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ABSTRACT

A study examined the individual, demographic, and significant vocational trait-factors associated with curriculum selection by students enrolled in vocational courses in Louisiana high schools. The study was intended to result in model information (in the form of baseline profiles of individuals by curriculum and geographic area) that vocational teachers could use to strengthen vocational programs. The Vocational Interest Checklist and the Bennett Mechanical Comprehension, Minnesota Clerical, and Sixteen Personality Factor Questionnaire tests were used to gather data for the profiles. The study sample consisted of students (mostly between 15 and 18 years old) enrolled in business, home economics, agriculture, industrial arts, and drafting programs. Almost 20 percent of the sample indicated modeling as their preferred occupation, with performing dancer being the second most popular choice (in three of the four geographical locations examined). Students enrolled in an agriculture program were the most consistent in identifying choices closely related to their field of study. Students living in the southeastern part of the state scored significantly higher on the Bennett Mechanical Comprehension Test than did those in other parts of the state, and students from the southwestern portion of the state outscored their counterparts on the verbal section of the Minnesota Clerical Test, whereas students from the northwestern part of the state scored highest on the numerical section. In both cases students in business courses received the highest scores. Ethnic background and socioeconomic status did not appear significant. Only tentative conclusions could be drawn from the scores on the personality test. (MN)

PROJECT TITLE

AN ANALYSIS OF VARIABLES AFFECTING HIGH SCHOOL STUDENTS' VOCATIONAL CHOICES

PROJECT DIRECTORS

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Joseph J. Scalise, Ed.D.

Funded by
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Institution Name University of Southwestern Louisiana

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FOREWORD

This Research Study, An Analysis of Variables Affecting High School Students' Vocational Choices, was produced as a result of a project funded by the Louisiana State Department of Education to the University of Southwestern Louisiana. This report represents the concerted efforts of Vocational Education teachers throughout the State of Louisiana.

The study was developed for the express purpose of aiding experienced as well as beginning Vocational Education teachers. It provides model information for strengthening vocational education programs.

I believe that this study will provide for the improvement of Vocational Education in Louisiana.

Thomas G. Clausen, Ph.D.
State Superintendent of Education

ACKNOWLEDGEMENTS

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Elaine Webb, Ed.D.
Assistant Superintendent
VOCATIONAL EDUCATION

FINAL REPORT

An Analysis of Variables Affecting High School Students Vocational Choices

John W. Grimes, Ph.D.

Joseph J. Scalise, Ed.D.

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

Statement of the Problem

The purpose of this project was to determine individual, demographic, and significant vocational trait-factors associated with curricular selection by students enrolled in vocational courses in Louisiana high schools. This was achieved by a systematic collection of data related to the aforementioned variables. The procedure was designed to allow for the creation of baseline profiles of individuals by curriculum and by geographical area. Such profiles then were used in developing prototypes for comparisons within and across vocational curriculums.

Objectives

The general objective of the study was to determine which variables were affecting the enrollment of high school students in vocational education courses. This was accomplished by meeting the following subobjectives:

Objective 1: Establishment of baseline student profiles

Task 1- selection and development of necessary instruments for collection of information/data needed to establish profiles

Objective 2: Establish data base of profiles by curriculum and by geographical area

Task 1- identification and involvement of schools in the four geographical areas of Louisiana (Northwest, Northeast, Southwest, and Southeast)

Task 2- administration of test and collection of information necessary to establish individual profiles

Task 3- separation of profiles according to curriculum

Objective 3: Use of collected data and profiles for statistical comparisons within and across vocational educational curriculums

Description of the Nature of the Problem

Technological advances and discoveries that have recently been occurring at a geometric pace serve to create both a present and a future reaction in the labor market. New advances rapidly make some or all of the skills of workers obsolete or insufficient in meeting work demands, thereby creating a need for retraining. Additionally, the content of educational training programs must be sufficiently flexible to meet the unpredictable needs of the future.

Since the vocational education graduate typically enters the labor market sooner than the college bound student, the preceding cautions have even greater implications for the vocational counselor. Thus, the need for efficient and effective counseling and planning is paramount. Unfortunately, as Wren (1963) and Arceneaux (1984) noted, inadequate and/or insufficient vocational guidance has been a persistent problem and a perennial concern. A review of the literature reveals that many factors have been associated with the problem. Some of those cited include a poor understanding of the labor market, insufficient curricular content, and the inappropriate matching of students with curriculums.

As mentioned above, the purpose of this project is to establish a more expansive view of the variables associated with curricular selection. Research of this type can lead to the resolution of these problems.

