DOCUMENT RESUME

ED 084 042 RC 007 412

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TITLE	A Comparison of Sioux Indian Children's Vane Kindergarten Test Results and the Established Norms.
PUB DATE	Aug 70
NOTE	26p.; Master's Project Paper, Northern State College, Aberdeen, South Dakota
AVAILABLE FROM	Inter-Library Loan, Northern State College, Aberdeen, South Dakota
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*American Indians; *Comparative Testing; *Group Norms; *Kindergarten Children; Measurement Techniques; *Norm Referenced Tests; Tables (Data); Test Results
IDENTIFIERS	Sioux; *Vane Kindergarten Test

ABSTRACT

The purposes of this study were (1) to develop norms among American Indian Students for the Vane Kindergarten Test (VKT) and (2) to statistically compare these with the published norms. Sixty-one test results of Sioux Indian children ages 4.6-5.5 were statistically compared with VKT norms. This tabulation of the results indicated that there is no significant difference between these results and the published norms. The scores were tested to see if there was any difference between the modes of learning assessed by the test. The modes of learning were the cognitive, affective, and psycho-motor domains. These results were also without significance at either the .01 or .05 percent level. Since there was no significant difference between the Sioux children and the norms, it is possible to assess the learning problems of Sioux Indian children by the VKT. The 3 recommendations stated that the VKT should be used in the Sioux Head Start programs as a 3-pronged measure of intelligence, as a projective educational aid, and as a diagnostic tool. (FF)

A COMPARTSON OF STOUX INDIAN CHILDREN'S VANE KINDERGARTEN TEST RESULTS AND THE ESTABLISHED NORMS

A Project Paper

Presented to

John P. Holt of the Graduate Faculty

Northern State College

Aberdeen, South Dakota

In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Special Education

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by

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August 1970

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CHAPTER I

INTRODUCTION

Known educational disabilities occur among American Indian student populations. These educational gaps recur despite demonstrated intellectual ability.[1,2] This raises an issue of possible dysfunction greater than that found in the typical population. To pursue that possibility, this study seeks to assess the cognitive, psycho-motor and affective processes of a substantial sample of Indian children. A second purpose of the study was to compare data obtained from that assessment with published norms for the sampling instrument.

THE PROBLEM

Statement of the Problem

The purposes of this study were (1) to develop norms among Indian students for the Vane Kindergarten Test, and (2) to statistically compare norms with the published norms.

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[1]Dean A. Crawford, David L. Peterson and Virgil Wurr, Minnesota Chippewa Indians: A Handbook for Teachers, St. Paul, Minnesota, 1967, p. 18

U.S., Congress, Senate, Special Subcommittee on Indian Education of the Committee on Labor and Public Welfare, The Education of American Indians, Hearing, 91st. Congress, 1st. Sess. February, 1969 (Washington: Government Printing Office, 1969), p. 33.

Importance of the Study

When confronted with the large dropout rates of Indian students in the junior and senior high schools and unfavorable academic comparisons with non-Indian students in the later elementary grades, an imperative for determining approximate aspects of learning problems emerges. Early diagnosis of the reasons for poor school performance proves useful. "If a child is to benefit maximally from his educational opportunities, the school should follow his progress from the earliest grades and a program that will meet his needs"[3]

Feasibility of the Study

This study is feasible because one test has recently been developed which integrates two non-language based scores with a score from the language development areas. This instrument is the Vane Kindergarten Test. This instrument measures the cognitive domain with a vocabulary subtest, the perceptive domain with a perceptual motor subtest and the affective domain with the Draw-A-Man subtest. The subtest, while diagnostic in nature, each produce an IQ score. A favorable comparison of norms from the Indian student population with the norms

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[3]Julia R. Vane, "The Vane Kindergarten Test." Journal of Clinical Psychology, April 1968, p. 1.

published for the instrument, would place three pledged diagnostic tool at the disposal of the educators.

METHODS AND PROCEDURE USED

This study was a statistical comparison of Indian children located at the Rosebud Indian Reservation Head Start Program. Comparisons have been made between those Indian children and the norms published for the instrument.

The Vane Kindergarten Test was administered to children divided into the ages of 4.6 to 4.11 and 5.0 to 5.5.

Results were tabulated at the end of this study. These were compared statistically to determine the presence or absence of a significant difference.

DEFINITION OF TERMS USED

American Indian Student: These are students attending the Head Start Program at the Rosebud Indian Reservation, who consider themselves to be American Indian. This definition is based neither upon blood quantum nor upon tribal registration.

Cognitive Domain: This includes those objectives which deal with the recall or recognition of knowledge in the development of intellectual abilities and skills.[4]

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[4]Benjamin S. Bloom, Editor, Taxonomy of Educational Objectives - Handbook I: Cognitive Domain, March 1969, p. 7.

