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## Native American Youth: What are Their Career Interests, Career Educational Needs?

D.J. Hess

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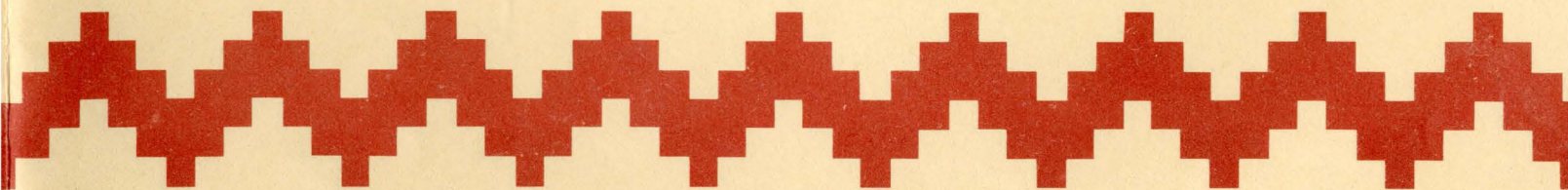
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# Native American youth:

## What are their career interests, career educational needs?

Agricultural Experiment Station  
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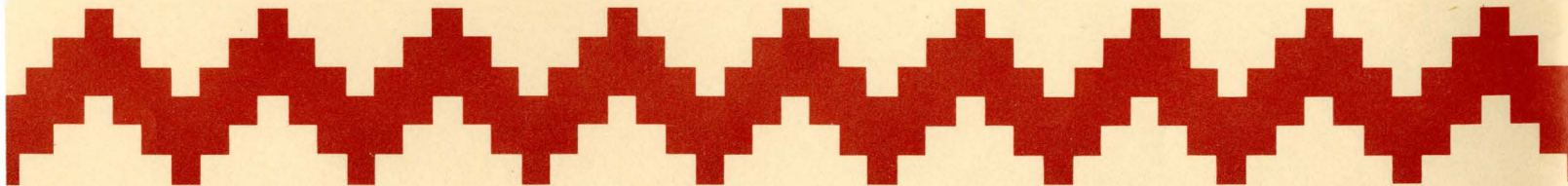


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# Native American youth:

## What are their career interests, career educational needs?

By Donna J. Hess

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Among Native Americans, interest is growing in the development of natural resources on reservation areas. Yet few Native American youth are pursuing careers in the areas related to this development--the agricultural and technical fields. Why is this so?

A staff member of one of the community colleges on a South Dakota reservation estimated that only 50 - 70 Native American students are currently enrolled in an agricultural or natural resource science program in the state. Tribal leaders, educators, and others have begun to ask what can be done to encourage young people from the reservation to prepare themselves for careers in these areas.

Compounding this problem is persistent poverty combined with unemployment and underemployment, a characteristic of many reservation areas. The U.S. Census Bureau reported in 1970 that approximately 52% of the Native American population in South Dakota lived in poverty. Furthermore, U.S. Labor Force statistics for 1972 showed the unemployment rate on South Dakota's reservations ranged from 9 - 68% with an average of 37%. The South Dako-

ta Department of Labor reported in July of 1979 that unemployment rates for nonwhite youth in the state (most are Native American) far exceeded that of white youth.

Are there no Native American youth interested in agriculture or in natural resources? Are career education programs really meeting their needs?

A state task force in 1977 defined "career education" as "a guidance and instructional strategy for improving individual achievement and facilitating individual career development, beginning in early childhood and continuing throughout life." Goals are to (1) assist individuals in discovering interests, capabilities, and aspirations and in developing positive attitudes about themselves; (2) assist them in exploring and understanding the world of work--the options available as well as requirements for participation; (3) assist in making career decisions; (4) motivate individuals to prepare for employment and/or further education; and (5) provide placement and follow-up services.

Are these goals being met in the career education programs of Native American youth ?

To answer these questions a project was begun to examine the career interests of Native American students living in reservation areas of South Dakota.

Research methods

Over a 3-year period data were gathered from students enrolled in one large high school on a reservation in the state. Students from a second large high school in the area were also surveyed, primarily to assess the representativeness of the first school. It is important to note that the two schools differ in several ways.

Both sociological and Indian education literature suggest that schools which differ as these do also differ in overall learning climates and, consequently, in students' achievements and behavior. It is reasonable, therefore, to ask whether

there might also be differences in students' interests and aspirations.

Data analysis revealed few statistically significant differences. However, responses to six general interest scales revealed one significant difference; 10 of the 25 specific career interest scales also revealed significant differences.

Viewed from another perspective, however, nearly two-thirds of the 25 specific interest scales showed no significant differences by school. On this basis, along with the fact that the sample school typically draws students from dispersed geographic areas on the reservation, it was concluded that findings collected from students in the first school selected were fairly representative of youth on that reservation.

Two hundred and eighty-one native American youth participated in the project from 1976 to 1979. Table 1 shows the number and grade level of students involved and the survey instrument used for each school year.

TABLE 1

PROJECT SAMPLE

School year	Number of participants	Level in school	Instrument used
1976-77	37	Juniors	Strong <sup>1</sup>
1977-78	45	Juniors	Strong-Campbell <sup>2</sup>
	47	Sophomores	CPP <sup>3</sup>
1978-79	55	Freshmen	CPP <sup>3</sup>
	56	Sophomores	CPP <sup>3</sup>
	41	Juniors	CPP <sup>3</sup>

<sup>1</sup>Strong = Strong Vocational Interest Inventory Blank.

<sup>2</sup>Strong-Campbell = Strong-Campbell Interest Inventory.

<sup>3</sup>CPP = Career Planning Program.



Of the 281 students, 240 were enrolled in the first school and 41 were enrolled in the second; 148 were males and 133 were females.

Standardized career interest inventories were used in collecting data. Some consideration was given to designing a survey especially for reservation-based Native American high school students. However, the process of developing a new inventory and establishing its validity and reliability, is time-consuming, costly, and involved. In addition, standardized instruments have the advantages of available processing as well as comparability with other populations.

There are many kinds of interest inventories. Some match students' interests with those of persons actually working in specific career areas. Others relate students' skills and interests to career clusters. Still others are open-ended and serve as tools for clarifying values and sorting interests. The latter, generally, do not lend themselves to data analysis and computer processing.

Examination of several commonly used career interest inventories revealed several points which needed to be considered. One was the age and grade level of the students to be surveyed. Some inventories, such as the Strong-Campbell Interest Inventory, are designed for more mature individuals (16 years and older). Using this instrument with less mature individuals is likely to produce unreliable, inconsistent results.

Somewhat related to age and grade consideration is a second point -- the reading level required to complete the inventory. One interest inventory, Holland's Self-Directed Search, was found available in a spe-

cial form coded E for use with individuals who have a limited command of written English. However, since this instrument is open-ended, it was not used.

A third consideration in selecting an appropriate career interest inventory was bias. One bias detected in some instruments involved gender. It was impossible for females to express any interest in agricultural careers with the Strong Vocational Interest Inventory Blank (an instrument now largely replaced by the Strong-Campbell Interest Inventory). In the older instrument, career interests which could be identified for males and females were sex-segregated and stereotyped. While this kind of bias has been eliminated from most recently developed and modified interest inventories, some problems still exist.

