheets of paper which are sent to school and upon which no one is ever permitted to mark except the school itself. If such were the case, the school should indeed be held entirely accountable for the amount and rate at which students learn, but the facts are something quite different. The facts are that children do not learn everything they know in school, although some are far more dependent upon the school than are others; they do not all start even in point of ability; or interest, or experience, or health; and they certainly do not remain even throughout their school careers in terms of learning advantages outside the school. Most persons know, of course, that this is true of individual pupils but they forget sometimes that whole groups of pupils may be characterized by such differences.<sup>19</sup>

---

<sup>18</sup>Coombs, Madison L., and others, The Indian Child Goes to School, Washington, D. C., Bureau of Indian Affairs, U. S. Department of Interior, 1958; p. 4.

<sup>19</sup>Ibid., p. 4.

Coombs continued:

It is not to be wondered at then that the white pupils in the study as a group consistently made higher scores than Indian pupils considering the great cultural advantage they enjoyed with respect to such things as language, motivation, and out-of-school learning opportunities. Nor is it surprising that the Indian pupils who attended public schools achieved better on the average than Indian pupils who attended federal and mission schools since culturally they were more advanced.<sup>20</sup>

In summary, several recent studies have indicated that the educational achievement of Indian students is considerably less than that of non-Indian students. Culturally different groups tend to do poorly on tests developed to measure western middle class intellectual functioning. Different cultures develop different types of intelligence.

Studies show that the school achievement of children depends to a large extent on their experience in their family and their local environment.

#### Indian High School Dropout Problem

During the decade 1960-70 national attention focused on the school dropout problem. Graduation from high school has become the accepted educational goal for most Americans and stands as the minimum requirement not only for higher education but also competitive position in the employment market. As late as 1900 not more than three or four

---

<sup>20</sup>Ibid., p. 5.

of every one hundred fifth graders were graduated from school eight years later, and it was only in 1950 that more than 50 per cent of fifth graders eventually were graduated from high school.<sup>21</sup>

Aurbach stated that because the responsibility for the education of Indian youth is distributed between three types of agencies (federal, state, and private), uniform data concerning school attendance, school persistence, and rates of school leaving prior to graduation at the twelfth grade are difficult to obtain.<sup>22</sup> The difficulty of data collection is further complicated by a high degree of school transfers.

In an effort to collect recent data on the Indian high school dropout, the Southwest Cooperative Educational Laboratory<sup>23</sup> and the Northwest Regional Educational Laboratory<sup>24</sup> have completed studies on the American Indian high school dropout. The research of the two laboratories covered a twelve-state area where large numbers of American Indians reside: Arizona, Alabama, Nevada, New Mexico, southern Colorado, and southern Utah were covered by the Southwest Laboratory;

---

<sup>21</sup>Aurbach, Herbert A., and Fuchs, Estelle, The Status of American Indian Education, Pennsylvania State University, University Park, Pennsylvania, 1970, p. 53.

<sup>22</sup>Ibid., p. 53.

<sup>23</sup>Owens, Charles S., and Bass, Willard P., The American Indian High School Dropout in the Southwest, Southwestern Cooperative Educational Laboratory, Albuquerque, New Mexico, January, 1969.

<sup>24</sup>Selinger, Alphonse D., The American Indian High School Dropout: The Magnitude of the Problem, Northwest Regional Educational Laboratory, Portland, Oregon, September, 1968.

Idaho, Montana, North Dakota, Oregon, South Dakota, and Washington were covered by the Northwest Laboratory.

In the Northwest study a stratified random sample of 50 per cent of the eligible schools in each state was drawn. Schools had to be in those portions of the states of Oregon, Washington, Idaho, Montana, North Dakota, and South Dakota which were included in the Aberdeen, Billings, and Portland area jurisdiction for the Bureau of Indian Affairs. Forty schools were drawn as the samples of a total of seventy-one schools which qualified.

The total dropout percentage, grades nine through twelve, for the region was 48.<sup>25</sup> Indian females had a significantly higher dropout rate (52 per cent) than did the Indian males (43 per cent).

The study reveals that Oregon had the lowest dropout rate (29 per cent) followed by Idaho (34 per cent), Washington (39 per cent), Montana (42 per cent), North Dakota (52 per cent), and South Dakota (58 per cent).<sup>26</sup>

The Northwest study found that the highest percentage of school dropouts appear in the third year of high school (14 per cent).

The Southwest study showed that the total dropout rate for the region studied was 39 per cent.<sup>27</sup> The dropout rate was the same for

---

<sup>25</sup>Ibid., p. 137.

<sup>26</sup>Ibid., p. 137.

<sup>27</sup>Owens, op. cit., p. 4.

Indian females and Indian males. The dropout rates by type of school attended were 39 per cent from federal schools, 43 per cent from private schools, and 38 per cent from public schools.

Concerning the Northwest and Southwest studies, Coombs wrote:

It is seen then that the best current figure on the Indian dropout rate is now somewhat more than  $1\frac{1}{2}$  times that of the general population. Perhaps a more important fact is that it has declined 18 percentage points from the BIA's estimate made in 1959. The decline in the national dropout rate between 1959 and 1968 was from 37 to 26 per cent or 11 per cent. In the decade of the 1960's, therefore, the Indian dropout rate declined 7 percentage points more than did that of the general population.<sup>28</sup>

A research study conducted by Harkins in the Minneapolis area revealed that Indian high school students often seem to feel discriminated against by non-Indian students and feel that teachers are unsympathetic.<sup>29</sup> He found that some Indian students experience a general feeling of not being respected, and there is frequently the conviction that there is little value in completing high school. Indian students appear to emulate peers who have dropped out of high school.

In short the number of Indian high school students completing high school lags behind the national level. However, the percentage of Indian students finishing high school has risen considerably in

---

<sup>28</sup>Coomb's, Madison L., "The Indian Student Is Not Low Man on the Totem Pole," Journal of American Indian Education, Vol. 9:5, May, 1970.

<sup>29</sup>Harkins, Arthur, Indian Education in Minneapolis: An Interim Report, University of Minnesota, Minneapolis, Minnesota, 1969.

the last ten years.

### Higher Education of Indian Students

A major difficulty with American Indians in higher education has been the high attrition rate.

McNeely conducted the first nation-wide study of student failure in 25 institutions of higher learning in 1937.<sup>30</sup> He observed:

For the universities as a whole a gross mortality of 62.1 percent was found and a net mortality of 45.2 percent. In other words for every 100 students entering all the universities approximately 62 left the institutions on a gross basis and 45 on a net basis.<sup>31</sup>

He found that for the universities as a whole 33.8 per cent of the students left in the freshman year, 16.7 per cent in the sophomore year, 7.7 per cent in the junior year, and 3.9 per cent in the senior year. With regard to causes of student mortality, 18.4 per cent left because of dismissal for academic failure, 12.4 per cent left because of financial problems, and 12.2 per cent left because of miscellaneous reasons.

Iffert's study of the national dropout problem included 147

---

<sup>30</sup>McNeely, John H., College Student Mortality, Bulletin 1937, No. 11, Office of Education, United States Government Printing Office, 1938.

<sup>31</sup>Ibid., p. 104.

institutions of higher learning.<sup>32</sup> He wrote:

Based upon this sampling it appears that slightly less than 40 percent of the freshman class will remain at the institution of first enrollment to graduate four years later. An additional 20 percent will either graduate later from the first institution or will go to other institutions where they will graduate in four years or more. Thus about 6 out of 10 freshmen will eventually receive degrees.<sup>33</sup>

Concerning American Indians Havighurst found in 1970 that approximately 8,000 Indians were in college and about 25 per cent would graduate from college with a four-year degree.<sup>34</sup>

A study by Artichoker and Palmer attempted to determine and analyze the problems encountered by Indian students while enrolled in colleges and universities in South Dakota.<sup>35</sup> The authors used two instruments (Mooney Problem Check List and one devised by the authors) that were administered to a total of 72 Indian students from all of the four-year institutions in South Dakota in the spring of 1957.

Analysis of the data was accomplished through two procedures. The first procedure involved a comparison of the problems of Indians

---

<sup>32</sup>Iffert, Robert E., Retention and Withdrawal of College Students, Bulletin 1958, No. 1, Office of Education, United States Government Printing Office, 1957.

<sup>33</sup>Ibid., p. 100.

<sup>34</sup>Havighurst, Robert J., Education of Indian Children and Youth, University of Chicago, Chicago, Illinois, December, 1970, p. 39.

<sup>35</sup>Artichoker, John Jr., and Palmer, Neil N., The Sioux Indian Goes to College, State University of South Dakota, Vermillion, South Dakota, 1959.

with the problems of non-Indians. The second procedure involved dividing the Indian students into two categories based upon their ability or lack of ability to speak an Indian language.

Artichoker and Palmer found:

The one general and overriding finding of this study was that Indian students have more problems that are troublesome and serious than do non-Indian students. Among the special problems of the Indian student, the following may be mentioned as having the greatest significance: (1) poor academic training for college, but also in social studies and English; (2) insufficient monetary funds, especially for clothing and "spending money"; (3) inability to relate himself to the future, particularly as this involves his educational and vocational objectives; (4) concern about moral and religious questions; and (5) concern about family members.<sup>36</sup>

A study by Ludeman covered the records of 112 Indian students who had attended Southern State Teachers College in South Dakota over a period of 33 years.<sup>37</sup> Ludeman attempted to discover how long they had stayed in college, what was their average grade point, and what they were doing at the time the study was made.

Ludeman found:

The tenure of the Indian students tends to be short with 36 attending one quarter or less and nearly one-half of the total number attending one full school year of three quarters or less. The fact that the average scholarship of these short lived students was quite low probably accounts in major part for their brief college attendance.<sup>38</sup>

---

<sup>36</sup>Ibid., p. 33.

<sup>37</sup>Ludeman, W. W., "Indian Students in College," The Journal of Educational Sociology, Vol. 33:333-335, March, 1960.

<sup>38</sup>Ibid., p. 334.

Indian students who stayed in college beyond six quarters or two years gathered scholastic power and turned in good average grades.

In analyzing the Indian students in his study, Ludeman found that Indian students suffer from their limited backgrounds and show a great deal of dependency.

