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STUDENTS AND MICHIGAN CAUCASIAN HIGH SCHOOL
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AN ASSESSMENT OF THE MOTIVATION AND ACHIEVEMENT
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STUDENTS AND MICHIGAN CAUCASIAN
HIGH SCHOOL STUDENTS

By

Richard I. Hendra

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ABSTRACT

AN ASSESSMENT OF THE MOTIVATION AND ACHIEVEMENT OF MICHIGAN RESERVATION INDIAN HIGH SCHOOL STUDENTS AND MICHIGAN CAUCASIAN HIGH SCHOOL STUDENTS

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The purpose of this research was to determine if significant differences existed in motivation, grade point averages, achievement test scores and intelligence test scores between Michigan Reservation Indian students and their non-reservation Caucasian peers.

Data were gathered from the five public school districts which provide the educational services for the Indian students residing on the four Michigan Indian reservations. Ninth grade students were sampled to include data from students who might be potential drop-outs, as the drop-out rate of the Michigan Reservation Indian students approaches 80 per cent.

Motivation of the students sampled was measured by the use of the M-Scales. Intelligence test scores and achievement test scores were obtained from school district records. Grade point averages were developed from student

grade records in subjects for which there was homework required.

An analysis of variance, based on a proportional subclass frequency design, was used to analyze the data. One and two tailed "t" tests were also used to determine which data required further analysis.

No statistically significant differences at the .05 level of significance were found to exist between measured motivation factors, intelligence test scores, and achievement test scores between Michigan Reservation Indian students and their non-reservation Caucasian peers. Statistically significant differences in grade point averages between the two groups were found to exist.

There were no statistically significant differences on measured motivation factors between Michigan Reservation Indian students and an established Caucasian sample, and no statistically significant differences existed on measured motivation factors between Michigan Reservation Indian students and an established Plains States Indian sample.

The conclusions of the study were:

1. There are no statistically significant differences between Michigan Reservation Indian students and their non-reservation Caucasian peers in measured motivation, measured intelligence and measured achievement.

2. There are statistically significant differences between Michigan Reservation Indian students and their non-reservation Caucasian peers in earned grade point averages.
3. The statistically significant difference in earned grade point averages between Michigan Reservation Indians and their non-reservation Caucasian peers is not attributable to a lack of motivation or ability.

Supportive evidence for conclusion three suggests that the differences in earned grade point averages might be attributed to:

1. A widespread lack of sensitivity toward the Indian students by school district personnel.
2. Poor attendance records of the Indian students, attributed partially to parental apathy, student health and socio-economic conditions of the family.
3. Limited curricula offered by the majority of the schools, and a serious lack of supporting services.
4. Due to the lack of home electrification and overcrowded home conditions suggesting poor study habits among the Indian students.

Recommendations of the study include:

1. That the five public school districts responsible for providing the educational programs for the Michigan Reservation Indians immediately plan and initiate programs to increase the sensitivity of their personnel towards the Indian.

2. That the Michigan Department of Education employ the personnel necessary to mobilize and assist the various Indian groups in designing academic and supportive programs which will enable the Reservation Indian to reap the rewards of the educational system.

3. That the Michigan Legislature enact appropriate legislation to fund programs to allow the citizens of the Reservations to become better Indians. These programs may include funds for study centers, teacher training directed towards the Indian culture and norms, supportive services for Indian students and the development of programs to increase the socio-economic status of the Reservation Indian community.

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This dissertation is dedicated to my wife, Ruth. There is little question that without her sacrifices and moral, physical and financial support, this project would not have been completed.

I would also like to pay special thanks to my advisors and friends, Dr. David Smith and Dr. Sam Moore. Their assistance in the planning and development of this dissertation did much to make it a better document.

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CHAPTER I

THE PROBLEM

Background

The geographical area that now comprises the State of Michigan was once inhabited by three Indian tribes: the Potawatomi, the Ottawa, and the Chippewa.

In the early nineteenth century, as the white man pushed the great frontier westward, the Michigan Indian was displaced and forced to retreat. During this era, game and land became scarce commodities which resulted in famine for the Indian families. Caucasian diseases and wars further decreased the Indian population of Michigan.

In the mid-nineteenth century several treaties were negotiated by the Michigan and Federal governments between themselves and the various Indian tribes. However, Leupp¹ points out that as was typical within the United States during this period, these treaties were seldom kept.

Cameron² states that during the great lumbering and fishing era of Michigan's development, many of the Indians

¹Francis E. Leupp, The Indian and His Problem (New York: Chas. Scribner & Sons, 1910), p. 26.

²Interview with Herman Cameron, Director of the Michigan Commission of Indian Affairs, Sault Ste. Marie, Michigan, March, 1969.

found employment in these industries. Further, such work was considered appropriate by the Indians because it was related to their culture and heritage. However, the tasks performed by the Indian were typically the unskilled chores, and when the forest and fishing industries declined the Indian soon found himself again being displaced and forced to retreat.

In an effort to cope with the "Indian Problem," four Indian reservations were established in various parts of Michigan between 1855 and 1937. All four currently remain in operation, and serve as resident areas for those Michigan Indians who choose to reside there.

In recent years, contemporary Michigan society has become increasingly aware of the plight of the reservation Indians within the state. Unfortunately this awareness has led to the development of very few significant efforts to assist this minority, either by specific legislative action or through any obvious programs developed through the various Departments of the State.

In a report to the Governor of Michigan in 1967, the Michigan Commission on Indian Affairs stated in part, "that if we are to assist the Michigan Indian, we must concentrate our efforts on the young."

Assuming the preceding observation is one of merit, the future well being of the Michigan Indian is directly incumbent upon a quality educational preparation.

The Michigan Reservation Indians are currently being educated in the public schools which are geographically convenient to the reservation. Residents of the three Upper Peninsula reservations avail themselves of the services of school districts which are relatively small (K-12 enrollments of less than 1,000 students) and of a rural orientation. Residents of the reservation located in the Lower Peninsula avail themselves of the services of a school district of a modest enrollment (K-12 enrollment of approximately 4,500) and of a small college community orientation.

Need

Quality education is an elusive term and its definition is dependent upon the school organization and its students. If the educational opportunities currently available for Michigan Reservation Indians do need to be improved, it is imperative that knowledge of motivation and educational achievement be developed for the Indian students.

In 1963, Dr. Van C. Johnson³ noted that a knowledge base of Indian education was needed for Indian students in South Dakota. In response to this need, a study concerning

³Van C. Johnson, "An Assessment of the Motivation Factor in the Estimation of Academic Achievement of Eleventh Grade Indian Students and the Factored Dimensions of the M-Scales: An Exploratory Study" (unpublished Ph.D. dissertation, Michigan State University, 1963).

the achievement and motivation of Indian students was developed.

Johnson's study was limited to two all Indian High Schools, operated by the United States Bureau of Indian Affairs. Indians attending the schools were residents of Indian Reservations located in seven of the Plains States and represented thirty-five tribes.

The instrument utilized in the Johnson study was the Michigan M-Scales, developed by Dr. William W. Farquhar at Michigan State University. This instrument was compared with the Differential Aptitude Test--Verbal Reasoning, and the grade point average for academic subjects for two preceding years, for each student tested. The comparisons resulted in an analysis of achievement and motivation.

Recommendations of the Johnson study, in part, urge the:

"Replication of the study to another sample of Indian students to ascertain whether or not the same academic and motivational differences prevail."

"Replication of the study in schools where the Indian student is a minority in a Caucasian environment."

"Replication of the study in other geographical areas of the United States."

The above recommendations were based on the following concerns:

1. The population sampled in the Johnson study may have had characteristics unique to the Indians of the Plains States.
2. The population sampled in the Johnson study may have had characteristics unique to all-Indian student schools operated by the United States Bureau of Indian Affairs.
3. The research begun in the Johnson study could be enhanced and made more meaningful with additional information gathered from a sample from a different geographical and educational environment.

In a study by Harold J. Miller⁴ of Indians attending integrated schools in North Dakota, several factors were reviewed which reinforce the need for this study.

The research was confined to schools where the Indians were minority students. As a result, Miller concluded:

1. Non-Indian students performed better in the schools surveyed than did the Indian students.
2. It appeared that the quality of instruction alone did not explain the differences.
3. Indians who attended integrated schools for several years performed better than Indians who just became a part of the integrated school environment.

⁴Harold J. Miller, "The Effect of Integration on Rural Indian Pupils" (unpublished Ph.D. dissertation, University of North Dakota, 1968).

Information similar to that described above is not available for Michigan and could be of value and assistance in planning future educational programs and legislation.

Other factors which reinforce the need for this study include:

1. Michigan ranks thirteenth⁵ of the fifty states in Indian population, yet there is no sophisticated evidence available on the Indian student from which to make inferences about the type of educational programs being provided.⁶
2. Michigan is currently providing no direct assistance for either basic educational programs or supportive services for the several school districts serving the Reservation Indians.⁷
3. Coleman notes that minority groups are cognizant of the fact the upward mobility is related to educational attainment.⁸
4. Michigan Reservation Indians are becoming more vocal and militant in expressing the lack of

⁵Don Meyers, "Michigan's Shame: Its Tragic Indians," Detroit News, May 17, 1964.

⁶Michigan Department of Education, Unpublished report for the National Study of American Indian Education, 1969.

⁷Ibid.

⁸James S. Coleman, Equality of Educational Opportunity, U.S. Office of Education (Washington D.C.: Government Printing Office, 1966), p. 192.

concern expressed toward their problems by the State during the last several decades.⁹

Purpose

There are three primary areas of interest dealt with in this thesis. They are:

1. To gather empirical evidence on the motivation, achievement and intelligence of Michigan Reservation Indian students attending selected Michigan public schools.
2. To gather empirical evidence on the motivation, achievement and intelligence of non-reservation Caucasian students attending the same selected Michigan public schools.
3. To compare and contrast the evidence obtained from the two groups described above, as well as to compare and contrast these data with previously established M-Scales norms for Michigan Caucasian students.

In exploring the above three objectives, the ideology of the Johnson study will be continued and extended. An approach of this scope and design is in agreement with the recommendations of the Johnson study, as supported by the following:

⁹Interview with John Winchester, Center for Urban Affairs, Michigan State University, East Lansing, Michigan, April, 1970.

1. This study examined a different population of Indian students to ascertain whether or not similar academic differences prevail. It is suggested that due to the differences in the educational environment of the Michigan Reservation Indian student from that of the Plains States Indian student, that the Michigan Reservation Indian will demonstrate higher scores on the various data collected than did those in the Johnson sample.

2. This study examined a population of Michigan Reservation Indian students who attend schools in which they constitute a racial minority. Both the Coleman report¹⁰ and the United States Civil Rights Commission Report¹¹ address the issue of students from a racial minority performing better in an educational environment that does have racial balance.

3. This study examined and was confined to another geographical area of the United States, specifically the State of Michigan. Because the Michigan Reservation Indian family has assimilated many of the Caucasian values and norms including the English language, it is predicted that this should have a positive influence upon his performance in school.

¹⁰Coleman, op. cit., p. 307.

¹¹Civil Rights Commission, Racial Isolation in the Public Schools, Vol. II (Washington, D.C.: Government Printing Office, 1967), p. 183.

Hypotheses

The hypotheses which follow are offered to define the three principal areas of interest of this document:

- Ho₁: There are differences in the mean scores of the four sub-tests of the M-Scales between Michigan Reservation Indian students and their non-reservation Caucasian peer group.
- Ho₂: There are differences in the grade point averages earned by Michigan Reservation Indian students and their non-reservation Caucasian peer group.
- Ho₃: There are differences in the achievement test scores earned by Michigan Reservation Indian students and their non-reservation Caucasian peer group.
- Ho₄: There are differences in the intelligence test scores earned by Michigan Reservation Indian students and their non-reservation Caucasian peer group.
- Ho₅: There are differences in the mean scores of the four sub-tests on the M-Scales between Michigan Reservation Indian students and an established sample of Caucasian students within Michigan.
- Ho₆: There are differences in the mean scores of the four sub-tests of the M-Scales between Michigan Reservation Indian students and the Johnson sample of Plains States Reservation Indian students.

Theory

In 1959, Dr. William W. Farquhar and his associates developed the Michigan M-Scales as a function of a United States Office of Education contract (Project 846, 1959).

The Scales are based on the concepts that a student's concern for long-term involvement, unique accomplishment, and competition with a standard of excellence will be

indicative of high achievement; while a student's concern for short-term involvement, common accomplishment, and competition with a minimal standard of excellence will be indicative of low achievement.

Four sub-tests comprise the M-Scales. The sub-tests include:

1. The Generalized Situational Choice Inventory, which measures the student's need for academic achievement.
2. The Preferred Job Characteristics Scale, which measures the student's occupational aspirations.
3. The Word Rating List, which measures the student's perception of himself in an academic setting.
4. The Human Trait Inventory, which measures the unique characteristics of high and low motivation students in an academic situation.

Since the development of the M-Scales, many researchers have used them to explore various areas of interest. Two particular studies besides the one done by Johnson do have a relationship to this thesis.

Payne¹² noted that in a survey of eleventh graders in nine Michigan high schools, the M-Scales did significantly

¹²David A. Payne, "The Dimensions of an Objective Measure of Academic Self-Concept" (unpublished Ph.D. dissertation, Michigan State University, 1961).

discriminate between low achieving and high achieving students. He also expressed concern over the possibility of a homogeneity factor in the eleventh grade students in his sample, due to the many drop-outs which occur prior to the eleventh grade. As a result of the concern expressed by Payne, the author sampled ninth grade students in the several schools surveyed.