Traditionally, isolated variables such as academic or

intellectual abilities, personality characteristics, or vocational interests have been used to review the stated questions. However, it appears that a broader or more pervasive assessment of variables, including both internal factors as mentioned previously as well as external variables such as demographic information should be considered. The compilation of these into a profile will permit the necessary flexibility for sufficient research analysis to address the identified problem areas.

Educational Significance

Educational systems at all levels have been under ever increasing scrutiny during the last decade. Recently the vocational education system has been taken to task for "failing" to properly prepare its students for the world of work. Typically the critics have been reacting at an emotional or political level while lacking appropriate systematically collected data to substantiate their claims.

However, as educators, we have a responsibility to use our skills to investigate these charges. Therefore it seems that the reasonable place to start is with the consumer of these offerings--the students. And the most logical starting point is in trying to determine:

1. What are the characteristics of vocational education students?
2. Are there significant differences among these students based on their enrollment in a specific curriculum?

The systematic and comprehensive approach as outlined in the next section of this report posits a plan that allows for the scientific collection of the data necessary to understand the

complexities of why a student selects a certain vocational curriculum. It then places us in a position to approach the difficulties that face our vocational education system and to provide that best possible assistance, through the vocational counselor, to the students seeking vocational education in the high schools of Louisiana.

Plan of Work

The following narrative details the project plan.

Phase I

Task 1. The first task was the identification of appropriate variables to be included in establishing the vocational profile. This included selecting/ordering standardized tests, developing interview questionnaires, and the completing all necessary forms.

Task 2. Identification of four appropriate schools in each of the geographical areas of Louisiana and the initiation of the following activities: contacting the Superintendent (or his/her designee), school principal, and vocational counselor; identifying 20 students per curriculum for each of the schools; and obtaining a committment to participate.

Phase II

Task 1. Training of selected personnel in the administration of the tests being used and the collection of other pertinent information.

Task 2. Administration of tests and collection of data on junior/senior level students as follows: 20 students per curriculum per geographical area resulting in a total data pool of 320 students.

Phase III

Task 1. Analysis of data and establishment of profiles for statistical comparisons and allowable conclusions reached based upon the data. [Another outcome of this analysis will be the generation of additional research hypotheses.]

Phase IV

Task 1. Compilation of research findings.

Task 2. Dissemination of information to:

a. Office of Vocational Educational
   Louisiana State Department of Education

b. Participating school systems with sufficient copies
   for central office administration and each
   participating school

c. Preparation of research article(s) to be submitted
   to professional journals and organizations

Dissemination

The procedures for the dissemination of the findings of this study are contained in the Plan of Work (Phase IV, Task 2) section of this report. Additionally, this report makes specific recommendations as to the use of the research findings and gives specific ideas as to the practical applications of these findings. In this manner, vocational counselors will be able to implement the findings in their schools.

FINAL REPORT

DEMOGRAPHIC DATA

An examination of the demographic data (see Table 1) indicates that the majority of the respondents were in between 15 and 18 years of age (95.1%). The sample was almost evenly divided by sex, with 52.4% of the sample being male and 47.6% female. Caucasians comprised 58.9% of the group and blacks 40.1%. A majority of the students reported that their parents earned less than $30,000 per year, with only 4.9% reporting an income in excess of $50,000.

By curriculum, the largest group represented was Business Education students (28.2%); Home Economics was the next largest with 26.5%; Industrial Arts comprised 19.4%; Agriculture, 18.4%; Drafting had 1.6%; and 2.3% were enrolled in another curriculum. Only a small percentage (1.3%) reported working full time, with the vast majority (74.1%) not working at all.

TABLE 1
DEMOGRAPHIC DATA - TOTAL SAMPLE

AGE	N	%
14	4	1.3
15	57	18.4
16	88	28.5
17	97	31.4
18	52	16.8
19>	11	3.2

SEX	N	%
M	162	52.4
F	147	47.6

ETHNIC STATUS	N	%
Black	124	40.1
Caucasian	182	58.9
Hispanic	2	.6
Oriental	1	.3

SOCIOECONOMIC STATUS	N	%
<10K	57	18.4
10-20K	74	23.9
20-30K	59	19.1
30-40K	37	12.0
40-50K	29	9.4
50-60K	7	2.3
>60K	8	2.6

(38 students did not respond to this item)

CURRICULUM	N	%
Business Educ.	87	28.2
Home Economics	82	26.5
Agriculture	57	18.4
Industrial Arts	60	19.4
Drafting	5	1.6
Other	7	2.3