Ludeman stated, "When we can bring Indian youth into regular communities and into public high schools, then they will be provided with more orthodox backgrounds for making successful higher education careers."<sup>39</sup>

The follow-up records of these 112 Indian students showed that the former students who completed two years of college were engaged in many occupations, some of high responsibility. Those who stayed in college longest had the top positions in the field.

Gill studied the characteristics of Indian dropouts at Arizona State University.<sup>40</sup> Gill found that low grades were responsible for the majority of the dropouts and they carried more than the necessary units to qualify as full-time students. The Indian students gained scholastic power after the freshman year of college.

Regarding educational progress of Indians in college, Coombs concluded:

---

<sup>39</sup>Ibid., p. 335.

<sup>40</sup>Gill, George A., Select Characteristics of American Indian Dropout Students at Arizona State University, unpublished research paper, Tempe, Arizona, 1962.

The educational progress which Indian people are making is perhaps least satisfying with respect to college enrollment and college graduation. Educational deficits tend to be cumulative with older students. But even here there are grounds for satisfaction and again there is better information than was the case a year or so ago about Indian education beyond high school, vocational-technical as well as collegiate.<sup>41</sup>

In summary several universities have designed programs specifically to offset Indian student mortality. The quality and quantity of education the Indian receives in the universities will play a major role in determining the success of the Indians in assuming increased responsibility and management of their own affairs.

---

<sup>41</sup>Coombs, op. cit., p. 6.

## CHAPTER III

### PROCEDURES

The purpose of this study was to investigate selected characteristics that may be related to the successful and/or unsuccessful American Indian student enrolled at Montana State University. This chapter contains a description of the population, methods of collecting data, hypotheses, statistical methods, and summary.

#### Population

The population in this study consisted of 182 American Indian students who attended Montana State University during the five-year period from September, 1967 through June, 1972. Since this study was concerned with all Indian students enrolled one quarter or more at Montana State University during this period, no sampling technique was involved.

#### Methods of Collecting Data

The data for the variables in this study were obtained from the personal files of the Indian students maintained at the Center for Intercultural Programs, the Registrar's Office, and the Testing and Counseling Service.

The raw data for this study consisted of information on 16 variables as follows: (1) sex, (2) age, (3) blood quantum, (4) living

on or off the reservation, (5) type of high school from which the Indians graduated (public, church, or federal), (6) home reservation, (7) bilingualism, (8) field of study, (9) number of living children in family, (10) MSU American Indian Club attendance, (11) marital status, (12) number of credits carried, (13) results of American Council on Education Psychological Examination for College Freshmen (ACE), (14) results of Cooperative School and College Ability Tests (SCAT), (15) results of Ohio State University Psychological Test (Ohio), and (16) high school grade point average.

#### Hypotheses.

For the purpose of this study, the null hypotheses were as follows:

1. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to sex.
2. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to age.
3. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to blood quantum.

4. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to living on or off the reservation.

5. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to type of high school from which the Indians graduated (public, church, or federal).

6. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to their home reservation.

7. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to being bilingual.

8. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to field of study.

9. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to the number of children in the family.

10. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to Indian Club attendance.

11. There are no significant differences between successful and

unsuccessful Indian students enrolled at Montana State University with respect to marital status.

12. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to the number of credits carried.

13. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to their scores on the American Council on Education Psychological Examination for College Freshmen (ACE).

14. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to their scores on the Cooperative School and College Ability Tests (SCAT).

15. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to their scores on the Ohio State University Psychological Test (Ohio).

16. There are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to high school grade point average.

## Statistical Methods

In this study the chi square was used to test hypotheses one through eight and hypotheses ten and eleven. Chi square is a non-parametric statistic and deals with data that consist of nominal classification type of measurement. Thus, this statistic was appropriate for testing the above mentioned hypotheses. The statistical difference was considered significant at the .05 level of confidence. Hypotheses nine and twelve through sixteen were tested by using the t-test for uncorrelated data. Again, the .05 level of significance was considered as statistically significant.

In general, the following steps were used to test the hypotheses:

1. The null hypothesis was stated.
2. The level of significance was selected. The level of significance selected for this study was .05.
3. The test statistic to be used was stated.
4. The critical value was stated. These values were found by using the appropriate tables for the critical values of chi square and of t and entering at the specific level of significance and the appropriate number of degrees of freedom.
5. The statistic was computed.
6. The null hypothesis was retained or rejected by comparing the calculated values of the statistics to the critical value stated.

The null hypothesis and the alternate hypothesis for the 16 variables used in this study were  $H_0: \mu_s = \mu_u$  and  $H_1: \mu_s \neq \mu_u$  respectively.

All data were posted on the Fortram Coding Form and taken to the Montana State University Computing Center where the data were key punched and verified and the appropriate program was run on the computer.

#### Summary

Past studies have indicated the Indian students encounter vast assortments of problems while pursuing their university education. This study was conducted to investigate selected characteristics that may be related to the successful and/or unsuccessful American Indian student enrolled at Montana State University. The population consisted of 182 Indian students who attended Montana State University from September, 1967 through June, 1972. Sixteen variables were used in this study. The data were obtained from the personal files of the students in the Center for Intercultural Programs, the Testing and Counseling Service, and the Registrar's Office. The null hypothesis and the alternative hypothesis were used to determine if the null hypothesis was to be rejected or retained. The level of significance was at the .05 level of confidence.

## CHAPTER IV

### ANALYSIS OF DATA

The purpose of this study was to investigate selected characteristics that may be related to the success or failure of American Indian students enrolled at Montana State University.

The subjects in this investigation were divided into two categories (successful and unsuccessful) with three groups listed under each category. The three groups under the successful category were (1) one who had graduated from Montana State University, or (2) one who was enrolled and had a satisfactory cumulative grade point average, that is a 2.00, or (3) one who had dropped out of school but had a satisfactory cumulative grade point average at the time of leaving school. The three categories under the unsuccessful category were (1) one who had been suspended due to low academic achievement, or (2) one who had dropped out of school voluntarily but had an unsatisfactory cumulative grade point average (less than 2.00), or (3) one who was enrolled and had an unsatisfactory cumulative grade point average.

The total sample in this study consisted of 182 Indian students enrolled at Montana State University from September, 1967 to June, 1972.

The results regarding the sixteen variables reported in this chapter are based on data secured as stated in the preceding chapters.

## Variables

Sex

Table 1 shows the number of males and females in each of the six groups.

TABLE 1. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF STUDENTS COMPARED AS TO SEX

	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
Male	22	14	48	48	19	24	6	49
Female	9	19	11	39	20	17	9	46
Total	31	33	23	87	39	41	15	95

$$\chi^2 = 7.31$$

$$D.F. = 5$$

There were 97 males (53 per cent) and 85 females (47 per cent) in the studied group. A total of 48 males (49 per cent) were in the three successful groups. Of the 85 females, 39 (46 per cent) were in the three successful groups.

The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to sex. The null hypothesis was accepted as the computed chi square was 7.31. The expected chi square at .05 level of significance with five degrees of freedom is 11.07.

Thus, no significant differences were found between successful and unsuccessful Indian students enrolled at Montana State University with respect to sex.

### Age

For the purpose of this study, this variable was divided into six age groups as follows:

- |          |                 |
|----------|-----------------|
| 1. 17-18 | 4. 21           |
| 2. 19    | 5. 22           |
| 3. 20    | 6. 23 and above |

The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to age.

Table 2 shows the number of students in the three successful groups and in the three unsuccessful groups according to the six age groups described above.

TABLE 2. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF STUDENTS COMPARED AS TO AGE

Age	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
17-18	5	12	7	24	7	11	5	23
19	4	12	3	19	18	15	0	33
20	6	4	2	12	7	3	7	17
21	3	0	3	6	2	3	1	6
22	4	0	0	4	1	5	1	7
23-above	9	5	8	22	4	4	1	9
Total	31	33	23	87	39	41	15	95

$\chi^2 = 54.54^*$

D.F. = 25

\*Significant beyond .05 level

The null hypothesis was rejected as the computed chi square was 54.54. The expected chi square at the .05 level of significance with 25 degrees of freedom is 37.65. This may be interpreted to mean that there are significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to age.

Table 2 points out that 22 of the 31 students (71 per cent) in the 23 and above age group were successful, suggesting that the older students have a better chance of succeeding in college. The 17 to 18 year old students were the second most successful group (51 per cent).

#### Blood Quantum

The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to blood quantum. The students were divided into four degrees of Indian blood groups: less than one-quarter, one-quarter to less than one-half, one-half to less than three-quarter, and three-quarter or more. The null hypothesis was rejected since the computed chi square was 28.23 and the expected chi square at the .05 level of significance with 15 degrees of freedom is 25.00. It appears that degree of Indian blood is related to being successful or unsuccessful in the university.

Table 3, page 44, shows the overall comparison of the four degrees of Indian blood groups. The less than one-quarter group was most successful with 27 of 38 students (approximately 71 per cent).

being successful. The three-quarter or more group was least successful. Approximately 27 per cent of the students in this group were successful.

TABLE 3. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF STUDENTS COMPARED AS TO BLOOD QUANTUM

Blood Quantum	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
Less than one-quarter	11	11	5	27	7	4	0	11
One-quarter to less than one-half	10	16	8	34	10	18	6	34
One-half to less than three-quarter	4	3	5	12	7	5	1	13
Three-quarter or more	6	3	5	14	15	14	8	37
Total	31	33	23	87	39	41	15	95

$\chi^2 = 28.23^*$

D.F. = 15

\*Significant beyond .05 level

#### On or Off Reservation

The null hypothesis stated that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to their having lived on or off the reservation. The null hypothesis was accepted as the computed chi square was 3.16. At the .05 level of significance and with five degrees of freedom expected chi square is 11.07. Table 4, page 45, provides data for this comparison.

TABLE 4. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF STUDENTS COMPARED AS TO LIVING ON OR OFF RESERVATION

	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
On	26	23	19	68	32	33	12	77
Off	5	11	3	18	7	8	3	18
Total	31	34	49	87	39	41	15	95

$$\chi^2 = 3.16$$

$$D.F. = 5$$

Approximately 47 per cent of the Indian students on reservations were in the successful category and approximately 50 per cent of the Indian students living off reservations were in the successful category. It appears that Indian students who grow up off reservations are not significantly more successful than Indian students who grow up on reservations. Thus, it may be concluded that this variable cannot be used to distinguish successful and unsuccessful Indian students with better than chance results.