Green¹³ found in his research on Negro students that when compared to the Caucasian, the Negro fails to achieve as well, has a greater tendency to drop-out of school and usually demonstrates a lower need for achievement. It has been previously noted that it is a fundamental purpose of this document to ascertain if similar factors exist between Michigan Reservation Indian students and Caucasians.

Intelligence and achievement test scores utilized in the projected comparisons and contrasts between the Michigan Reservation Indian students and their non-reservation Caucasian peers were determined from the student records available within the several selected school districts surveyed.

Grade point average data were determined by the research of the student records for those grades earned in academic courses in grades seven and eight. In defining

¹³Robert L. Green, "The Predictive Efficiency and Factored Dimensions of the Michigan M-Scales for Eleventh Grade Negro Students: An Exploration Study" (unpublished Ph.D. dissertation, Michigan State University, 1962).

academic courses more explicitly, they were considered to be those subjects which required homework to be done by students.

As the data gathered for analysis were obtained from a population, the Cornfield-Tukey argument for suggesting the appropriateness of the use of inferential statistics on populations¹⁴ was accepted.

It then followed that a multiple analysis of variance of the means of the various fixed variables was a statistically sound approach for reviewing the data. This operation required that attention be given to the proportional sub-class frequency technique in the statistical design.

A statistical difference at the .05 level of significance was considered to be a meaningful difference. This level was established, a priori.

For comparisons between the research of this study and that of previous studies, a simple "t" test comparison will be developed.

The assumptions made on the factors considered as constants, include:

1. Differences in the M-Scales scores which occurred between the ninth grade populations of the several schools

¹⁴J. Cornfield and J. W. Tukey, "Average Values of Mean Squares in Factorials," Annals of Mathematics Statistics, 27:907-949.

surveyed and the eleventh grade students of the Michigan Caucasian sample were not the effect of the grade differences.

2. Differences in intelligence and achievement test scores which occurred between the ninth grade populations of the several schools surveyed were not the result of differences in the intelligence and achievement testing devices utilized, or in the manner in which they were administered.

3. Differences in grade point averages which occurred between the ninth grade populations of the several schools surveyed were not the results of the various techniques utilized in determining the grades or the resultant grade point averages.

4. Differences in the M-Scales scores which occurred between Michigan Reservation Indian students and Plains States Indians of the Johnson study are not due to the differences in time between the Johnson study and this thesis.

5. The group of students under study, although established a priori and relatively small, will be valuable in making inferences as it does consist of the entire population of ninth grade Michigan Reservation Indian students and their non-reservation peers.

The conclusions of this dissertation, as described by the hypotheses and information contained within this

section will provide valuable information on the educational patterns now being followed by the Michigan Reservation Indian student, when compared to his non-reservation Caucasian peers and other Caucasian students within the State.

Overview

This thesis is organized so as to present a review of the pertinent literature in Chapter II. The methodology utilized in collecting, organizing and tabulating the data are described in Chapter III. Chapter IV presents an analysis of the data, while Chapter V includes the conclusions of the study as well as implications for further research.

CHAPTER II

REVIEW OF LITERATURE

Historical Background

Early History

It is the consensus of most archaeologists that at one time the continent now known as North America was uninhabited by man. However, evidence which has been discovered and studied over the years has led them to hypothesize that as time progressed, people of Mongolian descent crossed the Bering Strait from Russia into Alaska, and from there migrated into various regions of the continent. These individuals are believed to be the ancestors of the American Indian.¹

Little history of the Indian was recorded prior to the arrival of Columbus in 1492. Discovery of artifacts has led archaeologists to believe there were five major segments in the evolution of the Indian civilization prior to the Caucasian's arrival. They included the pre-historic era, the stone boilers, the farmers and potters, the mound builders, and the grand pipe era.² Each division in time

¹Clark Wissler, Indians of the United States (New York: Doubleday & Co., 1948), p. 5.

²Ibid., p. xvi.

added to the knowledge and culture of the Indian. The mound builders work is still evident in Ohio and Illinois, as well as that of the Pueblo builders of the Southwest. Historical research suggests the construction of this period took place during the two century span of 900-1100 A.D.³

The grand pipe era was that phase of Indian development which was taking place when the Europeans began their first explorations and settlements. An illustration of the activities of this period includes the formation of the Iroquois Confederation in the area which now comprises the State of New York. Its purpose was to aid in tribal protection and to establish territorial rights.⁴ These early political activities of the Indians were ratified by the use of the grand pipe which "was not only a symbol of peace and brotherly love but a charm to compel it, the symbol of a fine idea."⁵

Also during this time period, the Indian had begun to organize himself into great families, based on language and habitat. Thus developed the Forest Indians of the Algonquian and Iroquois in the Northeast, the Plains Indians of the Sioux in the Midwest, the Penutian Indians west of the

³Ibid., p. 32.

⁴Hazel W. Hertzberg, The Great Tree and the Longhouse (New York: MacMillan Co., 1966), p. 85.

⁵Wissler, op. cit., p. 38.

Rockies, and the Uto Indians in the Southwest.⁶ The families or confederacies were comprised of many tribes. For instance, the Algonquian included the tribes of the upper Great Lakes, such as the Ottawa, Chippewa, Menomini, Fox, Potawatomi, Sauk, Miami, Kickapoo, Wea, Mascoutins, and Piankeshaw.⁷

The Settlement Period

When Europeans first began to arrive on the shores of North America, the Indians were not basically a hostile group. Their societies were generally refined and sophisticated. But because the Indians' cultures were viewed only in terms familiar to the Caucasian, they were termed savage and barbaric because they were strange and not understood.⁸ And as Leupp states,

An intruder who forces his way into an occupied homeland, takes possession of it, and establishes there a new language, new customs, and new proprietary relations would naturally be regarded by his unwilling host with SOME SUSPICION.⁹ (Emphasis added.)

As the Caucasian began to increase in numbers, the Indian's routine and habits became more and more upset.

⁶ Ibid., p. 53.

⁷ Emerson F. Greenman, The Indians of Michigan, Michigan Historical Commission, Pamphlet No. 5, 1961, p. 8.

⁸ Alvin M. Josephy, Jr., The Indian Heritage of America (New York: A. A. Knopf, 1968), p. 5.

⁹ Leupp, op. cit., p. 4.

When the white man began to explore and develop the territory and continued to move further west, the Indian frontier was forced back. As this occurred, tribal boundaries were broken and the Indians began fighting the white man on one side, and other tribes on the other. Thus weaker tribes were forced to band with the stronger tribes or become annihilated almost entirely.

An example of this type of action occurred between the fierce Iroquois and the Hurons. As the Iroquois were forced west they overran the Hurons, killing all they found. The only remnants of this tribe were the escapees who were hidden by the Ottawas and Chippewas further west.¹⁰

The Forest Indians of Michigan, as previously noted, are of the Algonquian family and consist of three major tribes: the Potawatomi, who resided in the southwestern area of the Lower Peninsula; the Ottawa, who resided in the northern section of the Lower Peninsula; and the Chippewa or Ojibway, who resided in the Upper Peninsula. Minor tribes included the Hurons, Miamis, and Menominies.¹¹

The French first visited the area which is now known as Michigan in 1622. Father Marquette established the first continuous settlement, in Sault Ste. Marie, in

¹⁰Greenman, op. cit., p. 23.

¹¹Louise Jean Walker, Woodland Wigwams (Hillsdale, Michigan: Hillsdale School Supply, 1964), p. 8.

1668.¹² The French were primarily interested in settling the land and treated the Indian as an equal. They were accepted reasonably well by the Indians. The French also made an effort to learn the Indian languages, and some began to live among them.¹³

When the British began to move west and warred with the French, the Indians often sided with the French because of the relationships which had been established. However, when the French were defeated they left the Indians to their own fate, which resulted in considerable bitterness. Later, when the British followed a similar pattern after being defeated in their battles with the Americans, the Indian became very disillusioned about the degree of truth contained in the promises of the white man.¹⁴

In one of the last efforts to stop the European invaders, a brilliant young Ottawa named Pontiac laid seige to Detroit in 1763.¹⁵ However the plan failed and eventually all the remaining resistance of the Michigan Indian was crushed by U.S. General Anthony Wayne during the Battle of the Fallen Timbers near Maumee, Ohio.¹⁶

¹²Greenman, op. cit., p. 21.

¹³Walker, op. cit., p. 32.

¹⁴Wissler, op. cit., p. 77.

¹⁵Josephy, op. cit., p. 313.

¹⁶Wissler, op. cit., p. 81.

Indian Life During the Settlement Period

The Indians were not the warlike creatures which are depicted in many books and movies on the subject in contemporary society. They were rather "a home-loving and home respecting people. They were good parents and teachers who showed great patience and affection in the training of their children."¹⁷ The children were trained at an early age to live useful lives and undergo hardships without complaining. Walker noted in her book that "the papooses had their arms tied in, too, and so could never develop a habit of sucking their thumbs. Those brought up in this fashion were not often fretful, and seldom cried."¹⁸

During this period, the Indian made many contributions to the American society which was being established. This included the cultivation of corn and potatoes, which are now, with rice and wheat, two of the most important staples of the world. Other contributions were made in showing the settlers how to grow other foods; how to develop utensils, tools, and clothing from the resources available; and good hunting and fishing methods.¹⁹

The Indians of Michigan were basically hunters and fishermen, not farmers. This is easily understood when one

¹⁷Walker, op. cit., p. 44; Wissler, op. cit., p. 253; Leupp, op. cit., p. 4; Hertzberg, op. cit., p. 7.

¹⁸Walker, op. cit., p. 50.

¹⁹Josephy, op. cit., pp. 31-32.

notes that Michigan was once 97 per cent forested.²⁰ The Potawatomes did some farming, the Ottawas a little, and the Chippewas hardly any. The crops grown included corn, squash, beans, melons, and tobacco. A typical corn crop might yield as high as fifteen bushels per acres. Maple sugar was a spring treat, and the Menominies utilized wild rice to supplement their diets.²¹

Because meat was the heart of the Indians' diet, as hunters they were patient, well-schooled and successful. This is illustrated by the fact that the average Indian ate four pounds of meat per day.²² To meet this need, it has been estimated that the average village of fifty persons required two deer or forty snowshoe rabbits per day.²³

It is also interesting to note that the Indian was very careful about his hunting methods and was an excellent conservationist. They either varied their hunting territory from year to year, or made sure enough males and females of the species remained to replenish the game taken.²⁴

²⁰Willard Baird, This is Our Michigan (Battle Creek, Mich.: Federated Publications, Inc., 1959), p. 37.

²¹Philip P. Mason, Struggle for Survival, The Story of Michigan's Indians (Detroit: Detroit Historical Museum, 1960), p. 3.

²²Wissler, op. cit., p. 242.

²³Mason, op. cit., p. 13.

²⁴Ibid., p. 9; Hertzberg, op. cit., p. 68.

In the Indian community the men and women had separate duties. The men hunted, fished, and protected the tribe while the women prepared food, made baskets, and farmed. Each would feel shamed if required to do the work of the other.²⁵

The Indian villages and the people themselves were quite clean. Research suggests that their intelligence was quite high, as illustrated by their ability to recount tribal council events strictly from memory.²⁶ The villagers were a close group with a communal mode of living to enhance survival. Their non-dependance on the Caucasians norms and values was not a result of a lack of energy or intelligence, but a result of the conditions of their lives, which were small forest social units, far apart.²⁷

The Decline Period

Prior to the "White Invasion," the Indian was living fairly well in the area which now comprises Michigan. At this point in time there were probably 15,000 Indians living in the territories which now make up the state.²⁸

The "great decline" took place for many reasons, one of the most important being disease. Smallpox, cholera,

²⁵Walker, op. cit., p. 46

²⁶Hertzberg, op. cit., p. 104.

²⁷Greenman, op. cit., p. 5.

²⁸Baird, op. cit., p. 9.

and other Caucasian illnesses caused widespread death through the villages.²⁹ Another factor was the various wars between tribes, and the Indians' involvement in wars between the French, British, and Americans, as previously discussed. A third factor was the loss of game, on which, we have observed, the Indian was most dependent. Due to the great demand for furs by both the French and British, Indians slaughtered animals for their pelts. This is documented by the fact that over 100,000 pelts were taken through the Straits of Mackinac for the French in one year!³⁰ A fourth major problem was the introduction of alcohol to the Indian. It has been argued by many that liquor was one of the largest contributors to the demoralization of the Indian. (However, Wissler makes a penetrating observation in his book by noting that such accusations may be very deceiving as few Caucasians can cope with alcohol although as a race we have had many more years of experience in its use.)³¹ Partially as consequences of the four factors listed above, the fifth blow came to the Indians. After the wars, in about 1825, large numbers of settlers began to locate in Michigan. They put an additional strain on the remaining game, and subdued the now weakened tribes into submission.

²⁹Wissler, op. cit., p. 134; Mason, op. cit., p. 13.

³⁰Walker, op. cit., p. 22.

³¹Wissler, op. cit., p. 266.

During this period the Indians were forced to cede their lands to the Government. In the period from 1807 to 1842, with the exceptions of a few reservation areas, the entire area which now comprises the State of Michigan was given up by the Indian tribes.³² The remaining Indians either left for western areas where land was still available for their way of life, or remained in an effort to co-exist with the Caucasian.

In the author's opinion, this period was perhaps one of the blackest eras of the Caucasian race. Under the policies of removal under the Jackson and Van Buren administrations, tribes were sent to unsettled lands in the West.