Another kind of bias was the extent to which items in the inventory were based on urban, middle-class experiences. If such items are extensively used, chances are good that the students' career-related interests will not be identified accurately. One result might be a flat profile in which no clear interest areas are observable. Rather than having no interests as such a profile might suggest, career interests of these students might not have been tapped. It is not suggested that the career interest inventory should only relate to careers found in rural or reservation areas. Such an instrument would be limiting because students may not live their entire lives in rural or reservation communities. In addition, careers not now prevalent in these areas might become so in the future. The inventory should provide students with a wide range of choices. By testing several instruments and discarding those which yielded flat profiles this problem was overcome.

The career interest inventory chosen for this project was the Career Planning Program (CPP) developed by the American College Testing (ACT) Corporation. Reasons for choosing this program were (1) the instrument was relatively free of the problems identified; (2) the instrument provided information on students' interests and on relevant career experiences, abilities, and educational plans; (3) the instrument was relatively easy to administer; and (4) the counselor who administered the instrument found the resulting data useful for career and educational counseling.

All of the inventories were administered at the first school by a cooperating field researcher. At the second school an undergraduate Native American student who had been instructed in the proper method administered the survey.

#### Career interests identified

The six general interest scales in the Career Planning Program (CPP)

are social service; business contact; business detail; technical work; science; and creative arts. Using this program, data were collected from 199 students during the 1977-78 and 1978-79 school years (see Table 2).

Highest interest was expressed in the technical area, although differences among the various scales were not great. Students' interests in all six areas generally ranged from moderate to high; more than 50% of the students surveyed expressed at least moderate interest in each area. Rather than lacking interests, as has sometimes been suggested about Native American youths, these students have a broad range of interests.

In addition to the general interest scales, the CPP contains 25 specific interest and ability scales. On these it is possible for a student to (1) express interest in a career area; (2) demonstrate ability in a career area; (3) show both interest and ability in a career area; or (4) show neither interest nor ability in a career area. An interest area may be re-

TABLE 2

GENERAL INTERESTS AS MEASURED BY THE CPP

Interest scale	Low interest			Moderate interest			High interest		
	1978	1979	All	1978	1979	All	1978	1979	All
Social Service	21%	18%	18%	60%	58%	59%	19%	24%	23%
Business Contact	21%	15%	17%	49%	60%	57%	30%	25%	26%
Business Detail	19%	18%	18%	55%	58%	57%	26%	24%	25%
Technical Work	4%	15%	12%	64%	48%	52%	32%	37%	36%
Science	13%	19%	18%	62%	59%	60%	25%	22%	22%
Creative Arts	19%	12%	14%	57%	58%	57%	23%	31%	29%



garded as a potential area for development of skills; ability or skill areas may be potential interest areas. Table 3 shows the percentage of students expressing interest and/or demonstrating ability in each of the 25 areas included in the survey. The data are presented separately for each school year sample.

No significant differences were noted between the two years on the 25 scales although one year contains a broader group of students (47 sophomores from one school in 1977-78 com-

pared to 152 freshmen, sophomores, and juniors from two schools in 1978-79).

While the general interest scales showed little variation in interest areas, the 25 specific scales reveal some important differences. Areas of greatest interest and/or ability include retail sales and services; office machine operation; storage, dispatch, and delivery; human services; growing, caring for plants and animals; transport equipment operation; and personal and household services. In each of these areas nearly all of the surveyed students expressed interest and/or demonstrated ability. This

TABLE 3

SPECIFIC INTEREST AND/OR ABILITY AREAS AS MEASURED BY THE CPP

Interest/ability area	1977-78 Sample	1978-79 Sample
Promotion and Direct Contact Sales	49%	47%
Management and Planning	19%	22%
Retail Sales and Services	100%	91%
Clerical and Secretarial Work	62%	55%
Paying, Receiving, and Bookkeeping	38%	45%
Office Machine Operation	100%	92%
Storage, Dispatch, and Delivery	100%	92%
Human Services	100%	92%
Repairing Home and Office Equipment	64%	53%
Growing, Caring for Plants and Animals	100%	94%
Construction and Maintenance	62%	55%
Transport Equipment Operation	100%	94%
Machine Operating and Repairing	68%	59%
Engineering and Applied Technology	45%	42%
Natural Sciences and Mathematics	23%	22%
Medicine and Medical Technologies	36%	36%
Social Sciences and Legal Services	26%	26%
Creative Arts	21%	30%
Applied Arts (Verbal)	26%	28%
Applied Arts (Visual)	23%	20%
Popular Entertainment	11%	19%
Education and Social Services	32%	35%
Nursing and Human Care	64%	75%
Personal and Household Services	100%	91%
Law Enforcement and Protective Services	60%	45%



changed little from one year to the next.

Areas in which little interest or ability were shown include management and planning; natural sciences and mathematics; social sciences and legal services; creative arts; applied arts (both verbal and visual); and popular entertainment. There were 10 significant differences by school in these interest/ability areas, and there were six significant differences by sex on these scales.

Data were also collected from an additional 45 high school juniors us-

ing the Strong-Campbell Interest Inventory. Table 4 shows the results. Some of the relatively high interest areas identified with the Strong-Campbell survey correspond to relatively high interest/ability areas identified with the CPP. Nearly all of the students who completed the CPP identified growing, caring for plants and animals as a high interest/ability area. On the Strong-Campbell survey, agriculture ranked high as an interest area -- 84% of the students expressed average or higher than average interest. Similarly, retail sales and services ranked high on both the CPP and Strong-Campbell scales.

TABLE 4

CAREER INTERESTS AS MEASURED BY THE STRONG-CAMPBELL INTEREST INVENTORY

Interest area	Percentage reporting average or higher interest
Agriculture	84%
Athletics	82%
Military Service	80%
Sales	80%
Medical Service	78%
Office Practices	73%
Adventure	67%
Mechanical Work	67%
Art	62%
Mathematics	60%
Teaching	58%
Domestic Arts	58%
Religious Activities	58%
Social Service	56%
Medical Science	53%
Merchandising	53%
Science	49%
Business Management	49%
Law/Politics	47%
Music/Drama	44%
Public Speaking	42%
Nature	38%
Writing	24%

At the other end of the spectrum, the relatively low ranking of applied arts and popular entertainment on the CPP corresponded with the low ranking of music/drama on the Strong-Campbell Inventory. There is not, however, perfect correspondence since the two instruments employ different scales. In addition, some variation in results reported here may be a reflection of the maturity of the students.

Relatively low rankings in the mathematics area, particularly on the CPP, as well as in areas involving reading and verbal skills (verbal applied arts, education/teaching, public speaking, and writing) might be foreseen, given the information on students' abilities or skills. Results of measured abilities/skills are shown for students who completed the CPP in 1977-78 and 1978-79 in Table 5.

Numerical, reading, and language usage skills are the greatest weaknesses of these students. Numerical skills were particularly weak for more than two-thirds of those who completed the survey in 1978-79 and for more than 80% of those who completed the survey in 1977-78.

In contrast, the mechanical and space relations areas are the greatest

strengths for these students -- approximately 75% scored at average or high levels in both years. The higher interest shown in the mechanical area (Strong-Campbell), in repairing home and office equipment (CPP), in construction and maintenance (CPP), in machine operating and repairing (CPP), and in engineering and applied technology (CPP) are reflections of these strengths. These would be good areas for interest development.

#### Comparison by school

During the 1978-79 school year, data were collected from two schools using the CPP. Results are shown on the six general interest scales in Table 6.