GRADE LEVEL COMPLETED	N	%
8	24	7.8
9	90	29.1
10	93	30.1
11	98	31.7
12	1	.3

EMPLOYMENT STATUS	N	%
Unemployed	229	74.1
Part-time	66	21.4
Full-time	4	1.3

VOCATIONAL INTEREST CHECKLIST

An essential ingredient of vocational counseling is occupational information. Although the counseling process involves more than providing such information, any instrument that organizes the world of work and provides information about occupational duties and requirements is valuable to both the counselor and counselee. Different persons like and are good at different things. Some workers like to help other people while some would rather work with their hands. Still others prefer artistic work or writing, or selling or clerical tasks. These are but a few examples of the many types of work performed each day.

The Department of Labor has taken all jobs in the United States and organized them into 12 areas on the basis of worker interest. Each of these 12 areas is distinctly categorized into one of the following areas:

1. Artistic
2. Scientific
3. Plants and Animals
4. Protective
5. Mechanical
6. Industrial
7. Business Detail
8. Selling
9. Accommodating
10. Humanitarian
11. Leading - Influence
12. Physical Performance

The interest areas on the 700+ item Vocational Interest Checklist correspond to the interest factors identified from the research and development activities in interest measurement conducted by the Division of Testing of the U.S. Employment Service. The interest factors represent the broad interest requirements of occupations as well as the vocational interests of individuals.

In this study, the students were requested to select the top

Vocational Interests. The following tables represent a statistical analysis of their choices.

TABLE 2
ANALYSIS OF INTEREST BY CURRICULUM - TOTAL POPULATION

INTEREST AREA	CURRICULUM					
	Bus.Ed.	Home Ec.	Agric.	Indus. Arts	Draft.	Other
Artistic						
Literary Arts	1	0	0	0	0	0
Visual Arts	1	0	0	2	0	0
Performing: Drama	2	1	2	1	0	1
Performing: Music	1	2	1	2	0	1
Performing: Dance	12	14	2	1	0	1
Craft Arts	1	1	0	3	0	0
Elemental Arts	0	1	0	0	0	0
Modeling	19	25	1	5	1	1
Scientific						
Physical Science	1	0	0	1	0	0
Life Sciences	1	2	7	1	0	1
Medical Sciences	2	3	2	0	0	0
Laboratory Technol.	2	1	1	1	0	0
Plants & Animals						
Managerial	0	0	5	2	0	0
General Supervision	0	1	8	4	0	0
Animal Training & Service	2	0	1	0	0	0
Elemental Work: Plants & Animals	0	1	1	1	1	0
Protective						
Safety & Law Enforcement	0	0	1	4	0	0
Security Services	0	0	1	2	0	0
Mechanical						
Engineering	1	0	1	2	0	0
Managerial Work	0	0	0	2	0	0
Engineering Tech.	2	1	1	0	0	0
Air & Water Vehicle Operation	1	0	0	3	0	0
Craft Technology	0	0	1	1	0	0
Land & Water Vehicle Operation	1	0	0	4	0	1
Materials Control	0	1	0	0	0	0
Crafts	0	1	0	0	0	0
Equipment Operations	0	0	4	1	0	0
Industrial						
Production Work	0	0	1	1	0	0
Business Detail						
Administrative	0	2	0	1	0	0
Mathematical	0	1	1	0	0	0
Financial	3	0	0	0	0	0

Oral Communication	5	2	0	0	0	0
Records Processing	2	0	0	0	0	0
Clerical Machine Operation	4	2	0	0	0	0
Clerical Handling	1	0	0	1	0	0
Selling						
Sales Technology	0	0	0	1	0	0
General Sales	1	0	0	0	0	0
Accommodating						
Hospitality Services	1	1	0	0	0	0
Barber & Beauty Services	2	3	1	2	1	0
Passenger Services	0	0	1	1	0	0
Attendant Services	0	0	0	1	0	0
Humanitarian						
Nursing, Therapy	1	3	0	0	0	0
Child & Adult Care	2	2	0	0	0	0
Leading-Influence						
Math & Statistics	2	1	0	0	0	0
Social Research	0	0	1	0	0	0
Law	2	0	0	1	0	0
Communications	0	1	0	0	0	0
Business Management	1	0	0	1	0	0
Physical Performing						
Sports	0	0	3	3	1	1
Total N =	80	75	50	56	4	7
% =	29.4	27.6	18.4	20.0	1.5	2.6