No one will ever know how many tribes were enslaved, tortured, debauched and killed. No one can ever estimate the dimensions of human tragedy that cost in addition to lives, the loss of homes, dignity, cultural institutions, standards of security, material and intellectual accomplishment, and liberty and freedom to millions of people. The aggressors were the whites, the scenes of tragedy the very homelands of the victims.³³

The treatment of the Michigan Potawatomes serves as an excellent example of the Caucasians' perception of justice. As a reward for ceding their remaining lands in Michigan to the government, this forest tribe was promised an equal area of grassy plains in what is now the State of

³²Greenman, op. cit., p. 34.

³³Josephy, op. cit., p. 278.

Kansas. Because of the vast ecological differences in the two areas, the relocation required an almost complete change in the tribes' lifestyle and they were reluctant to go. As a result of their resistance, the army literally forced the Potawatomies to Kansas, at bayonet point.³⁴

During this period the United States Bureau of Indian Affairs, (BIA), was established. Originally structured under the Department of War, it was transferred to the Department of Interior in 1849.³⁵ The main purpose of the BIA was to assimilate the Indians into the mainstream of American life, by destroying their native cultures.³⁶

The reasons cited for the Indian decline did take their toll. Records indicate that by 1838 the Michigan Indian population had dropped to 7,914 and by 1860 it had been further reduced to 6,172.³⁷

The Static Period

During the static period the Michigan Indian continued his efforts towards adopting the Caucasian's customs.

³⁴Kenneth E. Tiedlie, A Study of the Hannahville Indian Community, Michigan State College, Special Bulletin 369, April, 1951, p. 11.

³⁵Stuart Levine and Nancy Lurie, The American Indian Today (Deland, Florida: Everett/Edwards, Inc., 1968), p. 173.

³⁶Ibid., p. 172.

³⁷Michigan State Library, Michigan Section Records (unpublished).

During the period from 1870-1910 the great lumbering boom was taking place in the state. It was easy for the able bodied to find work in the out of doors, which they loved. Also fishing was a commercial enterprize, so it utilized the Indian's skills and provided an opportunity from which to earn a livelihood. However, they were both unskilled occupations so the Indian did not acquire many skills that were to be important when both industries declined.³⁸

Reservations were established in various parts of the state to provide sites where the Indians might reside. The four remaining reservations are described in a report by the Michigan Historical Commission as follows:

1. Bay Mills: Located in Chippewa County of the Upper Peninsula, this reservation's date of establishment is somewhat vague. It contains 1,748 acres of land and approximately five hundred Indians reside there. Its per capita value is estimated to be \$208.

2. Hannahville: Located in Menominee County of the Upper Peninsula this reservation was formally established in 1913, although the Indians had been squatters in the area for many years prior to this date. It contains 3,359 acres and approximately one hundred fifty Indians reside there. Its per capita value is estimated to be \$191.

3. Isabella: Located in Isabella County near Mt. Pleasant of the Lower Peninsula, this reservation was established in 1855. From 1893 to 1934 an Indian Boarding School was operated here by the U.S. Bureau of Indian

³⁸ Herman Cameron, op. cit.

Affairs. There are 1,876 acres involved and approximately four hundred fifteen Indians reside there. The per capita value is estimated to be \$166.

4. Keweenaw Bay: Located in Baraga County of the Upper Peninsula, this reservation was established in 1937, and consists of 15,738 acres. Approximately thirteen hundred Indians reside there. The per capita value is estimated to be \$43.³⁹

The per capita assets of the land described in the preceding outline indicate the value of the land on which the reservations are located. To reinforce the discussion, the following illustration is offered. The per capita assets of the Hannahville Indians are \$191. This multiplied by the number of persons residing there, (150) gives an estimated value of their holdings of approximately \$28,650. This amount divided by the number of acres they own (3,359) places a value on their holdings of a little more than \$8.00 per acre. Tiedlie verifies such an arbitrary computation by reporting that it is mostly swamp and rocky outcroppings.⁴⁰

The point of the preceding argument is to supplement the comment of Levine and Lurie in that typically the reservation lands are almost useless.⁴¹

³⁹Michigan Historical Commission, Indian Reservations, Information Series No. 2, Lansing, Michigan, 1957.

⁴⁰Tiedlie, op. cit., p. 14.

⁴¹Levine and Lurie, op. cit., p. 70.

Also during this period, Indians settled in communities throughout the state, which were not on reservations. These included villages such as Harbor Springs, Cross Village, Mackinac Island, as well as Detroit and other cities.⁴²

During the static period, the Federal Government continued its policies of Indian assimilation through the Bureau of Indian Affairs. It developed a paternalistic attitude in an effort to improve Indian welfare, which was in a desperate state as a result of his displacement and the stripping of his cultural ways of life.⁴³

One of the programs developed in Michigan was designed to make farmers out of the Indians. This project was doomed due to land conditions such as those described on the Hannahville reservation, which are typical of the reservation land in Michigan. Also as previously noted, the cultural background of the Indian included farming as a feminine role, and so it was therefore repugnant to the Indian male.

Horses and tools were made available, but no assistance or instruction was provided in their use to till what good soil was there. Therefore, the program was a failure which again disillusioned the Indian.⁴⁴

⁴²Baird, op. cit., p. 9.

⁴³Leupp, op. cit., p. 26.

⁴⁴Tiedlie, op. cit., p. 13.

On June 2, 1924, as a result of their efforts during World War I, the Indians were given their citizens rights by the Congress and the State.⁴⁵ In 1934 the Indian Reorganization Act was passed, and in 1953 the ban to sell liquor to the Indians was repealed.⁴⁶

In 1934, Governor Comstock made an agreement with the Bureau of Indian Affairs on behalf of Michigan. The agreement stated that the State would look after the affairs of the Michigan Indians and that the Indian Boarding School in Mt. Pleasant would be closed, but education would be provided.⁴⁷ Later the Indian agent for the State was removed by the Bureau of Indian Affairs (1940's). The Indian agent was not replaced until a request was made by the Governor's Commission on Indian Affairs in 1965. The BIA agent's office is now located in Gladstone, Michigan, where BIA personnel are available to assist the State's Indian population.

⁴⁵U. S. Department of Interior, Bureau of Indian Affairs, Answers to Questions About American Indians (Washington, D.C.: Government Printing Office, 1965), p. 4.

⁴⁶Ibid., p. 5.

⁴⁷Meyers, op. cit.

The Contemporary Reservation
Indian in Michigan

Living Conditions

In the 1960 census, it was recorded that there were 9,701 Indians residing in Michigan.⁴⁸ Of this number, it has been estimated that 1,119 Indians reside on the four reservations.⁴⁹ It has been estimated that there are approximately 3,000 near Detroit, and 4,000 in other communities scattered throughout the State.⁵⁰ However, the Governor's Commission on Indian Affairs thoroughly disagrees with the census totals. They suggest that there is a gross inaccuracy due "to a reluctance of many residents with racially mixed backgrounds to accept the Indian designation."⁵¹

It should be noted here, that the Indian in Michigan and throughout the country in general, is no longer a vanishing American. By comparing the figures cited above with those previously noted for the 1860's, the increase in the State's Indian population can be readily seen.

⁴⁸Stan Stiener, The New Indians (New York: Dell, 1968), p. 324.

⁴⁹William A. Brophy and Sophie D. Aberle, The Indian--America's Unfinished Business (Norman, Okla.: University of Oklahoma Press, 1966), p. 216.

⁵⁰Meyers, op. cit.

⁵¹Governor's Commission on Indian Affairs, "Findings and Recommendations," June 3, 1964, p. 1. (Mimeographed.)

More striking is an example of an increase of the number of Navajo children, as listed in Table 2.1 which follows:

TABLE 2.1.--Navajo school children.

Year	Children in School
1939	5,308
1951	13,883
1961	20,650

Source: Stan Stiener, The New Indians (New York: Dell 1968), p. 31.

The present problems facing the Michigan Indian which are of greatest consequence, have been described as a lack of education, inadequate housing, unemployment or underemployment, and discrimination.⁵² More explicitly, the Michigan Indian's plight has been described in the statement, "A large majority of these people do not have indoor plumbing and very few have water. The saddest situation of all is the Indian children who do not have adequate food, clothes, and shoes."⁵³

Housing and living conditions for Indians throughout the country have been described as generally poor. Most

⁵²Stiener, op. cit., p. 3.

⁵³Letter from Michigan Senator Charles N. Youngblood, Jr., State of Michigan Library, Lansing, Michigan, April, 1966. (Mimeographed.)

Indian housing consists of a one or two room shack, with no water on the premises, and what water is available is contaminated. Over 90 per cent of the Indian homes have inadequate sewage disposal systems.⁵⁴

Michigan reservation Indians often occupy inadequate homes which also do not have potable water supplies and the areas are not electrified. This point can be emphasized by the fact that the Hannahville reservation had no electric utility serving it until 1966, and as of 1970 only some of the residents can avail themselves of electrical service. Without this important utility, refrigeration is almost non-existent, as are familiar communication devices such as radio and television.

In a survey of the Bay Mills reservation, it was noted that 80 per cent of the homes had no inside water supply, 25 per cent of the homes had no electrical services, and 65 per cent of the homes needed major repairs.⁵⁵

Employment for the Indian is a problem on the national and state level. Unemployment rates of 30 per cent to 50 per cent are not uncommon on many of the reservations throughout the country.⁵⁶ The last hired, first

⁵⁴ Brophy and Aberle, op. cit., p. 168.

⁵⁵ Sam Taylor, The Redman's Appalachia, Michigan Commission on Indian Affairs, 1967, p. 13. (Mimeographed.)

⁵⁶ Brophy and Aberle, op. cit., p. 68.

fired doctrine has been used around some reservations, but more serious was the "not hired at all" doctrine.⁵⁷ Many job opportunities available in reservation areas are not open to Indians because they lack the vocational skills necessary for the duties required. Other job opportunities are closed strictly due to blatant and open discrimination.

It is interesting to note that the Federal Government has been spending annually through various programs an amount equal to between \$650 to \$900 per Indian. If this were in the form of direct support, it could provide an income of almost \$4,685 for an Indian family of five. This would be a considerable improvement over an estimated national Indian income of only \$1,600 per year.⁵⁸ As another illustration, one can note that the U. S. Department of Health, Education, and Welfare last year allocated approximately \$10,000,000 for non-Indians to study Indians.⁵⁹

The Bureau of Indian Affairs, bogged down hopelessly in governmental red tape, has become a hate symbol for the Indian as a result of its paternalistic attitude.⁶⁰ There

⁵⁷Stiener, op. cit., p. 24.

⁵⁸Ibid., p. 259.

⁵⁹Vine Deloria, Jr., "This Country Was a Lot Better Off When the Indians were Running It," New York Times Magazine, March 8, 1970, p. 56.

⁶⁰Brophy and Aberle, op. cit., p. 121.

has been little done by the agency over the years to either promote economic opportunities for Indians on their reservations, or to provide adequate training to assist the Indian in learning the skills necessary to acquire a job in his vocational interest area.

The situation in Michigan is quite indicative of the problems described above. Indian unemployment or under-employment has been estimated to run as high as 90 per cent of the employable reservation Indians.⁶¹

This high statistic, however, is somewhat reflective of the economic characteristics of the geographical area in which three of the reservations are located, namely the Upper Peninsula of Michigan. In a recent study,⁶² the following facts were presented:

1. There has been a 5,000 person population loss in the Upper Peninsula from 1960 to 1970.
2. There has been a 3.8 per cent employment gain in the Upper Peninsula from 1960 to 1968.
3. The unemployment rate for the area was 10.3 per cent in 1960 and was 8 per cent in 1968. Eight per cent was more than double the national

⁶¹Jean Worth, Marquette Daily Mining Journal, Marquette, Michigan, January 31, 1970.

⁶²Michigan Employment Security Commission, The Upper Peninsula . . . Perspectives, Problems and Prospects, Lansing, Michigan, August, 1969.

average of 3.6 per cent and almost double the Michigan average of 4.4 per cent for that year.

The evidence presented does in no way explain Indian unemployment being much higher than non-Indian unemployment, but does note that the economic conditions of the area, in general, are not good.

The author previously noted that the national average family income for Indians is approximately \$1,600. In Michigan it has been estimated to be between \$1,000 and \$1,499.⁶³ In an effort to relate this to the areas surrounding the reservations, the following tables have been developed (see page 36).

As can be seen, the family income of the Michigan Reservation Indian is in no way reflective of either the State averages, or the averages of the areas adjacent to the reservation. As a final point on the income of the Michigan Reservation Indian, a recent investigation noted that two brothers residing on the Keweenaw Bay reservation had a combined income of only \$45.00 per month.⁶⁴

The situation of the Michigan Indian who has left for the city does appear to vary from reservation life. Many Indians have relocated in Detroit with some finding the situation no better than on the reservation due to

⁶³Taylor, op. cit., p. 12.

⁶⁴Julie Morris and Edward Shanahan, Detroit Free Press, April 27, 1970.

TABLE 2.2.--Buying power per household in Michigan counties containing Indian reservations.

Reservation	County Location	Population	Households	Buying Income/ Household
Keweenaw Bay	Baraga	7,700	2,300	\$ 6,233
Bay Mills	Chippewa	35,300	10,100	\$ 7,535
	(Sault Ste. Marie)	20,400	6,600	\$ 7,720
Hannahville	Delta	33,200	9,800	\$ 7,245
	(Escanaba)	15,800	4,900	\$ 7,620
	Menominee	22,900	6,700	\$ 6,710
Isabella	Isabella	37,700	9,600	\$10,123
	(Mt. Pleasant)	17,300	4,000	\$12,945
Averages by County		27,360	7,700	\$ 7,569
State of Michigan Average				\$ 8,685
Michigan Reservation Indian Average per family				\$ 1,500

Source: Sales Management Magazine, Section D, County-City Data by States, estimated, New York, June 10, 1969.

