R E P O R T R E S U M E S

ED 017 083 EC 000 206

REPORT OF CONSTRUCTION OF A PICTURE INTEREST INVENTORY FOR THE DEAF, 1959-1961.

GALLAUDET COLLEGE, WASHINGTON, D.C.

REPORT NUMBER OE-RD-464 PUB DATE 61
EDRS PRICE MF-$0.50 HC-$2.48 60P.

DESCRIPTORS- *EXCEPTIONAL CHILD RESEARCH, *AURALLY HANDICAPPED, *TESTS, TEST CONSTRUCTION, DEAF, INTEREST SCALES, STANDARDIZED TESTS, VOCATIONAL INTERESTS, ADOLESCENTS, ADULTS, MALES, OCCUPATIONAL CHOICE, TEST RELIABILITY, TEST VALIDITY, PICTURE INTEREST INVENTORY,

A PICTURE INTEREST INVENTORY FOR THE DEAF WAS CONSTRUCTED AND STANDARDIZED. THE INVENTORY CONSISTED OF 27 TRIADS OF LINE DRAWINGS REPRESENTING VARIOUS OCCUPATIONS. ITEMS WERE GROUPED INTO 10 SCALES--PERSUASIVE, CLERICAL, MECHANICAL, SCIENTIFIC, OUTDOOR, LITERARY, COMPUTATIONAL, ARTISTIC, SOCIAL SERVICE, AND DRAMATIC. SUBJECTS WERE DEAF MALES AGED 16 OR OVER AND WITH IQ SCORES ABOVE 85 DRAWN FROM RESIDENTIAL SCHOOLS FOR THE DEAF, BUREAUS OF VOCATIONAL REHABILITATION, PUBLIC SCHOOLS, GALLAUDET COLLEGE, AND THE EMPLOYED DEAF. AFTER 3 1/2 MONTHS, TESTS WERE READMINISTERED TO 1659 OF THE ORIGINAL 2590 SUBJECTS. RAW SCORES WERE CONVERTED TO STANDARD SCORES. INSPECTION SHOWED STABILITY OF MEANS ACROSS THE RANGE OF AGES INVOLVED. TEST-RETEST RELIABILITY COEFFICIENTS FOR FOUR OF THE SUBJECT GROUPS (EXCEPTING THE EMPLOYED) FOR EACH OF THE 10 SCALES WERE MADE. MEDIAN RELIABILITY COEFFICIENTS WERE .571 FOR RESIDENTIAL SCHOOLS, .602 FOR PUBLIC SCHOOLS, .649 FOR BUREAUS OF VOCATIONAL REHABILITATION, AND .733 FOR GALLAUDET COLLEGE. TO DETERMINE VALIDITY, SCALE SCORES OF THE GALLAUDET SAMPLE WERE CORRELATED WITH CORRESPONDING SCALES OF KUDER PREFERENCE RECORD. THE PRODUCT MOMENT COEFFICIENTS RANGED FROM .259 TO .612 WITH A MEDIAN OF .417. AS ANOTHER MEASURE OF VALIDITY, THE TEST WAS ADMINISTERED TO A SAMPLE OF EMPLOYED DEAF IN 22 OCCUPATIONS. MEANS AND STANDARD DEVIATIONS ON EACH SCALE FOR THE 22 OCCUPATIONS WERE DERIVED. ALTHOUGH THE SCALES DID TEND TO DISCRIMINATE AMONG THE OCCUPATIONAL GROUPS, SOME SCALES DID NOT DISCRIMINATE IN THE EXPECTED DIRECTION. INTERCORRELATIONS WERE COMPUTED AMONG THE 10 SCALES ON THE SAMPLE GROUPS. A CONSIDERABLE AMOUNT OF OVERLAP IN WHAT IS MEASURED BY EACH SCALE WAS NOTED. RELIABILITY OF THE DIFFERENCE BETWEEN SEPARATE SCALES YIELDS A RANGE OF .00 TO .79 WITH AN AVERAGE OF .56. NORMS IN T SCORE TERMS ARE GIVEN FOR ALL GRADES IN THE RESIDENTIAL AND PUBLIC SCHOOLS AND FOR 15 OCCUPATIONAL GROUPS. TO DETERMINE THE CORRECTNESS OF PLACING ITEMS IN SCALES, A BISERIAL CORRELATION BETWEEN EACH ITEM ALTERNATIVE AND EACH OF THE 10 SCALE SCORES WAS COMPUTED. NECESSARY STEPS TO MAKE THE TEST READY FOR OPERATIONAL USE ARE DESCRIBED. (FL)