TABLE 3
ANALYSIS OF INTEREST BY GEOGRAPHICAL AREA

INTEREST AREA	GEOGRAPHICAL AREA			
	Southeast	Southwest	Northeast	Northwest
Artistic				
Literary Arts	0	0	1	1
Visual Arts	2	0	1	0
Performing: Drama	2	3	1	1
Performing: Music	4	1	2	0
Performing: Dance	7	14	6	5
Craft Arts	3	0	1	1
Elemental Arts	0	0	1	0
Modeling	12	6	18	17
Scientific				
Physical Science	1	1	0	0
Life Sciences	1	6	2	3
Medical Sciences	0	4	3	1
Laboratory Technology	1	1	0	3
Plants & Animals				
Managerial	2	3	0	2
General Supervision	4	4	0	5
Animal Training & Service	0	1	0	2
Elemental Work: Plants & Animals	2	1	1	0
Protective				
Safety & Law Enforcement	3	1	0	1
Security Services	1	0	1	1
Mechanical				
Engineering	2	1	0	1
Managerial Work	0	0	1	1
Engineering Technology	0	1	1	2
Air & Water Vehicle Operation	3	0	0	1
Craft Technology	0	1	1	0
Land & Water Vehicle Operation	3	1	1	1
Materials Control	0	0	0	2
Crafts	0	0	0	1
Equipment Operations	1	4	0	0
Industrial				
Production Work	1	1	0	0
Business Detail				
Administrative	0	0	3	1
Mathematical	0	1	1	0
Financial	2	1	0	1

Oral Communication	2	1	2	2
Records Processing	1	1	0	0
Clerical Machine Operation	2	3	1	0
Clerical Handling	0	1	0	1
Selling				
Sales Technology	0	0	1	0
General Sales	1	0	0	0
Accommodating				
Hospitality Services	0	0	1	1
Barber & Beauty Services	1	1	6	1
Passenger Services	0	1	1	0
Attendant Services	0	0	1	0
Humanitarian				
Nursing, Therapy	0	0	4	0
Child & Adult Care	1	1	1	1
Leading-Influence				
Math & Statistics	1	1	1	0
Social Research	0	0	1	2
Law	0	1	2	2
Communications	0	0	2	0
Business Management	1	0	1	0
Physical Performing				
Sports	4	2	1	1
Total N =	72	71	72	66
% =	25.6	25.3	25.6	23.5

TABLE 4

ANALYSIS OF TOTAL POPULATION
(N = 281)

First Interest Choice (N = 309)

Occupational Area	Frequency	Percent
1. Modeling	53	17.2
2. Performing Arts: Dance	32	10.4
3. General Supervision: Plants & Animals	13	4.2
4. Life Sciences	12	3.9

Second Interest Choice (N = 309)

Occupational Area	Frequency	Percent
1. Modeling	36	11.7
2. Laboratory Technology	14	4.5
3. Physical Sciences	12	3.9
4. Clerical Machine Operations	11	3.6

Third Interest Choice (N = 221)

Occupational Area	Frequency	Percent
1. Modeling	14	4.5
2. Nursing, Therapy Services	11	3.6
3. Performing Arts: Dance	10	3.2
4. (Several Tied for 4th)	8	2.6

Fourth Interest Choice (N = 203)

Occupational Area	Frequency	Percent
1. Laboratory Technology	12	3.9
2. Modeling	9	2.9
3. Barber & Beauty Services	8	2.6
4. Equipment Operations	7	2.3

Fifth Interest Choice (N = 184)

Occupational Area	Frequency	Percent
1. Clerical Machine Operations	9	4.9
2. Land & Water Vehicle Operations	7	3.8
3. Safety & Law Enforcement	7	3.8
4. Performing Arts: Dance	7	3.8

TABLE 5

VOCATIONAL INTEREST - SOUTHEAST
(N = 72)

First Interest Choice (N = 72)

Occupational Area	Frequency	Percent
1. Modeling	12	15.0
2. Performing Arts: Dance	7	8.8
3. General Supervision: Plants & Animals	4	5.0

Second Interest Choice (N = 72)

Occupational Area	Frequency	Percent
1. Modeling	7	8.8
2. Sports	5	6.3
3. Equipment Operations	3	3.7

Third Interest Choice (N = 62)

Occupational Choice	Frequency	Percent
1. Craft Arts	3	3.7
2. Modeling	3	3.7
3. Physical Sciences	3	3.7
4. Clerical Machine Operations	3	3.7

(NOTE: Data at the 4th and 5th preferred selection were not significantly distinguishable for tabulation)

TABLE 6

VOCATIONAL INTEREST - SOUTHWEST
(N = 71)

