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A Comparative Study of Academic Achievement of Full-Blood and Mixed-Blood Indian Students

Paul J. Comeau

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A COMPARATIVE STUDY OF ACADEMIC ACHIEVEMENT
OF FULL-BLOOD AND MIXED-BLOOD
INDIAN STUDENTS

by
Paul J. Comeau

Bachelor of Arts, Northern State College, 1967

An Independent Study
Submitted to the Graduate Faculty
of the
University of North Dakota
in partial fulfillment of the requirements
for the degree of
Master of Education

Grand Forks, North Dakota

May
1978

This independent study submitted by Paul J. Comeau in partial fulfillment of the requirements for the degree of Master of Education from the University of North Dakota is hereby approved by the Faculty Advisor under whom the work has been done.


Advisor

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CHAPTER I

INTRODUCTION

Background of Study

Approximately one-half of the students attending the Standing Rock Elementary School at Fort Yates, North Dakota are full-blood Indian with the other one-half being of mixed Indian-white descent (mixed-bloods). A very few of the students are non-Indian.

The tendency in the past has been to consider the full-blood Indian students as lower achievers in scholastic work than the mixed-bloods or non-Indian students, thus creating an inverse relationship in which achievement decreases as percentage of Indian blood increases. The basic reason given for this is that Indian students are hindered with cultural adjustments and language problems. Hunter and Sommermier (1922) gave the Otis Intelligence Test to 715 American Indians at the Haskell Indian Institute, Lawrence, Kansas and noted a steady decrease in average scores with an increase in Indian blood. Byrde (1970) found that full-blood children tend to be culturally farther away from the dominant culture than one-quarter blood children and should be expected to score lower on achievement tests.

The writer's interest in this study stems from hearing this statement, "We can't expect too much from these students because of their Indian background." While working as a Teacher Corps intern in the Fort Yates Elementary School during the 1976-77 and 1977-78 school

years, the writer was unable to distinguish any patterns of discernable differences in achievement among these groups. The questions then became: Are present language and culture significant factors in scholastic achievement among students at Fort Yates Elementary School, and do full-blood students still score lower on achievement tests than mixed-blood or non-Indian students?

Purpose and Need of Study

The purpose of this study was to compare the differences in SRA Achievement Test scores between mixed-blood and full-blood students and to check the relevance of the idea that full-blood Indian children show less academic achievement as measured on standardized achievement tests than mixed-blood Indian children because they are hampered by cultural differences and language difficulties. If language and culture are significant factors in scholastic achievement, then full-blood students should score lower than mixed-blood students. If a difference is found, this study may determine the need for a compensatory program for full-blood Indian students or a possible change in curriculum. If no difference is found, the Standing Rock Elementary School should expect, and can expect, as much from their full-blood Indian students as from their mixed-blood students.

Assumptions

The following statements are assumed to be correct and are important to the outcome of this study:

1. It is assumed that the SRA Achievement Test is an accurate measure of scholastic achievement.

2. It is assumed that the degree of Indian blood is a good indicator of tendency toward the Indian culture and language.

Delimitations of the Study

This study was conducted within the following delimitations:

1. This study is limited to the 1977-78 students in the Standing Rock Elementary School, Fort Yates, North Dakota whose degree of Indian blood was accessible in grades two through six.
2. It is limited to the accuracy with which the SRA Achievement Tests were scored by computer.
3. The Chester Fritz Library, University of North Dakota, Grand Forks, North Dakota provided the major source of the information used in this study.

Hypotheses

Hypothesis 1. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade two of the Standing Rock Elementary School on the SRA Achievement Test scores in reading.

Hypothesis 2. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade three of the Standing Rock Elementary School on the SRA Achievement Test scores in reading.

Hypothesis 3. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade four of the Standing Rock Elementary School on the SRA Achievement Test scores in reading.

Hypothesis 4. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade five of the Standing Rock Elementary School on the SRA Achievement Test scores in reading.

Hypothesis 5. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade six of the Standing Rock Elementary School on the SRA Achievement Test scores in reading.

Hypothesis 6. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade two of the Standing Rock Elementary School on the SRA Achievement Test scores in math.

Hypothesis 7. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade three of the Standing Rock Elementary School on the SRA Achievement Test scores in math.

Hypothesis 8. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade four of the Standing Rock Elementary School on the SRA Achievement Test scores in math.

Hypothesis 9. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade five of the Standing Rock Elementary School on the SRA Achievement Test scores in math.

Hypothesis 10. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade six of the Standing Rock Elementary School on the SRA Achievement Test

scores in math.

Hypothesis 11. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade two of the Standing Rock Elementary School on the composite score of the SRA Achievement Test.

Hypothesis 12. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade three of the Standing Rock Elementary School on the composite score of the SRA Achievement Test.

Hypothesis 13. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade four of the Standing Rock Elementary School on the composite score of the SRA Achievement Test.

Hypothesis 14. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade five of the Standing Rock Elementary School on the composite score of the SRA Achievement Test.

Hypothesis 15. There will be no significant difference between mixed-blood Indian children and full-blood Indian children in grade six of the Standing Rock Elementary School on the composite score of the SRA Achievement Test.

CHAPTER II

REVIEW OF HISTORY AND LITERATURE

Cultural Identity

The Indian people have been going through an identity crisis since the end of the Indian wars. Before the wars, Indians were identified by nations and tribes. Today Indians are grouped more commonly into two groups--"mixed-bloods" and "full-bloods". Daniels (1970) points out that people on reservations do not make the distinction between Sioux and Crow or Oglala and Hunkpapa, but tend to classify Indians as full-bloods or mixed-bloods.

Full-bloods are usually defined as having parents of Indian descent only. A mixed-blood may denote a person having a white parent and a full-blood parent, a white parent and a mixed-blood parent, a full-blood parent and a mixed-blood parent, or having a mixed-blood parent and a mixed-blood parent. Daniels (1970) states that mixed-blood is a term used to describe all those who are in any way standing between the two major cultural traditions or social systems represented on the reservations. He also states that in contrast to both the whites and full-bloods, the mixed-bloods do not possess a distinct cultural identity.

Useem (1947) states that the degree of Indian blood is a popular way to sum up the relative influence of Indian culture and white culture. Full-blood, mixed-blood and white are adjectives which indicate ways of life. Daniels (1970) agrees with Useem when he states that the terms

white, mixed-blood and full-blood are based on behavior of individuals. For example, full-bloods are often called mixed-bloods or whites by the traditional full-blood Indians when they become entrenched into the white culture.

Besides the cultural identity struggle, the Indian people have the economic identity struggle. Daniels (1970), in dealing with economic patterns of Oglalas on the Pine Ridge Reservation, states that poverty is a sign of "Indianness". Indians who have chosen to remain on the reservation and have retained some of their culture and values usually subsist near the poverty level. To the whites, who are unaware of the real issue of cultural identity, Indians who choose this way of life are deemed inferior and this inferiority is most often expressed in terms of the concept of race.

Early Education

The white people of America have been trying to educate the Indian people for many years. BIA (1963) notes that beginning in 1568 Indian education was under the direction of missionaries. This was true for approximately three centuries until the Indian treaties provided for the establishment of Indian schools. By 1842 there were 37 Indian schools in operation. This number increased to 264 by 1963. BIA (1976) reveals a decrease of Indian schools to 204. The Johnson-O'Malley Act is most responsible for this decrease. This act was passed in 1934 and gave the Secretary of the Interior the power to enter into contracts with states for the education of Indians and to permit the use of Federal school buildings and equipment by local authorities. The reason given for this act was, "Indian children become better adjusted

to living with all people in a community when they associate with other children in public schools." This led to the closing of many Federal schools.

BIA (1976) states that in Federal schools students develop basic academic skills, acquire a social and economic understanding of the world, improve living standards, improve health standards, and obtain sufficient education to enter institutions of higher learning--the primary objective being to prepare the Indian for successful living.