#### Type of High School

Data for this variable show that the type of high school from which Indian students graduated has little to do with success or failure at Montana State University. The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to

type of high school from which the Indians graduated (public, church related, or federal). The null hypothesis was accepted as the computed chi square was 10.18. The expected chi square at .05 level of significance with 10 degrees of freedom is 18.31.

Approximately 29 per cent of the Indian students who graduated from federal schools were successful, while 43 per cent of the students who graduated from church related schools were successful and 50 per cent of the students who graduated from public schools were successful. Table 5 provides data for the three groups.

TABLE 5. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF STUDENTS COMPARED AS TO THE TYPE OF HIGH SCHOOL FROM WHICH THE INDIANS GRADUATED

Type of High School	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
Federal	3	1	0	4	5	4	1	10
Church Related	0	2	1	3	3	0	1	4
Public	28	29	22	79	30	37	13	80
Total	31	32	23	86	38	41	15	94

$$x^2 = 10.18$$

$$D.F. = 10$$

When the researcher compared Indian students who graduated from federal schools with those graduating from other schools (church related and public), he found no significant differences. The computed

chi square was 7.80 and the expected chi square at the .05 level of significance with five degrees of freedom is 11.07.

This may be interpreted to mean that there was no relationship found between the type of high school Indian students graduate from and success at Montana State University.

#### Home Reservation

The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to their home reservation. The null hypothesis was accepted as the computed chi square was 29.21 and the expected chi square at the .05 level of significance with 35 degrees of freedom is 43.77.

Thus, there are no significant differences between successful and unsuccessful Indian students with respect to the reservation they are enrolled on. Table 6, page 48, shows the number of students in the successful and unsuccessful categories for the seven reservations in Montana. The Indian students from the Flathead Reservation were most successful (61 per cent).

TABLE 6. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF STUDENTS COMPARED AS TO THEIR HOME RESERVATION

Reservation	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
Cheyenne	1	4	1	6	4	4	1	9
Crow	6	4	7	17	11	10	4	25
Fort Peck	4	6	4	14	4	8	0	12
Rocky Boy's	0	1	0	1	0	1	0	1
Fort Belknap	3	1	1	5	3	5	1	9
Blackfeet	5	3	5	13	7	7	2	16
Flathead	8	5	3	16	5	3	2	10
Other	4	8	2	14	4	3	5	12
Total	41	32	23	86	38	41	15	94

$$\chi^2 = 29.21$$

$$D.F. = 35$$

### Bilingualism

The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to being bilingual. The null hypothesis was accepted as the computed chi square was 7.81. The expected chi square, at the .05 level of significance with five degrees of freedom, is 11.07.

This may be interpreted to mean that there are no significant differences between successful and unsuccessful students enrolled at Montana State University with respect to being bilingual. However, only 31 per cent of the bilingual students were successful while approximately 52 per cent of the students who did not speak a tribal

language were successful.

TABLE 7. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF STUDENTS COMPARED AS TO BEING BILINGUAL

	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
Bilingual	3	3	5	11	11	9	5	25
Monolingual	27	30	18	75	28	32	10	70
Total	30	33	23	86	39	41	15	95

$$x^2 = 7.81$$

$$D.F. = 5$$

#### Field of Study

For the purpose of this study, this variable was divided into seven fields of study as follows:

1. Agriculture (Agricultural Education, Agricultural Engineering, Animal Science).
2. Applied Social and Physical Sciences (Architecture, Commerce, Film and Television, Home Economics).
3. Biological Sciences including theoretical and applied (Microbiology, Nursing, Zoology).
4. Education (Elementary, Secondary, Physical Education Coeducational, Physical Education Men, Physical Education Women).
5. Humanities (Art, English, Music, Philosophy, Speech, Modern Languages).

6. Physical Sciences and Mathematics and Engineering (Earth Science, General, Geology, Mathematics, Chemical Engineering, Civil Engineering, Electrical Engineering, Construction Technology).

7. Social Sciences (Government, History, Pre-Law, Psychology, Sociology).

The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to field of study. The null hypothesis was accepted as the computed chi square was 28.79. The expected chi square at the .05 level of significance with 30 degrees of freedom was 43.77. On that basis it would be concluded that there are no significant differences between successful and unsuccessful Indian students with regard to field of study.

Table 8, page 51, shows the number of successful and unsuccessful students according to the seven fields of study described above.

Approximately 61 per cent of the students in Education were successful. Agriculture had approximately 58 per cent in the success category, Humanities had 56 per cent, and Social Sciences had 52 per cent. The other remaining three fields had a lower success ratio (Biological Sciences 43 per cent; Applied Social and Physical Sciences 42 per cent; Physics, Math, Engineering 37 per cent

TABLE 8. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF STUDENTS COMPARED AS TO FIELD OF STUDY

	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
Agriculture	4	4	3	11	1	5	2	8
Applied Social & Physical Sciences	4	4	1	14	8	7	4	19
Biological Sciences	5	7	3	15	8	8	4	20
Education	5	4	5	14	5	3	1	9
Humanities	0	4	5	9	4	3	0	7
Physical Sciences, Math & Engi- neering	5	4	4	13	7	11	4	22
Social Sciences	3	6	2	11	6	4	0	10
Total	31	33	23	87	39	41	15	95

$$\chi^2 = 28.79$$

$$D.F. = 30$$

#### Number of Children

In comparing the successful and unsuccessful Indian students with regard to the number of children in the family, Table 9, page 52, shows that there is a relationship between the number of children and success or failure in the university.

Table 9 shows that the mean number of children in the successful category was 4.38 with a standard deviation of 2.59; whereas, the mean number of children in the unsuccessful category was 5.27 with a standard deviation of 2.83. An application of the t-test resulted in

a t-score of 2.06. For 158 degrees of freedom at the .05 level of significance the critical value of  $t = 1.98$ . Thus, the t-score was significant at the .05 level suggesting that the successful Indian students come from families with fewer children. Therefore, the null hypothesis was rejected.

TABLE 9. COMPARISON OF SUCCESSFUL AND UNSUCCESSFUL INDIAN STUDENTS WITH THE NUMBER OF CHILDREN IN THE FAMILY

Successful			Unsuccessful			t-value
N	M	S.D.	N	M	S.D.	
74	4.38	2.59	86	5.27	2.83	2.06*
t = 2.06*		D.F. = 158		*Significant beyond .05 level		

#### Club Attendance

Table 10 shows the number of students in the successful and unsuccessful categories according to Indian Club Attendance. Club

TABLE 10. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF STUDENTS COMPARED AS TO CLUB ATTENDANCE

	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
0-19%	20	23	12	55	15	17	5	37
20-39%	1	3	2	6	5	5	0	10
40-59%	1	2	2	5	3	2	3	8
60-79%	4	3	4	11	9	2	3	14
80- +%	5	2	3	10	7	15	4	26
Total	31	33	23	87	39	41	15	95

$$x^2 = 30.70$$

$$D.F. = 20$$

attendance was divided into five groups as follows:

1. 0-19 per cent attendance
2. 20-39 per cent attendance
3. 40-59 per cent attendance
4. 60-79 per cent attendance
5. 80 or more per cent attendance

The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to Indian Club attendance.

The null hypothesis was accepted since the computed chi square was 30.70 and the expected chi square at the .05 level of significance with 20 degrees of freedom was 31.41. Since the computed chi square was very close to the expected chi square, the investigator decided to compare those students with club attendance of 0-19 per cent with those students who had club attendance of more than 20 per cent. Table 11 provides data for this comparison.

TABLE 11. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF STUDENTS COMPARED AS TO CLUB ATTENDANCE (SECOND RUN)

	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
0-19%	20	23	12	55	15	17	5	37
20 +%	11	10	11	32	24	24	10	58

$\chi^2 = 12.70^*$

D.F. = 5

\*Significant beyond .05 level

The computed chi square was 12.70 and the expected chi square at the .05 level of significance with 5 degrees of freedom was 11.07. Thus, in this comparison, the null hypothesis was rejected. This may be interpreted to mean that there are significant differences between successful and unsuccessful Indian students with respect to club attendance. It appears that those Indian students who have poor Indian Club attendance have a better chance of succeeding in school.

#### Marital Status

Table 12 shows the number of single and married students in each of the six groups.

TABLE 12. CHI SQUARE ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL CATEGORIES OF INDIAN STUDENTS COMPARED AS TO MARITAL STATUS

	Successful Groups			Total	Unsuccessful Groups			Total
	1	2	3		1	2	3	
Single	20	26	19	65	37	37	14	88
Married	9	5	4	18	2	4	1	7
Total	29	31	23	83	39	41	15	95

$$\chi^2 = 20.23^*$$

$$D.F. = 5$$

\*Significant beyond .05 level

The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to marital status. The null hypothesis

was rejected as the computed chi square was 20.23. The expected chi square at the .05 level of significance with five degrees of freedom is 11.07.

There was a total of 65 single Indian students (42 per cent) in one of the three successful groups, while a total of 18 married students (72 per cent) were in one of the successful groups.

Thus, there are significant differences between successful and unsuccessful students with respect to marital status. The above data suggest that the married Indian students have a better chance of succeeding in the university.

#### Number of Credits

The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to the number of credits carried.

Table 13 shows that the mean number of credits for Indian students in the successful category was 14.72 with a standard

TABLE 13. COMPARISON OF SUCCESSFUL AND UNSUCCESSFUL INDIAN STUDENTS WITH THE NUMBER OF CREDITS CARRIED.

Successful			Unsuccessful			t-value
N	M	S.D.	N	M	S.D.	
87	14.72	2.13	95	12.53	2.32	6.63*

t = 6.63\*

D.F. = 180

\*Significant beyond .05 level

deviation of 2.13; while the mean number of credits for Indian students in the unsuccessful category was 12.53 with a standard deviation of 2.32. The t-test was applied and a t-score of 6.63 was obtained. For 180 degrees of freedom at the .05 level of significance the critical value of  $t = 1.98$ . Thus, the null hypothesis was rejected indicating that the successful Indian students carry more credits than do the unsuccessful Indian students.

Cooperative School and College  
Ability Tests (SCAT)

The null hypothesis was that there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to their scores on the School and College Ability Test. On the quantitative portion of the test, there were no significant differences between the successful and unsuccessful Indian students. However, on the language portion (verbal linguistic ability) the t-score was significant. Table 14 provides the data.