First Interest Choice (N = 71)

Occupational Area	Frequency	Percent
1. Performing Arts: Dance	14	17.7
2. Modeling	6	7.6
3. Life Sciences	6	7.6
4. Equipment Operations	4	5.1

Second Interest Choice (N = 59)

Occupational Area	Frequency	Percent
1. Modeling	11	18.6
2. Management Work: Plants Animals	5	8.5
3. Laboratory Technology	4	6.8
4. Clerical Machine Operations	4	6.8

Third Interest Choice (N = 49)

Occupational Area	Frequency	Percent
1. Social Services	4	8.1
2. Child & Adult Care	3	6.1
3. Modeling	3	6.1

(NOTE: Data at the 4th and 5th preferred selections were not significantly distinguishable for tabulation)

TABLE 7

VOCATIONAL INTEREST - NORTHEAST
(N = 72)

First Interest Choice (N = 72)

Occupational Area	Frequency	Percent
1. Modeling	18	23.4
2. Performing Arts: Dance	6	7.8
3. Barber & Beauty Services	6	7.8

Second Interest Choice (N = 64)

Occupational Area	Frequency	Percent
1. Modeling	8	10.4
2. Laboratory Technology	5	6.5
3. Financial Detail	4	5.2

Third Interest Choice (N = 62)

Occupational Choice	Frequency	Percent
1. Performing Arts: Dance	6	7.8
2. Modeling	5	6.5
3. Nursing Therapy Services	5	6.5
4. Administrative Detail	4	5.2

(NOTE: Data at the 4th and 5th preferred selection were not significantly distinguishable for tabulation)

TABLE 8

VOCATIONAL INTEREST - NORTHWEST
(N = 66)

First Interest Choice (N = 66)

Occupational Area	Frequency	Percent
1. Modeling	17	23.3
2. Performing Arts: Dance	5	6.8
3. General Supervision	5	6.8

Second Interest Choice

Occupational Area	Frequency	Percent
1. Modeling	10	13.7
2. Physical Sciences	4	5.5
3. Performing Arts: Dance	4	5.5
4. Equipment Operations	4	5.5

(NOTE: Data at the 3rd, 4th, and 5th preferred selections were not significantly distinguishable for tabulation)

TABLE 9
ANALYSIS ON INTEREST BY CURRICULUM - TOTAL POPULATION
PRIORITY CHOICES

	Frequency	Percent
A. Business Education (N = 80)		
1. Modeling	19	23.75
2. Performing Arts: Dancing	12	15.00
3. Oral Communication	5	6.25
4. Clerical Machine Operations	4	5.00
B. Home Economics (N = 75)		
1. Modeling	25	33.33
2. Performing Arts: Dancing	14	17.50
3. Barber & Beauty Services	3	3.75
4. Nursing, Therapy	3	3.75
C. Agriculture (N = 50)		
1. General Supervision: Plants & Animals	8	16.00
2. Life Sciences	7	14.00
3. Managerial Work: Plants & Animals	5	10.00
4. Equipment Operations	4	8.00
D. Industrial Arts (N = 56)		
1. Modeling	5	8.92
2. General Supervision: Plants & Animals	4	7.14
E. Drafting (N = 4)		
(No significant pattern)		
F. Other (N = 7)		
(No significant pattern)		

BENNETT MECHANICAL COMPREHENSION

The Bennett Mechanical Comprehension Test (BMCT) is a 68-item paper and pencil test, which is administered with a 30-minute time limit. The examinee responds to a problem by selecting from one of three alternative answers. The test is considered an assessment of mechanical comprehension and spatial perception. High performance on these aptitudes is generally essential in scientific, technical, mechanical, and operative occupations. The following is a summation of performances on this instrument for this research project.

TABLE 10

ANALYSIS BY GEOGRAPHICAL AREA

Geographical Area	N	Mean	Range	Performance Range	%-tile Range
Southeast	80	37.24	18-68	Low Avg.	23
Southwest	79	40.10	23-56	Low Middle	34
Northeast	77	29.78	17-47	Below Avg.	08
Northwest	73	34.78	20-55	Low Avg.	19
Total	309	35.53	17-68	Low Avg.	20

TABLE 11

ANALYSIS BY CURRICULUM

Curriculum	N	Mean	Range	Performance Range	%-tile Range
Bus. Ed	87	34.56	18-68	Low Avg.	20
Home Econ.	82	31.27	17-52	Below Avg.	12
Agriculture	57	42.23	25-56	Low Middle	47
Indust. Arts	60	36.63	21-57	Low Avg.	23
Drafting	5	30.00	18-39	Below Avg.	09
Other	7	36.00	25-43	Low Avg.	23
Total	298	35.50	17-68	Low Avg.	21