TABLE 2.3.--Total personal and per capita income in Michigan counties containing Indian reservations.

Reservation	County Location	Per Capita Income
Keweenaw Bay	Baraga	\$2,062
Bay Mills	Chippewa	\$2,900
Hannahville	Delta	\$2,480
	Menominee	\$2,391
Isabella	Isabella	\$2,394
State of Michigan Average		\$3,365
Michigan Reservation Indian Average <u>per family</u>		\$1,500

Source: Michigan Department of Commerce, Research Division, Unnumbered Bulletin, Lansing, Michigan, September, 1969.

unemployment. Others have found jobs and are living more comfortably.⁶⁵

There are some efforts being expended in Michigan to improve the economic position of its Indian population. These include a greater interest by private industry, as well as an expanded program being developed by the Michigan Civil Service Commission.⁶⁶

The health of the Indian is also a factor which has been of constant concern to the Indian population. As noted earlier in this chapter, Caucasian diseases for which the Indian has little immunity were large factors in the decline of the Indian population. This lack of immunity is still a factor, although a lack of contemporary precautionary methods must also be considered.

Table 2.4 develops a comparison between the national Indian population and the general population of the United States.

It has also been noted that the Indian death rate is eight times the national average for intestinal infections, five times greater for tuberculosis, three times greater for accidents, homicide, influenza and pneumonia.⁶⁷ The

⁶⁵Ibid., April 28, 1970.

⁶⁶ Interview with Russell Hendrick, Michigan Department of Social Services, Lansing, Michigan, June, 1970.

⁶⁷ Brophy and Aberle, op. cit., p. 163.

TABLE 2.4.--Indian and U. S. national average health comparisons.

Health Statistic	Indians (1959)	United States Average (1959)
Birth rate/1000	41.4	24.1
Child mortality rate/1000	53.7	27.1
Child mortality rate (1-4 yrs.)	4.9%	1.0%
Child mortality rate (0-6 yrs.)	21.2%	6.8%
Average age at death	41.8 yrs.	62.3 yrs.

Source: William A. Brophy and Sophie D. Aberle, The Indian--America's Unfinished Business (Norman, Okla.: University of Oklahoma Press, 1966), p. 162.

Indian death rate for old age diseases is only .5 that of the national average, which may be related to the fact that with the average age at death being 41.8 years, there are not many left to contract the diseases associated with old age.

The incidence of illnesses of all types appears to be considerably higher among Indians than for the general population. One investigation recorded that the incidence of gonorrhea was 500 per cent higher, strep throat 1,000 per cent higher, meningitis 2,000 per cent higher, and dysentery 10,000 per cent higher.⁶⁸

⁶⁸Stiener, op. cit., p. 196.

The Michigan Reservation Indian appears to be representative of many of the characteristics described above. The average age at death has been estimated⁶⁹ to be 42, and the infant mortality rate to be twice that of the Michigan average.

In a comprehensive health study recently undertaken by the Michigan Commission on Indian Affairs, fifteen medical tests including blood pressure, blood condition, heart condition, urinalysis, X-rays, and weight were given. Of the 308 Indians screened, 196 were found to have abnormalities with 51 per cent having one or more.⁷⁰

A review⁷¹ of the 1967 and 1968 health statistics for reported illnesses in the counties in which the reservations lie was made. However due to the high probability of poor reporting from the Indian reservations, and the lack of breakdown by smaller political subdivisions and illnesses, its relevance to this discussion is subject to question.

There are many reasons suggested for the higher rates of illnesses on Michigan Reservations. These include poor water, improper diets, poor sanitation practices, poor

⁶⁹Taylor, op. cit., p. 20.

⁷⁰Michigan Commission on Indian Affairs, "Report for U. S. Senator Robert Griffin," Lansing, Michigan, 1970, p. 6. (Mimeographed.)

⁷¹Michigan Department of Health, Center for Statistics, "Reports for 1967, 1968," Lansing, Michigan. (Mimeographed.)

housing and less accessibility to medical services.⁷²

However, Tiedlie notes in his study of the Hannahville Reservation that "although they live in poverty, they did not live in filth."⁷³

Educational Opportunities

The history of Indian education has been a story of considerable effort with little accomplishment. The American Indian has been subjected to sub-standard educational opportunities ever since the Caucasian decided that the savages should assimilate his values, norms, and societal mores.

In the early years, the only education available to the Indians was that provided by the various missionary groups throughout the country. The skills taught were few, and a great emphasis was placed on converting the Indians to Christianity. Josephy comments on this point by stating "although Christianity may have saved many Indian lives, it helped to destroy the Indian institutions and cultures, which left them disorganized and weak in the midst of whites who had already overrun their lands."⁷⁴

Following the efforts of the missionaries, the Federal Government began playing an ever-increasing role

⁷²Taylor, op. cit., p. 5.

⁷³Tiedlie, op. cit., p. 15.

⁷⁴Josephy, op. cit., p. 281.

in educating the Indian population of our country. Under the direction of the Bureau of Indian Affairs, two basic programs developed. One approach was to build schools for the Indians on their reservations, while the other approach was to assist the Indian youngsters in enrolling in nearby public schools. Neither program has met with much success, documented by recent statistics which indicate that only about one-fifth of the nation's adult Indians have completed high school.⁷⁵

For some years, the BIA schools serving the various reservations have been under attack. Recently their effectiveness and approach has been the subject of many heated debates in Congress and its various committees, but little change is apparent.

The philosophy of the Bureau of Indian Affairs and the schools it operates has been one of transforming the Indian into a person who is more acceptable within the national Caucasian society. In a very blunt fashion, some anthropologists have openly accused the BIA schools of trying to turn the Indians in their care into White-Anglo-Saxon-Protestants (WASPS).⁷⁶

Another writer depicts the situation as one where the Indian children are snatched from their homes and

⁷⁵Washington Monitor (Washington, D.C.: National School Public Relations Assoc., November 24, 1969).

⁷⁶Levine and Lurie, op. cit., p. 10.

shipped to boarding schools where anything Indian is prohibited. Upon completion of their education they are free to go into a white world that does not want them, or return to their reservations as strangers.⁷⁷ Many of the schools are described as compounds resembling penal institutions, which place more emphasis on absenteeism and discipline than curriculum.⁷⁸

The Indians who have been going to the various public schools have not fared much better. Discrimination has been a large problem, evidenced by an observation that as late as 1964 an Indian was not allowed to go to a white school in Louisiana.⁷⁹

The general result has been reflected in the poor achievement of the Indian student. The majority are over age for their grade, have up to a two year lag in their reading abilities, and are prone to drop out of school.⁸⁰ Erikson, in a study of Indians in North Dakota, concluded that the problem was not innate ability. The results of his investigation showed that the average measured intelligence of the Indian was in fact superior to that of the

⁷⁷Peter Farb, "The American Indian--A Portrait in Limbo," Saturday Review, October 12, 1968, p. 29.

⁷⁸Washington Monitor, op. cit.

⁷⁹Levine and Lurie, op. cit., p. 146.

⁸⁰Brophy and Aberle, op. cit., pp. 138-140.

average Caucasian.⁸¹ More recent studies in the Southwest support the basic conclusions made by Erikson.

The basic problem appears to be related to the learning experiences being provided for the Indian students. In some areas of the country language differences exist in that the Indians speak their native dialect at home but only English is used in the schools. Cultural differences are perhaps existent in almost all of the schools serving Indian students.⁸²

The curriculum and methodology, patterned after the norms appropriate for middle class white schools, have done little to compensate for the differences outlined above. This is made obvious by the teacher who requested her Indian students to develop a theme on "Why we are all happy the Pilgrims landed."⁸³

Little has been done to include and emphasize the culture and heritage of the Indian.⁸⁴ A study completed by Vogel⁸⁵ indicated that the Indian typically has been

⁸¹Erik H. Erikson, Childhood and Society (New York: W. W. Norton Co., 1963), p. 161.

⁸²Estelle Fuchs, "American Indians at School--Time to Redeem an Old Promise," Saturday Review, January 24, 1970, p. 57.

⁸³"The Angry American Indian: Starting Down the Protest Trail," Time, February 9, 1970, p. 17.

⁸⁴Brophy and Aberle, op. cit., p. 145.

⁸⁵Virgil J. Vogel, The Indian in American History (Chicago: Integrated Educational Associates, 1968).

obliterated from the textbooks, or presented in a manner that is defaming to his character. Little attention is paid to the fact that twenty-seven of our fifty states bear names of Indian origin, as well as four of the Great Lakes and countless animals, flowers, rivers, and mountains.

In Wax's classic study of BIA schools in the Dakotas, he concluded that the personnel staffing the institutions could be much more effective if they had specialized training to assist them in becoming more responsive to the particular needs of the Indian students.⁸⁶ This important area of teacher sensitivity to the problems of the student was also discussed in Coleman's Equality of Educational Opportunity report.

One solution to the problem might be to employ more Indian teachers in the schools serving Indian students. Presently it has been noted that only 16 per cent of the teachers in BIA schools are Indian.⁸⁸

Another solution, which has been stressed as perhaps the most important, is to make provisions for the Indian community to develop decision making roles in the policy

⁸⁶Murray L. Wax, Rosalie H. Wax, and Robert V. Dumont, Jr., Formal Education in an American Indian Community: Cooperative Research Project No. 1361 (Atlanta: Emory University Press, 1964), pp. 67-72.

⁸⁷Coleman, op. cit., p. 317.

⁸⁸Fuchs, op. cit., p. 57.

making and operation of their schools. For years, the Caucasian's have dictated the policy of the schools. However, there is little doubt that there are capable Indian leaders and they do want to handle the affairs that are shaping their destinies.⁸⁹ Also this approach could have a tremendous positive effect on the attitudes of the Indian students towards school, for again as Coleman observes, the school can have little effect upon the student that is independent of his background.⁹⁰

In Michigan, the situation is somewhat brighter than that for the nation as a whole. However, the educational opportunities and attainment for the Indian population is far from being comparable to that of the Caucasian population.

There are currently over two million school children attending the public and non-public schools within Michigan. Of this number, approximately 0.3 per cent are identified as being Indian, as shown in Table 2.5.

Of the over 100,000 teachers in the public and non-public schools of the state, Table 2.6 shows the per cent and number of Indian teachers which have been identified.

⁸⁹Stiener, op. cit., p. 263.

⁹⁰Coleman, op. cit., p. 325.

TABLE 2.5.--Indian students in Michigan schools.

Type of School	% Indian	Number of Indians
All Schools	.3	6,473
Public Schools	.2	4,499
Private and Parochial Schools	.7	1,974

Source: Michigan Department of Education, "Preliminary Analysis of the 1968-69 School Racial Census," Unnumbered Bulletin, Lansing, Michigan, 1969.

TABLE 2.6.--Indian teachers in Michigan schools.

Type of School	% Indian	Number of Indians
All Schools	.2	207
Public Schools	.1	139
Private and Parochial Schools	.5	68

Source: See Table 2.5.

The Indian students attending public schools within Michigan are scattered in various geographical locations. The major concentrations of Indian students are identified in Table 2.7.

Of the school districts identified in Table 2.7, five are of particular interest in this study, since they serve the four Indian Reservations of Michigan. The districts

included in this study are shown with selected characteristics in Table 2.8.

TABLE 2.7.--Concentrations of Indian students in Michigan public schools.

School District	Number of Indian Students	Tribe
Sault Ste. Marie	274	Chippewa
Detroit	218	Mixed
Grand Rapids	131	Ottawa
Mount Pleasant	123	Chippewa-Ottawa
Brimley	109	Chippewa
L'Anse	107	Chippewa
Bark River-Harris	59	Potawatomi
Baraga	49	Chippewa

Source: Michigan Department of Education, Unpublished report for the National Study of American Indian Education, 1969.