TABLE 14. COMPARISON OF SUCCESSFUL AND UNSUCCESSFUL INDIAN STUDENTS WITH THE SCAT

	Successful			Unsuccessful			t-value
	N	M	S.D.	N	M	S.D.	
Quant.	36	3.44	1.70	53	3.40	1.50	.14
Verbal	36	4.36	1.84	53	3.49	1.46	2.48*
Quant. t =	.14		D.F. = 87	*Significant beyond .05 level			
Verbal t =	2.48*						

This may be interpreted to mean that there is a relationship between the verbal portion of the SCAT and success or failure in the university.

Concerning the quantitative portion of the test, Table 14, page 56, reveals that the mean score (in stanines) in the successful category was 3.44 with a standard deviation of 1.70. The unsuccessful category had a mean score of 3.40 and a standard deviation of 1.50. The t-test result of .14 was far short of the critical value of  $t = 2.00$  needed for 87 degrees of freedom at the .05 level of significance.

Also, Table 14 shows the verbal mean score (in stanines) in the successful and unsuccessful category. The mean score for the successful category was 4.36 with a standard deviation of 1.84. The unsuccessful category had a mean score of 3.49 and a standard deviation of 1.46. The computed t-test resulted in a t-score of 2.48. At the .05 level of significance, for 87 degrees of freedom the critical value of  $t = 2.00$ .

American Council on Education Psychological  
Examination for College Freshmen (ACE)

Since many of the Indian students took the ACE Test rather than the SCAT, this researcher applied the t-test to the ACE scores. The null hypothesis was: there are no significant differences between successful and unsuccessful Indian students enrolled at Montana State University with respect to their scores on the American Council on

Education Test.

The ACE is divided into the quantitative portion and the verbal portion as is the SCAT. Table 15 shows the mean scores (in stanines) in the successful and unsuccessful categories.

TABLE 15. COMPARISON OF SUCCESSFUL AND UNSUCCESSFUL INDIAN STUDENTS WITH THE ACE

	Successful			Unsuccessful			t-value
	N	M	S.D.	N	M	S.D.	
Quant.	46	4.43	1.63	38	4.03	1.72	1.12
Verbal	46	4.63	1.95	38	3.37	1.55	3.24*
Quant. t =	1.12		D.F. = 82	*Significant beyond .05 level			
Verbal t =	3.24*						

Table 15 shows that on the quantitative portion of the test there were no significant differences between the successful and unsuccessful Indian students. On the verbal portion of the test the t-score was significant. The application of the t-test (verbal portion) resulted in a t-score of 3.24. For 82 degrees of freedom, therefore, the t-score was significant beyond the .05 level of significance.

Ohio State University Psychological Test (Ohio)

In comparing the successful and unsuccessful Indian students with the scores on the Ohio Test, Table 16, page 59, reveals that there is a relationship between scores on the test and success in school.

TABLE 16. COMPARISON OF SUCCESSFUL AND UNSUCCESSFUL INDIAN STUDENTS WITH SCORES ON THE OHIO TEST

Successful			Unsuccessful			t-value
N	M	S.D.	N	M	S.D.	
81	4.65	2.10	91	3.38	1.73	4.35*

t = 4.35\*

D.F. = 170

\*Significant beyond .05 level

Table 16 shows that the mean score (stanines) in the unsuccessful category was 3.38 with a standard deviation of 1.73.

The application of the t-test resulted in a t-score of 4.35. For 170 degrees of freedom at the .05 level of significance, the critical value of t was 1.98. Thus, the t-score was significant suggesting that the successful Indian students score higher on the Ohio Test. The null hypothesis was rejected.

#### High School Grade Point Average

The null hypothesis was: there are no significant differences between successful and unsuccessful Indian students with respect to high school grade point average. Table 17 provides the data for this comparison.

Table 17, page 60, shows that the mean grade point average for Indians in the successful category was 2.82, while the mean for the Indians in the unsuccessful category was 2.29. The standard deviation for the successful and unsuccessful categories was 1.86 and 2.06

respectively.

TABLE 17. COMPARISON OF SUCCESSFUL AND UNSUCCESSFUL INDIAN STUDENTS WITH HIGH SCHOOL GRADE POINT AVERAGE

Successful			Unsuccessful			t-value
N	M	S.D.	N	M	S.D.	
50	2.82	1.86	58	2.29	2.06	4.39*

t = 4.39\*

D.F. = 106

\*Significant beyond .05 level

The application of the t-test resulted in a t-score of 4.39. For 106 degrees of freedom at the .05 level of significance the critical value of t is 2.00. Thus, the t-score was significant beyond the .05 level of significance. The null hypothesis was rejected. This indicates that the successful Indian students at Montana State University had a higher high school grade point average than the unsuccessful Indian students.

#### Summary

The data analyzed in this chapter revealed that of the 16 variables tested, 6 variables proved to be not statistically significant. These six variables were: (1) sex; (2) living on or off reservation; (3) type of high school from which the Indians graduated; (4) home reservation; (5) bilingualism; and (6) field of study. Thus,

the null hypotheses for these variables were accepted.

Ten of the sixteen variables proved to be statistically significant and, therefore, the null hypotheses were rejected. The ten variables which were significant were as follows: (1) age; (2) blood quantum; (3) number of living children in family; (4) American Indian Club attendance; (5) marital status; (6) number of credits carried; (7) result of the American Council on Education Psychological Examination for College Freshmen; (8) result of the Cooperative School and College Ability Tests; (9) result of the Ohio State University Psychological Test; and (10) high school grade point average. It appears that these ten variables are related to success or lack of success of the American Indian students enrolled at Montana State University.

## CHAPTER V

### CONCLUSIONS, OBSERVATIONS, RECOMMENDATIONS, AND SUMMARY

The purpose of this study has been to investigate how selected characteristics of American Indian students may be related positively or negatively to their success or non-success while enrolled at Montana State University. The conclusions, observations, and recommendations presented in this chapter are based on the findings of this investigation and the experience of the researcher while serving as advisor to American Indians at Montana State University from September, 1967 to June, 1974.

#### Conclusions, Observations, and Recommendations

##### 1. Sex

Conclusion. Male and female Indian students were found to be, equally successful (as defined in the study) while enrolled as students at Montana State University. Thus, sex was found not to be a significant variable factor. However, it should be pointed out that while there was no significant difference between the sexes, the Indian males did tend to receive slightly higher grades than did the Indian females.

Observations. The author feels that one explanation of why the Indian males had this slightly higher success ratio is that the Indian male appears to have a more positive self-concept and that the desire to succeed academically is more pronounced for Indian males. Often

females were found to be more interested in marriage and family life rather than a college education, perhaps because of Indian cultural images of the female as the domestic mainstay.

The Indian females seem to be less aggressive and have more adjustment problems, such as conforming to dormitory rules, overcoming homesickness, and finding new friends on campus. Perhaps the Indian male is more acculturated because he has had more contact with non-Indians while working, participating in sports, and such.

It appears that when the Indian student has been brought up to regard education as a way of life, rather than just a tool for vocational purposes, then education becomes more important for both sexes.

## 2. Age

Conclusion. The older Indian students, those in the 23 years and above group, were significantly more successful than were younger Indian students. Thus, it appears that some Indian students may benefit from a three or four year delay after graduating from high school before they start their university programs.

Observations. It is the belief of this researcher that young Indian students have little first-hand experience of an independent life, an experience which they need in order to be able to cope with inevitable academic setbacks. Independent experience also helps them to realistically perceive their abilities and accept alternatives that they can master. The Indian student, it seems, needs to experience

personally the everyday working world.

Many young Indian students who enter college immediately after graduating from high school have unresolved family problems or personal emotional problems such as immaturity, rebellion, worry, anxiety, social inadequacy, and mobility to adjust. In many cases the students bring those problems with them to the university.

The Indian student who delays his college education for several years and is on his own undoubtedly will come in contact with non-Indians, especially if he is employed off the reservation, and he will thus become more familiar with the non-Indian culture. He will be able to determine those non-Indian values he can accept and will incorporate or integrate those values with his traditional Indian values. With this background the older Indian student can adjust more easily to university demands that fall outside his customs.

The older student has often experienced the hard times associated with unemployment and realizes that it would be economically beneficial for him to go to school. On the other hand, there are those who realize that they are not cut out for the discipline of academic life or that their life goals really do not require a university education. In many instances, the Indian student has been pushed into going to college by teachers, parents, tribal members, or Bureau officials when in fact the student has no such inclination.

The data indicated that the 17 to 18 year old students were the

second most successful group (51 per cent). It is speculated that with the current interest in Indian education (locally and nationally) and the current on-going Indian programs such as bilingual, bicultural, Headstart, Upward-Bound programs and special services on campuses, the younger students have developed greater self-confidence and pride, and really want to help their people. They, more than others, see education as the best vehicle.

Recommendation. Since the findings of this study revealed that the older Indian students have a very good chance of being academically successful in the university, it is recommended that the schools on the reservations, tribal leaders, and officials of the Bureau of Indian Affairs seek out potential Indians who have been out of high school for several years and encourage them to enroll at a university.

### 3. Blood Quantum

Conclusion. This variable was found to be significant in the study. Indian students having the least amount of Indian blood (less than one-quarter) were most successful (71 per cent). Those in the three-quarter-or-more Indian blood group were the least successful, with only 27 per cent of them having success according to the study's definition of success.

Observations. The one-quarter Indian blood student may be more successful because he is less likely to socialize primarily with Indians where the traditional Indian cultural differences would affect

educational achievement. The less-than-one-quarter Indian blood student is perhaps more acculturated and more committed to the non-Indian values associated with higher education. The parents of one-quarter Indian blood students are in most cases monolingual (English) and also have more of an educational tradition. The probability of a one-quarter Indian blood student encountering a language barrier is unlikely to occur. The dilemma of many of the three-quarter-or-more Indian blood students might best be expressed in terms of the conflict between the kind of achievement the university would expect from those students and what they have grown up to expect from life and the world.

Recommendation. Since the findings of this research revealed that Indian students who were in the three-quarter-or-more Indian blood group were the least academically successful in a university, it is recommended that elementary, junior high, high schools, and universities carefully and thoroughly examine their educational programs to find the problem areas of these students and develop innovative programs and methods to meet the needs of these students.

#### 4. Grew Up On or Off Reservation

Conclusion. No significant differences were found between successful and unsuccessful Indian students with respect to growing up on or off the reservations.