Perceptual Domain: This is the integration of visual, auditory and kinesthetic processes, accompanied by spatial awareness.

Affective Domain: This includes those objectives which describe changes in interest, attitudes and values, and the development of appreciations and adequate adjustment.[5]

DELIMITATION OF THE STUDY

This study was limited to:

1. Indian children enrolled in the Rosebud Indian Reservation Head Start Program during the school year of 1969-1970,
2. who were between 4.6 - 5.5 years of age,
3. who were in attendance at:
   a. Wood, White River, and Rosebud, South Dakota Head Start units on April 8, 1970 and
   b. Norris, Parmelee, St. Francis, and Mission, South Dakota units on April 9, 1970, and

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[5]op. cit. Benjamin S. Bloom, p. 7.

4. a child was not included if:
   a. he had a physical deformity or
   b. his test protocol showed a missing subtest score.

CHAPTER II

REVIEW OF THE LITERATURE

The Vane Kindergarten Test was published in April of 1968. Because each section has a different background, it is necessary to review the literature separately for each subtest.

VOCABULARY SUBTEST

> Abilities measured by this subtest are related to intelligence and ability to succeed with academic work. The responses to the beginning words measure knowledge and as such function as a general information test. Responses to the more difficult words require language facility as well as knowledge of the meaning of the words. As an example, many young children are aware of what the word "straight" means, but few have the language facility to define it properly.[6]

This test may be the least valid of the three subtests. This is because of the language facility required for the more difficult words. It has been demonstrated that culturally disadvantaged children are linguistically different.[7,8] They may score low on IQ tests as a result.[9,10]

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[6]op. cit. Julia R. Vane, p. 2.

[7]Thomas J. Edwards, Forging Ahead in Reading. The International Reading Association, 1968. Newark, Delaware. p. 260.

[8]op. cit. Dean A. Crawford. p. 9.

[9]op. cit. U.S., Congress, Senate. p. 33

[10]op. cit. Thomas J. Edwards. p. 60

The ability to do the abstract thinking is present.[11] But the language may not be adequate to express this thinking in terms of the linguistic requirements for the test.

The invalidity of the vocabulary test might be generalized from culturally disadvantaged students of other groups. It has been shown that "success" in school is frequently related to understanding and utilizing abstract concepts. Bernstein postulated:

> "lower-class children used language expressing concrete rather than abstract ideas. This hypothesis is supported in part by Miller and Swanson in their discussion of expressive style. When the child-rearing practices (most associated with middle-class practices) approved of maternal self-control, symbolic reward, and psychological discipline, the child tended to develop a conceptual or abstract style. When, as in lower-class families, maternal self-control was limited, rewards were tangible, and discipline was physical, the child more often developed a motoric or concrete style. Significant social class differences in pupil selection of concrete as opposed to abstract explanations of solutions to problems has been found by Miller. Since achievement and IQ test scores may be related to the ability of the child to understand and work with abstracts, the role of social class in predisposing the family and peers to provide the necessary experiences is critical."[12]

THE PSYCHOMOTOR TEST

According to Julia Vane:

> "abilities measured by this subtest are related to basic perceptual motor skills which are developmental in nature. Skills needed for success on this

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[11] op. cit. U.S., Congress, Senate. p. 33.

[12] John M. Beck and Richard W. Saxe, Teaching the Culturally Disadvantaged Pupil (Springfield, Illinois: Charles C. Thomas Publisher, 1965) p. 16.

> type of test have been shown to be related to mastery of reading and writing in the primary grades. Poor performance on the subtest frequently is indicative of a developmental lag in motor or perceptual development. Very poor performance may be suggestive of central nervous system dysfunction or brain injury."[13]

The theory behind the Psychomotor Test is Bender's Gestalt approach, but the drawings have been modified as suggested by grade school teachers. The Gestalt approach is used in this test basically as a means of arriving at maturational IQ and diagnosis for the previously mentioned brain damage or educational deficiencies. Elizabeth Koppitz pointed to the use of the Bender Visual-Motor Gestalt Test with children with the following results. "Findings show that the mean Bender scores improve steadily up to age nine and level off thereafter. The Bender differentiates both outstanding and immature visual motor perception up to age eight. Thereafter it no longer discriminates at the upper end."[14]

Although the Bender Visual-Motor Gestalt is primarily a diagnostic test, the modification in drawing by Julia Vane, coupled with the previous research by Elizabeth Koppitz, suggests that it is an accurate test of maturational development.[15] translated into an IQ score.

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[13]op. cit. Vane, April 1968, p. 2.

[14]Elizabeth M. Koppitz, "The Bender Gestalt For Children," Journal of Clinical Psychology, Vol. 16, Oct. 1960, p. 432.

[15]Pascal and Suttell, The Bender-Gestalt Test (New York, 1951, p. 22.