Lame Deer, a full-blood Indian, reveals much of his life and his preparation for successful living in his book, Lame Deer Seeker of Visions. Lame Deer and Erdoes (1972) state, "The BIA thought that the best way to teach us was to stop us from being Indians" (p. 33). Lame Deer recalls his parents being notified that they were to send him to school or else they would be given a rough time by the Indian police. He said that in those days--the early 1900's--Indian schools were like jails with roll call four times a day. Indian police were sent after runaways. Students were forbidden to talk their Indian language or to sing their Indian songs. Lame Deer and Erdoes (1972) state that he remained in the third grade for six years because that was the highest grade in school at that time. During this time, he says that the school never taught him much English or how to read or write.

Lillian Comeau (1978), a mixed-blood Indian, relates her early school days through a personal interview. Her parents were notified by the BIA that she had to be in school. At the age of seven she was entered into a boarding school 60 miles from her parents' home. There she worked for one-half of each day doing housework and gardening and went to school for one-half of each day. Students were punished if they

were caught speaking the Indian language or singing Indian songs. She states that she couldn't have learned much because after finishing school she was asked to write a letter for her uncle and she was unable to do it.

In the accounts of the full-blood Indian and the mixed-blood Indian, two points tend to stand out. First, Indian culture was denied at Indian schools; and secondly, both students felt they had learned very little scholastically. It is not the writer's intention to make a case against the Indian schools, but only to shed some light on why Indian students are deemed low achievers in schools.

The Indian family often consisted not only of parents and children, but also of grandparents, uncles, aunts and cousins all living in the same house or very near each other. Lame Deer and Erdoes (1972) state, "As with most Indian children, much of my upbringing was done by my grandparents" (p. 23). He went on to say that an Indian child is surrounded with relatives. There are enough people around that children always have someone paying attention to them. They are never alone. If the adults go someplace, the children also go. Indian children are rarely forced to do something they dislike to do. They have their rights just like adults.

It is easy to see why being forced into a very structured boarding school of a different culture was a tremendous shock to Indian children and why scholastic achievement was low. Lame Deer and Erdoes (1972) state, "I wouldn't cooperate in the remaking of myself. I played the dumb Indian" (p. 35).

Studies of Achievement

Several studies have been completed comparing full-bloods, mixed-bloods and whites in school achievement. These studies tend to agree that language and culture are major factors in how well a student will perform in school, and that the degree of Indian blood is a good indication of language and culture.

Coombs, Kron, Collister and Anderson (1958) found that there was a consistent relationship between the degree of Indian blood and preschool language: the more Indian blood a student had the less English he spoke. They also found that the more Indian blood a student had the lower he achieved in school. To summarize, the greater amount of Indian blood a student had the less English he spoke and the lower he achieved in school. Coombs et al. (1958) goes on to say that the degree of Indian blood and preschool language are two of the best indicators of the degree of acculturation in a student, and that the stage of acculturation which a student and his family have reached has a powerful influence upon his school achievement. Acculturation is defined as the degree in which a family integrates itself with the dominant culture. Hallowell (1957) found three levels of acculturation among Indian people: the traditional level or group who have kept their Indian culture and have been influenced very little by the white culture; the transitional level or group who have been influenced by the white culture and are moving somewhere in between the Indian culture and white culture but toward the white culture; and the acculturated level or group who have adopted the white culture completely.

Coombs et al. (1958) also found that Indian students living off the reservation achieved better in schools than students living on the

reservation. This again suggests culture as being a factor in scholastic achievement since the Indian culture would be more dominant on the reservation than off.

Bodahl (1934) found that mixed-blood students scored higher on linguistic tests than full-blood students. However, on non-linguistic tests the full-bloods scored higher. This indicates that when language is not a factor differences tend to disappear.

Ross (1962) compared academic achievement and attendance patterns of full-blood and mixed-blood students in a Federal school. He found that mixed-bloods scored higher on achievement tests than the full-blood group.

Sofar (1964) demonstrated in his study that Indian students were achieving as well as could be expected when compared to white students. He also states that the academic progress of Indian students will be increased when teachers no longer have the belief that Indian students are underachievers.

Byrde (1970) divided an eighth grade group into four degree-of-Indian-blood groups. Using the Scheffe test he found no significant differences in achievement among any of the four groups.

CHAPTER III

PROCEDURE

Population

The subjects used for this study were students enrolled at the Standing Rock Elementary School (SRES) in Fort Yates, North Dakota during the 1977-78 school year. The subjects were selected from grades two through six. They had taken the SRA Normed Achievement Test in September, 1977 and their degree of Indian blood was accessible. This sample consisted of 48 full-bloods and 60 mixed-bloods.

The majority of the students' parents are ranchers or are employed with the tribe or Bureau of Indian Affairs. The students receive Indian cultural studies in grades one through three from full-blood teachers. The curriculum for Indian cultural studies includes Indian art, Indian values, and some of the Indian language. However, the majority of students cannot speak the Indian language fluently. The principal at SRES is a full-blood Indian and approximately half of the staff are either full-bloods or mixed-bloods.

Instrument

The instrument used was the SRA Achievement Series (ACH) which is published by the Science Research Associates, Inc. The SRA Assessment Survey (1972) indicates that this series consists of two editions-- Primary and Multi-level. The Primary edition consists of two levels,

Primary I and Primary II, each containing tests in reading, language arts and math. The Multi-level edition consists of three separate levels which are green, blue and red. It consists of tests in reading, language arts, mathematics, social studies, use of sources, and science.

The SRA is a norm-referenced test in which the students' scores are compared with other students' scores both nationally and locally. The questions were written by teachers whose intentions were to write questions covering important outcomes of instructions in the given subject/matter areas.

The content validity was established by SRA through the process of answering three questions: 1) What should be tested; 2) What is taught; and 3) What is learned? Question number one was answered by considering current instructional and curricular materials, and also by weighing teachers' and curriculum specialists' reviews. The second question was answered by having teachers write the questions and review the tests. The students helped answer the third question by taking a pretest of items being considered. Each question was selected on the basis that it should be taught, that it is taught, and that it is learned.

A reliable test is consistent in measuring what it attempts to measure. The Kuder-Richardson 20 (KR 20) formula was used to estimate the reliability of this test.

$$KR\ 20 = \frac{K}{K-1} \left(\frac{\text{Var. (X)} - \sum pq}{\text{Var. (X)}} \right)$$

- K = number of items in test
- Var. (X) = variance of the distribution of test scores
- p = proportion of correct responses to an item
- q = proportion of incorrect responses to an item
- pq = variance of a particular item distribution
- $\sum pq$ = sum of the item variances

The KR 20 reliability coefficients for the Primary edition range from .88 to .96. The Multi-level edition coefficients range from .84 to .98.

Gathering of Data

The SRA Achievement Series (ACH) was administered in September, 1977 to students in grades two through six by their classroom teachers. The second grade was given the Primary edition I. The third and fourth grades were given the Primary edition II. The fifth and sixth grades were given the Multi-level edition with the green level being used. The tests were sent to SRA, Inc. for computer scoring. The reading, math, and composite scores of all areas were the only scores used in this study.

The degree of Indian blood in each student was recorded from the school records. The initial grouping was in eighths-- $8/8$, $7/8$, $6/8$, $5/8$, $4/8$, $3/8$, $2/8$, and $1/8$. Due to the small population used, $8/8$ was considered full-blood and all other degrees were considered mixed-blood.

The above information was tabulated and transferred to IBM cards. A comparison between the SRA achievement scores of full-bloods and mixed-bloods was computed on the University of North Dakota's computer system using the Mann-Whitney U test.

Analysis of Data

The Mann-Whitney U test was used to compare the data in this study. This is a powerful non-parametric test which can be used to compare two independent groups drawn from the same population. Siegel (1956) states:

If the Mann-Whitney test is applied to data which might properly be analyzed by the most powerful parametric test, the T test, its power-efficiency approaches $3/\pi = 95.5$ percent as N increases (Mood, 1954), and is close to 95 percent even for moderate sized samples. It is therefore an excellent alternative to the T test, and of course it does not have the restrictive assumptions and requirements associated with the T test. (p. 126)

The following equations were used in computing the data.

$$U = n_1 n_2 + \frac{n_1(n_1 + 1)}{2} - R_1$$

$$z = \frac{U - \frac{n_1 n_2}{2}}{\sqrt{\frac{(n_1)(n_2)(n_1 + n_2 + 1)}{12}}}$$

n_1 = the number in the smaller of two independent groups

n_2 = the number in the larger of two independent groups

U = the number of times that a score in the group with n_2 cases precedes a score in the group with n_1 cases in the ranking

R_1 = sum of the ranks assigned to group whose sample size is n_1

z = a standard score (p. 123).