TABLE 12

ANALYSIS BY ETHNIC GROUP

Ethnic Group	N	Mean	Range	Performance Range	%-tile Range
Black	124	30.64	17-47	Below Avg.	10
Caucasian	182	38.82	18-68	Low Middle	32
Hispanic	2	45.00	44-46	High Middle	53
Oriental	1	25.00	25	Very Low	21
Total	309	35.53	17-68	Low Avg.	21

TABLE 13

ANALYSIS BY SEX

SEX	N	Mean	Range	Performance Range	%-tile Range
Male	162	38.39	18-57	Low Average	30
Female	147	32.38	17-68	Below Avg.	13
Total	309	35.53	17-68	Low Avg.	21

MINNESOTA CLERICAL TEST

The Minnesota Clerical Test (MCT) is designed to measure elements of perceptual speed and accuracy required to perform various clerical activities. The test can be used in selecting people to fill a wide variety of jobs, e.g., clerks, typists, cashiers, bank tellers, and computer operators. Such jobs require the worker to mentally process numerical and/or verbal material quickly and accurately.

Administration of the test is divided into two sections. the first part is an eight-minute task in which the examinee attempts to discriminate between pairs of 200 numbers. The second part asks the examinee to discriminate between correctly and incorrectly spelled words. Seven minutes are allowed for this section.

TABLE 14

ANALYSIS BY GEOGRAPHICAL AREA - VERBAL

Geographical Area	N	Mean	Range	Performance Range	%-tile Range
Southeast	80	93.44	21-178	Low Avg.	27
Southwest	79	116.39	68-180	High Middle	66
Northeast	76	114.05	48-172	High Middle	63
Northwest	73	101.88	38-164	Low Middle	37
Total	308	106.41	21-180	Low Middle	49

TABLE 15

ANALYSIS BY SOCIOECONOMIC STATUS - VERBAL

Socioeconomic Status	N	Mean	Range	Performance Range	%-tile Range
<10K	57	106.30	38-165	Low Middle	49
10 - 20K	74	106.99	21-180	Low Middle	49
20 - 30K	59	108.90	42-168	High Middle	53
30 - 40K	37	111.49	51-150	High Middle	58
40 - 50K	29	106.24	46-178	Low Middle	49
50 - 60K	7	96.71	62-138	Low Avg.	33
>60K	8	109.63	64-164	High Middle	55
Total	271	107.61	21-180	High Middle	51

TABLE 16

ANALYSIS BY CURRICULUM - VERBAL

Curriculum	N	Mean	Range	Performance Range	%-tile Range
Bus. Ed	87	123.05	56-180	High Avg.	77
Home Econ.	82	106.17	21-172	Low Middle	49
Agriculture	57	102.14	46-168	Low Avg.	42
Indust. Arts	59	88.56	40-155	Low Avg.	22
Drafting	5	88.60	48-121	Low Avg.	22
Other	7	111.00	51-160	High Middle	55
Total	297	106.66	21-180	Low Middle	49

TABLE 17

ANALYSIS BY ETHNIC GROUP - VERBAL

Ethnic Group	N	Mean	Range	Performance Range	%-tile Range
Black	123	107.69	48-172	High Middle	51
Caucasian	182	105.48	21-180	Low Middle	49
Hispanic	2	147.00	139-155	Above Avg.	93
Oriental	1	38.00	38	Low Middle	42
Total	308	106.41	21-180	Low Middle	49

TABLE 18

ANALYSIS BY SEX - VERBAL

SEX	N	Mean	Range	Performance Range	%-tile Range
Male	161	96.81	38-164	Low Average	33
Female	147	106.41	21-180	High Middle	67
Total	308	106.41	21-180	Low Middle	49

TABLE 19

ANALYSIS BY GEOGRAPHICAL AREA - NUMERICAL

Geographical Area	N	Mean	Range	Performance Range	%-tile Range
Southeast	80	106.56	38-162	Low Avg.	30
Southwest	79	119.75	77-185	High Middle	58
Northeast	77	122.88	72-175	High Middle	65
Northwest	73	110.42	48-173	Low Middle	42
Total	309	113.62	38.185	Middle	49