Creative arts was the only area of significant difference in general interests by school. This was confounded by sex and grade level, the latter varying between the schools. School difference on this scale cannot entirely be dismissed, however, since comparison of the data from high school juniors in one school with data from high school sophomores in the other school a year earlier (age cohorts of the first group) also reveals a significant difference on this

TABLE 5

ABILITY OR SKILL AREAS AS MEASURED BY THE CPP

Ability or skill area	1977-78 Results		1978-79 Results	
	Low	Average-High	Low	Average-High
Language Usage	21%	79%	39%	61%
Mechanical Reasoning	26%	74%	24%	76%
Space Relations	26%	74%	28%	72%
Clerical	38%	62%	33%	67%
Reading	49%	51%	54%	46%
Numerical	81%	19%	70%	30%

TABLE 6

GENERAL INTERESTS AS MEASURED BY THE CPP IN 1978-79 BY SCHOOL<sup>1</sup>

General interest scale	<u>Low interest</u>		<u>Moderate interest</u>		<u>High interest</u>	
	School 1	School 2	School 1	School 2	School 1	School 2
Social Service	18%	18%	56%	65%	26%	18%
Business Contact	17%	10%	61%	58%	22%	32%
Business Detail	20%	12%	57%	60%	23%	28%
Technical Work	17%	10%	44%	58%	38%	32%
Science	21%	15%	59%	60%	20%	25%
Creative Arts <sup>2</sup>	11%	15%	66%	35%	23%	50%

<sup>1</sup>School 1 designates school of primary interest. School 2 designates school of comparative interest.

<sup>2</sup>Difference is significant at the .01 level.

scale. In terms of general interests, minimal overall differences are observed between the two schools.

The more detailed 25 specific interest scales show more significant differences by school. These are primarily among the male students. Table 7 shows student interest and/or ability areas as measured by the CPP in 1978-79 by school and by sex within each school.

Eleven significant differences emerge between schools on the specific interest/ability scales. Nine of these are significant only for males. These and their level of significant difference are retail sales and services (.01); office machine operation (.01); storage, dispatch, and delivery (.01); human services (.01); repairing home and office equipment (.02); growing, caring for plants and animals (.01); transport equipment operation (.01); machine operating and repairing (.01); and personal household services (.01).

A tenth, construction and maintenance (.05), is not significant when sex is controlled; therefore, it is

questionable whether it represents a real school difference. The only scale on which females differed by school was education and social services with a .05 level of significant difference.

When specific interests/abilities are examined, about 50% of the sample differ on about a third of the scales; the other half of the sample differ on less than 5% of those scales. No significant differences were found on about two-thirds of the scales. Therefore, much similarity is expressed in interests/abilities among the students in these two schools, especially among female students.

#### Comparison by grade

Since the tenth and eleventh grade students who took part in this study during the 1977-78 school year completed different interest inventories, their interests are not directly comparable. An assessment of interest areas by grade, therefore, is primarily based upon the 152 ninth, tenth, and eleventh grade students who took the CPP during the 1978-79 school



TABLE 7

SPECIFIC INTEREST AND/OR ABILITY AREAS AS MEASURED BY THE CPP IN 1978-79  
BY SEX AND SCHOOL<sup>1</sup>

Interest and/or ability area	School 1			School 2		
	Males	Females	All	Males	Females	All
Promotion and Direct Contact Sales	40%	52%	45%	43%	65%	54%
Management and Planning	27%	25%	26%	14%	10%	12%
Retail Sales and Services <sup>2</sup>	95%	96%	96%	62%	95%	78%
Clerical and Secretarial Work	41%	71%	54%	43%	70%	56%
Paying, Receiving, and Bookkeeping	43%	54%	48%	29%	50%	39%
Office Machine Operation	97%	96%	96%	67%	95%	80%
Storage, Dispatch, and Delivery <sup>2</sup>	97%	96%	96%	67%	95%	80%
Human Services	95%	96%	96%	71%	95%	83%
Repairing Home and Office Equipment <sup>3</sup>	62%	54%	59%	38%	35%	37%
Growing, Caring for Plants and Animals	97%	98%	97%	71%	100%	85%
Construction and Maintenance <sup>4</sup>	68%	50%	60%	48%	35%	42%
Transport Equipment Operation <sup>2</sup>	97%	98%	97%	71%	100%	85%
Machine Operating and Repairing <sup>2</sup>	73%	56%	66%	43%	40%	42%
Engineering and Applied Technology	46%	38%	42%	48%	35%	42%
Natural Sciences and Mathematics	21%	19%	20%	29%	25%	27%
Medicine and Medical Technologies	30%	42%	35%	33%	40%	37%
Social Sciences and Legal Services	22%	25%	23%	33%	30%	32%
Creative Arts	30%	23%	27%	33%	40%	37%
Applied Arts (Verbal)	32%	27%	30%	29%	15%	22%
Applied Arts (Visual)	22%	10%	17%	33%	25%	29%
Popular Entertainment	24%	12%	19%	19%	20%	20%
Education and Social Services <sup>5</sup>	30%	35%	32%	19%	65%	42%
Nursing and Human Care	71%	83%	73%	57%	85%	71%
Personal and Household Services <sup>2</sup>	95%	95%	96%	67%	95%	80%
Law Enforcement and Protective Services	41%	46%	43%	48%	55%	51%

<sup>1</sup> School 1 designates school of primary interest; School 2 designates school of comparative interest.

<sup>2</sup> Difference is significant at the .01 level for schools and for males.

<sup>3</sup> Difference is significant at the .02 level for schools and for males.

<sup>4</sup> Difference is significant at the .05 level for schools only.

<sup>5</sup> Difference is significant at the .05 level for females only.

year. The ninth and tenth grade students in the 1978-79 sample were enrolled in a different school than the eleventh grade students.

No significant differences by grade appeared on five of the six general interest scales of the CPP. The one significant difference in general interests was in creative arts (see Table 8) where approximately two-thirds of the ninth and tenth grade

students indicated a moderate level of interest. In contrast, little more than one-third of the eleventh grade students showed moderate interest. However, 50% of the eleventh graders indicated a high level of interest. Only 2% of the ninth grade students indicated a low level of interest in creative arts.

To determine whether these differences were caused by grade or

TABLE 8

GENERAL INTEREST AREAS AS MEASURED BY THE CPP IN 1978-79 BY GRADE

General interest scale	Grade	Level of interest		
		Low	Moderate	High
Social Service	9	25%	52%	23%
	10	12%	59%	29%
	11	18%	65%	18%
Business Contact	9	17%	67%	17%
	10	18%	55%	27%
	11	10%	58%	32%
Business Detail	9	25%	48%	27%
	10	16%	64%	20%
	11	12%	60%	28%
Technical Work	9	15%	52%	33%
	10	20%	38%	43%
	11	10%	58%	32%
Science	9	21%	58%	21%
	10	21%	59%	20%
	11	15%	60%	25%
Creative Arts <sup>1</sup>	9	2%	67%	31%
	10	18%	66%	16%
	11 <sup>2</sup>	15%	35%	50%
	10 <sup>2</sup>	19%	57%	23%

<sup>1</sup>Difference is significant at .001 level.

<sup>2</sup>Tenth grade students in 1977-78 enrolled in same school as 1978-79 ninth and tenth grade students -- difference between them is significant at .05 level.



school variations, the ninth and tenth grade students' interests were compared with those of the tenth grade students from the 1977-78 sample enrolled in the same school. A statistically significant difference was found (.05). However, Table 8 shows that the 1977-78 tenth graders had less interest in the creative arts than did the 1978-79 eleventh graders, and in this respect are more similar to the 1978-79 ninth and tenth grade students. Thus, it may be that a school difference has confounded the differences observed by grade in creative arts in the 1978-79 data. In both sets of data, however, it is clear that ninth grade students were more likely to express a moderate or high level of interest in the creative arts than the tenth or eleventh grade students.