CHAPTER IV

PRESENTATION OF DATA

The data gathered for this study will be presented in this chapter. The order in which the information will be presented will follow the same hypothesis statement sequence as in Chapter I.

Table 1

A COMPARISON OF READING SCORES FOR SECOND GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	8	10.94
Mixed-blood	12	10.20

U = 44.5 z = -0.27 2 tailed p = .787

The hypothesis of no significant difference between full-bloods and mixed-bloods in reading achievement as measured by the SRA test (ACH) for second grade students is retained. It is concluded that the difference in reading achievement between these two groups is not significant.

The hypothesis of no significant difference between full-bloods and mixed-bloods in reading achievement as measured by the SRA test (ACH) for third grade students is retained. It is concluded that the

difference in reading achievement between these two groups is not significant.

Table 2

A COMPARISON OF READING SCORES FOR THIRD GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	10	9.55
Mixed-blood	12	13.13
U = 40.5	z = -1.287	2 tailed p = .198

Table 3

A COMPARISON OF READING SCORES FOR FOURTH GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	12	9.83
Mixed-blood	10	13.50
U = 40.	z = -1.322	2 tailed p = .186

The hypothesis of no significant difference between full-bloods and mixed-bloods in reading achievement as measured by the SRA test (ACH) for fourth grade students is retained. It is concluded that the difference in reading achievement between these two groups is not significant.

Table 4

A COMPARISON OF READING SCORES FOR FIFTH GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	8	11.81
Mixed-blood	14	11.32
U = 53.5	z = -0.171	2 tailed p = .864

The hypothesis of no significant difference between full-bloods and mixed-bloods in reading achievement as measured by the SRA test (ACH) for fifth grade students is retained. It is concluded that the difference in reading achievement between these two groups is not significant.

Table 5

A COMPARISON OF READING SCORES FOR SIXTH GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	10	12.00
Mixed-blood	12	11.08
U = 55.0	z = -0.330	2 tailed p = .741

The hypothesis of no significant difference between full-bloods and mixed-bloods in reading achievement as measured by the SRA test (ACH) for sixth grade students is retained. It is concluded that the

difference in reading achievement between these two groups is not significant.

Table 6

A COMPARISON OF MATH SCORES FOR SECOND GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	8	11.88
Mixed-blood	12	9.58
U = 37.0 z = -0.851 2 tailed p = .395		

The hypothesis of no significant difference between full-bloods and mixed-bloods in math achievement as measured by the SRA test (ACH) for second grade students is retained. It is concluded that the difference in math achievement between these two groups is not significant.

Table 7

A COMPARISON OF MATH SCORES FOR THIRD GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	10	13.25
Mixed-blood	12	10.04
U = 42.5 z = -1.168 2 tailed p = .243		

difference in reading achievement between these two groups is not significant.

Table 6

A COMPARISON OF MATH SCORES FOR SECOND GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	8	11.88
Mixed-blood	12	9.58
U = 37.0 z = -0.851 2 tailed p = .395		

The hypothesis of no significant difference between full-bloods and mixed-bloods in math achievement as measured by the SRA test (ACH) for second grade students is retained. It is concluded that the difference in math achievement between these two groups is not significant.

Table 7

A COMPARISON OF MATH SCORES FOR THIRD GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	10	13.25
Mixed-blood	12	10.04
U = 42.5 z = -1.168 2 tailed p = .243		

The hypothesis of no significant difference between full-bloods and mixed-bloods in math achievement as measured by the SRA test (ACH) for third grade students is retained. It is concluded that the difference in math achievement between these two groups is not significant.

Table 8

A COMPARISON OF MATH SCORES FOR FOURTH GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	12	10.75
Mixed-blood	9	11.33
U = 51.0 z = -0.219 2 tailed p = .826		

The hypothesis of no significant difference between full-bloods and mixed-bloods in math achievement as measured by the SRA test (ACH) for fourth grade students is retained. It is concluded that the difference in math achievement between these two groups is not significant.

Table 9

A COMPARISON OF MATH SCORES FOR FIFTH GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	8	7.69
Mixed-blood	14	13.68
U = 25.5 z = -2.095 2 tailed p = .036		

The hypothesis of no significant difference between full-bloods and mixed-bloods in math achievement as measured by the SRA test (ACH) for fifth grade students is not retained. It is concluded that the difference in math achievement between these two groups is significant with mixed-blood students scoring higher than full-blood students.

Table 10

A COMPARISON OF MATH SCORES FOR SIXTH GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	10	11.40
Mixed-blood	12	12.00
U = 59.0		z = -0.066
		2 tailed p = .947

The hypothesis of no significant difference between full-bloods and mixed-bloods in math achievement as measured by the SRA test (ACH) for sixth grade students is retained. It is concluded that the difference in math achievement between these two groups is not significant.

Table 11

A COMPARISON OF COMPOSITE SCORES FOR SECOND GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	8	11.44
Mixed-blood	12	9.88
U = 40.5		z = -0.579
		2 tailed p = .562

The hypothesis of no significant difference between full-bloods and mixed-bloods in composite scores as measured by the SRA test (ACH) for second grade students is retained. It is concluded that the difference in composite scores between these two groups is not significant.

Table 12

A COMPARISON OF COMPOSITE SCORES FOR THIRD GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	10	11.20
Mixed-blood	12	11.75

U = 57.0 z = -0.199 2 tailed p = .843

The hypothesis of no significant difference between full-bloods and mixed-bloods in composite scores as measured by the SRA test (ACH) for third grade students is retained. It is concluded that the difference in composite scores between these two groups is not significant.

Table 13

A COMPARISON OF COMPOSITE SCORES FOR FOURTH GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	12	9.79
Mixed-blood	9	12.61

U = 39.5 z = -1.044 2 tailed p = .297

The hypothesis of no significant difference between full-bloods and mixed-bloods in composite scores as measured by the SRA test (ACH) for fourth grade students is retained. It is concluded that the difference in composite scores between these two groups is not significant.

Table 14

A COMPARISON OF COMPOSITE SCORES FOR FIFTH GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	8	8.81
Mixed-blood	14	13.04

U = 34.5 z = -1.472 2 tailed p = .141

The hypothesis of no significant difference between full-bloods and mixed-bloods in composite scores as measured by the SRA test (ACH) for fifth grade students is retained. It is concluded that the difference in composite scores between these two groups is not significant.

Table 15

A COMPARISON OF COMPOSITE SCORES FOR SIXTH GRADE STUDENTS
AT SRES ON THE SRA TEST (ACH) BETWEEN FULL-BLOOD
AND MIXED-BLOOD INDIAN STUDENTS

Group	N	Mean Rank
Full-blood	10	11.90
Mixed-blood	11	11.00

U = 46.0 z = -0.636 2 tailed p = .525

The hypothesis of no significant difference between full-bloods and mixed-bloods in composite scores as measured by the SRA test (ACH) for sixth grade students is retained. It is concluded that the difference in composite scores between these two groups is not significant.

CHAPTER V

SUMMARY/CONCLUSIONS/RECOMMENDATIONS

The purpose of this study was to compare the differences in SRA Achievement Test scores between mixed-blood and full-blood students. This was done through a statistical comparison of SRA test scores.

A review of related literature indicated that the degree of Indian blood was usually inversely related to achievement. The more Indian blood a student had, the lower he achieved. It also indicated that the closer an Indian student approached acculturation, the higher his achievement would be.

The related literature also revealed that Indians of the past experienced a cultural shock when placed in white schools. They had trouble adapting to the structure of schools and to the disallowance of their culture. Another factor was many students had to attend boarding schools, which meant being away from their family for a long period of time. These factors may account for much of the low achievement of the past.

The intention of this study was to compare the scholastic achievement of full-blood and mixed-blood students at the Standing Rock Elementary School in Fort Yates, North Dakota, and to determine if culture and language were factors to consider in the scholastic achievement of these students. In doing this, it was assumed that the degree

of Indian blood was a good indicator of the tendency toward the Indian culture and language. It was also assumed that SRA test scores were good indicators of scholastic achievement.