TABLE 20

ANALYSIS BY SOCIOECONOMIC STATUS - NUMERICAL

Socioeconomic Status	N	Mean	Range	Performance Range	%-tile Range
<10K	57	111/98	48-166	Low Middle	45
10 - 20K	74	116.62	38-185	High Middle	53
20 - 30K	59	113.68	45-170	Low Middle	49
30 - 40K	37	119.08	56-165	High Middle	58
40 - 50K	29	112.24	69-160	Low Middle	45
50 - 60K	7	103.00	69-145	Low Middle	32
>60K	8	113.00	66-173	Low Middle	47
Total	271	114.42	38-187	Low Middle	49

TABLE 21

ANALYSIS BY CURRICULUM - NUMERICAL

Curriculum	N	Mean	Range	Performance Range	%-tile Range
Bus. Ed	87	127.49	73-185	High Avg.	70
Home Econ.	82	113.23	38-175	Low Middle	49
Agriculture	57	111.07	69-165	Low Middle	45
Indust. Arts	60	98.01	45-157	Low Avg.	22
Drafting	5	107.80	85-139	Low Middle	37
Other	7	116.57	56-166	High Middle	53
Total	298	113.87	38-185	Low Middle	49

TABLE 22

ANALYSIS BY ETHNIC GROUP - NUMERICAL

Ethnic Group	N	Mean	Range	Performance Range	%-tile Range
Black	124	116.67	56-183	High Middle	53
Caucasian	182	111.44	38-185	Low Middle	45
Hispanic	2	155.50	146-165	Above Avg.	93
Oriental	1	48.00	48	Very Low	02
Total	309	113.62	38-185	Low Middle	49

TABLE 23

ANALYSIS BY SEX - NUMERICAL

SEX	N	Mean	Range	Performance Range	%-tile Range
Male	162	106.19	45-183	Low Middle	34
Female	147	121.80	38-185	High Middle	63
Total	309	113.62	38-185	Low Middle	49

SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE TEST (16PF)

The 16PF is designed to provide complete coverage of personality in a brief period. The factors measured are central to a general theory of personality. The test was first published in 1949 after 10 years of extensive research. Since that time it has undergone five major revisions.

The test is objectively scored and designed for use with individuals age 16 and above. Several forms are available, and Forms A, B, C, and D are most appropriate for individuals with a high school education or its equivalent. It is a widely used and a highly respected instrument for personality measurement.

(For a more detailed explanation and description see references on page 46).

TABLE 24

16 PRIMARY PERSONALITY FACTORS

Factor	Low Score Direction	High Score Direction
A	Reserved	Warmhearted
B	Less Intelligent	More Intelligent
C	Affected by Feelings	Emotionally Stable
E	Humble	Assertive
F	Sober	Happy-go-lucky
G	Expedient	Conscientious
H	Shy	Venturesome
I	Tough-minded	Tender-minded
L	Trusting	Suspicious
M	Practical	Imaginative
N	Forthright	Shrewd
O	Unperturbed	Apprehensive
Q1	Conservative	Experimenting
Q2	Group Oriented	Self-sufficient
Q3	Undisciplined Self-conflict	Controlled
Q4	Relaxed	Tense

Generally, the results indicate that the respondents seem to have answered the questions honestly and with little or no attempt to exaggerate or minimize any psychological conflict. However, the following comments should be considered only working hypotheses. More specific inquiry should be conducted by a qualified mental health professional.

Scores for the total population indicate that the group is of average intelligence, somewhat outgoing, self-sufficient, worldly, aggressive, and rebellious. In addition, there are strong indications that the group prefers routine, repetitive work in occupations in which they can make their own decisions.

Southeast: Home economic students, as a group, seem to experience some difficulty with organization and possibly would do poorly in situations in which abstraction is required. Also, interests and attitude are quite changeable.

Work preference is routine and repetitive yet self-paced. Business education students appear to be self-sufficient and resourceful. Some tender-mindedness, dependency, and worldliness is indicated. Occupations preferred involve routine, repetitive work. For students in drafting the scores showed a tendency to giveup easily and to be uncontrolled and lax about following social rules. While preferring routine work, individuals with this profile typically are very successful at obtaining and holding steady employment. Scores for industrial arts students clustered around the midpoint (average). However two tentative hypotheses can be made. Most important for students in this curriculum is the indication of the lack of creativity. Moreover, individuals with this profile do well in occupations in which aggressiveness is rewarded. It is interesting to

note that athletes and commercial pilots have similar profiles.