With the exception of the Mt. Pleasant District which has a small city-small university orientation, the districts have a rural setting. Using the data presented in Table 2.8, the following comparisons can be developed:

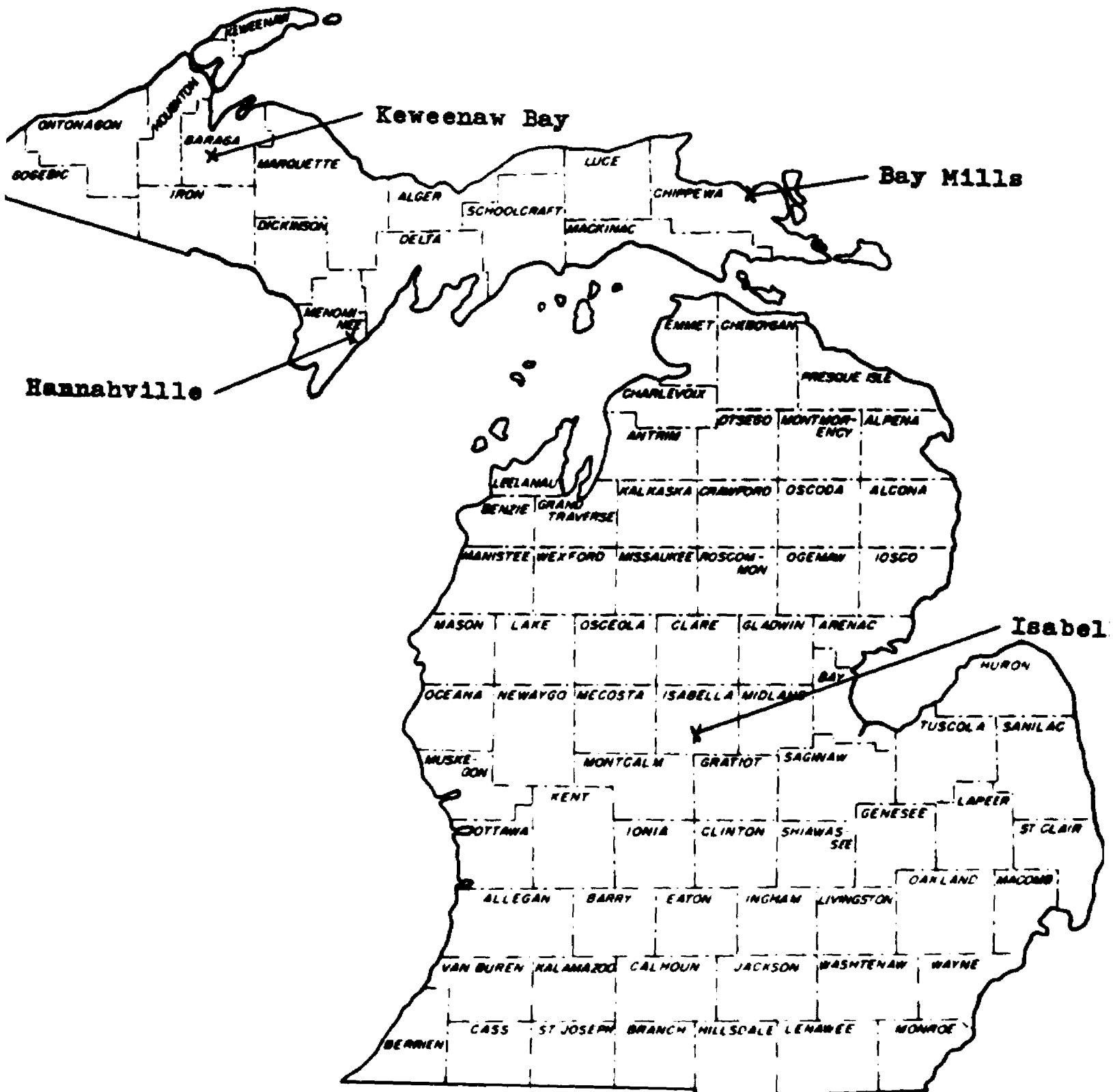
1. None of the districts have local resources equal to the State of Michigan average as they all fall below the State Equalized Valuation per Child.

TABLE 2.8.--Pertinent characteristics of the five public school districts serving Michigan Indian reservations.

School District	State Equalized Valuation/Child	Pupils	Area in Square Miles	Average Teachers Salaries	No. of Certified Personnel	Number of Personnel on Sub-standard Certificates	Total Instructional Expense Per Child
Mt. Pleasant	\$12,058	4,514	132	\$2,399	223	14 - 6.3%	\$535.27
Baraga	\$ 8,127	707	186	\$8,213	38	9 - 23.7%	\$425.07
L'Anse	\$ 8,488	1,146	447	\$8,488	54	3 - 5.6%	\$423.26
Brimley	\$8,877	533	270	\$7,764	25	0 - 0	\$375.63
Bark River-Harris	\$ 5,673	723	189	\$9,139	31	1 - 3.2%	\$412.03
Appropriate State Averages	\$15,198			\$9,145.20			\$657.01

Source: Michigan Department of Education, Bulletin 1012, Lansing, Michigan, December, 1969; Michigan Department of Education, Unpublished Statistics of Michigan Teacher Certification, 1969-70, Lansing, Michigan.

TABLE 8 (continued)
MICHIGAN INDIAN RESERVATION LOCATIONS



2. With the exception of Mt. Pleasant, the remaining four high schools do not graduate classes of over one hundred students. Conant argues that a high school of this size usually does not provide a reasonable curriculum to meet the educational needs of many of its students.⁹¹

3. With the exception of Brimley, teachers' salaries compare favorably with the State average. If there is a relationship between pay security and teaching, this should be a positive factor.

4. With the exception of Baraga, the percentage of teachers without a degree and/or holding a sub-standard Michigan Teaching Certificate does not appear to be unfavorable.

5. None of the districts are expending funds for Total Instructional Expense that are equal to the State of Michigan Average.

In summarizing the information presented in Table 2.8, it appears that with only a few variances, the districts appear to have favorable relationships to the state averages with the exception of local resources and instructional expenditures.

Table 2.9 depicts the physical facilities presently being utilized by the five districts studied, and identifies the schools being attended by the Reservation Indian

⁹¹James B. Conant, The American High School Today (New York: McGraw-Hill, 1959), p. 37.

TABLE 2.9.--Physical facilities and Indian enrollment by building.

School Buildings	Grades Housed	No. of Class-rooms	Special Purpose Rooms	Year Built (Plus Additions)	Planned Capacity	Present Enrollment	Number of Indian Students Enrolled
Baraga							49
Latrendresse El.	K-6	14	1 Kdgn. 1 Music 1 Library 1 Mltip.	1967	450	416	21
Baraga H.S.	7-12	9	1 Bus. Ed. 1 Home Ec. 1 Ind. Arts 1 Music 1 Library 1 Gym 1 Cafeteria	1905 1932	400	391	28
Bark River-Harris							59
Bark River-Harris	K-8	17	1 Kdgn. 1 Spec. Ed. 1 Gym 1 Library 1 Cafeteria	1958	500	530	44
Bark River-Harris High School	9-12	4	1 Bus. Ed. 1 Home Ec. 1 Ind. Arts 1 Science 1 Library 1 Cafeteria	1893	160	170	15
Brimley							109
Brimley School	K-6	14	1 Kdgn. 2 Bus. Ed. 1 Home Ed. 1 Ind. Arts 1 Music 1 Science 1 Gym 1 Library	1955 1962	500	480	109

TABLE 2.9.--Continued.

School Buildings	Grades Housed	No. of Class-rooms	Special Purpose Rooms	Year Built (Plus Additions)	Planned Capacity	Present Enrollment	Number of Indian Students Enrolled
L'Anse							107
Laird El.	K-8	9	0	1924	175	92	1
				1941			
Sullivan El.	K-6	13	2 Kdgn. 1 Spec. Ed. 1 Library 1 Cafeteria	1949 1965	480	451	43
L'Anse H.S.	7-12	15	2 Art 3 Bus. Ed. 2 Home Ec. 3 Ind. Arts 1 Lang. Lab. 2 Music 3 Science 2 Library 1 Gym	1927	700	595	63
Mt. Pleasant							123
Ganiard El.	K-6	11	1 Kdgn. 1 Library 1 Mltip.	1935 1938 1948 1954	325	342	9
Kinney El.	K-6	11	1 Kdgn. 1 Library 1 Mltip.	1932 1954	325	327	42
Panther El.	K-6	10	1 Kdgn. 1 Library 1 Mltip.	1936 1954	300	309	0
McGuire El.	K-6	12	1 Kdgn. 1 Library 1 Mltip. 4 Spec. Ed. 1 Art	1961 1966	390	325	8

TABLE 2.9.--Continued.

School Buildings	Grades Housed	No. of Class-rooms	Special Purpose Rooms	Year Built (Plus Additions)	Planned Capacity	Present Enrollment	Number of Indian Students Enrolled
Pullen El.	K-6	11	1 Kdgn. 1 Library 1 Mltip. 1 Cafeteria	1951 1954 1966	325	390	5
Rosebush El.	K-6	10	1 Kdgn. 1 Library 1 Mltip.	1949 1960	300	287	14
Vowles El.	K-6	13	1 Kdgn. 1 Library 1 Mltip. 1 Art	1961 1966	375	419	0
West Inter.	7-8	14	2 Art 1 Home Ec. 1 Lang. Lab 1 Ind. Arts 3 Music 5 Science 2 Spec. Ed. 1 Library 2 Gym 1 Cafeteria	1966	800	775	30
Mt. Pleasant H.S.	9-12	9	1 Art 3 Bus. Ed. 2 Home Ec. 4 Ind. Arts 1 Lang. Lab. 2 Music 4 Science 1 Library 1 Audio-Vis. 2 Gym 1 Cafeteria	1955	900	1,363	15

Source: Michigan Department of Education, Unpublished Statistics from the School Facilities Inventory, Lansing, Michigan, 1969; Michigan Department of Education, Unpublished Statistics from the Racial Inventory by District and School, Lansing, Michigan, 1970.

students. In analyzing the data presented in Table 2.9, the following generalizations are presented:

1. The elementary facilities of the five districts appear to be fairly adequate in that there are library and multipurpose areas available, and in general they are of fairly recent construction.

2. With the exception of Mt. Pleasant, the secondary facilities being utilized in the districts under study are quite inadequate and are of fairly old construction. Areas considered important for a comprehensive program by Conant,⁹² such as language labs, science labs, and areas for vocational instruction, appear to be quite limited.

3. Facilities for true exploratory educational programs in the middle grades appear to be non-existent in the four small school districts of the Upper Peninsula.

4. Racial balance does not appear to be a large factor in any of the five school districts, as it appears that the Indian population is not isolated in a particular building of the district. However, it may be appropriate at this point to call attention to the fact that there are no Indian teachers employed by the five school districts, nor do any Indians serve on their Boards of Education.

5. In general, the planned capacity and actual capacity of the facilities being utilized are not indicative of serious overcrowded classroom conditions.

⁹²Ibid., p. 52.

In summarizing the information presented in Table 2.9, it appears that with the exception of Mt. Pleasant, the secondary facilities of the school districts serving the Michigan Reservation Indians are old and inadequate. Racial isolation does not appear to be a problem within the district, and with an occasional exception, facility overcrowding is not evident.

Guidance services provided by the school districts vary in full-time equated counselor-pupil ratios from approximately 1 to 175, to 1 to 300.⁹³ These fall into a range termed acceptable by Conant.⁹⁴ However attention should be called to the fact that only one school district, Mt. Pleasant, has more than one full-time counselor, and that the remaining four districts utilize personnel with additional teaching assignments. Also, the availability of ancillary services considered important to the operation of a good guidance program are not available in the four districts without full-time guidance personnel.

Of the five school districts involved in this study, only two, L'Anse and Mt. Pleasant, have accreditation standings. A review of their secondary curriculums shows that they offer more than one foreign language for at least two years, four years of English, and four years of

⁹³School District Records, individual records reviewed which are available in the five school districts in the study, 1970.

⁹⁴Conant, op. cit., p. 44.

mathematics and science. Mt. Pleasant offers strong programs in the vocational fields including business education and industrial arts. The L'Anse High School is somewhat weaker in its course offerings in these areas.

In reviewing the secondary curricula of the Baraga, Bark River-Harris, and Brimley school districts it is noted that the basic academic course offerings are present. This includes at least four course offerings in English, science, mathematics, and the social sciences. However it is typical to observe that the psychology teacher also teaches chemistry, and that the history teacher also serves as the school librarian. None of the three school districts offers any foreign language program.

In the vocational sciences, these programs, too, are limited. A maximum of four courses in industrial arts are available each year, three courses in homemaking, and six courses in business education.

In summary, the students attending the accredited schools can avail themselves of a broader selection of course offerings in an effort to develop an educational program more tailored to their interests and abilities. The students in the non-accredited high schools apparently are faced with a very limited selection of academic courses, and a severely limited selection of vocationally oriented class offerings.

During the 1969-70 academic year, all Michigan School Districts participated in the Michigan Assessment Program. This consisted of testing all students in grades four and seven and obtaining scores on vocabulary and basic skills achievement. Factors considered in analyzing the data included:⁹⁵

1. Socio-economic status
2. Student attitudes and aspirations
3. School district financial resources
4. School district staff resources

Although the data are far from being thoroughly analyzed and reviewed, a preliminary report⁹⁶ shows that the education profiles for the regions (three and four) in which the Michigan Indian Reservations are located are above the mean scores for the State as a whole. The report also notes that in general, with the exception of composite achievement, the rural districts did not do as well as the rest of the schools within these regions.

The Michigan Assessment Program information could be of significance to future studies of the schools serving Michigan Indian students when its analysis is complete.

Attendance statistics for Indians and non-Indians were not available from the school districts. In reviewing

⁹⁵Michigan Department of Education, Assessment Report, No. 4, Lansing, Michigan, 1970, p. 1.

⁹⁶Ibid., pp. 14-17.

this area of concern the responses of school officials ranged from a significant absenteeism problem among Indian students, to being observed as not too dissimilar from that of the non-Indians. In a review of this question on the Bay Mills Reservation, it was noted that the Indian students accounted for more than 75 per cent of the secondary school absences although they only consisted of 16 per cent of the school's population.⁹⁷ Reasons cited in the study for the poor attendance included parental apathy and a lack of good clothing.

The drop-out patterns for the five school districts serving the Michigan Reservation Indians are presented in Table 2.10.

In general, the dropout rate for the five school districts serving Michigan reservations is well below the State of Michigan average, and in several instances the individual district dropout rate is below the county average dropout rate. However these figures are somewhat deceiving and present a skewed picture when related to the Indian population of the districts. For instance, the L'Anse dropout rate is indicated to be 2.81 per cent. However a Guidance Department survey shows that of the 277 Indian students enrolled in the L'Anse High School from 1961 to 1970, only 14 dropped out, for a calculated dropout

⁹⁷Taylor, op. cit., p. 10.