Tables 1, 2, 3, 4, and 5 indicate that there is no significant difference in SRA reading test scores between full-blood and mixed-blood Indians in grades two, three, four, five and six. Tables 6, 7, 8, and 10 indicate that there is no significant difference in SRA math scores between full-blood and mixed-blood Indians in grades two, three, four and six.

Table 9 indicates that there is a significant difference in SRA math scores for grade five. Full-bloods scored significantly lower than mixed-bloods.

Tables 11, 12, 13, 14, and 15 indicate that there is no significant difference in SRA composite scores between full-blood and mixed-blood Indians in grades two, three, four, five and six. Composite scores are summary scores of all tests taken in the SRA Achievement Series (ACH).

Conclusions

Many past studies have indicated that full-bloods achieve lower scholastically than mixed-bloods. This study indicates a significant difference in achievement between full-bloods and mixed-bloods in math at the fifth grade level only. In all other areas no significant difference was found.

In reading (refer to Tables 1, 2, 3, 4, and 5), full-bloods scored slightly higher in grades two, five and six. Mixed-bloods scored higher in grades three and four.

In math (refer to Tables 6, 7, 8, 9, and 10), full-bloods scored higher in grades two and three. Mixed-bloods scored higher in grades four and six. Mixed-bloods scored significantly higher in grade five. This may have been caused by the influence of a few bright students in math on the small sample taken.

In composite scores (refer to Tables 11, 12, 13, 14, and 15), full-bloods scored slightly higher in grades two and six. Mixed-bloods scored higher in grades three, four and five.

It is concluded that there is no difference in scholastic achievement between full-blood and mixed-blood Indians at the Standing Rock Elementary School in Fort Yates, North Dakota. It is also concluded that the Indian culture and language are not major factors in low scholastic achievement at this school.

Limitations

The following is a list of limitations to which this study is subjected:

1. This study uses the SRA Achievement Series (ACH) scores as an indicator of achievement, and this test may not be an accurate measure of Indian student achievement because of cultural considerations.
2. This study was completed for only one elementary school on the Standing Rock Indian Reservation.
3. The population sample used for this study was very small.
4. The degree of Indian blood is the only indicator used for identification with the Indian culture and language.
5. The degree of Indian blood among mixed-bloods included all degrees of mixed-blood. Other groupings or combinations of mixed-bloods might have produced different results.

Recommendations

A recommendation for further action based on the results of this study is:

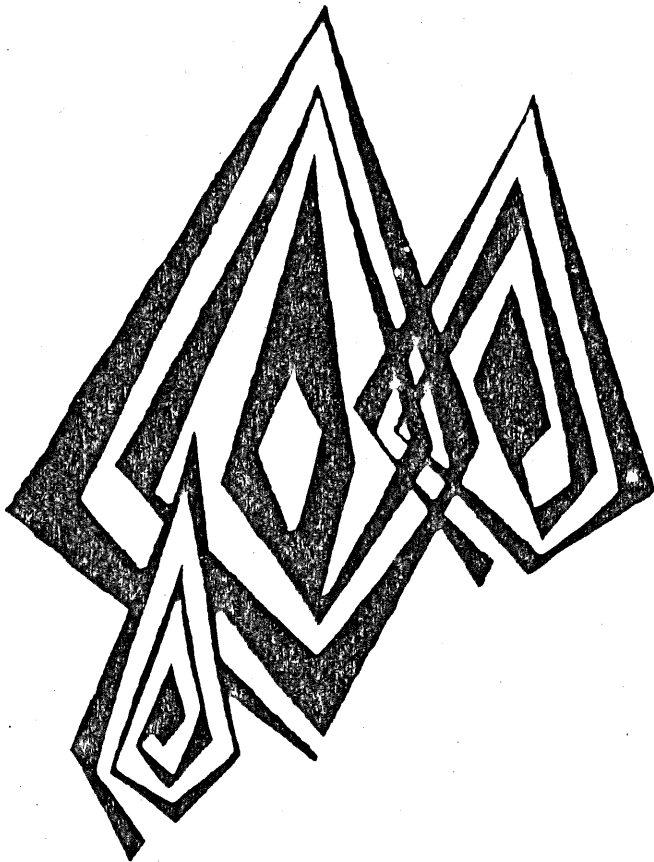
1. Teachers at the Standing Rock Elementary School in Fort Yates, North Dakota should be made aware of the results of this study, which indicate that there are no significant differences in 1977 SRA Achievement Test scores between full-blood and mixed-blood students at this elementary school.

Several possibilities for further study grow out of this study. The following recommendations are offered for consideration:

1. A similar study should be conducted for the Fort Yates Junior and Senior High Schools to determine if a difference in scholastic achievement between full-bloods and mixed-bloods occurs at a point later than grade six.
2. A similar study should be conducted using populations taken from several schools on the Standing Rock Sioux Reservation to determine if the results of this study are valid for the entire reservation.
3. A similar study should be conducted at the Standing Rock Elementary School in Fort Yates, North Dakota using past SRA scores to determine if a difference existed in the past, and if one existed, to determine when it existed and what was changed in the school to eliminate the difference in scholastic achievement between full-blood and mixed-blood Indians.
4. A similar study should be conducted using age instead of grade level for grouping.

APPENDIX A

SRA ASSESSMENT SURVEY



ACHIEVEMENT SERIES

PRIMARY I EXAMINER'S MANUAL

S R A

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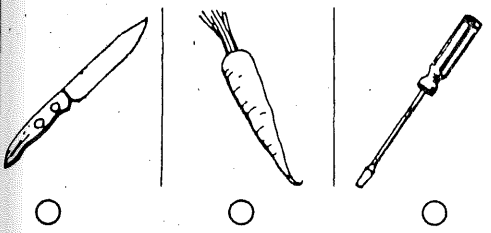
CONTENTS

General Information	5
SRA's Achievement Series (ACH)	5
The Short Test of Educational Ability (STEA)	5
Testing	5
The Students' Experience	6
Introducing the Students to the Tests	6
Administering STEA	7
Directions for Administering Language Arts	7
Filling In Identifying Information	7
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Alphabetization	8
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Word-Picture and Sentence-Picture Association	16
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Directions for Administering Mathematics	18
Contents of Mathematics	18
Math Concepts	18
Math Computation	21
Ending the Testing Sessions	22
Organizing and Returning Materials	22
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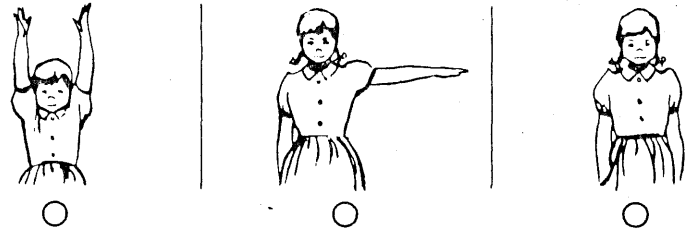
SRA ASSESSMENT SURVEY
ACHIEVEMENT SERIES
 Reading – Form F/Primary I

PUPIL NUMBER		
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9	9	9

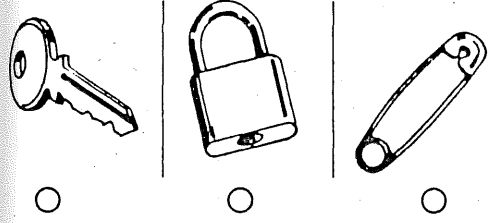
carrot



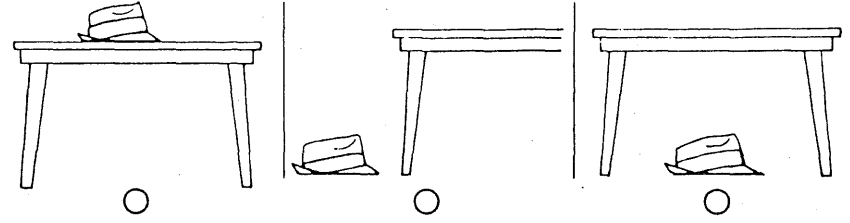
Her hands are above her head.