Very few significant differences in interests/abilities by grade appear in the 25 specific interest/ability scales of the CPP (see Table 9). Only two were observed in the 1978-79 data — repairing home and office equipment with a .05 level of significant difference and machine operating and repairing with a .01 level. These disappeared when the 1978-79 ninth and tenth grade students' interests/abilities were compared to those of the 1977-78 tenth grade students from the same school. This suggests differences observed in the 1978-79 data are school rather than grade differences.

Among the 25 specific interest/ability areas surveyed, seven consistently appeared as high interest/ability areas for students in ninth, tenth, and eleventh grades. They were retail sales and service; office machine operation; storage, dispatch, and delivery; human services; growing, caring for plants and animals; transport equipment operation; and personal and household services. Almost all of

the students indicated interest and/or ability in these areas.

In seven of the areas, students consistently indicated little or no interest or ability. These areas were management and planning; natural sciences and mathematics; social sciences and legal services; creative arts; verbal applied arts; visual applied arts; and popular entertainment.

#### Comparison by sex

Three sets of data were used in comparing interest areas of female and male respondents. These were Strong Vocational Interest Inventory Blank data from 37 eleventh grade students in 1976-77; Strong-Campbell Interest Inventory data from 45 eleventh grade students in 1977-78; and CPP data from 199 ninth, tenth, and eleventh grade students in 1977-78 and 1978-79. The latter data, with a much larger sample size, were the most reliable. Through all three samples, female and male occupational interests were strikingly similar. Significant differences were relatively few in number.

The Strong Vocational Interest Inventory Blank, used with the 1976-77 sample, contains a sex bias. As a consequence, interests of females and males could be compared on only 11 of the basic interest scales. Only two of them (office practices and social services) showed statistically significant differences in the interests of females and males. In both cases, females expressed a higher interest in the occupational area than did males (see Tables 10 and 11). The remaining nine scales rated interest in mechanical work; medical services; law/politics; art; merchandising; teaching; public speaking; religious activity; and music. In all of these areas,



TABLE 9

SPECIFIC INTEREST AND/OR ABILITY AREAS AS MEASURED BY THE CPP IN 1978-79

Interest and/or ability areas	Percentage reporting interest and/or ability		
	9th grade	10th grade	11th grade
Promotion and Direct Contact Sales	40%	58%	54%
Management and Planning	26%	27%	12%
Retail Sales and Service	91%	100%	78%
Clerical and Secretarial Work	44%	64%	56%
Paying, Receiving, and Bookkeeping	42%	54%	39%
Office Machine Operation	93%	100%	80%
Storage, Dispatch, and Delivery	93%	100%	80%
Human Services	91%	100%	83%
Machine Operating and Repairing <sup>1</sup>	56%	75% <sub>3</sub>	42%
		68% <sub>3</sub>	
Engineering and Applied Technology	34%	50%	42%
Natural Sciences and Mathematics	24%	16%	27%
Medicine and Medical Technologies	38%	32%	37%
Repairing Home and Office Equipment <sup>2</sup>	53%	64% <sub>3</sub>	37%
		64% <sub>3</sub>	
Growing, Caring for Plants and Animals	94%	100%	85%
Construction and Maintenance	56%	64%	42%
Transport Equipment Operation	94%	100%	85%
Social Sciences and Legal Services	24%	23%	32%
Creative Arts	31%	23%	37%
Applied Arts (Verbal)	27%	32%	22%
Applied Arts (Visual)	22%	12%	29%
Popular Entertainment	18%	20%	20%
Education and Social Services	24%	41%	42%
Nursing and Human Care	71%	82%	71%
Personal and Household Services	91%	100%	80%
Law Enforcement and Protective Services	44%	43%	51%

<sup>1</sup> Difference is significant at the .01 level.

<sup>2</sup> Difference is significant at the .05 level.

<sup>3</sup> Reported interest/ability of 1977-78 tenth grade students is from same school as

1978-79 ninth and tenth grade students. Significant differences disappear when these groups are compared.

TABLE 10

## EXPRESSED INTEREST IN OFFICE PRACTICES BY SEX

Sex	Interest level			Total
	High	Moderate	Low	
Male	1 ( 5%)	5 (28%)	12 (67%)	18 (100%)
Female	10 (53%)	8 (42%)	1 ( 5%)	19 (100%)
Total	11 (30%)	13 (35%)	13 (35%)	37 (100%)

Difference is significant at .001 level

TABLE 11

## EXPRESSED INTEREST IN SOCIAL SERVICES BY SEX

Sex	Interest level			Total
	High	Moderate	Low	
Male	1 ( 5%)	3 (17%)	14 (78%)	18 (100%)
Female	3 (16%)	9 (47%)	7 (37%)	19 (100%)
Total	4 (11%)	12 (32%)	21 (57%)	37 (100%)

Difference is significant at .05 level.



except office practices for females, interests tended to be moderate to low. Females expressed moderate to high interest in the area of office practices. See Table 12 for a summary of expressed interests on these scales.

The Strong-Campbell Interest Inventory provided a broader base for comparing female and male occupational interests. Since sexually distinct scales were eliminated from this instrument, it was possible to examine female and male interests in 23 areas. The 22 females and 23 males had statistically significant different interests on eight of the scales. Those areas and the levels of significant difference were adventure (.02); medical science (.05); medical service (.01); teaching (.05); social service (.02); domestic arts (.001); business management (.05); and office practices (.001). As Table 13 shows, females expressed greater interest in each of

these areas than did the males with the exception of adventure.

Of the 23 interest scales, females expressed greater interest than males on 17, although not all of these differences were statistically significant. This pattern is particularly observable for areas in which students expressed relatively less interest.

The 1977-78 and 1978-79 combined sample of 199 students who completed the CPP provides an even broader basis for comparing female and male occupational interests. Ninety-two of these students were females and 107 were males. Again, relatively few significant differences were found in interests.

In general interests measured by the CPP, only two of the six scales revealed significant differences in female and male interests. These were science (.01) and creative arts (.01).

TABLE 12

BASIC INTEREST AREAS AS MEASURED BY THE STRONG VOCATIONAL INTEREST BLANK IN 1976-77 BY SEX

Basic interest area	Males			Females		
	Interest level			Interest level		
	High	Moderate	Low	High	Moderate	Low
Office Practices <sup>1</sup>	5%	28%	67%	53%	42%	5%
Social Services <sup>2</sup>	5%	17%	78%	16%	47%	37%
Mechanical Work	11%	33%	56%	11%	47%	42%
Medical Services	5%	17%	78%	21%	21%	58%
Law/Politics	17%	28%	55%	11%	31%	58%
Art	5%	28%	67%	0%	26%	74%
Merchandising	5%	28%	67%	11%	5%	84%
Teaching	5%	17%	78%	16%	10%	74%
Public Speaking	0%	33%	67%	5%	16%	79%
Religious Activity	5%	11%	83%	5%	16%	79%
Music	5%	22%	72%	0%	11%	89%

<sup>1</sup>Difference is significant at the .001 level.

<sup>2</sup>Difference is significant at the .05 level.