THE DRAW-A-MAN TEST

The Draw-A-Man test is a test used to give both a maturational level and a diagnosis for social maladies. "This subtest is similar to the Drawing Test of Intelligence developed by Harris, but the directions, scoring and standardization are different. Such tests have been shown to be a measure of both intelligence and adjustment at the preschool and primary level and an index of future achievement."[16]

This test has been given to Indian students who show no difference in score for the published norm. As a non-verbal test with tested scoring validity, it would seem appropriate to use on Indian students. There are seven published deviations that are considered valid.

According to Vane,

> "it was planned originally to score the Man drawings using the system developed by Goodenough. Extensive experience with both highly trained and relatively new examiners indicated that when a large number of tests were scored in a short time, many errors occurred. The errors tended to occur on items involving measurement of body parts, judgment of quality, or on items for which directions by Goodenough were somewhat ambiguous. In order to minimize scoring errors, a simpler system of 31 points were developed. Items that were found to be valid indicators of intelligence, but what could not be scored rapidly and consistently by a varied group of examiners, were not included. When IQs obtained by this scoring method were correlated with Stanford-Binet IQs of 187 children five and six years of age, the result was + .49. This compares favorably with the correlation

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[16] op. cit. Vane, April 1968. p. 2.

of + .52 which was obtained by comparing the drawings of the same 187 children scored by the Goodenough method with their Stanford-Binet IQs. Since the simplified scoring method contains only 31 points, it should be limited to use with young children and it may underestimate very bright children of six and one-half and seven years. For older children, the Goodenough scoring is recommended."[17]

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[17] op. cit. Vane, April 1968, pp. 20-21.

CHAPTER III

ANALYSIS OF DATA

To test for the presence of a significant difference the t-test was used. The Vane Kindergarten Test was given to the Sioux Indian children enrolled in the Head Start Program on The Rosebud Indian Reservation in South Dakota. Twenty-four test results were used for each of the subtests at the 4.6 to 4.11 year age level. The resulting t-score indicated no significant difference between Indian children and the published norms. Thirty-seven test scores were used for the children between the ages 5.0 and 5.5. The results indicated no significant difference. (See tables 1 and 2.)

The review of the literature for the vocabulary test indicated a lower score on tests based on language might occur. The means of the Vocabulary subtest at both age levels seemed to indicate that although the Indian children were within the norms, a disparity existed within the test. The means for the vocabulary tests were 101.33 and 94.54 compared with the psycho-motor means of 111.59 and 113 and the means for the Draw-A-Man Test of 109.75 and 109.92. The comparison was expanded to test if any significant difference occurred within the subtests. If the vocabulary IQ differed from the psycho-motor or the Draw-A-Man subtest to any significant degree. There was no significant difference. (See tables 3 and 4.)

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Sixty-one test results of Sioux Indian children ages 4.6 to 5.5 were statistically compared with the norms for the Vane Kindergarten Test. This tabulation of the results indicate that there is no significant difference between these results and the published norms. (See tables 1 and 2.) The group of scores were then tested to see if there was any difference between the modes of learning assessed by the test. The modes of learning were the cognitive, affective, and psycho-motor domains. These results were also without significance at either the .01 or .05 percent level. (See tables 3 and 4.)

Conclusions

There is no significant difference between the Sioux children and the norms. Therefore, an assessment of learning problems is possible in Sioux Indian children by the use of the Vane Kindergarten Test.

> "The underlying assumption of the VKT is that samples of behavior taken at kindergarten age will give clues to the child's ability to function adequately in areas related to success in school. Although the VKT relies upon only three subtests, it permits an individual evaluation of each child which makes it possible to determine the influence of motivation, attention, perceptual motor skills, or nonconforming behavior upon

test perceptual motor skills, or nonconforming behavior upon the test results"[18]

The test for significance between subtests should indicate that Indian children learn equally well in the affective, cognitive, and psycho-motor domain. The correlations and reliability studies which correlate with the Vane should be able to correlate with Sioux Indian students.

The statement of the problem raised two issues:

1. Development of separate norms for Indian students on the project instruction and
2. a comparison of those norms with the standardized norms.

As the data collected revealed no significant differences on any item or any subtest on the project instrument there remains no reason to establish new norms. Thus, both purposes of the study are considered met.

Recommendations

I. The VKT should be used in the Sioux Head Start programs as a three-pronged measure of intelligence.

II. The VKT should be used in the Sioux Head Start as a projective educational aid.

III. The VKT should be used in the Sioux Head Start program as a diagnostic tool.

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[18] op. cit. Vane, p. 1.