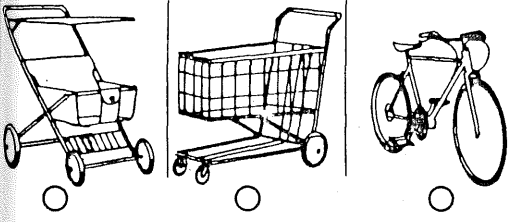
key



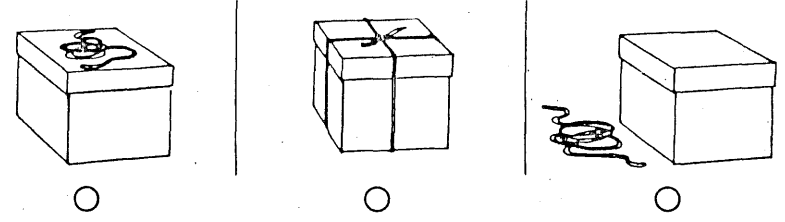
The hat is under the table.



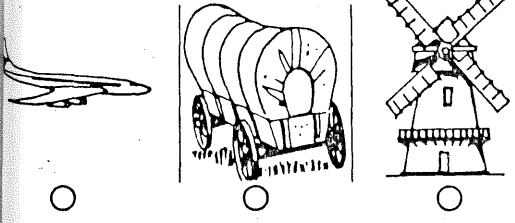
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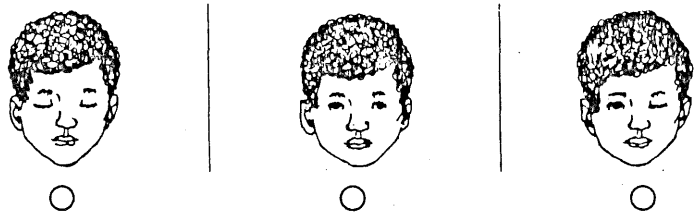
The string is beside the box.



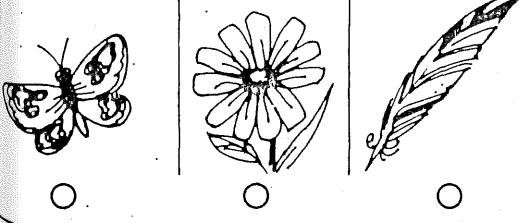
airplane



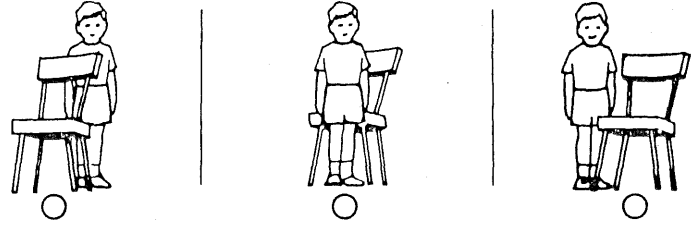
Both eyes are open.



feather



The boy is in front of the chair.



Sam is a funny dog.
He eats like people.
We feed him ham and beans.
He hates dog food.

What kind of dog
is Sam?

- Fat
- Funny
- Ugly
- Friendly

If you had a hamburger,
Sam would probably

- try to eat it
- eat his dog food
- not eat anything
- tell a joke

Sam thinks dog
food is

- better than ham
- only for people
- not any good
- the best food

Did you ever see a mouse that could fly? A bat is
sometimes called a flying mouse.

A bat is a furry animal. It has no feathers. Instead,
its wings are made from skin. The skin stretches from the
tips of its front legs to the tips of its back legs.

Some bats are as tiny as mice. Others can spread their
wings nearly as wide as an eagle can.

A bat is not like flying fish or flying squirrels. Those
animals glide only a little way. But a bat is like birds and some
insects. It can stay up in the air as long as it wants to.

A bat can fly like

- a mouse
- a flying squirrel
- a flying fish
- a few insects

Sometimes a bat
is called a

- flying mouse
- flying fish
- furry bird
- furry squirrel

All bats are

- as big as eagles
- flying birds
- as little as mice
- furry animals

Flying squirrels can

- glide as long as they want
- glide only a little way
- fly like birds
- fly like bats

Birds and some insects
can fly like

- flying squirrels
- flying fish
- bats
- mice

A good title for this
story would be

- Mice
- Bats
- Flying Squirrels
- The Fish That
Could Fly

Teddy's turtle was gone. It had climbed out of the turtle bowl. Teddy looked all over the house. No turtle!

He went to a pet shop. He picked out a new turtle. Then he reached into his pocket for money. And he pulled out his turtle instead!

Teddy's turtle climbed out of the

- pet shop
- pocket
- bowl
- house

Teddy needed money for

- a new turtle
- a new bowl
- some new turtles
- his first turtle

Where did Teddy find his turtle?

- In the house
- In the turtle bowl
- Under the turtle bowl
- In his pocket

Ben and Billy climbed down a rope into the cave. It was cold and dark, damp and quiet.

"Swell house for a ghost," Ben whispered. He shined the flashlight all around.

The room was filled with rocks. There were pink ones and green ones, and other colors too. Some of the rocks were bigger than the boys, but some were the size of potatoes.

All of a sudden, something soft and wet dropped on Ben's head. "What's that?" asked Billy.

"Let's get out of here fast," Ben shouted. But as he started to run, he dropped the flashlight. It smashed on the cave floor. Now they couldn't see anything at all.

To get into the cave the boys used a

- flashlight
- rope
- rock
- ladder

The cave was NOT

- cold
- damp
- noisy
- dark

After the flashlight dropped, Ben probably felt

- hopeful
- calm
- proud
- helpless

chase a dog

- ask for
- run after
- walk
- feed

the fine day

- good
- thin
- long
- wet

the both of us

- one
- none
- two
- three

a black puppy

- baby cat
- little bird
- baby dog
- doghouse

a scary drop

- walk
- drip
- tale
- fall

ask his parents

- brother and sister
- mother and father
- sister and father
- mother and brother

in the street

- road
- water
- car
- news

bat the ball

- throw
- drop
- play with
- hit

the lesson is over

- fun
- new
- above
- done

scramble the pieces

- mix up
- put away
- climb over
- give away

shut the box

- lift
- stop
- close
- hide

a little bird

- blue
- small
- fat
- sick

hunt for food

- save
- look
- pay
- beg

a pretty woman

- fun-loving
- friendly
- nice-looking
- helpless

a sad tale

- boy
- face
- day
- story

collect stamps

- spend
- save
- count
- clean

plan a journey

- budget
- party
- plant
- trip

a downhearted look

- sad
- dull
- cross
- gay



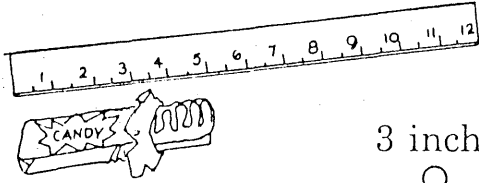
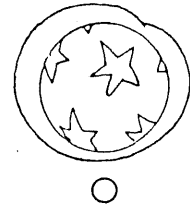
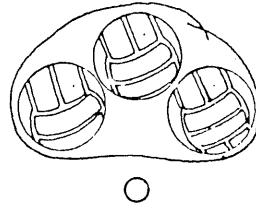
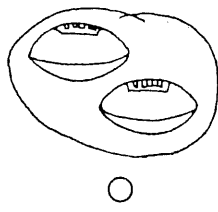
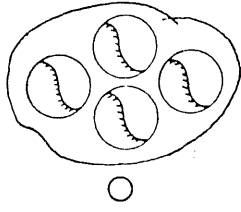
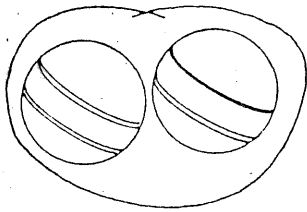
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SRA ASSESSMENT SURVEY
ACHIEVEMENT SERIES
 Mathematics – Form E/Primary I

PUPIL NUMBER		
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2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9



3 inches

4 inches

5 inches

6 inches

3

5

6

8

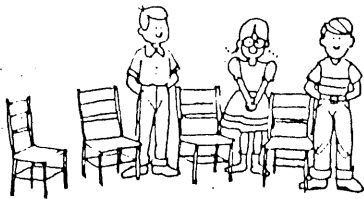
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50