TABLE 13

EXPRESSED INTERESTS AS MEASURED BY THE STRONG-CAMPBELL INTEREST INVENTORY  
IN 1977-78 BY SEX

Interest area	Percentage expressing average or higher interest		
	Males	Females	Total
Agriculture	96%	73%	84%
Athletics	83%	82%	82%
Military Service	74%	86%	80%
Sales	83%	77%	80%
Medical Service <sup>1</sup>	61%	95%	78%
Office Practices <sup>2</sup>	57%	91%	73%
Adventure <sup>3</sup>	87%	45%	67%
Mechanical Work	78%	55%	67%
Art	52%	73%	62%
Mathematics	61%	59%	60%
Teaching <sup>4</sup>	39%	77%	58%
Domestic Arts <sup>2</sup>	26%	91%	58%
Religious Activities	52%	64%	58%
Social Service <sup>3</sup>	35%	77%	56%
Medical Science <sup>4</sup>	35%	73%	53%
Mechandising	39%	68%	53%
Science	39%	59%	49%
Business Management <sup>4</sup>	35%	64%	49%
Law/Politics	39%	55%	47%
Music/Drama	30%	59%	44%
Public Speaking	35%	50%	42%
Nature	22%	55%	38%
Writing	13%	36%	24%

<sup>1</sup>Difference is significant at .01 level.

<sup>2</sup>Difference is significant at .001 level.

<sup>3</sup>Difference is significant at .02 level.

<sup>4</sup>Difference is significant at .05 level.

As Tables 14 and 15 show, both females and males tended to express moderate interest in these areas. Where they differ is in the proportion expressing either low or high interest. More males than females expressed low interest in science, and conversely more females than males expressed high interest. In creative arts the pattern was reversed, with more females expressing low interest and more males expressing high interest.

Data on the remaining four general interest scales (social service, business contact, business detail, and technical work) are included in Table 16. Again, both females and males tended to express moderate levels of interest.

The pattern of few statistically significant differences by sex persists when the 25 specific interest/ability scales of the CPP are examined

TABLE 14

EXPRESSED INTEREST IN SCIENCE AS MEASURED BY THE CPP  
IN 1977-78 AND 1978-79 BY SEX

Sex	Level of interest						Total <sup>1</sup>
	Low		Moderate		High		
Male	23	(22%)	66	(64%)	14	(14%)	103 (100%)
Female	11	(12%)	48	(55%)	29	(33%)	88 (100%)
Total	34	(18%)	114	(59%)	43	(23%)	191 (100%)

<sup>1</sup>Data is missing for this scale from four males and four females.  
Differences are significant at .01 level.

TABLE 15

EXPRESSED INTEREST IN CREATIVE ARTS AS MEASURED BY THE CPP  
IN 1977-78 AND 1978-79 BY SEX

Sex	Level of interest						Total <sup>1</sup>
	Low		Moderate		High		
Male	7	(7%)	59	(57%)	37	(36%)	103 (100%)
Female	19	(22%)	51	(58%)	18	(20%)	88 (100%)
Total	26	(14%)	110	(58%)	55	(29%)	191 (100%)

<sup>1</sup>Data is missing for this scale from four males and four females.  
Differences are significant at .01 level.



TABLE 16

EXPRESSED INTERESTS AS MEASURED BY THE CPP IN 1977-78 AND 1978-79  
ON SIX GENERAL INTEREST SCALES BY SEX

General interest scale	Males			Females		
	Low	Moderate	High	Low	Moderate	High
Social Service	16%	62%	22%	23%	54%	23%
Business Contact	18%	60%	21%	15%	53%	32%
Business Detail	23%	54%	22%	12%	60%	27%
Technical Work	15%	57%	27%	10%	45%	44%
Science <sup>1</sup>	22%	64%	14%	12%	55%	33%
Creative Arts <sup>1</sup>	7%	57%	26%	22%	58%	20%

<sup>1</sup> Male/female difference is significant at .01 level.

for this sample. Only six of these scales reveal significant differences by sex (see Table 17). These and their levels of significant difference are clerical and secretarial work (.001); paying, receiving, and bookkeeping (.05); construction and maintenance (.05); machine operating and repairing (.05); education and social services (.02); and nursing and human care (.02).

More females expressed interest and/or ability in clerical and secretarial work; paying, receiving, and bookkeeping; education and social services; and nursing and human care. More males, however, expressed interest and/or ability in construction and maintenance, and machine operating and repairing. On the whole, though, females and males were remarkably similar in expressed interests and/or ability for most occupational areas.

#### Career interest follow-through

Similarities emerge in the career-related interests of the Native American students in this sample. On both CPP and Strong-Campbell invento-

ries, technical, agricultural, and business or commercial areas of interest rank consistently near the top in expressed interests. According to the CPP, these areas also rank high in abilities. Conversely, social service, education/teaching, and applied arts rank consistently near the bottom in expressed interests. This pattern persists when these interests are observed in other inventories, and when interests of Native American students from other reservation schools are examined. This includes both male and female students in different grades.

This consistency in career-related interests raises an important question. How well do these expressed interests parallel the kinds of post secondary education and training pursued by Native American students from reservation areas in South Dakota? This study cannot directly answer that since longitudinal data on post high school career preparation of these students are not available. However, given the consistency of this sample's interests, it is likely that other Native American students in the state have or had similar interests.



TABLE 17

SPECIFIC INTEREST AND/OR ABILITY AREAS AS MEASURED BY THE CPP  
IN 1977-78 AND 1978-79 BY SEX

Interest and/or ability areas	Percentage reporting interest and/or ability		
	Males	Females	Total
Promotion and Direct Contact Sales	42%	54%	48%
Management and Planning	22%	21%	22%
Retail Sales and Services	90%	97%	93%
Clerical and Secretarial Work <sup>1</sup>	44%	71%	56%
Paying, Receiving, and Bookkeeping <sup>2</sup>	36%	52%	44%
Office Machine Operation	92%	97%	94%
Storage, Dispatch, and Delivery	92%	97%	94%
Human Services	92%	97%	94%
Repairing Home and Office Equipment	58%	52%	55%
Growing, Caring for Plants and Animals	93%	99%	95%
Construction and Maintenance <sup>2</sup>	64%	49%	57%
Transport Equipment Operation	93%	99%	95%
Machine Operating and Repairing <sup>2</sup>	68%	53%	61%
Engineering and Applied Technology	49%	36%	43%
Natural Sciences and Mathematics	22%	22%	22%
Medicine and Medical Technologies	33%	39%	36%
Social Sciences and Legal Services	26%	25%	26%
Creative Arts	30%	25%	28%
Applied Arts (Verbal)	29%	25%	27%
Applied Arts (Visual)	26%	15%	21%
Popular Entertainment	21%	13%	17%
Education and Social Services <sup>3</sup>	26%	43%	34%
Nursing and Human Care	65%	80%	72%
Personal and Household Services	91%	97%	93%
Law Enforcement and Protective Services	49%	49%	49%

<sup>1</sup> Male/female difference is significant at .001 level.

<sup>2</sup> Male/female difference is significant at .05 level.

<sup>3</sup> Male/female difference is significant at .02 level.

Some data on present and recent past post high school educational pursuits of Native American students in the state are available from the Native American student counselor at South Dakota State University. These data, together with personal impressions, and observations of other educators, provide some clues.

South Dakota State University is the land grant institution in the state and has training opportunities in agriculture and in a number of technical areas. Enrollment of Native American students in this institution gives some indication of the extent to which Native American students pursue career preparation in agricultural and



technical areas, areas of relatively high expressed interest.