Observations. In part this may be because many Indians who live off the reservation live in Indian neighborhoods or in isolated

areas and do not intermingle very much with the non-Indian culture. The non-Indian world often impinges on the Indian's mind and causes conflicts arising from a different system of values and so the Indians stay away from the non-Indians whose value system is quite different from their own. Thus, the Indian culture and mores are carried with them wherever the Indian might be.

#### 5. Type of High School

Conclusion. This variable was not statistically significant, however, the Indian students who graduated from public high school were slightly more successful.

Observations. Perhaps this variable was not significant because schools are similar regardless of whether they are operated by the state government, churches, or the federal government. Most teachers are trained in teacher-education institutions which are quite similar throughout the United States. The same curriculum materials are available to all schools and many textbooks are similar, bought from a few large publishing companies. Most of the schools are permeated by a similar lack of cultural awareness. In our educational system, everyone is treated by the same standard generally and little, if any, time is devoted to the culturally different student.

Generally speaking, the students who go to public schools that have larger enrollments will have certain educational advantages, such as remedial programs, better equipped labs, more visual aids, better

counseling, and a wider choice of subjects. This may explain why the Indian students who graduated from public high schools were somewhat more successful at Montana State University. But even so, the public schools, the biggest educators of Indian students (approximately two-thirds of the Indians go to public schools) seem quite consistent and inflexible in their approach to educating Indian students.

6. Home Reservation

Conclusion. The data from this variable showed no significant differences between successful and unsuccessful Indian students with respect to the reservation they are enrolled on in Montana.

Observations. The Indian students from the Flathead Reservation did, however, tend to be a little more successful than the Indian students from the other reservations in Montana. Their success could be due to the fact that the majority of the students from the Flathead Reservation, in this study, were in the less-than-one-quarter and one-quarter to less-than-one-half blood quantum groups. These students appear to have committed themselves to learning and have accepted the non-Indian culture and relate to the dominant society.

7. Bilingualism

Conclusion. Only about 20 per cent of the Indian students in this study spoke a tribal language. The computed chi square for this variable was not statistically significant; however, the English-

speaking monolingual Indian students tended to be more successful than the bilingual Indian students. Approximately 52 per cent of the Indian students who did not speak a tribal language were in the successful category, whereas only 31 per cent of the Indian students who spoke a tribal language were in the successful category.

Observations. The bilingual students may have tended to be less successful because the dominant culture educational programs do not meet their needs. The evaluation of any program's effectiveness for them should be measured in terms of how well it meets their particular needs. Even though bilingual programs are now being instituted in many schools, they often have inadequate materials and personnel. It has been said by bilingual Indian students that they are at a disadvantage because they first think in terms of their tribal language and then must transfer those concepts into the English language. This bilingual problem sometimes brings about a fear of failure which deflates the student's ego and makes him feel inferior, and may even completely cripple his academic performance.

The parents of bilingual students generally are less involved in school activities than are the parents of the English-speaking students. This lack of parental involvement is detrimental to the student since there is a relationship between the educational tradition of the family and the success of the student. It appears that parents need to believe in education if their children are to do well in school.

Recommendation. It is recommended that every effort be made by each reservation to establish an Indian education committee to involve Indian parents, especially those families who speak their tribal language, in educational programs and activities.

8. Total Number of Children in Family

Conclusion. The number of children in the family was found to be a significant factor in success among American Indians enrolled at Montana State University. The data revealed that the mean number of children in the group that are successful was 4.38, whereas the mean number of children in the unsuccessful group was 5.27. This indicates that Indian students who come from smaller families have a better chance of being successful at Montana State University.

There were 60 Indian students who had three or less brothers and sisters (30 males and 30 females). Of the 30 males, approximately 53 per cent were in the successful category, whereas approximately 57 per cent of the females were successful.

One hundred four Indian students had four or more brothers and sisters. Forty-two per cent (25 of 59) of the male students from that group were in the successful category. Of the 45 females with four or more brothers and sisters, approximately 36 per cent (17 of 45) were in the successful category. Moreover, the overall (male and females) success ratio of those with three or less siblings was approximately 55 per cent as compared to 40 per cent for those students

with four or more siblings.

Observations. In the larger families, it appears that the relatives (especially grandparents) often help raise the children. The grandparents are usually less educationally oriented than are the children's parents. Some Indian students who come from large families often attend church related schools or federal boarding schools due to family economic or social problems. This early experience away from home apparently causes the student to have a negative attitude toward university education since it seems to be an unpleasant extension of their earlier experiences.

Recommendation. Since the findings of this study indicated that students coming from smaller families tend to do better academically in college, it is recommended that further research be done to try to determine cause-effect relationships that seem to operate within the socio-economic milieu of the Indian family by family size differential.

#### 9. Indian Club Attendance

Conclusion. When club attendance was divided into five groups of (1) 0-19 per cent attendance, (2) 20-39 per cent attendance, (3) 40-59 per cent attendance, (4) 60-79 per cent attendance, and (5) 80 or more per cent attendance, the computed chi square was not statistically significant. Thus, this may be interpreted to mean that a high club attendance is not related to being academically successful in the university. However, when a comparison was made between those students

with club attendance of 0-19 per cent and those students with attendance of 20 per cent or more, the results proved to be significant. Approximately 60 per cent of the Indian students in the 0-19 per cent attendance group were in the successful category, whereas about 35 per cent of the students who had club attendance over 20 per cent were successful at Montana State University.

A goodly portion of the students who were in the 0-19 per cent group were students with the least amount of Indian blood (less than one-quarter). There were a total of 92 students in the 0-19 per cent group of which 32 (35 per cent) had less than one-quarter Indian blood. Twenty-four of these thirty-two students (75 per cent) were successful according to the definition of success in this study. There were nine students (three-quarter or more Indian blood) who were in the 0-19 per cent club attendance group. Of these nine students only one (11 per cent) was in the successful category. These students appeared to be somewhat isolated from other Indians as well as non-Indians on campus.

Observations. The Indian club membership is not restricted to Indian students, but is open to non-Indians who desire to participate in the club activities.

The club provides opportunities for Indian students to promote social activities that facilitate better adjustment of the Indian students to the university life. Through democratic elections and procedures, the students have an opportunity to develop leadership

abilities.

Recommendation. Even though a high club attendance and academic success were not related to success in this study, it is recommended that Indian students be encouraged to participate in Indian club meetings and activities because this researcher believes that through club participation the Indian student is afforded the opportunity to associate with other Indian students and to make his adjustment to campus life somewhat easier. A future study that looks at the social or integrative function of the Indian club rather than using academic success as the controlling variable might find important benefits not revealed in this study. Furthermore, one must bear in mind that the objective of the Indian club is not specifically geared toward academic concern but rather social activities.

#### 10. Marital Status

Conclusion. The findings with respect to marital status proved to be statistically significant with approximately 72 per cent of the married students being academically successful as compared to 42 per cent for the single Indian student.

There were a total of 25 Indian students in this study who were married. Of these 25 students 19 were males and 6 were females. Sixty-three per cent of the males (12 of 19) were academically successful, whereas all of the six married females were successful. Further analysis of the data revealed that 13 of the 25 married students had Indian club

attendance in the 0-19 per cent group and 11 of these students (85 per cent) were in the successful category.

Observations. Married students seem to participate in campus clubs and activities less than single students. In many instances, the activities are geared more for the single students giving them an opportunity to meet someone of the opposite sex. The married students tend to have a more realistic knowledge of their academic strengths and weaknesses than the single students. When a married student does have a problem (academic or social) he seems to seek help quickly or try to alleviate the problem.

Recommendation. Since married students are more likely to be successful than are single students, it is recommended that the tribes, Bureau of Indian Affairs, and universities increase their efforts to recruit married Indian students. The Bureau of Indian Affairs and other funding agencies should make every effort to provide adequate financial assistance to married students.

#### 11. Field of Study

Conclusion. The student's choice of field of study was found not to be statistically significant. The percentage of successful Indian students ranged from a high of approximately 61 per cent for those in education to a low of approximately 37 per cent for those in physics, mathematics, and engineering.

Observations. There were 29 students in nursing. Of these 29 nursing students 11 (38 per cent) were academically successful. Perhaps the reason so many Indian students go into the nursing curriculum is that they are interested in helping others of their race. The fields of education and sociology were chosen by 35 students. These fields are also people oriented, and students selecting education or sociology as a field of study seem to express a desire to help others. On the other hand, 14 students chose commerce which is not generally thought of as a field for helping others but can be viewed as an area that can be practiced back home on the reservation. For example, if a student takes several commerce courses such as accounting, office machines, typing, and shorthand and then decides to drop out of the university (after a year or two), he has a saleable skill which will generally be sufficient for him to get an office job with his tribe or the Bureau of Indian Affairs.

Recommendation. Since the Indian students were in 34 fields of study, it is recommended that a comprehensive study of the factors that determine how an Indian student chooses a field of study could reveal useful counseling information.

2) Number of Credits Carried

Conclusion. The number of credits carried proved to be statistically significant. The mean number of credits for successful Indian students was 14.72, while the mean for the unsuccessful students was 12.53.

Observations. Beginning freshmen often have a difficult time adjusting to university work. The Bureau of Indian Affairs frequently recommends that a student take a fewer number of credits (about 36) during the first year. The assumption here is that with lighter academic loads the student will have more time to spend on fewer subjects and make up any deficiencies he might have. This investigator observed that many poorly prepared Indian students insist on starting with an average academic load (15 or 16 credits) and then drop courses during the quarter when they realize they are failing the courses. Often when the student is failing a course or two he will devote much of his study time on the course or courses he is having difficulty with at the expense of other courses he is taking. Thus, by the time he drops the courses he is failing it may be too late to make recovery on the courses he retained. The end result is a poor grade point average for the quarter.

There are other factors such as motivation, financial status, study habits, living conditions, and absenteeism which must be considered. For example, if a student is disinterested in a course he is taking and does not go to many of his classes, he most likely is not going to do very well in that course even if he is taking only 12 credits from the start of the quarter. Thus, having the student take a lighter load is not always the answer to the problem, because the student may be in a curriculum he does not like or the curriculum is

too difficult, he may be wasting too much time, he may have personal problems, or he does not have a real desire to continue his education.