53

54

55



0

1

3

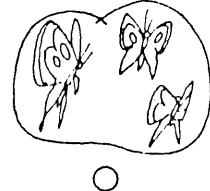
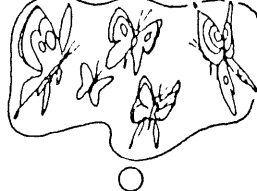
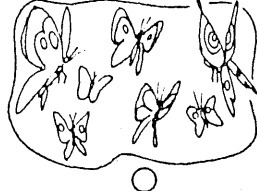
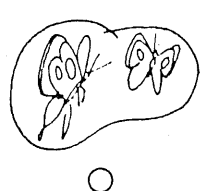
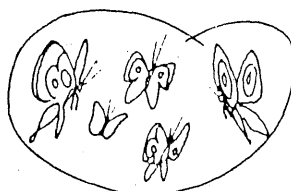
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50

300

100

9



7

10

70

100

$4 + 2$

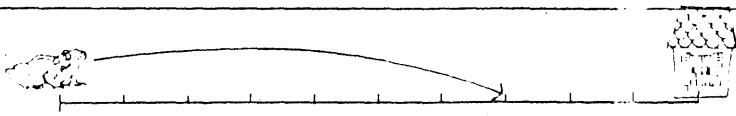
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$4 + 22$

$2 + 4$

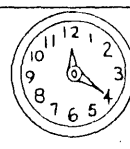
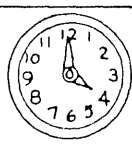
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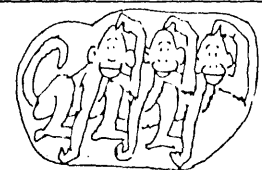
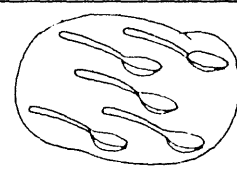
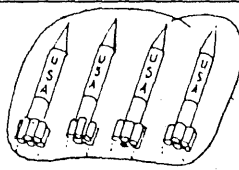
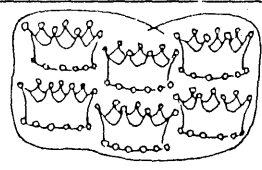
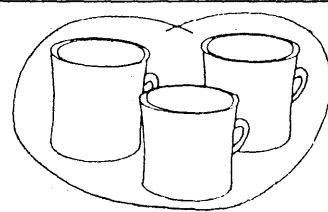
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2 3 4 10
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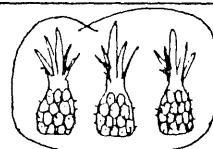
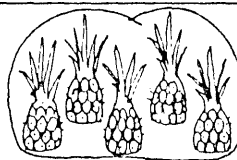
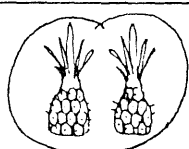
M

1 10 19 21
○ ○ ○ ○

N

9 45 54 59
○ ○ ○ ○

O



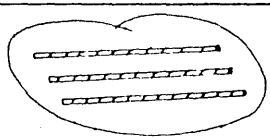
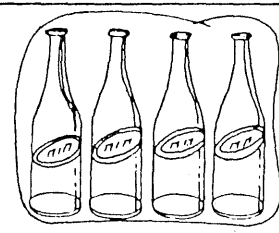
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P

$3 + 3$

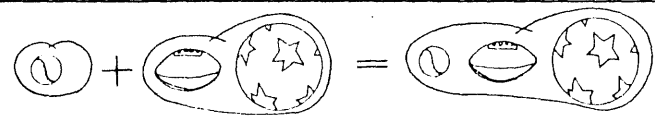
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Q



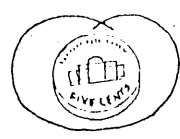
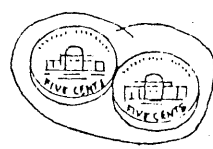
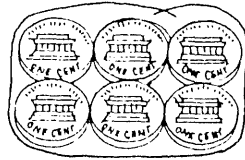
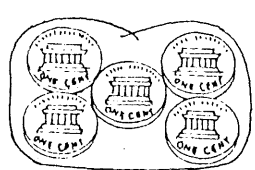
1 4 7 8
○ ○ ○ ○

R



$3 + 3 = 6$ $1 + 1 = 2$ $3 + 1 = 4$ $1 + 2 = 3$
○ ○ ○ ○

S



○ ○ ○ ○

2 4 6 8 10 ?

11

12

13

14

$2 + (4 + 1)$

$2 + 4$

$6 + 2$

$4 + 5$

$2 + 5$

3

13

30

300

$6 + \square = 11$

1

4

5

7

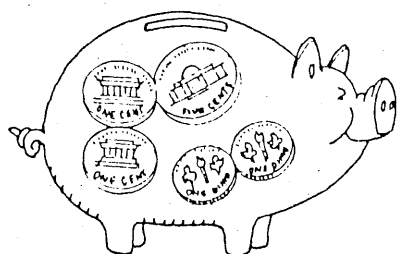
$2 + (3 + 1) = (2 + 3) + \square$

1

2

3

5



17¢

22¢

27¢

32¢

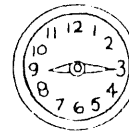
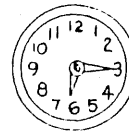
$100 + 20 + 3$