Few Native American students who have come to this institution have selected majors in agriculture or the technical areas. Most have pursued their education in the College of Arts and Science, particularly in social science. During the 1979-80 academic year, 42% of the Native American students at South Dakota State University (SDSU) were enrolled in the College of Arts and Science. Twenty-one percent were enrolled in the College of Agriculture and Biological Sciences. Viewing the College of Engineering as a technical area of training, it accounts for another 8%. Table 18 shows these data based upon an enrollment of 38 Native American students.

Compared to the University of South Dakota (USD) and Black Hills State College (BHSC), SDSU enrolls relatively few Native American students. Nearly 10 times as many are enrolled at the first two institutions together than at SDSU.

Perhaps the majority of USD and BHSC's Native American students are enrolled in education (teacher preparation, special education, and counseling). This is in contrast to the expressed career-related interests gathered from Native American high school students over the past three years. Education/teaching was, in fact, one of the lower ranking interest areas of those students.

Other observations further suggest this lack of follow-through on interests in agricultural and technical areas. No more than 50 - 75 Native American students are estimated to be currently enrolled in agricultural or natural resource programs in the state. Similar low estimates have been given on regional and national levels.

Harris Arthur, Navajo resource specialist, has indicated a need to develop more skills in these areas among Native Americans. Several speakers at a National Indian Education Association meeting held several years ago in St. Paul, Minnesota cited both the need for training of Native Americans in the natural resources area and the small number of Native Americans currently pursuing such training.

Whether or not Native American students currently enrolled in post secondary education programs are pursuing studies consistent with their interests cannot be answered in this report. Data on career-related interests do suggest there ought to be many more Native Americans pursuing training programs in agriculture and the technical areas than are currently enrolled. Why is there this discrepancy? Furthermore, why are so many Native American students enrolled in education (teaching and counseling) and social sciences, given the low levels of interest expressed in these areas?

At least two possible explanations can be dismissed. First, the failure to enroll in agricultural and technical programs is not because of a lack of interest in those career areas. Career interest data consistently reveal interests among Native American students in these areas. Second, the failure to enroll in those programs is not because of a lack of familiarity with careers in those fields. At least one career interest inventory, the CPP, revealed that many Native American high school students have had a relatively high degree of exposure to and experience with careers in these fields.

One reason for the discrepancy between expressed interests and pur-

TABLE 18

## ENROLLMENT OF NATIVE AMERICAN STUDENTS AT SDSU DURING THE 1979-80 YEAR

College	Major	Number of students	Percentage
Home Economics	Home Economics Education	1	3%
	Child Development	2	5%
		3	8%
Engineering	Agricultural Engineering	1	3%
	General Engineering	2	5%
		3	8%
Agriculture and Biological Sciences	Biology	1	3%
	Animal Science	1	3%
	Pre-veterinarian Medicine	2	5%
	Wildlife-Biology	1	3%
	Agricultural Economics	2	5%
	Agricultural Business	2	3%
		8	21% <sup>1</sup>
Arts and Science	History	1	3%
	Commercial Economics	1	3%
	Economics	1	3%
	Journalism	2	5%
	Sociology	3	8%
	Health, Physical Education and Recreation	3	8%
	Physical Therapy	1	3%
	English	2	5%
	Art	1	3%
	Speech	1	3%
		16	42% <sup>1</sup>
Pharmacy	Pharmacy	1	3%
Nursing General	Pre-nursing	1	3%
Registration	No Preference	4	10%
Graduate School	Guidance and Counseling	2	5%
			100%

<sup>1</sup> Rounding of percentages accounts for failure of individual figures to add up precisely to total college percentage.



suits might be a lack of necessary academic skills for these fields. Skills data from the CPP support this idea. Table 19 shows CPP abilities and skills data for 188 Native American high school students who took the CPP in 1977-78 and 1978-79.

While no science skills were assessed with this instrument, mathematics or numerical skills were. Data reveal that this is the area of greatest weakness for these students, with 73% scoring in the low range. The ability/skills assessment scales also show more than half (53%) of the students scored low in reading. This deficiency would interfere with the pursuit of post secondary education in all fields.

In other skills areas relevant to agricultural and technical careers, students performed very well. Seventy-six percent of the students scored in the moderate to high range in mechanical reasoning and 72% scored in the moderate to high range in space relations ability. In addition, CPP

data specifically reveal 89% of these students to have ability in growing, caring for plants and animals (from the combined interest/ability scale). Thus, lack of requisite abilities or skills does not account for failure of students to pursue training in these areas.

As data on interests and abilities/skills emerged in this study, alternative explanations for the small number of Native American students pursuing training in areas consistent with expressed interests were sought. Adequacy of career education available to Native American students was questioned. Concerns were whether students had ample opportunity to explore interests and abilities/skills and whether a sufficient range of opportunities was available in many occupational areas.

Counselors are the key individuals in the career education programs of schools. The role of counselor was examined and a survey of those counselors who work with Native American students in South Dakota was devised and carried out.

TABLE 19

ABILITY OR SKILL AREAS AS MEASURED BY THE CPP FOR 1977-78 AND 1978-79

Ability or skill area	Low	Moderate	High
Mechanical Reasoning	46 (24%)	129 (69%)	13 ( 7%)
Numerical Skills	137 (73%)	48 (26%)	3 ( 2%)
Space Relations Ability	51 (27%)	93 (49%)	44 (23%)
Reading Skills	100 (53%)	80 (43%)	9 ( 5%)
Language Usage	65 (35%)	114 (61%)	10 ( 5%)
Clerical Skills	64 (34%)	92 (49%)	32 (17%)

## Guidance counselors' function

Students interact with many individuals within the social structure of the school. Some of these individuals come to have particular significance or meaning for the students. They serve as sources of information, values, and norms, and make assessments which are important to students' self-concepts and plans for the future. Guidance counselors occupy this position of "significant other" in the context of the school.

It is the counselors' job to make information on education and occupations available to students. It is also their responsibility to advise and guide students in making decisions about further education and occupations. In addition, guidance counselors assist students with values clarification, help them make academic, vocational, and personal adjustments, and provide them with assessments of strengths, abilities, and weaknesses.

All of this becomes especially meaningful because the guidance counselor is recognized as possessing a specialized role within the social structure of the school. The counselor stands in a position of influence and authority over the student.

Another role associated with the position of guidance counselor is that of being a gatekeeper.<sup>1</sup> After assessing students' capabilities, counselors either encourage or discourage them from aspiring to particular occupations.

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<sup>1</sup>Frederick Erickson. 1975. Gatekeeping and the melting pot: Interaction in counseling encounters. Harvard Educational Review 45: p. 44-70.

Counselors also serve as the gates through which students receive information about careers, opportunities, and training requirements. To function effectively, counselors must have access to full information. If they lack this, they may inadvertently close the gates to students' interests in particular career areas.

A third role which the guidance counselor fills is that of advice giver. Typically, counselors advise students about academic, vocational, and personal needs. They not only provide students with assessments of their individual strengths and weaknesses, but also with assessments of career opportunities and structural obstacles to career achievement.

Students expect guidance counselors to be knowledgeable about the job market and its requirements. Students typically ask, "If I choose this or that major, what can I do? What kind of a job can I expect to get?" Thus, guidance counselors help students assess future occupational prospects, assist them in planning and preparing for the job market, and give them direction in finding a meaningful and rewarding career.