Southwest: Business education:-individuals with this career theme typically work in sales because they are leaders. They are full of energy, enthusiastic, and self-confident. However, they tend to be impatient when working with details and may lack the ability to concentrate for long periods. Vocational preferences tend to be business executive, merchandise buyer, hotel manager, industrial consultant, realtor, sports promoter, television producer, and salesperson. Scores for students in agriculture indicated characteristics of self-sufficiency, resourcefulness, warmheartedness, maturity, as well as being controlled, socially precise, overwrought, tense, and frustrated. Home economics students' profiles indicate that they may do well in occupations in which aggressiveness is rewarded. Also, scientific analytic interests are indicated. They tend not to like subordinate positions and have some strong needs for autonomy so occupational preferences would be those in which they can make their own decisions.

Northeast: Profiles for business education students show that they have faith in their own ideas and judgments and they are somewhat stubborn and assertive. They prefer routine, repetitive work. Industrial arts students' scores show some apprehensiveness, insecurity, control, and adventurousness. They also prefer routine work. Students in the home economics curriculum can be characterized as experimenting, self-sufficient, preferring their own decisions, yet controlled, tense, driven, suspecting, and competitive. Again, there is a preference for routine, repetitive work. The drafting students' profile indicates a preference for routine, repetitive work. They are also worldly and ambitious but worrying and insecure.

Northwest: Business education students' profiles indicated a preference for occupations that require them to make their own decisions. They may also prefer occupations requiring persuasion and tend not to like subordinate positions. There is also indication of interest in scientific analysis. Home economics students may have difficulty with organization and may do poorly in situations in which abstraction is required. They prefer routine, repetitive work. Agriculture students also prefer routine, repetitive work, and there are some indications of difficulties with organization. Industrial arts students also indicated a preference for routine, repetitive work.

SUMMARY

An analysis of the Vocational Interest Checklist indicated that the preferred occupation by almost 20% of the sample was in the modeling area. Workers in this group appear before a camera or a live audience, generally in nonspeaking capacities. They stand in for actors/actresses and take part in crowd scenes in television or in motion picture productions. They show clothing, hair styles, and other products.

This selection was the predominant choice in the total population and the top choice in three of the four geographical areas. Modeling was also the top selection in three of the four largest curricular areas. The second most preferred occupational choice was in the performing arts area of dance. Workers in this group compose, perform, or teach dance routines or techniques. Performing dancers and composers work for motion picture and television studios, nightclubs, and theaters and other places where this kind of entertainment is regularly presented. As with modeling, this interest area was widely identified throughout the population in all geographical regions. However, it did not receive as much preference when the data were analyzed by curriculum.

As analysis of vocational interest by curriculum suggests that individuals enrolled in agricultural programs were the most consistent in identifying choices closely related to the field of study. Although not as consistently, there did appear to be similar trends in the other curriculums as well.

A review of the Bennett Mechanical indicates students from the Southeast scored significantly higher than those in other geographical

areas. There does appear to be a slight correlation between socioeconomic status and performance on the BMT. Students in the Agriculture curriculum obtained the highest mean score, and students in Drafting scored the lowest. There also appeared to be a significant relationship between performance on the BMT and ethnic group and sex.

Performance on the Minnesota Clerical, Verbal test indicates students in the Southwest scored significantly higher than those in all other geographical areas. Overall, there did not appear to be a relationship between performance and socioeconomic status. Students in the Business Education curriculum scored higher than all other students. While there did not appear to be a significant difference between ethnic groups, females did score higher than males.

Students in the Northwest area scored highest on the numerical section. As with the verbal section, there did not appear to be a significant association between socioeconomic status and performance. Again Business Education students scored significantly higher than students in other curriculums, and females scored higher than males. No significant differences were noted between ethnic groups.

Information provided by the 16PF should be viewed as only tentative. A more detailed and specific study should be conducted on personality variables. However, some themes were apparent. One consistent theme was the preference for routine, repetitive work. Within curriculums across the state, there also seems to be some consistency among the types of students enrolling.

RECOMMENDATIONS

1) A review of the study suggests students could benefit from more extensive information regarding vocational/career options. The results are not perceived as a reflection/suggestion of the adequacy of the present performance of vocational counselors; but as an indication of the vast amounts of information available to students and a need for more expedient processing of this information. This may best be accomplished through individualized, packaged programs and career exploration days.

2) A follow-up study designed to correlate student's scores on selected vocational aptitudes with grades in a specific curriculum should be conducted. Adoption of such procedures would serve as a screening device that would allow for providing tutorial services for potentially unprepared students. It may also provide a starting point for guidance and counseling for students who might be selecting an inappropriate course of study.

3) A specific, detailed study of the relationship between personality characteristics and vocational curricular choices should be conducted.

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