123

1203

10203

100203



13

30

37

300

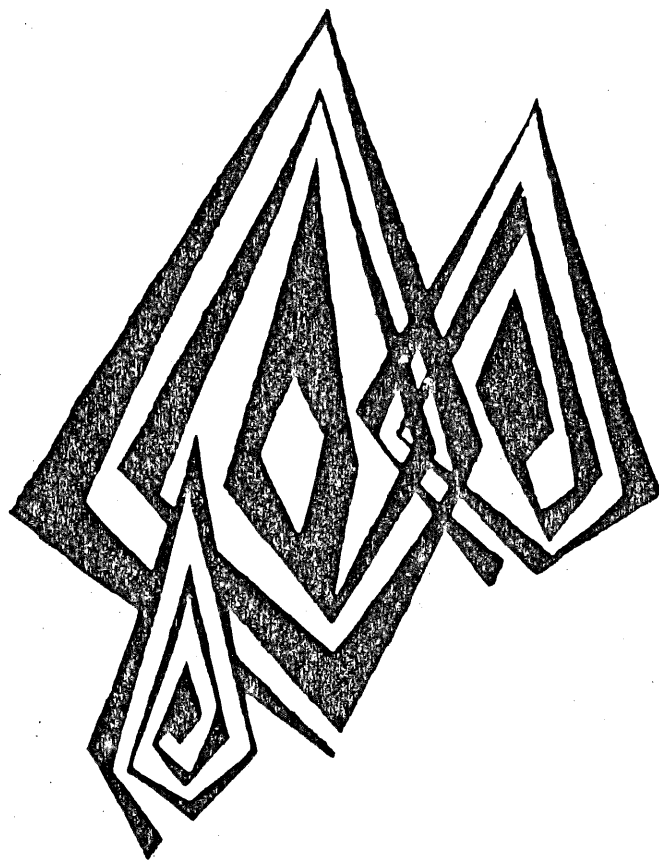
$(7 + 3) + 5 = (7 + 5) + \square$

3

5

7

10



ACHIEVEMENT SERIES

PRIMARY II EXAMINER'S MANUAL

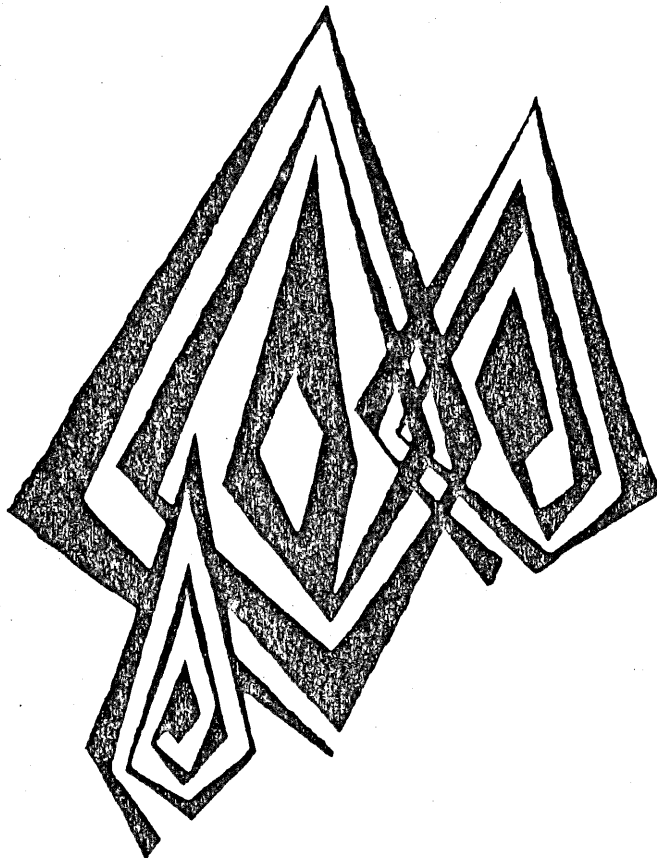


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SRA ASSESSMENT SURVEY



ACHIEVEMENT SERIES

MULTILEVEL EXAMINER'S MANUAL

EXAMINER'S MANUAL

ADMINISTERING THE TESTING PROGRAM

This manual presents the standard procedures for administering the SRA Achievement Series, forms E and F. Teachers who will administer the test battery should read this manual carefully to gain familiarity with the testing procedures and the method of marking answers on the answer sheet.

It is important that all directions be followed exactly. Only when the tests are administered under uniform conditions can norms be used with confidence. Only when this uniformity is maintained for the entire group will the students' scores be comparable.

Study each step in this manual carefully, so that there will be no hesitation in administration. The important sections of this manual are listed below.

1. Instructions for marking the answer sheet—page 4
(Some teachers may find it easier to have the students write only their names on the name grid. The teachers fill in the other grids later.)

2. Instructions for introducing the tests at the start of the first testing session—page 4

3. Directions for administering each test—pages 6 to 13

It is desirable that the examiner take the tests himself before administering them. If this is not possible, he should read through each test so that he will be familiar with the items.

MATERIALS NEEDED FOR TESTING

Test booklets

Each color-coded booklet contains the complete Achievement battery for either the blue, green, or red level. You will need one Achievement test booklet and, if you administer the Ability test, one Short Test of Educational Ability (STEA) booklet for each student. Examiners and proctors should also have a copy of each booklet.

Answer sheets

A separate answer sheet the same color as the test booklet is provided for each student. It can be used to answer all the questions in the battery and in STEA. The student keeps the same answer sheet for the entire series of tests.

Examiner's Manual

You will need one manual for each examiner; if a large group is being tested, you will need one additional copy for each proctor.

Pencils and erasers

Instruct the students in advance to come to each test session with two No. 2 lead pencils and an eraser. You should have a liberal supply of extra No. 2 pencils to give to students who have not brought their own and to replace those that need sharpening during the testing period. Marks made with pens and colored pencils cannot be scored.

Scratch paper

Have an ample supply of scratch paper to distribute before the Mathematics tests and STEA are administered.

Timer

The test periods must be timed precisely. An interval timer is best for this purpose, although a stopwatch or a watch with a second hand can be used.

Reading material

Study materials or books of general interest should be available for students who finish the tests early.

THE TESTING ROOM

Arrange for desk or table space so that each student has room for an open 8½X11 test booklet, an answer sheet, and scratch paper for the Mathematics tests and STEA.

Chairs with tablet arms are *not* satisfactory.

The testing room should be quiet, well lighted, and well ventilated. If possible, arrange to test in a room that does not face a playground. Make preparations in advance to reduce recess noises and to keep messengers from entering the testing room. Put a sign on the classroom door that reads "Testing in Progress—Do Not Disturb."

During the testing the students should be separated as much as the seating arrangement of the room will allow. A seating arrangement that discourages copying is much more successful than warning students not to copy.

SIZE OF GROUP AND NUMBER OF PROCTORS

If you are administering the tests to a large group, you will require the assistance of one adult proctor for every 30 students beyond the first 30. Make arrangements in advance with each proctor regarding the section of the room he is to supervise, and go over with him the methods that will be used for distribution and collection of materials. Each proctor should read this manual before the first testing session.

DISTRIBUTING AND COLLECTING TEST MATERIALS

Since more than one session is required to give the test battery, the test materials will have to be collected and redistributed. It is therefore important to follow a procedure that will return the student's answer sheet to him each time.

To collect and distribute materials efficiently, the following plan is suggested.

1. Have each student keep the same seat for all testing periods.
2. At the start of the opening testing session, distribute the test booklets first; then pass out answer sheets.
3. At the end of each testing session except the last, have the students insert their answer sheets under the cover of the test booklet so that their names barely show at the side. Then collect the test booklets in a prearranged order.
4. At the beginning of each of the remaining testing sessions, redistribute the test booklets in the exact reverse of the order in which they were collected. Have each student check the test booklet he receives to make sure it contains his own answer sheet. Each student must have the same answer sheet for the test battery.

TIMING THE TESTS

These tests emphasize power rather than speed; the time limits are quite generous. On some occasions all students may have finished before time limits are reached. If everyone has finished, you should call time at once. It is important, however, that full time be allowed even if only

two or three students are still working. These slower workers will often be competent and careful students, and they should not be penalized by shortened time limits. You can reduce restlessness among those who finish early by urging them to check their answers and by having general reading materials available.

SCHEDULING THE TESTS

The total time required is approximately 5 hours 15 minutes. Actual testing time is 4 hours 30 minutes. Administration time may vary from class to class, but actual testing time must not exceed the specified limits. If Vocabulary, Social Studies, Use of Sources, or the Science test will be given, be sure to include time in your schedule for the accompanying tests that also must be given. These are listed below. To aid the examiner in timing the tests, this manual provides space to record starting and stopping times for each test. If STEA is administered, it is recommended that it be given first.

TESTING TIME

<i>Test</i>	<i>Actual testing time</i>	<i>Approx. admin. time</i>	<i>Approx. total time</i>
INTRODUCTION		17 min.	17 min.
Reading	50 min.	5	55
Vocabulary*	10	2	12
Mathematics			
Concepts	40	3	43
Computation	30	3	33
Language Arts	38	3	41
Spelling	12	3	15
Social Studies*	30	3	33
Use of Sources†	30	3	33
Science*	30	3	33
TOTAL	4 hours & 30 min.	45 min.	5 hours & 15 min.
STEA	20 min.	10 min.	30 min.

*Reading test must also be taken or no scores can be reported.

†Social studies and science tests must also be taken or no scores can be reported.

PROPER MARKING OF THE ANSWER SHEETS

Filling in response ovals

The answer sheets will be scored by an electronic scoring machine. The machine can score accurately only if the answer sheets are properly marked. The examiners and

proctors must make sure that the sheets are marked correctly. The most important considerations in filling in response ovals are listed below.

1. Each mark must be dense and black; soft (No. 2) pencils must be used.
2. Each mark must cover more than half the area of the oval.
3. The mark must be made within the oval. Marks need not be uniform in size or shape. Very neat or fussy marking should be discouraged, since it takes too much of the student's time and may lower his score.

The examples below illustrate good and poor marking.



If this is the first time the students are using separate answer sheets, it may be helpful to illustrate proper marking on the chalkboard.

Marking the name grid

Proper marking of the Student Name Grid (side 1 of the answer sheet) is necessary for correct listing of the students' names on the reports of test results. In filling in this information each student must:

1. Leave a space in the box between last name and first name. If a student's name is too long to fit in the grid, he should be instructed to print only as much of it as space allows.
2. Mark only *one oval* in each alphabetical column.
3. Erase *completely* all incorrect marks before blackening the proper oval.

Entering identifying information

Before the first test session begins, it will be helpful to put on the chalkboard the identifying information exactly as students are to print it on the answer sheet—grade, semester, form, STEA level (if STEA is to be given), teacher's name, and school.

INTRODUCTORY DIRECTIONS TO STUDENTS

(Directions to the examiner are printed with no indentation and should not be read to the students.)