TABLE 2.10.--Dropout patterns of school districts and counties containing Michigan Indian reservations.

County	School District	District Membership	Number of Drop- outs	Dropout Rate in Per cent
		Over 16		
Baraga	Baraga	195	9	4.61
	L'Anse	426	12	2.81
	(County)	621	21	3.38
Chippewa	Brimley	159	7	4.40
	(County)	2,200	103	4.68
Delta	Bark River-Harris	159	4	2.51
	(County)	2,590	97	3.74
Menominee	(County)	755	17	2.25
Isabella	Mt. Pleasant	1,520	55	3.61
	(County)	2,177	89	4.08
1967-68 Average Dropout Rate for the State of Michigan				6.73

Source: Michigan Department of Education, Public High School Dropouts in Michigan for 1967-68, Statistical Bulletin No. 4007, Lansing, Michigan, December, 1969.

rate of less than 6% for Indians. However during this same period only 32 Indian students graduated, or approximately 15 per cent of those enrolling who could have graduated. The survey does not indicate what happened to the other 85 per cent.

In the Bark River-Harris High School, of nine Indian freshmen entering school in the fall of 1969, only seven completed the year. This is a dropout rate of 22 per cent for the Indian population of that class, well above the 2.5 per cent indicated for the general school district population.

In summarizing, it does appear that while the dropout rate for the districts under study is low for the general school population, it is considerably higher for the Indian segment of the school population. This trend is easily verified by a study done on the years of educational attainment for the Isabella Indian Reservation. Of the 103 adult residents questioned the mean educational attainment was only 8.53 years, with only 13.6 per cent reporting high school completion.⁹⁸

Summary

The Michigan Reservation Indian occupies one of the lowest positions of the socio-economic scale for the State. In addition he suffers from various illnesses to a greater degree than his non-Indian peers. His general environment is poorer than that of the average Michigan resident, and often times his home needs major repairs, electrification, good water, and indoor plumbing. Four of the five schools

⁹⁸Michigan Commission on Indian Affairs, Unpublished statistics developed in 1964, Lansing, Michigan.

he attends are substandard and somehow find a way to force over 80 per cent of his numbers out before graduation. Little effort is expended in involving him in the decision making processes which affect his own destiny, nor is much attention paid to his cultural heritage which has made so many contributions to today's society.

In reviewing today's situation as it exists on the Michigan Indian Reservations, the words of Leupp in 1910 could be never more true. He suggested then that the Indian problem was a human problem, and perhaps we should try to assist them in being better Indians, rather than trying to convert them into Caucasians.⁹⁹

⁹⁹Leupp, op. cit., pp. 42-53.

CHAPTER III

DESIGN OF THE STUDY

Sample Selection

Since the basic concern of this study is limited to the motivation and achievement of Michigan Reservation Indians and their non-reservation peers, the sampling procedures were quite limited. Random selection of school districts was impossible as there are only five public school districts which serve the students residing on the four Michigan Indian Reservations. They are the Baraga, Bark River-Harris, Brimley, L'Anse and Mt. Pleasant school districts.

In an effort to add to the meaning of the study, ninth grade male and female students were utilized. The ninth grade was selected, a priori, for several reasons. First, Michigan attendance laws require students to remain in school until they reach their sixteenth birthday. Most ninth graders, even if retained in previous grades are under sixteen so the study included data on potential drop-outs.

Secondly, the ninth grade was selected because students at this grade level and general age have acquired

an awareness of the world in which they live and can make capable decisions about their motivational patterns.

Finally, the school records for ninth grade students are fairly complete, which added to the reliability of the study.

There were twenty samples taken in the study. These samples were developed from the ninth grade male and female Reservation Indian students and their non-reservation Caucasian peers in the five selected school districts of Michigan. This is outlined in Table 3.1.

TABLE 3.1.--Sampling format.

School District	Reservation		Non-reservation	
	Indian Students		Caucasian Peers	
Baraga	Male	Female	Male	Female
Bark River-Harris	Male	Female	Male	Female
Brimley	Male	Female	Male	Female
L'Anse	Male	Female	Male	Female
Mt. Pleasant	Male	Female	Male	Female
Total of twenty samples	5	5	5	5

The four samples from each of the five school districts comprise the entire population of the ninth grades for each district. This procedure was utilized in an

effort to conceal the researcher's interest in possible racial differences from the students. Such a concealment procedure reduced the probability of a confounding variable due to testing from appearing in the data and is suggested as an appropriate research practice by Campbell and Stanley.¹ In an effort to remove the possible effects of the confounding variable of history, maturation and administration, the measuring instruments were administered by the same individual in each of the five school districts on subsequent days of the week.

From the total samples gathered, random selections from each cell were determined through the use of a Table of Random Numbers, for the actual analysis of the data.

Measuring Instruments

There were four types of data gathered for each student involved in the study:

1. Motivational Score: This score was obtained through the use of the Michigan "M" Scales developed by Dr. William Farquhar.² The "M" Scales are comprised of four subtests: The Generalized Situational Choice Inventory; The Word Rating List; The Human Traits Inventory; and

¹D. T. Campbell and J. C. Stanley, Experimental and Quasi-Experimental Design for Research (Chicago: Rand McNally & Co., 1963), p. 9.

²William W. Farquhar, U.S. Office of Education, Research Project No. 846 (8458), 1959.

The Preferred Job Characteristics Scale. The "M" Scales are based on the concepts that a student's concern for long-term involvement, unique accomplishment, and competition with a standard of excellence are indicative of high achievement, while a student's concern for short-term involvement, common accomplishment, and competition with a minimal standard of excellence are indicative of low achievement.

2. Achievement Score: This score was obtained from the school district records for each student. The verbal reasoning factor was the score utilized.

3. Intelligence Score: This score was obtained from the school district records and was taken from a test that is independent from the achievement score.

4. Grade Point Average: The grade point average was computed for each student, utilizing the grades received in the academic subjects taken in the seventh and eighth grades. Academic subjects are considered as those which require homework, i.e., history, arithmetic, English, etc.

Analysis Procedures

Attention was paid to several factors which had to be considered in developing the analysis procedures. This effort was expended to insure a testable design and to reduce the possibilities of committing either a type one or type two statistical error. First, the study involved the

entire population of the ninth grade Michigan Indian Reservation students and their non-reservation Caucasian peers. Cornfield and Tukey³ have developed a sophisticated rationale whereby the use of inferential statistics when analyzing a population is appropriate. Their argument lies in the concept of making generalizations to future populations, or in the instant case, to future ninth grade Michigan Reservation Indian students.

Secondly, the Indian population under study admittedly is small. However it does comprise the entire population of the State and is the entire population of interest. Arguments concerning the actual size were not considered to be of sufficient magnitude to impair the usefulness of the study.

Finally, in an effort to insure that the responses given on the "M" Scales were representative of the students' true feelings, individual student identification was not utilized. Recognition was given to the fact that making student by student direct comparisons between the four items gathered was not possible. It is also noted that the use of blocking designs would not be possible. This may have caused the loss of some precision in the study; however, it is felt that honest responses on the "M" Scales are more important than the other factors mentioned.

³Cornfield and Tukey, op. cit., pp. 907-949.

The data collected from the "M" Scales were scored by the Michigan State University Scoring Center. The data were then key-punched so that the Michigan State University Computer Center could compute the analyses described below:

1. Analysis of Variance: An analysis of variance was performed on the following sub-sections of the data: "M" Scales--Male; "M" Scales--Female; Achievement-Intelligence-Grade Point Average--Male; and Achievement-Intelligence-Grade Point Average--Female.

The appropriateness of the use of an analysis of variance for the data collected is described in Chapters 8 and 12 of Hays'⁴ works on inferential statistics. A random sample was taken from the data gathered. In order to facilitate the use of an analysis of variance, the data were arranged so they followed the Proportional Sub-Class Frequency Model.

2. "t" test: A simple "t" test was performed on the comparisons made between the evidence collected in this study and the mean scores previously developed for a large Michigan Caucasian sample, and a South Dakota Indian sample, in previous studies by Farquhar⁵ and Johnson.⁶ The appropriateness of the use of the "t" test for making the

⁴William L. Hays, Statistics (New York: Holt, Rinehart, and Winston, 1963).

⁵Farquhar, op. cit.

⁶Johnson, op. cit.

comparisons described, is described in Chapters 9 through 12 in Armore's⁷ works on statistical inference.

The statistical and meaningful levels of significance for both the analysis of variance and "t" test were established, a priori, at the .05 level.

Testable Hypotheses

The hypotheses which follow are offered to test the three principal areas of interest of this document. Stated in the null form, they are:

- Ho₁: There are no statistically significant differences in the mean scores of the four subtests on the M-Scales between Michigan Reservation Indian students and their non-reservation Caucasian peer group.
- Ho₂: There are no statistically significant differences in the grade point averages obtained by the Michigan Reservation Indian students and their non-reservation Caucasian peer group.
- Ho₃: There are no statistically significant differences in the achievement test scores obtained by the Michigan Reservation Indian students and their non-reservation Caucasian peer group.
- Ho₄: There are no statistically significant differences in the intelligence test scores obtained by the Michigan Reservation Indian students and their non-reservation Caucasian peer group.
- Ho₅: There are no statistically significant differences in the mean scores of the four subtests on the M-Scales between Michigan Reservation Indian students and an established sample of 12,000 Caucasian students within Michigan.

⁷Sidney J. Armore, Introduction to Statistical Analysis and Inference for Psychology and Education (New York: John Wiley and Sons, 1966).

Ho₆: There are no statistically significant differences on the mean scores of the four subtests of the M-Scales between Michigan Reservation Indian students and the Johnson sample of Plains States Reservation Indian students.

Summary

A Michigan Reservation Indian sample, and a sample from his non-reservation Caucasian peers, were drawn from the ninth grades of the five school districts serving the four Michigan Indian Reservations. "M" Scales scores, achievement scores, intelligence scores, and grade point averages were developed for each student included in the study. An analysis of variance and a "t" test at the .05 level were computed to determine if the stated hypotheses were to be accepted or rejected.

CHAPTER IV

STATISTICAL ANALYSIS

Procedure

The five selected school districts from which the data were drawn were visited and the M-Scales administered on subsequent days of the week. The order of administration was: Monday, Mt. Pleasant; Tuesday, Baraga; Wednesday, Brimely; Thursday, Bark River-Harris; Friday, L'Anse. The order was determined only by the convenience to the school district in administering the M-Scales.

In the small districts of Baraga, Bark River-Harris, and Brimley, the M-Scales were administered to the entire ninth grade class in attendance on the day the schools were visited. Supporting data were gathered from the students' records only of the students tested.

In the larger districts of L'Anse and Mt. Pleasant, the M-Scales were administered to over 75 per cent of the ninth grade students in various classes so as to provide a random sample of non-Indians. The total Indian population was included by having the Guidance Department of the particular district administer the M-Scales to those Indian students not in the classes sampled. Supporting data were

gathered from the student records only of the students tested.

In developing the data for use in the Proportional Sub-Class Frequency Model for an Analysis of Variance, the size of the cells was dictated by the smallest number of Indians and non-Indians from a school district from which data had been obtained.

For males, Baraga, Brimley, and L'Anse reported four Indian males and Brimley reported twelve non-Indian males. This resulted in the cells being determined to be four Indian and twelve non-Indian male students. In those districts which reported a greater number of males classified either as Indian or non-Indian, a random sample was taken so as to provide four Indian and twelve non-Indian students for the appropriate cells of the Proportional Sub-Class Frequency Model.

For females, Bark River-Harris reported no female Indian students and subsequently had to be eliminated from this section of the analysis. Of the remaining four schools, Baraga and L'Anse reported two female Indian students and Brimley reported fourteen female non-Indian students. This resulted in the cells being determined to be two Indian and fourteen non-Indian female students. In those districts which reported a greater number of females classified either as Indian or non-Indian, a random sample was taken so as to provide two Indian and fourteen

non-Indian students for the appropriate cells of the Proportional Sub-Class Frequency Model.

The random sampling was accomplished by assigning a number to each student in the group to be sampled. Care was taken in assigning the numbers to the student information so that no series of numbers was utilized more than once. A table of random numbers¹ was then used to determine which data were to be analyzed.

The achievement score data gathered were not comparable across school districts due to the different methods by which the scores were recorded by the five selected school districts sampled. This required that Hypothesis Three be analyzed by a two-tailed "t" test procedure.

Care was taken to review the data and their analyses to reduce the possibility of committing either a type one or type two statistical error. Close inspection of both processes led to the conclusion that the possibilities of committing either a type one or type two error were negligible.

The data to be analyzed by the Proportional Sub-Class Frequency Model of an Analysis of Variance were transferred to data processing cards and the services of the Michigan

¹See Table IV, Table of Random Numbers in David V. Huntsberger, Elements of Statistical Inference (Boston: Allyn and Bacon, 1961), pp. 260-263.

State University Computer Center were utilized. A detailed account of the results of the procedure, as well as the results of the "t" test procedures, are described in the following sections.

Hypothesis One

There are no statistically significant differences in the mean scores of the four sub-tests of the M-Scales between the Michigan Reservation Indian students and their non-reservation Caucasian peer group.

To test the hypothesis, three separate tests of the data were made. The first, Schools by Indian Interaction, showed significance for the females but not for the males (Tables 4.1 and 4.2, page 74).

The second, Differences by Schools, again showed significance for females but not for males (Tables 4.3 and 4.4, page 75).