## Survey of counselors

Guidance counselors who work with Native American youth in school settings in South Dakota were surveyed during the winter of 1977 and spring of 1978. They were identified through the 1977-78 membership list of the South Dakota Indian Counselors Association and the Yellow Pages for South Dakota Counselors 1977-78. A final sample of 135 was obtained through completed, mailed surveys.

Following are some characteristics of this group. A total of 63% work in urban communities as defined



by the U.S. Census Bureau (having a population of 2,500 or more people). Thirty-two percent work mainly with Native Americans; 58%, with junior and/or senior high school students. Some 52% reported that most or all of their duties involve counseling activities; 63% indicated they had been employed in a counseling role for 3 years or more. Of the sample, 87% identified themselves as non-Indians. Fifty-two percent of the respondents were males while 48% were females.

Counselors who responded completed a questionnaire which had been developed with the assistance of the South Dakota Indian Counselors Association. Members of this association were particularly helpful in pretesting the survey instrument.

In addition to background questions, counselors were asked about their familiarity with, use of, and assessment of standard interest inventories; their perceptions of sources of influence on career and academic choices of Native American students; and their ideas about factors which motivate Native American students to further their education and/or enter job training programs. In addition, counselors were polled on their assessments of Native American students' self-concepts and senses of control, their views of occupational and career opportunities for Native Americans in 29 specific areas; and obstacles they saw hindering Native American youth in various academic and career areas. Finally, counselors were asked to evaluate the adequacy of career education resources for their work with Native American youth.

#### Counselors' assessments of career opportunities

Attention in this report will focus on counselors' perceptions of ca-

reer opportunities and career education needs. These issues relate most directly to the observed disjunction between students' expressed interests and their enrollment in educational and training programs.

Counselors were asked to consider career opportunities for Native American females and males separately. This was to determine whether they perceived different opportunities for each sex. Prior to this, the counselors had been asked whether they believed career interests of female and male Native American students were similar or different. Sixty-one percent responded they believed students' interests to differ by sex. This contrasts with the relatively few differences observed when students' interests are compared by sex.

Table 20 shows the counselors' assessments of opportunities in 29 career areas. These are presented in terms of percentage reporting "many or at least a fair number" of opportunities in the specified areas. The table presents career opportunities in rank order from areas of greatest perceived opportunity to areas of least perceived opportunity for females and males.

From data presented in Table 20 it is evident counselors are optimistic about career opportunities for Native American youth. More than 50% assessed there to be "many to a fair number" of opportunities in most of the 29 career areas. However, opportunities were seen to be greater for males than for females. Fifty percent or more of the counselors assessed males to have at least a "fair number" of opportunities in 24 of the 29 career areas. Just 16 of the 29 career areas were seen to be promising for females.



TABLE 20

## COUNSELORS' ASSESSMENTS OF OPPORTUNITIES FOR NATIVE AMERICAN STUDENTS

Opportunities for males	Percentage <sup>1</sup>	Opportunities for females	Percentage <sup>1</sup>
Tribal Government Service	87	Education	85
Counseling	82	Counseling	82
Education	82	Health Service	80
Military Service	80	Teaching	80
Creative Arts	76	Tribal Government Service	78
Federal Government Service	75	Social Service	76
Teaching	75	Creative Arts	75
Skilled Trades	74	Federal Government Service	73
Social Service	71	State Government Service	68
State Government Service	70	Accounting	66
Health Service	68	Military Service	64
Religious Activities	63	Skilled Trades	64
Accounting	61	Medicine	58
Agribusiness	61	Business Management	53
Sports	61	Religious Activities	53
Medicine	57	Law	52
Business Management	56	Dentistry	48
Engineering	54	Sports	46
Law	54	Natural Sciences	44
Forestry	50	Veterinary Medicine	38
Ranching	50	Park Service	37
Dentistry	49	Engineering	34
Natural Sciences	49	Mercantile Business	34
Park Service	49	Agribusiness	32
Farming	46	Agricultural Extension	31
Agricultural Extension	44	Forestry	31
Veterinary Medicine	43	Ranching	28
Mercantile Business	35	Horticulture	27
Horticulture	31	Farming	25

<sup>1</sup>Percentage of counselors assessing "many or a fair number" of opportunities to be open.

More important, in terms of questions posed earlier, is the ranking of opportunities according to counselors' assessments. Education (including teaching and counseling), government service, social service, and creative arts appear high in counselors' assessments of opportunities for both female and male students. With the exception

of skilled trades, most technical and agricultural career areas are seen as offering fewer opportunities for Native American youth. Counselors' assessments of career opportunities for Native American youth are in contrast to their expressed interests. In addition, counselors' assessments of opportunities are fairly consistent



with the kinds of training and education programs which Native American youth enter after high school.

The "don't know" responses counselors gave about opportunities in career areas are also instructive. In general, those areas in which fewer opportunities were perceived were also the areas in which counselors gave more "don't know" responses. For example, approximately 29% of the counselors (31% in relation to opportunities for males and 27% for females) assessed there to be "at least a fair number" of opportunities in horticulture. This was one area perceived as least promising. At the same time, another 27% (26% for opportunities for males and 29% for females) of the counselors reported that they "don't know" what the career opportunities are in horticulture.

Many more "don't knows" were expressed in relation to careers in agriculture (including ranching, farming, agribusiness, and extension work) and the natural resources. This suggests counselors are less familiar with career opportunities in those areas. Few "don't knows" were reported for career areas most akin to counselors' own area — education, teaching, and counseling (see Table 21).

#### Counselors' perceptions of career education needs

Examination of assessments of career opportunities for Native American youth in Tables 20 and 21 suggests counselors need more information. They were asked about their perceptions and experiences in relation to the career education needs of Native American youth.

The counselors reported the greatest deficiency in career education resources was in availability of

funds. Seventy-seven percent of the responding counselors reported inadequate funds for field trips to expose students to a variety of careers, for career interest inventories to assist students in identifying career-related interests, for career education films, and for reading materials on career opportunities and training requirements.

In addition, counselors identified role models for careers as not being adequately available to them and the students. Fifty-four percent reported that persons outside the local community willing to talk about and demonstrate aspects of their careers were inadequately available. Similarly, 49% reported there were few persons in the community whom students may observe in careers which are of interest to them.

In the absence of role models, films depicting people, especially Native Americans, in various occupations could be helpful. However, 41% of the counselors reported that films on careers of interest to their students were inadequately available. In addition, responses suggest that reading materials are needed.

Taken together, these findings suggest many deficiencies exist in the career education of Native American youth. This is particularly true with respect to students having adequate opportunity to fully explore interests and abilities/skills and in the range of opportunities available.

Since counselors serve as both gatekeepers and advice givers in the career education process, it is imperative they have full access to information on careers and career opportunities. This does not seem to be the case. Indeed, lack of information is

TABLE 21

COUNSELORS' "DON'T KNOW" RESPONSES ABOUT CAREER OPPORTUNITIES  
FOR NATIVE AMERICAN STUDENTS

Opportunitites for males	Percentage <sup>1</sup>	Opportunities for females	Percentage <sup>1</sup>
Horticulture	26	Horticulture	29
Mercantile Business	22	Mercantile Business	22
Natural Sciences	21	Natural Sciences	22
Dentistry	18	Forestry	21
Agricultural Extension	17	Ranching	19
Engineering	17	Park Service	18
Forestry	17	Farming	17
Religious Activities	16	Agricultural Extension	17
Farming	15	Engineering	17
Park Service	15	Dentistry	16
Veterinary Medicine	15	Religious Activities	16
Ranching	14	Veterinary Medicine	16
Sports	13	Sports	14
Medicine	12	Agribusiness	13
Accounting	11	Law	12
Health Service	11	Medicine	12
Law	11	Accounting	11
Business Management	10	Business Management	10
Agribusiness	8	Military Service	9
Military Service	8	Tribal Government Service	8
Tribal Government Service	7	Federal Government Service	8
Federal Government Service	7	Health Service	8
Skilled Trades	7	Creative Arts	6
Creative Arts	6	State Government Service	6
Education	6	Skilled Trades	6
State Government Service	6	Counseling	5
Counseling	5	Education	5
Social Service	5	Social Service	5
Teaching	5	Teaching	5

<sup>1</sup>Percentage of counselors giving "don't know" responses.

greatest in career areas of highest interest to students.