(Directions to be read to the students are indented in this manner and bordered by a vertical bar on the left.)

The directions in this section will prepare the students for the tests and instruct them in filling in the name grid and other identifying information. These instructions are to be used only at the beginning of the first test session.

Make sure each student has two No. 2 lead pencils and an eraser. They may not use pens or colored pencils. The

students should be seated in the desired arrangement and separated as much as possible.

Read all directions slowly and distinctly. Say:

Today we are going to begin taking a series of tests that will help you and your teachers know how well you can remember and use what you have learned.

It is important that you do your best on these tests so that your scores will show clearly your educational strengths and weaknesses.

The answer sheet that I will pass out in a moment will be read by a machine that will record your scores. This machine is very accurate, but it is important that you listen to and follow carefully the instructions for making your marks so that the machine can read them.

Do not make any marks on the test booklet. You are to mark your answers to the test questions on the separate answer sheet.

I will now give each of you an answer sheet. Do not mark the answer sheet. Leave it on your desk until I tell you what to do with it.

Pass out the answer sheets (If you are using Digitek or IBM 1230 answer sheets, turn to page 14 for directions. If you are using SRA answer sheets, continue here.)

When the materials have been distributed, say:

Be careful how you handle your answer sheet. Do not fold it or bend the corners. Keep it as clean as possible. Make no marks on it until I tell you to do so.

Place your answer sheet on your desk so that side 1, with the name grid, faces up.

Check to see that all students have side 1 up. Show them the Student Name Grid on the answer sheet. (If you will hand-score your answer sheets, instruct the students to print their names in the space provided. Then turn to page 6; otherwise continue here.)

Now turn the sheet so that the spaces for teacher's name and school are at the bottom of the sheet.

Make sure that all students have the sheet correctly placed. Then say:

Now fill in these ovals. Next to "Grade," fill in the oval for ____.

Give grade and pause.

Next to "Semester," fill in the oval for ____.

Give semester and pause.

Next to "Form," fill in the oval for ____.

Give form and pause.

If STEA is not to be administered, tell the students to skip the STEA line; otherwise say:

Next to "STEA," fill in the oval for level ____.

Give STEA level and pause.

Next to "Sex," fill in the oval indicating whether you are a boy or girl.

In the blank space after "TEACHER," print ____.

Give teacher's name and pause.

Next to "SCHOOL," print ____.

Give name of school and pause.

Allow enough time for all students to complete this identifying information clearly and accurately. Then say:

Now look at the Student Name Grid at the right side of your answer sheet. To find out how to put your name in the grid, read the section called "Marking Your Name" to yourselves while I read it aloud. Make no marks on the answer sheet until I tell you to do so.

"Your answer sheet will be scored by a machine. This machine can also 'read' your name if it is properly recorded on the answer sheet.

"There are two steps in filling in your name.

"First, print your name in the boxes across the bottom of the grid like this: (1) your last name; (2) skip a box; (3) your first name. If your whole name will not fit in the space, print as many letters as fit.

"Second, fill in the matching oval above each letter. Blacken the entire oval, but do not go outside it.

1. Fill in the matching oval above each letter.
2. Leave the space between your last and first name blank.

"Make sure that you blacken each oval heavily and that only one oval is marked in each column."

Remember--there are two steps to filling in your name grid: first, printing your name in the boxes; second, filling in the matching oval above each box.

Are there any questions about filling in your name?

Pause to answer any questions. Then say:

Now take your pencil and print your last name in the boxes at the bottom of the name grid. Put one letter in each box.

Check to see that all students are printing their last names properly. Then continue:

Now skip one box and print your first name.

If a student's name is too long to fit in the grid, instruct him to print as much as possible. Then say:

Now fill in the ovals above your name. Begin with the letter in the first box. Find the same letter in the alpha-

betical column directly over it. Make a heavy black mark inside the oval showing this letter. Make your mark large enough to fill the oval, but do not go outside the oval.

Do the same for each letter of your name.

If you make a mistake, erase very carefully and make the right mark.

Allow enough time for students to fill in their names. Walk around the classroom and check to see that each student is working carefully and accurately.

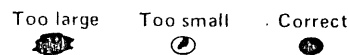
When all the students have filled in their name grids, instruct them to turn to side 2 of their answer sheets. Say:

We are almost ready to begin the first test. Turn your answer sheet over and place it so that the section called "Marking Your Answers" is at the bottom. Read this section silently while I read it aloud.

"Each row of ovals on the answer sheet has a number that matches the number of one of the test questions. To answer a test question, decide which is the best answer. Then find the row of ovals numbered the same as the question. Make a heavy black mark in the oval with the same letter as the answer you have chosen.

"There are three important things to remember:

"First, the heavy black mark you make should be large enough to fill the oval, but it should not go outside the oval. Do not waste time making extremely neat marks, but make sure the mark is heavy and fills the oval.



"Second, keep your place on the answer sheet. Make certain you make your mark in the row numbered the same as the question you are answering.

"Third, mark only one oval in a row. If you change your mind about an answer, erase your first mark completely and make another mark."

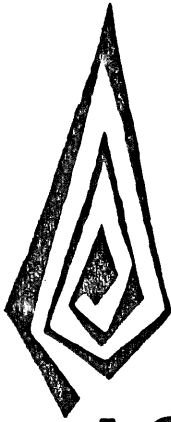
Do not fold or bend your answer sheet. Keep it as clean as possible. Mark only in the ovals provided, because extra marks might be counted as errors.

Are there any questions?

Answer any questions and then read the instructions for the first test on your schedule.

Your school test coordinator will furnish instructions on use of the Numeric Research, Student ID, and Special Test Unit Number grids if they are being used in your testing program. These should be filled in by the teacher after the students have completed the tests.

SRA ASSESSMENT SURVEY



ACHIEVEMENT SERIES

FORM E/GREEN LEVEL

Prepared by Robert A. Naslund, Louis P. Thorpe, and
D. Welty Lefever, all of the University of Southern
California

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BIBLIOGRAPHY

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- Bodahl, M. A. The test performance of the Fort Peck (Montana) Indians. Unpublished manuscript, University of North Dakota, 1934.
- Bureau of Indian Affairs (U.S.). Statistics concerning Indian education. Lawrence, Kansas: Publication Service, Haskell Institute, 1963.
- Bureau of Indian Affairs (U.S.). Statistics concerning Indian education. Lawrence, Kansas: Publication Service, Haskell Indian Junior College, 1976.
- Byrde, J. F. The Indian student. Vermillion: Dakota Press, 1970.
- Comeau, L. Personal communication, January 17, 1978.
- Coombs, M. L., Kron, R. E., Collister, G. E., & Anderson, K. E. The Indian child goes to school. Washington, D.C.: U.S. Government Printing Office, 1958.
- Daniels, R. E. Cultural identities among the Oglala Sioux. In E. Nurge (Ed.), The modern Sioux. Lincoln: University of Nebraska Press, 1970.
- Hallowell, A. Culture and experience. Philadelphia: University of Pennsylvania Press, 1957.
- Hunter, W. S., & Sommermier, E. The relation of the degree of Indian blood to score on the Otis intelligence test. Journal of Comparative and Physiological Psychology, 1922, 2, 257-277.
- Lame Deer, J., & Erdoes, R. Lame Deer seeker of visions. New York: Simon and Schuster, 1972.
- Mood, A. M. Introduction to the theory of statistics. New York: McGraw-Hill, 1954.
- Ross, D. D. A comparative intergroup study of the academic achievement and attendance patterns between full-blood and mixed-blood type Oglala Sioux Indian students in the secondary department of the Oglala Community School, Pine Ridge, South Dakota. Unpublished master's thesis, Nebraska State Teachers College, 1962.
- Siegel, S. Non-parametric statistics for the behavioral sciences. New York, Toronto and London: McGraw-Hill, 1956.
- Sofar, D. A study relative to Indian education in Wyoming. Wyoming: State Department of Education, 1964.

SRA Assessment Survey. Using test results: A teacher's guide. Chicago:
Science Research Associates, Inc., 1972.

Useem, R. H. Statement by Ruth Hill Useem. American Anthropologist,
1947, 56, 393-394.