The third test reviewed the data to determine if significant differences existed between the Indians and non-Indians for which the M-Scales data were available (Tables 4.5 and 4.6, page 76). The "F" test statistic for females is .8263 which is not significant at the .05 level. The "F" test statistic for males is .0720 which is not significant at the .05 level. This resulted in a failure to reject the null hypothesis that significant differences exist between Reservation Indians and their Caucasian peers when measured by the M-Scales.

TABLE 4.1.--M-Scales, F ratios for Schools by Indian Interaction--females.

Sub-Test	Mean Square Between	F Ratio	Significance Level at .05
GSCI	51.1451	2.5223	none
PJCS	33.4196	0.7142	none
WRL	132.0796	1.1555	none
HTI	24.4368	1.1422	none
Overall F		2.5337	significant
Step-down F		2.8366	significant

TABLE 4.2.--M-Scales, F ratios for Schools by Indian Interaction--males.

Sub-Test	Mean Square Between	F Ratio	Significance Level at .05
GSCI	15.6938	0.4215	none
PJCS	7.7771	0.4678	none
WRL	84.1354	1.1210	none
HTI	6.8917	0.3624	none
Overall F		.8600	none
Step-down F		.5625	none

TABLE 4.3.--M-Scales, F ratios for Differences by Schools--
females.

Sub-Test	Mean Square Between	F Ratio	Significance Level at .05
GSCI	68.0618	3.3566	significant
PJCS	11.6696	0.2494	none
WRL	82.8713	0.7250	none
HTI	25.8118	1.2065	none
Overall F		1.9638	significant
Step-down F		1.6470	none

TABLE 4.4.--M-Scales, F ratios for Differences by Schools--
males.

Sub-Test	Mean Square Between	F Ratio	Significance Level at .05
GSCI	36.4313	0.9786	none
PJSC	9.2646	0.5573	none
WRL	3.7229	0.0496	none
HTI	2.3792	0.1251	none
Overall F		0.5896	none
Step-down F		0.1524	none

TABLE 4.5.--M-Scales, F ratios for Indian--non-Indian comparison--females.

Sub-Test	Mean Square Between	F Ratio	Significance Level at .05
GSCI	6.7522	0.3330	none
PJCS	25.0804	0.5360	none
WRL	7.7701	0.0680	none
HTI	25.5558	1.1945	none
Overall F		0.8263	none
Step-down F		2.2581	none

TABLE 4.6.--M-Scales, F ratios for Indian--non-Indian comparison--males.

Sub-Test	Mean Square Between	F Ratio	Significance Level at .05
GSCI	44.2042	1.1873	none
PJCS	48.6000	2.9235	none
WRL	510.4167	6.8008	significant
HTI	84.0167	4.4181	significant
Overall F		2.2581	none
Step-down F		1.3278	none

Appendix A presents the pertinent data from the analyses performed, including the analysis design, cell names, correlation matrix, mean square within cells interaction, and the validity tests of the M-Scales between Indians and non-Indians.

Hypothesis Two

There are no statistically significant differences in the grade point averages obtained by Michigan Reservation Indian students and their non-reservation Caucasian peers.

This hypothesis was tested by three separate analyses of the data. The first, School by Indian Interaction, showed no significance for either males or females (Tables 4.7 and 4.8, page 78).

The second, Differences by Schools, showed significance for females, but none for males (Tables 4.9 and 4.10, page 79).

The third test reviewed the data to determine if significant differences existed between the Indians and non-Indians for which the GPA data was available (Tables 4.11 and 4.12, page 80). The "F" test statistic for females was 4.8051 which is significant at the .05 level. The "F" test statistic for males was 17.2348 which also was significant at the .05 level. Therefore null Hypothesis Two suggesting that there were no significant differences in the GPA's of Michigan Reservation Indians and their non-reservation Caucasian peers was rejected.

TABLE 4.7.--GPA, IQ, F ratios for Schools by Indian Interaction--females.

	Mean Square Between	F Ratio	Significance Level at .05
GPA	9.3156	1.4523	none
IQ	349.1927	2.3723	none
Overall F		1.2919	none
Step-down F		1.1583	none

TABLE 4.8.--GPA, IQ, F ratios for Schools by Indian Interaction--males.

	Mean Square Between	F Ratio	Significance Level at .05
GPA	2.1721	0.3879	none
IQ	563.6771	2.2242	none
Overall F		1.1969	none
Step-down F		2.0490	none

TABLE 4.9.--GPA, IQ, F ratios for Differences by Schools--
females.

	Mean Square Between	F Ratio	Significance Level at .05
GPA	1.3506	0.2106	none
IQ	521.6927	3.5442	significant
Overall F		3.0781	significant
Step-down F		6.3940	significant

TABLE 4.10.--GPA, IQ, F ratios for Differences by Schools--
males.

	Mean Square Between	F Ratio	Significance Level at .05
GPA	8.9451	1.5975	none
IQ	754.2021	2.9760	significant
Overall F		1.9168	none
Step-down F		2.2652	none

TABLE 4.11.--GPA, IQ, F ratios for Indian--non-Indian comparison--females.

	Mean Square Between	F Ratio	Significance Level at .05
GPA	30.8217	4.8051	significant
IQ	.8058	0.0055	none
Overall F		5.0187	significant
Step-down F		4.8978	significant

TABLE 4.12.--GPA, IQ, F ratios for Indian--non-Indian comparison--males.

	Mean Square Between	F Ratio	Significance Level at .05
GPA	96.5075	17.2348	significant
IQ	1733.4375	6.8400	significant
Overall F		8.9290	significant
Step-down F		0.6976	none

Appendix B presents pertinent data from the analyses performed, including the cell means, correlation matrix, and mean square within cells interaction.

Hypothesis Three

There are no statistically significant differences in the achievement test scores obtained by Michigan Reservation Indian students and their non-reservation Caucasian peer group.

This hypothesis was tested by non-directional "t" tests (two-tailed) between Indian students and non-Indian students for each school (nine separate "t" tests). Two tests for males did show significance at the .05 level. Three tests for males and all four tests for females did not prove to be significant at the .05 level (Tables 4.13 and 4.14, page 82).

As a result, null Hypothesis Three which suggested there were significant differences between Reservation Indians and their non-reservation Caucasian peers on achievement test scores failed to be rejected.

Hypothesis Four

There are no statistically significant differences in the intelligence test scores obtained by the Michigan Reservation Indian students and their non-reservation Caucasian peer group.

This hypothesis was tested by three separate analyses of the data. The first, Schools by Indian Interaction, showed no significance for either males or females (Tables

TABLE 4.13.--Achievement test scores--females.

School	Indian Mean	Indian Variance	Caucasian Mean	Caucasian Variance	"t" Value	Significance at .05
1	56.0	196.00	43.0	200.24	1.140	none
2	No Females					
3	9.3	0.64	9.7	3.00	-0.952	none
4	20.0	225.00	51.4	931.25	-1.340	none
5	13.2	0.01	14.9	2.89	-1.333	none

TABLE 4.14.--Achievement test scores--males.

School	Indian Mean	Indian Variance	Caucasian Mean	Caucasian Variance	"t" Value	Significance at .05
1	15.0	288.50	33.7	555.48	-1.365	none
2	12.3	138.96	32.5	35.87	-4.229	significant
3	7.9	0.37	7.5	2.48	1.465	none
4	47.5	493.75	54.3	288.26	-0.596	none
5	11.2	0.31	14.1	46.29	-2.500	significant

4.7 and 4.8, page 78). The second, Differences by Schools, showed significance for both males and females (Tables 4.9 and 4.10, page 79).

The third test reviewed the data to determine if significant differences existed between the Indians and non-Indians for which the IQ data were available (Tables 4.11 and 4.12, page 80). The "F" statistic for females was .8058 which was not significant at the .05 level. The "F" statistic for males was 6.8400 which was significant at the .05 level. However, in the step-down analysis when the variance common to GPA is removed, the "F" statistic was .6976 and no significance is shown at the .05 level.

Based on the analysis, Hypothesis Four which suggests that significant differences in IQ test scores exist between Reservation Indians and their non-reservation Caucasian peers fails to be rejected.

Appendix B presents the pertinent data from the analyses performed on the GPA--IQ data.

Hypothesis Five

There are no statistically significant differences in the mean scores of the four sub-tests on the M-Scales between the Michigan Reservation Indian students and an established sample of 12,000 Caucasian students within Michigan.

This hypothesis was tested by using a one-tailed "t" test at the .05 level of significance. At the .05 level, the "t" test statistic is 1.729 for males and 1.895 for

females. At this level there was no significance noted on any of the four sub-tests of the M-Scales (Tables 4.15 and 4.16, page 85).

Based on the analysis, null Hypothesis Five which suggests that significant differences exist between the means on the M-Scales between Michigan Reservation Indians and an established sample of 12,000 Caucasian students within Michigan fails to be rejected.

Hypothesis Six

There are no statistically significant differences on the mean scores of the four sub-tests of the M-Scales between Michigan Reservation Indian students and the Johnson sample of Plains States Reservation Indian students.

This hypothesis was tested by using a one-tailed "t" test at the .05 level of significance. At the .05 level, the "t" test statistic is 1.729 for males and 1.895 for females. At this level there was no significance noted on any of the four sub-tests of the M-Scales (Tables 4.17 and 4.18, page 86).

Based on the analysis, null Hypothesis Six which suggests that significant differences exist between the means on the M-Scales between Michigan Reservation Indians and Plains States Reservation Indians fails to be rejected.

Summary

An analysis of the scores of the four sub-tests of the M-Scales, grade point averages, achievement test scores

TABLE 4.15.--M-Scales--female Michigan Reservation Indians and Caucasian sample.

Sub-Test	Maximum Score	Indian Mean	Stand. Dev.	Cauc. Mean	"t" Statistic	Significance at .05
GSCI	30	20.5	26.25	20.45	0.005	none
PJCS	33	27.8	10.41	27.44	0.098	none
WRL	48	27.6	85.62	28.99	-0.046	none
HTI	26	15.1	22.37	17.51	-0.305	none

TABLE 4.16.--M-Scales--male Michigan Reservation Indians and Caucasian sample.

Sub-Test	Maximum Score	Indian Mean	Stand. Dev.	Cauc. Mean	"t" Statistic	Significance at .05
GSCI	45	27.1	23.14	30.76	-0.708	none
PJCS	20	13.2	14.71	16.20	-0.912	none
WRL	48	22.6	30.08	30.41	-1.162	none
HTI	26	15.2	25.86	18.97	-0.651	none

TABLE 4.17.--M-Scales--female Michigan Reservation Indians and Plains Reservation Indians.

Sub-Test	Maximum Score	Mich. Indian Mean	Stand. Dev.	Plains Indian Mean	"t" Statistic	Significance at .05
GSCI	45	20.5	26.26	23.21	-0.293	none
PJCS	20	27.8	10.41	28.91	-0.302	none
WRL	48	27.6	85.62	25.88	0.057	none
HTI	26	15.1	22.37	16.59	-0.189	none

TABLE 4.18.--M-Scales--male Michigan Reservation Indians and Plains Reservation Indians.

Sub-Test	Maximum Score	Mich. Indian Mean	Stand. Dev.	Plains Indian Mean	"t" Statistic	Significance at .05
GSCI	45	27.1	23.14	32.41	-1.027	none
PJCS	20	13.2	14.71	15.60	-0.729	none
WRL	48	22.6	30.08	27.51	-1.113	none
HTI	26	15.2	25.86	15.30	-0.002	none

and intelligence test scores was done using the .05 level of statistical significance.

There were no statistically significant differences found between Michigan Reservation Indian students and their non-reservation Caucasian peers on the four sub-tests of the M-Scales, achievement test scores, or intelligence test scores. There were statistically significant differences found in their grade point averages.

In a comparison between the Michigan Reservation Indian students' mean scores on the four sub-tests of the M-Scales and an established Caucasian sample no statistically significant differences were noted.

Finally, in a comparison between the Michigan Reservation Indian students' mean scores on the four sub-tests of the M-Scales and a sample of Plains States Indian Reservation students, no statistically significant differences were noted.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to gather and analyze empirical evidence on the motivation, measurable intelligence and academic achievement of the Michigan Reservation Indian students for comparison with their non-reservation peers.

There are four separate and distinct Indian Reservations located within the geographical confines of Michigan. Three are located in various parts of the Upper Peninsula and one is located in central Lower Michigan.

The educational services for the Reservation Indian students are provided by the five public school districts within whose boundries the reservations lie. A review of the school districts and their operations noted that only two of the five had accreditation standings. The remaining three had very small student enrollments, limited curricula and few supportive services.

Supportive evidence noted that the Michigan Reservation Indian occupies a very low socio-economic position within the state, is subject to poor health and usually lives in a substandard home. This did appear to have an

influence on school attendance and study habits and may be a factor in the Indian drop-out rate which approaches 80 per cent.

Data for the study were obtained by visiting each of the four reservations and the five public school districts which serve them. Motivation was measured by the utilization of the M-Scales, developed by Dr. William W. Farquhar.¹ Intelligence test scores and achievement test scores were obtained from the school records. Grade point averages were computed for each student in the study, from only those courses which were academically oriented and required homework.

Data were gathered for the entire population of ninth grade Reservation Indian students in Michigan and their non-reservation peers. Random sampling was utilized to prepare the data for an analysis of variance based on a proportional sub-class frequency design to be tested at the .05 level for significance.

The analysis showed that there were no statistically significant differences between Michigan Reservation Indian students and their non-reservation Caucasian peers on the four sub-tests of the M-Scales, intelligence test scores or achievement test scores. Statistically significant differences were found to exist in grade point averages

¹Farquhar, op. cit.

between Michigan Reservation Indian students and their non-reservation Caucasian peers with the Indian students receiving the lower grades.