Thus, an important reason for failure of students to follow-through on career interests may be unavailability of information. In effect, the gates may have been closed. Instead, through greater availability of information on careers of less interest, more students have chosen training and education programs in these areas.

An important factor contributing to the high dropout rate of Native American students from post secondary educational and training programs might be their entry into areas of little interest to them. If more information on a wider range of careers were available, maybe students would enter programs more consistent with their interests and, consequently, successfully complete them. These ideas are speculative, however. The



problem of dropping out from educational programs is complex and involves more factors than lack of interest.

How can career education programs be improved?

These observations pose serious challenges to those concerned with the futures of Native American youth and the needs of Native American people. How can the career education of Native American students be improved? How can counselors be assisted in better meeting their needs? What more do we need to know about the career decision-making process of Native American students?

The first objective of career education is to assist individuals in understanding themselves and developing positive self-images. Data from counselors show many Native American students have poor self-concepts and low senses of control over their destinies. These attitudes hinder students in achieving, in decision-making, and in planning for their futures. Strategies to raise the self-attitudes of Native American students must be developed and implemented as a first step in the career education process. Results of the counselors' survey show a need for continued efforts in this area.

Helping individuals explore and come to understand the world of work is a second goal for career education programs of Native American students. Counselors who work with these youth indicated resources for this are lacking. People who can demonstrate aspects of various careers and interact with students in exploring career interest areas are, according to counselors' reports, unavailable. Appropriate films and reading materials in some career areas are also not readily

available. Perhaps one of the greatest inadequacies is the lack of information which guidance counselors have on career areas. These deficiencies, particularly the need for information, must be overcome if the career education needs of Native American youth are to be met.

A third objective is to assist individuals in career decision-making and planning. Counselors must have complete information to do this. If information is incomplete, out-of-date, or not available or ~~not~~ usable by counselors and students, students will be hindered in making well-informed decisions about education, training, and career plans. Duane Mackey pointed out this need in his proposal for a Career Education Demonstration Project for American Indian children at the University of South Dakota. He said Indian youth are uncertain of available career options and lack opportunity to explore them in relation to their cultural value system. The need for information disclosed by this study must be filled.

Finally, a need to motivate individuals to prepare for further education and/or employment (relevant to most educational settings) is a fourth goal. Counselors indicated motivation development is important for Native American students if they are to succeed in academic or career areas. This is closely related to another aspect of personal development, developing a positive self-attitude. Strategies which improve students' self-attitudes may also be effective in inspiring them to achieve and succeed. Data from this study suggest students may be more stimulated to invest their efforts in areas of real interest to them. Consequently, an effective motivational strategy may be one which taps demonstrated interests and strengths of students.



Self-attitudes and personal development are as important as exploration of career-related interests. All of these areas must receive attention in a career education program. Plans to meet these needs must take into account deficiencies in existing career education programs. They must also respond to needs of guidance counselors for training and continuing sources of information.

#### How can counselors be assisted?

Study results indicate there are some areas in which counselors' capabilities of meeting career education needs of Native American students can be strengthened. First, counselors must have adequate training and information on available career education tools. Data show many of them are unfamiliar with and do not use career interest inventories. It was observed that many had little training in their selection and use.

This must be a weakness in many counselor training programs. One way to remedy this is to provide in-service training programs and workshops held in conjunction with annual meetings of such groups as the South Dakota Indian Counselors Association, the South Dakota Education Association, and the South Dakota Personnel and Guidance Association. Workshops held with the latter group might be most effective. Many of the guidance counselors who work with Native American youth across South Dakota are members of this organization.

Counselors must also have complete information available on a wide spectrum of careers. South Dakota is still largely a rural, agricultural state. Harris Arthur points out, "As the demand for consumption continues

to accelerate, energy and water resources on Indian lands will be in greater demand than ever before." He tells that if tribes are to benefit from development of natural resources on reservations and have control over it, it is essential they develop the necessary expertise and technical capability. It is, therefore, particularly important that guidance counselors be fully informed about careers relating to agriculture, natural resources, and technology.

Results of the counselors' survey suggest there is a serious lack of information about careers in these fields. To remedy this, workshops could be held to provide information and to acquaint counselors with additional resources. South Dakota State University and other schools with technical and natural resource programs could cooperate in doing this. Counselors must be prepared to open the gates to career areas, rather than close them because of a lack of information on resources.

Since career decision-making and planning take place within a social matrix, it is important counselors fully understand this. Among those who are not members of the South Dakota Indian Counselors Association but who work with Native American youth, there is a great deal of uncertainty how factors such as the extended family and cultural orientations impact on students' decisions and plans. If guidance counselors are to be effective advice givers, these things must be understood and taken into account.

Several institutions and groups within South Dakota are able to provide insight on these factors through workshops, educational programs, and publications. These include the South



Dakota Indian Education Association, the South Dakota Indian Counselors Association, the Center of Indian Studies at Black Hills State College, the Institute of Indian Studies at the University of South Dakota, and the community colleges located on reservations in the state.

What more do we need to know?

There are many unanswered questions about the career interests, career decisions and behavior of Native American youth. Data from this inquiry suggest many Native American students discard high career interest areas and pursue education in other, lower interest areas. Why this happens and to what extent it occurs is not clear. Evidence does suggest that deficiencies in career education, including the amount of information available on agriculture, natural resource, and technical careers, are a contributing factor.

Following are suggested directions for further study:

1. Follow-up work needs to be done to determine the extent to which critical interests and abilities are being lost. How do post secondary education and training pursuits correspond to interests expressed in high school? Data need to be gathered on post secondary enrollments of Native American students by field of study.
2. The career decision-making process of Native American youth needs to be explored. How are educational and career decisions made? What factors influence those decisions, and how do they influence them? Guidance counselors are evidently important in

this process. How do different significant others -- parents, peers, teachers, and members of the extended family -- influence these decisions? What are their assessments of careers and career opportunities in agriculture, natural resources, and technical areas?

3. How does social structure influence the career decisions of Native American youth? In particular, how does the political and economic climate of the nation, state, and reservations impact on career decisions? How do federal government programs and controls on development affect educational and career plans? Are there structural obstacles inhibiting youth from pursuing training and careers in the agricultural, natural resource, and technical areas?
4. Finally, as the identified deficiencies in the career education process are met, programs should be evaluated for effectiveness. Have students been assisted in following up on expressed interests? Have counselors been better equipped to respond to students' needs?

As noted several years ago by the South Dakota State Plan for Career Education, Native American youth have special needs in the area of career education. Meeting those needs entails both a legal and a moral responsibility. Given the pressures upon Native American peoples with respect to natural resource development, that responsibility is especially critical now. If many Native American youth do, in fact, have interests and abilities in agricultural and technical fields, those interests and abilities cannot continue to be lost.