Recommendation. It is suggested that a detailed study of factors such as study habits, the effect of absenteeism and factors providing motivation be made in order to design a counseling program that will more effectively help the Indian student perform better academically.

13 Cooperative School and College  
Ability Tests (SCAT)

Conclusion. This variable proved to be significant on the verbal (language) portion of the test, but on the quantitative portion there were no significant differences between the successful and the unsuccessful Indian students. Thus, it appears that the verbal portion of the SCAT test is a better predictor of academic success for American Indians than is the quantitative portion of the test.

Observations. American Indian students display varying degrees of verbal competency due in part to the diversity of their upbringing, different language and speech patterns, cultural norm differences and a different pattern of socializing experiences. The Indian student displays no verbal difficulty in communicating with other tribal members of his community, but often is unable to communicate effectively with members of the non-Indian society. When the Indian student is compared with the non-Indian student on tests which have been designed and

validated for and by a non-Indian population the Indian generally is found not to have comparable verbal skills.

Recommendation. It is recommended that the SCAT test scores be used as a tool to assist in estimating the capacity of American Indians to undertake higher levels of schooling and that the university increase its efforts to provide remedial programs based on the SCAT scores. It is further recommended that appropriate diagnostic instruments be utilized by the University Testing and Counseling Service to identify unique problems encountered by Indian students.

14. American Council on Education Psychological Examination for College Freshmen (ACE)

Conclusion. The verbal portion of the ACE test was statistically significant.

Observations. The ACE was superseded by the SCAT at Montana State University. It appears that the SCAT is somewhat better suited to the Indian students than is the ACE test because the SCAT is a verbal power test, whereas the ACE also has a speed factor as a dimension of the test. Given the student's problem of comprehension, the addition of a time limit makes it difficult for him even to complete the subtests.

15. Ohio State University Psychological Test (Ohio)

Conclusion. The data from this variable proved to be statistically significant and reveal that there is a positive relationship

between scores on the Ohio test and success at Montana State University. Forty-one of the one hundred five students (39 per cent) who had scored in the fourth or less stanine were successful academically, whereas 58 per cent (38 of 66 students) who were in the fifth or above stanine were academically successful in this study.

Observations. The Ohio test is designed to measure verbal aptitude. The three subtests consist of same-or-opposite items, word analogies, and reading comprehension. Thus, a student's reading ability is the critical factor in this test. Many Indian students have reading problems and inevitably do not score well on the Ohio test. Indian students who have been tested in the Reading Improvement Lab at Montana State University are generally found to read very slowly and with poor comprehension. Most Indian students that take the lab course make substantial gains if they stay with it long enough. Unfortunately, the Ohio test is given during freshman orientation, thus remedial work taken subsequent to that does not appear on the student's records. It is clear that many Indian students arrive at Montana State University with verbal skill deficits, and unless appropriate programs are provided for them they continue at a disadvantage or are eventually forced to leave since they cannot compete. In a setting where verbal skill is weighted so heavily, it is unrealistic to assume that the verbally disadvantaged student can pull himself up by the boot-straps. Furthermore, it is likely that the manifest verbal deficit acts to compound other problems

related to self-esteem, anxiety, and a sense of failure.

Recommendation. It is recommended that the testing and counseling program utilize the Ohio or other appropriate tests as diagnostic instruments and that students in the Indian program be provided with special remedial programs designed to improve their verbal and language skills. It is further recommended that students in those programs be re-tested periodically to ascertain the effectiveness of the remedial programs.

16. High School Grade Point Average (GPA)

Conclusion. High school grade point average as a variable was found to be statistically significant. Thus, the Indian student who had a high grade point average in high school is more likely to succeed in the university. Analysis of the data showed that 61 per cent of those Indian students who had a high school grade point average of 2.50 or more were academically successful, whereas only 31 per cent of those students who had less than 2.50 high school grade point averages were successful in the university.

Observations. It appears that the Indian student who had a high grade point average in high school is also more persistent in the academic programs at the university and thus is more likely to successfully complete his freshman year. Having experienced success during his freshman year, he is then more likely to return to the university for his sophomore year and continue to completion of the baccalaureate

degree. Moreover, the student who has had a high grade point average in high school seems to approach the start of college with a higher level of motivation and a better self-concept.

Recommendation. Since high school grade point average is positively related to academic success in the university, it is recommended that high schools examine their educational programs to try to locate areas that cause difficulties for Indian students. When they identify those areas, they should increase their efforts to provide meaningful programs that will help Indian students achieve academic success.

#### Summary and Extended Recommendations

It appears that much of the difficulty that the Indian student encounters at Montana State University has its roots in his earlier experiences. The socialization and educational background he obtains prior to arriving at Montana State University does not adequately prepare him for the types of experiences and expectations associated with university life.

Since the Indian student appears to enter the university scene with a number of deficiencies (especially verbal and language skills as revealed in this study), it seems imperative that a compensatory program be designed to alleviate those deficits. A successful educational experience for the Indian student at the university must involve a

broad institutional commitment that goes beyond that provided the regular student. In that regard the university might utilize anecdotal data available from the public schools much more intensively than it currently does.

It is not unreasonable to assume in advance of his entry that the Indian student will require both specialized counseling and educational programming. Furthermore, it becomes ever more apparent that increased recognition should be given by the university community to unique and important cultural differences that cause the Indian student to suffer upon initial entry to university life.

Montana State University is in a position to provide some realistic alternatives so that when an Indian student enrolls he truly will have a chance to be academically and socially successful. For example, the results of this study show that there is a positive relationship between the scores an Indian student receives on entrance tests such as the Cooperative School and College Ability Tests (SCAT) and the Ohio State University Psychological Test (Ohio) and success at Montana State University. Since these tests show evidence of being an effective measure of future scholastic success, they should be used as diagnostic instruments in counseling and educationally programming the individual Indian student.

It is the belief of this researcher that all new Indian students would be better advised if placed under one academic advisor (preferably

in General Studies) during their first year at Montana State University. Under this arrangement the academic advisor could keep a close eye on every student and thus be able to do a better job of preventative counseling. The student should still be permitted to pursue whatever curriculum he desires. For example, if a student wanted to be in the agriculture curriculum, he would be allowed to take agriculture courses. Having all new Indian students under one academic advisor would be advantageous to the Indian student, because it would allow a close relationship between the advisor and the student.

Another alternative for Indian students during their first year at Montana State University would be to allow them to take their first three quarters on a pass-fail basis. The thinking behind this is that it generally takes Indian students several quarters to get adjusted to university expectations and by the time they have become acclimated many have acquired a grade point deficit that is almost impossible for them to overcome. In this way the university would really be giving the Indian student a chance to succeed. Instead of feeling defeated by a low grade point average which would have to be carried over into subsequent quarters, like a handicap, he would feel he had a chance to succeed on the basis of the work he actually accomplished and could more gradually adjust to university norms.

The greater involvement of Indian students seems imperative if the university wants a more viable Indian program. Indian students

could be used to recruit other Indian students. Indian students (juniors and seniors) could be used as student counselors to help freshmen and sophomores with their personal or academic problems. Also, Indian students should be involved in the total university Indian program by giving input as to what they feel is needed or desired.

It would be desirable for Montana State University to have an Indian center (as it has a student union) that would serve as a focal point for Indian activities on the campus. The center could be used for various functions such as Indian club meetings, presenting forums, holding social activities, and the creating of Indian arts and crafts by Indian students. The center would relate directly to the existing American Indian Studies Program on campus and would enhance a cross-cultural experience. It could be a part of the present union building.

In closing, this researcher would suggest Montana State University seriously examine its academic programs for inclusion of content relative to American Indians. Specific courses concerning American Indians (taught by qualified Indians) should be offered to both Indian and non-Indian students. Courses that are already in existence such as American History and sociology courses could put the American Indian in proper perspective by introducing available new materials. Although it might be said that the program for the Indian students at Montana State University (1967 to 1974) has met some of the needs of the Indian students, it appears much more could be done.

APPENDICES

## DISTRIBUTION ON VARIABLES

## SEX

Sex	Number	Per cent
Male	97	53.3
Female	85	46.7
Total	182	

## AGE

Age	Number	Per cent
17	1	.5
18	46	25.3
19	52	28.6
20	29	15.9
21	12	6.6
22	11	6.0
23	2	1.1
24	4	2.2
25	5	2.7
26	4	2.2
27	2	1.1
28	3	1.6
29	4	2.2
30	1	.5
31	1	.5
32	1	.5
33	1	.5
34	1	.5
40	1	.5
48	1	.5
Total	182	

Mean	Variance	Standard Deviation
20.7	16.9	4.1

## BLOOD QUANTUM

Blood Quantum	Number	Per cent
Less than one-quarter Indian blood	38	20.9
One-quarter to less than one-half	68	37.4
One-half to less than three-quarter	25	13.7
Three-quarter or more	<u>51</u>	28.0
Total	182	

## TYPE OF HIGH SCHOOL ATTENDED

Type of High School	Number	Per cent
Federal	14	7.8
Church related	7	3.9
Public	<u>159</u>	88.3
Total	180	

## HOME RESERVATION

Home Reservation	Number	Per cent
Northern Cheyenne	15	8.3
Crow	42	23.3
Fort Peck	26	14.4
Rocky Boy's	2	1.1
Fort Belknap	14	7.8
Blackfeet	29	16.1
Flathead	26	14.4
Other	<u>26</u>	14.4
Total	180	

## BILINGUALISM

Student	Number	Per cent
Bilingual	36	19.9
Monolingual	<u>145</u>	80.1
Total	181	

## NUMBER OF LIVING CHILDREN IN FAMILY

Number of Children	Number	Per cent
1	15	9.4
2	17	10.6
3	24	15.0
4	25	15.6
5	20	12.5
6	22	13.7
7	9	5.6
8	12	7.5
9	8	5.0
10	3	1.9
11	3	1.9
12	1	.6
18	1	.6
Mean	Variance	Standard Deviation
4.8	7.5	2.7

## INDIAN CLUB ATTENDANCE

Club Attendance	Number	Per cent
0 - 19%	92	50.5
20 - 39%	16	8.8
40 - 59%	13	7.1
60 - 79%	25	13.7
80 - 100%	36	19.8
Total	182	