Analyzing the data as they compared to Michigan Caucasian means as established by Farquhar,² a "t" test determined that there were no statistically significant differences between the Michigan Reservation Indians and the established means at the .05 level of significance.

In an analysis to review the data as they compared to a Plains State Reservation Indian study³ a "t" test determined that there were no statistically significant differences between the Michigan Reservation Indians and the established means at the .05 level of significance.

Conclusions

The analysis of the data suggests the following conclusions:

1. There are no significant differences in the motivational attitudes of Michigan Reservation Indian students and those of Michigan Caucasians.
2. There are no significant differences in the intelligence test scores and achievement test scores of Michigan Reservation Indian students and their non-reservation Caucasian peers.

²Ibid.

³Johnson, op. cit.

3. There are significant differences in the grade point averages of the Michigan Reservation Indian students and their non-reservation Caucasian peers, with the Indian students receiving the lower grades.
4. The significant differences in the lower grade point averages for the Indian students are not directly attributable to a lack of motivation or innate ability.

Discussion

The conclusions of this study appear to be of merit and are supportable by the works of other researchers in the area of Indian education.

Conclusion one suggests that there are few motivational differences which exist between Michigan Reservation Indians and their non-reservation Caucasian peers. The M-Scales' validity was analyzed by a separate "t" test, and it was found to contain no significant differences between the Indian respondents and the non-Indian respondents.

Also, Johnson⁴ noted in a study of Plains States Reservation Indians that they performed significantly better on the GSCI sub-test of the M-Scales when compared to a pre-established Caucasian sample. Johnson concluded that

⁴Ibid.

this may be an indicator of a higher motivational factor for Indian students than previously was believed to exist.

Conclusion two suggests that few differences exist in the intelligence test scores and achievement test scores when a comparison is made between Michigan Reservation Indian students and their non-Indian peers. Although this conclusion is interesting when the real or imagined cultural biases in the measuring devices are considered, it is supported by the work of Erikson⁵ in the Dakotas. Another contributing factor may be the fact that English is the predominant language spoken in the homes of the Michigan Reservation Indians.

In Miller's⁶ study of Indian students, it was noted that the Indian student did not achieve as well as his Caucasian peers. However, it was found that the Indian students did have more scholastic success in an integrated school setting. This finding supports the arguments presented in Coleman's study on Equality of Education Opportunity.⁷

These sources support conclusion three, that the Michigan Reservation Indian students do earn grade point averages which are consistently lower than their Caucasian peers.

⁵Erikson, op. cit., p. 161.

⁶Miller, op. cit.

⁷Coleman, op. cit., p. 307.

Conclusion four is perhaps the most interesting of the conclusions and can be the subject of many inferences. The data and analyses of this study do not indicate appreciable differences in ability and motivation between Michigan Reservation Indian students and their non-reservation Caucasian peers. However very noticeable differences in grade point averages were found to exist, as well as the supporting evidence indicating an Indian drop-out rate of almost 80 per cent.

In reviewing the supportive data, several sources were found through which these differences could be explained.

One source was the poor attendance habits that appeared to exist in relation to the Michigan Reservation Indian students. Taylor⁸ noted that although the Indian students made up 16 per cent of one of the secondary school's population, they accounted for over 75 per cent of the absences. Reasons cited included parental apathy and a lack of good clothing.

Another source is the educational programs being offered. As has been noted, in four of the school reviewed in this study, the comprehensiveness of their programs has been seriously questioned. In the larger district more courses are available, but the students are a very

⁸Taylor. op. cit., p. 10.

small minority and could almost be classified as racial isolates.

The lack of supportive services is another large factor in the poorer success of the Indian students. School district efforts to provide guidance services oriented to the needs of the Indians appear to be almost nonexistent. This is not surprising when it was previously noted that the guidance services in four of the school districts were less than exemplary for all the students. School nurse services, testing services and remedial services were also less than adequate in the majority of the school districts surveyed.

The lack of teacher sensitivity towards the Michigan Reservation Indian students is another contributing factor. Many of the teachers interviewed during the course of this study lacked a basic knowledge of the Indians and their environment on the reservations. Some indicated an open lack of concern for the Indian students, although no overt acts of discrimination were observed.

Finally, the study habits of the Michigan Reservation Indian students also may be a factor. Due to the poorer household conditions which exist on Michigan's Indian Reservations, it is not hard to speculate on the conditions present which are not conducive to doing homework. As previously noted in the supporting evidence, many homes are

not electrified, many are overcrowded, and many are in poor repair.

In conclusion, it appears that it would be most appropriate for those school districts which serve the Michigan Reservation Indian students to develop programs designed to assist their Indian clientele to become better Indians. These may include study centers, better supportive services, increased teacher sensitivity, and active support of plans designed to better the Indians' socioeconomic status.

Implications for Further Research

Based on the conclusions of this study it appears that what is needed is not further studies, but assistance in developing plans of action.

Perhaps one area of research which would be beneficial to the development and implementation of various programs to increase the Michigan Reservation Indians scholastic rewards and decrease his drop-out rate might be directed towards developing more explicit answers to the questions raised by conclusion four of this study. Restated in a more forthright manner, if ability and motivation are not the factors, what areas can be identified which are causing our Michigan Reservation Indians to do less well than their peers in school?

Such a study may find that a greater emphasis should be placed on interviewing techniques than on paper and pencil testing procedures. Appropriate interviewees may include parents, drop-outs and students who reside on Michigan Indian Reservations.

Impressions

As a result of the research and the supporting evidence which make up this document, several impressions were made which do deserve a place in this dissertation.

First, the school districts visited by this researcher displayed an alarming lack of genuine interest in assisting the Reservation Indian students enrolled. There was little evidence that specific programs were being developed nor were operational programs aimed at improving the educational success of the Indian students. This is more alarming when one considers that the majority of the schools receive direct Federal assistance due to the fact that they are charged with educating Reservation Indian students.

District personnel demonstrated a very poor knowledge of the Indian students' academic background, living conditions and general welfare. This lack of sensitivity may no doubt directly contribute to the Indian students' obvious lack of success in school. Too often the researcher heard the comment "they don't want the things we want."

Secondly, the lack of concern is not totally attributable to only the school districts. Other units of government also are remiss in their constitutional responsibilities. Two illustrations bring this into focus very clearly. As noted, many Indian homes are not electrified. On one segment of one of the Reservations, the federally subsidized REA cooperative electric utility refuses to provide service for a group of Indian homes unless a monetary "guarantee of payment fund" is provided. Such a requirement is not demanded in the course of typical installations of the company. Another illustration is the poor maintenance procedures being followed for the roads on Reservation lands. It was noted that several years ago during the spring thaw, the road to one segment of one of the Reservations was impassable to automobile and school bus traffic for over two weeks. Such conditions did not exist in other populated sections of the township.

Finally on a state level, Michigan has little to show for its concern with its Indian population. There have been few legislative enactments designed to improve the welfare of the Reservation Indians. The Michigan Department of Education has employed personnel with expertise in assisting Negroes and Mexican Americans, but has no individual charged with improving Indian education.

As one reflects upon the preceding paragraphs, it is difficult for this researcher to show much pride in his

Caucasianism as it related to the treatment of the Indian. We stole their land, we stole what part of their culture we wanted and destroyed the rest, and we reduced a proud racial group to second-class citizens. It seems very sad that a society which advocates democracy, equality and Christianity has not yet progressed to a state where it can express a real love and concern for all of its members.

Recommendations

Based on the research and supporting evidence of this dissertation, the following recommendations are offered:

1. The five school districts serving the Michigan Reservation Indian students should plan and initiate programs to increase the sensitivity of their personnel towards the Indian immediately.
2. The Michigan Department of Education should employ the necessary personnel to mobilize and assist the various Indian groups in designing academic and supportive programs which will enable the Reservation Indians to reap the rewards of the educational system.
3. The Michigan Legislature should enact the appropriate legislation to fund programs designed to allow the citizens of our Reservations to become better Indians. These programs may include funds for study centers, teacher training directed towards the Indian culture and norms,

supportive services for Indian students and the development of programs to increase the socio-economic status of the Reservation Indian community.

4. The various units of government within Michigan should live up to their constitutional obligations to all citizens of the state and provide the services necessary for all of their constituents to live in a meaningful manner.

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APPENDICES

APPENDIX A

M-SCALES

TABLE A.1.--Analysis design--females.

Cell	Race	School	Observations
1	Indian	1	2
2	Indian	3	2
3	Indian	4	2
4	Indian	5	2
5	Caucasian	1	14
6	Caucasian	3	14
7	Caucasian	4	14
8	Caucasian	5	14

TOTAL N = 64

TABLE A.2.--M-Scales cell means--females.

Cell	GSCI	PJCS	WRL	HTI
1	26.00000	27.50000	35.00000	17.00000
2	13.50000	29.50000	26.00000	9.50000
3	24.50000	31.00000	31.00000	17.50000
4	18.00000	23.00000	18.50000	16.50000
5	19.64286	25.92857	27.00000	16.64286
6	18.92857	25.42857	24.85714	16.92857
7	20.07143	25.00000	31.50000	17.07143
8	19.42857	27.07143	31.35714	17.50000

TABLE A.3.--M-Scales--sample correlation matrix--females.

	GSCI	PJCS	WRL	HTI
GSCI	1.000000			
PJCS	.672579	1.000000		
WRL	.614701	.320726	1.000000	
HTI	.549631	.342629	.742567	1.000000

TABLE A.4.--M-Scales--mean square interaction within cells--females.

Sub-Test	Variance	Standard Deviation
GSCI	20.276786	4.5030
PJCS	46.790816	6.8404
WRL	114.302296	10.6912
HTI	21.394133	4.6254

TABLE A.5.--M-Scales validity--females.

School	Indian Mean	Indian Variance	Cauc. Mean	Cauc. Variance	"t" value	Signif. at .05
1	81.5	20.25	74.3	89.65	1.411	none
2	No females					
3	74.0	21.00	75.2	228.88	-0.104	none
4	81.5	6.25	74.2	899.00	0.322	none
5	57.5	72.25	77.1	343.00	-1.960	none

TABLE A.6.--Analysis design--males.

Cell	Race	School	Observations
1	Indian	1	4
2	Indian	2	4
3	Indian	3	4
4	Indian	4	4
5	Indian	5	4
6	Caucasian	1	12
7	Caucasian	2	12
8	Caucasian	3	12
9	Caucasian	4	12
10	Caucasian	5	12

TOTAL N = 80

TABLE A.7.--M-Scales cell means--males.

Cell	GSCI	PJCS	WRL	HTI
1	23.50000	14.25000	22.75000	13.50000
2	29.25000	14.50000	24.50000	16.25000
3	25.75000	11.75000	25.00000	14.50000
4	26.75000	12.75000	22.25000	15.50000
5	30.00000	12.50000	18.25000	16.25000
6	28.66667	14.91667	30.08333	18.08333
7	28.66667	14.58333	26.08333	17.50000
8	26.75000	13.33333	25.83333	17.75000
9	29.50000	15.25000	27.66667	17.25000
10	30.25000	16.66667	32.25000	17.25000

TABLE A.8.--M-Scales sample correlation matrix--males.

	GSCI	PJCS	WRL	HTI
GSCI	1.000000			
PJCS	.644869	1.000000		
WRL	.525287	.429987	1.000000	
HIT	.679217	.517702	.498546	1.000000

TABLE A.9.--M-Scales mean square interaction within cells--males.

Sub-Test	Variance	Standard Deviation
GSCI	37.229762	6.1016
PJCS	16.623810	4.0772
WRL	75.052381	8.6633
HIT	19.016667	4.3608

TABLE A.10.--M-Scales validity--males.

School	Indian Mean	Indian Variance	Cauc. Mean	Cauc. Variance	"t" value	Signif. at .05
1	37.0	46.50	42.8	68.07	-1.184	none
2	41.8	16.01	39.1	103.27	0.482	none
3	39.3	56.76	37.5	45.25	0.419	none
4	31.5	140.75	40.8	50.36	-1.755	none
5	35.0	22.50	44.3	76.84	-1.897	none

APPENDIX B

GPA--IQ

TABLE B.1.--GPA--IQ cell means--females.

Cell	GPA	IQ
1	5.6875	124.5000
2	5.5625	110.5000
3	2.5600	87.5000
4	4.8000	107.5000
5	5.5841	109.5714
6	7.0268	102.7857
7	7.9064	104.8571
8	6.4861	111.4286

TABLE B.2.--GPA--IQ--sample correlation matrix--females.

	GPA	IQ
GPA	1.000000	
IQ	.711829	1.000000

TABLE B.3.--GPA--IQ mean square interaction within cells--
females.

		Standard Deviation
GPA	6.414404	2.5327
IQ	147.195153	12.1324

TABLE B.4.--GPA--IQ--cell means--males.

Cell	GPA	IQ
1	2.4375	72.2500
2	.8438	82.0000
3	3.5938	106.0000
4	3.4875	101.0000
5	2.7875	96.0000
6	5.4375	103.5000
7	4.1458	94.9167
8	4.6979	99.8333
9	6.2328	105.4167
10	5.3185	107.3333

TABLE B.5.--GPA--IQ sample correlation matrix--males.

	GPA	IQ
GPA	1.000000	
IQ	.425234	1.000000

TABLE B.6.--GPA--IQ mean square interaction within cell--males.

	Variance	Standard Deviation
GPA	5.599559	2.3663
IQ	253.427381	15.9194