Table 1

A Comparison of VKT Sub Tests for Sioux Indian Children (c) Ages 4.6 - 4.11 + the Norms (n)

VKT Sub test	N	Mean	S.D.	Standard error	t score	df	signif. .05	signif. .01
Voc (n)	100	104.8	18.3	3.38	.2365	122	n.s.	n.s.
Voc (c)	24	101.33	18.5	14.26				
P - M (n)	100	100.2	14.5	2.12	1.16	122	n.s.	n.s.
P - M (c)	24	113	16.0	10.79				
Man (n)	100	102.8	15.9	2.55	.7048	122	n.s.	n.s.
Man (c)	24	109.75	15.1	9.54				

Table 1 shows the t-test for significance. These results are for the age group of 4.6 - 4.11 years. The results indicate no significance differences at either the .01 or .05 level.

Table 2

A Comparison of VKT sub-Tests for Sioux Indian Children (c) Ages 5.0 - 5.5 + the Norms (n)

VKT Sub-test	N	Mean	S.D.	Standard error	t score	df	signif. .05	signif. .01
Voc (n)	100	102.6	20.8	4.37	.967	135	n.s.	n.s.
Voc (c)	37	94.54	14.7	5.85				
P - M (n)	100	99.4	15.8	2.97	1.024	135	n.s.	n.s.
P - M (c)	37	111.59	20.7	11.51				
Man (n)	100	101.6	19.0	3.64	.707	135	n.s.	n.s.
Man (c)	37	109.92	20.3	11.18				

Table 3

A Comparative Analysis of the VKT Sub-Tests for Sioux Indian Children ages 4.6 - 4.11

	N	Mean	S.D.	Standard error	t score	df	signif. .05	signif. .01
Voc 4.6 - 4.11	24	101.33	18.5	14.26				
					.6526	46	n.s.	n.s.
P - M 4.6 - 4.11	24	113	16.0	10.79				
Voc 4.6 - 4.11	24	101.33	18.5	14.26				
					.4909	46	n.s.	n.s.
Man 4.6 - 4.11	24	109.75	15.1	9.54				
P - M 4.6 - 4.11	24	113	16.0	10.79				
					.2257	46	n.s.	n.s.
Man 4.6 - 4.11	24	109.75	15.1	9.54				

Table 4

A Comparative Analysis of the VKT Sub-tests for Sioux Indian Children ages 5.0 - 5.6

	N	Mean	S.D.	Standard error	t score	df	signif. .05	signif. .01
Voc 5.0 - 5.6	24	94.54	14.7	5.85				
					.3206	46	n.s.	n.s.
P - M 5.0 - 5.6	24	111.59	20.7	11.51				
Voc 5.0 - 5.6	24	94.54	14.7	5.85				
					1.2187	46	n.s.	n.s.
Man 5.0 - 5.6	24	109.92	20.3	11.18				
P - M 5.0 - 5.6	24	111.59	20.7	11.51				
					.1047	46	n.s.	n.s.
Man 5.0 - 5.6	24	109.92	20.3	11.18				

Table 5

Raw Scores Ages 4.6 - 4.11

P - M	VOC	MAN	FULL
1. 133	89	100	107
2. 100	100	107	102
3. 89	128	100	109
4. 98	87	93	93
5. 115	87	116	106
6. 126	136	136	133
7. 126	153	131	137
8. 98	87	116	100
9. 145	96	104	115
10. 123	96	114	111
11. 102	112	114	109
12. 112	86	125	108
13. 86	86	80	84
14. 111	111	84	102
15. 111	111	123	115
16. 111	95	95	100
17. 109	93	110	104
18. 109	93	88	97
19. 109	109	129	116
20. 140	109	105	118
21. 98	119	129	115
22. 127	81	108	109
23. 97	92	108	99
24. 137	81	119	112

Table 6

Raw Scores Ages 5.0 - 5.5

P - M	VOC	MAN	FULL
1. 105	90	133	109
2. 105	115	97	106
3. 120	90	112	107
4. 105	90	97	97
5. 165	90	112	122
6. 135	105	107	116
7. 115	125	133	124
8. 95	105	90	97
9. 135	76	113	108
10. 79	79	89	82
11. 103	89	105	99
12. 93	80	115	96
13. 118	89	100	102
14. 121	102	94	108
15. 121	87	129	112
16. 102	111	98	104
17. 116	111	108	112
18. 102	77	124	101
19. 155	77	169	134
20. 92	87	77	85
21. 92	87	116	98
22. 155	87	144	129
23. 138	76	132	115
24. 114	76	102	97
25. 129	110	122	120
26. 100	110	102	104
27. 86	100	97	94

Table 6 (continued)

Raw Scores Ages 5.0 - 5.5

	P - M	V O C	M A N	F U L L
28.	114	119	106	113
29.	100	86	71	86
30.	114	110	127	117
31.	98	133	80	84
32.	127	117	148	131
33.	113	98	109	107
34.	75	84	91	83
35.	89	108	109	102
36.	97	74	94	88
37.	106	106	115	109

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