## MARITAL STATUS

Marital Status	Number	Per cent
Single	153	84.1
Married	25	13.7

## FIELD OF STUDY

Field	Number	Per cent
Agr	16	8.8
Ag Ed	1	.5
Ag Engr	1	.5
An Sci	1	.5
Arch	4	2.2
Art	8	4.4
Chem E	1	.5
C E	5	2.7
Com	14	7.7
Con T	2	1.1
E Sci	1	.5
Elem Ed	11	6.0
Sec Ed	6	3.3
E E	1	.5
Engl	3	1.6
F&TV	5	2.7
Geol	1	.5
Govt & Pre-law	3	1.6
Hist	2	1.1
Home Ec	10	5.5
Math	2	1.1
M B	2	1.1
ML F	1	.5
Mus	2	1.1
Nurs	29	15.6
Phil	1	.5
P E	6	3.3
Psych	4	2.2
Soc	12	6.6
Spch	1	.5
Z&E	4	2.2
General	<u>22</u>	12.1
Total	182	

## AVERAGE NUMBER CREDITS CARRIED

Number of Credits	Number	Per cent
3	1	.5
7	4	2.2
8	1	.5
9	4	2.2
10	9	4.9
11	11	6.0
12	24	13.2
13	29	15.9
14	30	16.5
15	27	14.8
16	27	14.8
17	8	4.4
18	6	3.3
19	1	.5
	<u>182</u>	
Total	182	

Mean	Variance	Standard Deviation
13.5	6.1	2.4

## SCORES ON ACE (Quantitative)

Score (Stanines)	Number	Per cent
1	2	2.4
2	13	15.5
3	16	19.0
4	14	16.7
5	19	22.6
6	11	13.1
7	8	9.5
8	1	1.2
	<u>84</u>	
Total	84	

Mean	Variance	Standard Deviation
4.2	2.7	1.6

## SCORES ON ACE (Verbal)

Scores (Stanines)	Number	Per cent
1	5	6.0
2	14	16.7
3	19	22.6
4	11	13.1
5	16	19.0
6	12	14.3
7	3	3.6
8	2	2.4
9	2	2.4
Total	84	

Mean	Variance	Standard Deviation
4.0	3.5	1.8

## SCORES ON SCAT (Quantitative)

Score (Stanines)	Number	Percent
1	4	4.5
2	21	23.6
3	32	36.0
4	15	16.9
5	9	10.1
6	3	3.4
7	2	2.2
8	2	2.2
9	1	1.1
Total	89	

Mean	Variance	Standard Deviation
3.4	2.4	1.5

## SCORES ON SCAT (Verbal)

Score (Stanines)	Number	Per cent
1	5	5.6
2	16	18.0
3	19	21.3
4	20	22.5
5	13	14.6
6	12	13.5
7	2	2.2
8	1	1.1
9	1	1.1
Total	89	

Mean	Variance	Standard Deviation
3.8	2.7	1.6

## SCORES ON OHIO

Score (Stanines)	Number	Percent
1	21	12.2
2	25	14.5
3	31	18.0
4	27	15.7
5	24	14.0
6	25	14.5
7	12	7.0
8	4	2.3
9	3	1.7
Total	172	

Mean	Variance	Standard Deviation
3.9	4.0	2.0

## HIGH SCHOOL GRADE POINT AVERAGE

High School GPA	Number	Per cent
1.0	1	.9
1.2	1	.9
1.4	1	.9
1.5	3	2.8
1.6	6	5.6
1.7	2	1.9
1.8	3	2.8
1.9	5	4.6
2.0	5	4.6
2.1	8	7.4
2.2	5	4.6
2.3	7	6.5
2.4	5	4.6
2.5	5	4.6
2.6	6	5.6
2.7	4	3.7
2.8	8	7.4
2.9	2	1.9
3.0	3	2.8
3.1	3	2.8
3.2	6	5.6
3.3	3	2.8
3.4	4	3.7
3.5	4	3.7
3.6	2	1.9
3.7	2	1.9
3.8	2	1.9
3.9	1	.9
4.0	1	.9

Mean	Variance	Standard Deviation
2.5	4.5	2.1

LITERATURE CITED

LITERATURE CITED

- Aiken, Lewis, Psychological and Educational Testing, Allyn and Bacon, 1971.
- Alley, Robert D., Davison, Ronald G., Kelley, Walter T., and Kimble, Raymond L., "A Reading Improvement Strategy," Journal of American Indian Education, Vol. 13, No. 2, January, 1974.
- Anastasi, Amme, "Cultural Differences," Encyclopedia of Educational Research, third ed.: 350-358, Macmillan, New York, 1960.
- Anderson, Ned, "I Broke the Barrier," Indian Programs, University of Arizona, Tucson, Vol. 1, No. 4:1, Winter, 1970.
- Artichoker, John, Jr., and Palmer, Neil M. The Sioux Indian Goes to College, Vermillion, South Dakota: Institute of Indian Studies, State University of South Dakota, 1959.
- Aurbach, Herbert A., and Fuchs, Estelle, The Status of American Indian Education, Pennsylvania State University, University Park, Pennsylvania, 1970.
- Barnett, James Franklin, Factors Affecting the Education of Mont. Indians, Unpublished Masters Thesis, Montana State University, 1968.
- Baty, Roger M., Reeducating Teachers for Cultural Awareness, Praeger Publishers, New York, 1972.
- Beatty, Willard W. (ed.), Education for Cultural Change, United States Government Printing Office, Washington, D.C., 1953.
- Benedict, R., Patterns of Culture, The New Library, New York, 1948.
- Bernardoni, L. C., Critical Factors Influencing the Stated Vocational Preferences of Male White Mountain Apache Students, Unpublished Doctoral Dissertation, Arizona State University, 1962.
- Berry, Brewton, The Education of American Indians, Department of Health, Education, and Welfare, Washington, D. C., 1968.
- Biglin, James E., and Wilson, Jack, "Parental Attitudes Towards Indian Education," Journal of American Indian Education, Vol. 11, No. 3:7-14, May, 1972.

- Bragg, Emma W., "A Study of Student Withdrawal at 'W.U.'," Journal of Educational Psychology, Vol. 47:199-202, April, 1956.
- Brophy, William A., and Aberle, Sophie D., The Indian America's Unfinished Business, Norman: University of Oklahoma Press, 1966.
- Bryde, John F., The Sioux Indian Student: A Study of Scholastic Failure and Personality Conflict, Published by the Author, Pine Ridge, South Dakota, 1966.
- Buros, O. K., The Fifth Mental Measurement Yearbook, Buthers University Press, New Brunswick, 1959.
- Buros, Oscar K., The Sixth Mental Measurements Yearbook, The Gryphon Press, Highland Park, New Jersey, 1965.
- Cassell, R. N., and Sanders, R. A., "Comparative Analysis of Scores From Two Leadership Texts for Apache Indian and Anglo-American Youth," Journal of Educational Research, Vol. 55:19-23, September, 1961.
- Clark, Richard O., "Higher Education Programs for American Indians," Journal of American Indian Education, Vol. 12, No. 1:16-20, October, 1973.
- Coleman, James C., Equality of Educational Opportunity, U. S. Government Printing Office, Washington, D. C., 1966.
- Coombs, M. L., Kron, R. E., Collister, E. G., and Anderson, K. E., The Indian Child Goes to School, Haskell Institute Press, Lawrence, Kansas, 1958.
- Coombs, Madison, "The Indian Student is Not Low Man on the Totem Pole," Journal of American Indian Education, Vol. 9:1-9, May, 1970.
- Coon, Stephen, "Bilingual Legal Education," Journal of Indian Education, Vol. 12, No. 2:3-10, January, 1973.
- Cowels, Milly, Perspectives in the Education of Disadvantaged Children, World Publishing Co., Cleveland, 1967.
- Cundick, Bert, "Measures of Intelligence of Southwest Indian Students," Journal of Social Psychology, Vol. 81:151-156, August, 1970.
- Dale, George A., Education for Better Living: A Study of the Effectiveness of the Pine Ridge Educational Program, U. S. Interior, BIA, Lawrence, Kansas, 1955.

- Dressel, Fred B., "Logic Research and the Married College Student," Personnel and Guidance Journal, Vol. 43:920-924, May, 1965.
- Driver, Harold E., Indians of North America, University of Chicago Press, Chicago, 1961.
- Edington, Everett D., "Academic Achievement," Journal of American Indian Education, Vol. 8, No. 3, pp. 10-15, May, 1969.
- Fantini, Mario D., and Weinstein, Gerald, The Disadvantaged: Challenge to Education, Harper and Row, New York, 1968.
- Ferguson, George A., Statistical Analysis in Psychology and Education, McGraw-Hill Book Company, Inc., New York, 1971.
- Fey, Harold E., and McNickle, D'Arcy, Indians and Other Americans, Harper and Brothers, New York, 1959.
- Forbes, Jack D., The Education of the Culturally Different, Far West Laboratory for Educational Research and Development, Berkeley, California, 1968.
- Fry, Maurine, and Johnson, Carole S., "Oral Language Production and Reading Achievement Among Selected Students," Journal of American Indian Education, Vol. 13, No. 1:22-27, October, 1973.
- Fuchs, E., "Innovation at Rough Rock," Saturday Review, 82-84, September 16, 1967.
- Garth, T. R., "The Intelligence of Full-Blood Indians," Journal of Applied Psychology, Vol. 18:137-142, April, 1934.
- Garth, T. R., and Smith, O. D., "The Performance of Full-Blood Indians on Language and Non-Language Intelligence Tests," Journal of Abnormal and Social Psychology, Vol. 32:376-381, 1937.
- Garth, T., Smith, H., and Abell, W., "A Study of the Intelligence and Achievement of Full-Blood Indians," Journal of Applied Psychology, Vol. 12:511-516, 1928.
- Gifford, S., "Educating the American Indian," School Life, Vol. 47:10-12, 1964.
- Gill, George A., Select Characteristics of American Indian Dropout Students at Arizona State University, Unpublished Research Paper, Tempe, Arizona, 1962.

- Goldman, Roy D., Kaplan, Robert M., and Platt, Bruce B., "Sex Differences in the Relationship of Attitudes Toward Technology to Choice of Field of Study," Journal of Counseling Psychology, Vol. 20, No. 5:412-418, 1973.
- Greenberg, Norman C., and Greenberg, Gilda M., Education of the American Indian for Today's World, William C. Brown Book Company, Dubuque, 1964.
- Harkins, Arthur, Indian Education in Minneapolis: An Interim Report, University of Minnesota, Minneapolis, Minnesota, 1969.
- Hartz, John, Pulvino, Charles J., and McMahon, Robert C., "The Counselor's Charge in the American Indian's Educational Dilemma," The School Counselor, Vol. 20:270-274, March, 1973.
- Havighurst, Robert J., "Education Among American Indians: Individual and Cultural Aspects," The Annals of the American Academy of Political and Social Science, Vol. 311:105-115, May, 1957.
- Havighurst, Robert J., The Education of Indian Children and Youth, Office of Community Programs, University of Minneapolis, Minn., 1970.
- Havighurst, Robert J., and Hilkevitch, Rhea R., "The Intelligence of Indian Children as Measured by a Performance Scale," Journal of Abnormal and Social Psychology, Vol. 39:419-433, October, 1944.
- Havighurst, Robert J., and Nuegarten, Bernice L., American Indians and White Children, University of Chicago Press, Chicago, 1955.
- Havighurst, Robert J., Gunther, M. K., and Parratt, I. E., "Environment and the Draw-A-Man Test: The Performance of Indian Children," Journal of Abnormal and Social Psychology, Vol. 41:50-63, January, 1946.
- Hilgard, Ernest R., Introduction to Psychology, Harcourt, Brace, and World, New York, 1962.
- Hill, Charles, "Reading on the Reservation," Journal of Reading, Vol. 2:125-139, November, 1968.
- Honigman, James F., "North American Indians," Psychological Anthropology, Dorsey Press, Homewood, Illinois, 1961.

- Iffert, Robert E., Retention and Withdrawal of College Students, Bulletin 1958, No. 1, Office of Education, United States Government Printing Office, 1957.
- Kelly, William Dean, Causes for the Dropout Problem of Indian Students and Proposed Ways of Alleviating the Situation in the Wolf Point High School, Unpublished Masters thesis, Montana State University, 1966.
- Khatena, Joe and Cowan, J. C., "Cross-Cultural Measurement of Intelligence with the DAM and CPM," Gifted Child Quarterly, Vol. 11, No. 4:227-230, 1967.
- Kleinfeld, J. S., "Intellectual Strengths in Culturally Different Groups: An Eskimo Illustration," Review of Educational Research, Vol. 43, No. 3:342-357, Summer, 1973.
- Kleinfeld, J. S., "Regionalism in Indian Community Control," Journal of American Indian Education, Vol. 11, No. 3:7-14, May, 1972.
- Koelsche, Charles L., "A Study of the Student Drop-out Problem at Indiana University," Journal of Educational Research, Vol. 49: 357-364, January, 1956.
- Lehman, Irvin, "Some Socio-Cultural Differences in Attitudes and Values," Journal of Educational Sociology, Vol. 36:1-9, September, 1962.
- Little, Kenneth J., "The Persistence of Academically Talented Youth in University Studies," Educational Record, Vol. 40:237-241, July, 1959.
- Ludeman, W. W., "The Indian Student in College," The Journal of Educational Sociology, Vol. 33:333-335, March, 1960.
- Mallam, Clark R., "Academic Treatment of the Indian in Public School Texts and Literature," Journal of American Indian Education, Vol. 13, No. 1:14-18, October, 1973.
- Martig, Roger, and Beblassie, Richard, "Self-Concept Comparisons of Anglo and Indian Children," Journal of American Indian Education, Vol. 12, No. 3:9-16, May, 1973.
- McGrath, G. D., and Others, Higher Education of Southwest Indians with Reference to Success and Failure, Arizona State University, Tempe, Arizona, 1962.

- McNeely, John H., College Student Mortality, Bulletin 1937, No. 11, Office of Education, United States Government Printing Office, 1938.
- McNickle, D'Arcy, Indian Tribes of the United States, Oxford University Press, London, 1962.
- McNickle, D'Arcy, They Came Here First, J. D. Lippincott Co., New York, 1964.
- Misiaszek, Lorraine, "The Cultural Dilemma of American Indians," Social Education, Vol. 6:438-439, April, 1969.
- Montana Department of Public Instruction, Annual Report: Indian Education, Superintendent of Public Instruction, Helena, Montana, 1970.
- Mueller, Kate H., "The Married Student on Campus," College and University, Vol. 35, No. 2:156, Winter, 1960.
- Nix, Lonnie Elmer, Promotion of Higher Education Within Arizona Indian Groups, Unpublished Doctor's Dissertation, Arizona State University, 1963.
- Osborn, Lynn R., "Rhetoric, Repetition, Silence," Journal of American Indian Education, Vol. 12, No. 2:15-20, January, 1973.
- Owens, Charles S., and Bass, Willard P., The American Indian High School Dropout in the Southwest, Southwestern Cooperative Educational Laboratory, Albuquerque, New Mexico, January, 1969.
- Passow, Harry A., Education in Depressed Areas, Teacher College, Columbia University, 1963.
- Peck, Raymond Lester, A Comparative Analysis of the Performance of Indian and White Children from North Central Montana on the Wechsler Intelligence Scale for Children, Unpublished Doctor's Dissertation, Montana State University, 1972.
- Peterson, Shailer, How Well Are Indian Children Educated? Bureau of Indian Affairs, Department of Interior, Washington, D. C., 1948.
- Potts, Aflere, Developing Curriculum for Indian Children, Center for Cultural Studies, Adams State College, Alamosa, Colorado, 1964.

- Quimby, Robert Joseph, American Indian Students in Arizona Colleges: A Discriminant Analysis of Select Variables that Contribute to Success and Failure, Unpublished Doctor's Dissertation, Arizona State University, 1963.
- Roessel, Robert A., Jr., An Analysis of Select Navajo Needs with Implications for Navajo Education, Unpublished Doctoral Dissertation, Arizona State University, Tempe, Arizona, 1960.
- Rohrer, J. H., "The Test Intelligence of Osage Indians," Journal of Social Psychology, Vol. 16:99-105, June, 1942.
- Ross, William T., and Ross, Van Buskirk, Golda, "Backgrounds of Vocational Choice: An Apache Study," Personnel and Guidance Journal, Vol. 35:270-275, January, 1957.
- Rupiper, O. Hohn, "Multiple Factor Analysis of Academic Achievement: A Comparative Study of Full-Blooded Indian and White Children," Journal of Experimental Education, Vol. 28, No. 3:177-205, March, 1960.
- Ryan, Charles W., "Counseling the Culturally Encapsulated American Indian," Vocational Guidance Quarterly, Vol. 18:123-126, December, 1969.
- Schoonover, Sarah M., "The Relationship of Intelligence and Achievement to Birth Order, Sex of Sibling, and Age Interval," Journal of Educational Psychology, Vol. 50, No. 4, 1968.
- Selinger, Alphonse D., The American Indian Graduate: After High School, What? Northwest Educational Laboratory, Portland, Oregon, 1968.
- Selinger, Alphonse D., The American Indian High School Dropout: The Magnitude of the Problem, Northwest Regional Educational Laboratory, Portland, Oregon, September, 1968.
- Shaw, F., "Education of Culturally Deprived Youth in Urban Centers," Phi Delta Kappan, Vol. 45: no. 2:91-97, November, 1963.
- Shrader, William K., and Leventhal, Theodore, "Birth Order of Children and Parental Report of Problems," Child Development, Vol. 39: 1165-1175, December, 1968
- Sommars, Vesta M., Observations of Family Disorganization As It Relates to an Indian Community, Unpublished Masters thesis, Montana State University, 1969,

- Spang, Alonzo T., "Understanding the Indian," Personnel and Guidance, Vol. 50, No. 2:97-102, October, 1971.
- Spindler, G., and Spindler, L., "American Indian Personality Types and Their Sociocultural Roots," The Annals of the American Academy of Political and Social Science, Vol. 311:147-157, May, 1957.
- Stanbury, W. T., "Comparison of On and Off Reserve Educational Achievements," Journal of American Indian Education, Vol. 12, No. 3: 24-32, May, 1973.
- Steiner, Stan, The New Indians, Harper and Row, New York, 1968.
- Stensland, Anna, "American Indian Culture and the Reading Program," Journal of Reading, Vol. 1:22-26, 1971.
- Taylor, Theodore W., The States and Their Indian Citizens, United States Department of the Interior, Bureau of Indian Affairs, Washington, D. C., 1972.
- Thompson, Hildegard, "Education Among American Indians: Individual and Cultural Aspects," The Annals of the American Academy of Political and Social Science, Vol. 311:95-104, May, 1957.
- Thompson, H., "The Education of American Indians," Education Digest, Vol. 29:48-50, May, 1964.
- Thompson, Hildegard (ed.), Education for Cross-Cultural Enrichment, Haskell Press, Lawrence, Kansas, 1964.
- Townsend, I., "Reading Achievement of Eleventh and Twelfth Grade Indian Students," Journal of American Indian Education, Vol. 3:9-10, October, 1963.
- Trang, Sharon, A Review of the Literature in Indian Education, Unpublished Masters thesis, Montana State University, 1969.
- Visscher, Sietwende, A Preliminary Study of Some Attitudes Toward Cultural and Educational Conflicts of Indian Children in Montana, Unpublished Masters thesis, Montana State University, 1970.
- Vockell, Edward L., and Bennett, Blair, "Birth Order, Sex of Siblings, and Incidence of Learning Disabilities," Exceptional Children, Vol. 39:162-164, October, 1972.

Vogt, E., "The Acculturation of American Indians," The Annals of the American Academy of Political and Social Science, Vol. 311:137-147, May, 1957.

Wax, M., and Wax, R., "Culturation Deprivation as an Educational Ideology," Journal of American Indian Education, Vol. 3:15-18, January, 1964.

Wax, Rosalie, and Thomas, Robert K., "American Indians and White People," Phylon, Vol. 22, No. 4:305-317, Winter, 1961.

Wissler, C., Indians of the United States: Four Centuries of Their History and Culture, Doubleday, Doran and Co., Garden City, New York, 1946.

Yoshino, Roger, "College Drop-outs at the End of the Freshman Year," Journal of Educational Sociology, Vol. 32:42-48, September, 1958.

Zintz, Miles V., "Problems of Classroom Adjustment of Indian Children in Public Elementary Schools in the Southwest," Science Education, Vol. 46:261-269, April, 1962.

MONTANA STATE UNIVERSITY LIBRARIES



3 1762 10011654 8

—  
D378  
V948  
copy 2

X