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REPORT OF CONSTRUCTION OF A PICTURE INTEREST INVENTORY FOR THE DEAF 1/, 2/

Introduction

Counselors working with deaf clients have long been aware of the difficulties of appraising interests with conventional measures. Many deaf people, particularly those with little education, suffer severe verbal handicaps. Experience has shown that interest profiles developed with conventional measures such as the Strong and the Kuder frequently do not correspond with claimed interests or with observed behaviors in the job selection process. Two reasons for this phenomenon are usually suggested: (1) Deaf people do not understand the language of the tests; and (2) Deaf people have a different set of life experiences from hearing people. Either or both of these reasons for deviate interest patterns may be correct. Certainly it is known that some of the conventional interest measures require higher levels of reading ability than are attained by most of the non-college deaf. It is reasonable to suppose also, that the relative isolation imposed by deafness might cause deaf persons to come into the testing situations with different sets of values than are held by typical hearing people.

It was hypothesized that a test medium which would obviate the language problems, and which would leave little room for individual interpretation of content, might overcome both of the difficulties mentioned. The cliche, "A picture is worth a thousand words" may be less than perfectly true, but it was compelling to believe that pictures would accomplish both our aims. Pictures would make words unnecessary and they would provide a fairly faithful representation of the object or situation pictured. Pictures would require a minimum of interpretation. Accordingly, the project was initiated in the hope that deaf people might be helped to express their interests more adequately and that counselors might have an improved tool with which to work.

1/ This project was made possible, in part, by a grant provided by the United States Office of Vocational Rehabilitation.

2/ This project was initiated on August 31, 1959, under the direction of Stephen P. Quigley, Ph.D., Gallaudet College. The Principal Investigator was Harold Geist, Ph.D., Berkeley, California. On January 20, 1961, Dr. Quigley resigned as Project Director and was replaced by Howard L. Roy, Ph.D., Gallaudet College, who is responsible for structuring this report. Dr. Roy, in consultation with Dr. Fred Klein, Clinical Psychologist and Dr. Harry Bornstein, Research Psychologist, has attempted to present an objective account of the strengths and weaknesses of the research. The summary and conclusions represent a consensus of these members of the Gallaudet College faculty.

Purpose

The purpose of this project was to construct and standardize a pictorial inventory of vocational interests for use with deaf males. The reason for undertaking this project was the dearth of tests standardized exclusively on the deaf and used with the deaf. The development of a picture inventory of interests for the deaf was motivated by a desire to overcome the obstacle to interest measurement imposed by the language handicap from which so many deaf people suffer. The reading difficulty level of currently used interest inventories makes many of them inapplicable to the deaf. The specific objectives of this project were:

A. To assemble an experimental pool of pictured interest items in test form.
B. To determine reactions of a wide range of deaf males to the experimental test.
C. To determine the reliability of each of the separate scales of the test.
D. To estimate the validity of the test.
E. To develop norms for the interpretation of the test.
F. To make available an instrument which would assist the deaf in choosing suitable occupations and careers.

Methodology

The study was divided into two parts, each part taking approximately one year. The first year was devoted to:

A. Preparing the instrument.
B. Selecting the samples for study.
C. Informing the participating organizations of the nature and purpose of the project.
D. Collecting data from all samples except one, the employed deaf sample.

The second year was devoted to:

A. Collecting data from a sample of employed deaf males.
B. Analyzing all data.
C. Interpreting and reporting.

Sampling.

It was hoped that the test resulting from this project would be applicable to that part of the male deaf population likely to be choosing occupations in which to work. Accordingly, the study was limited to deaf males age 16 or older with I.Q.s above 85. Samples were drawn from:

20 residential schools for the deaf 3/
Bureaus of Vocational Rehabilitation (BVR) in 26 States.
7 public schools
Employed male deaf.

3/ The selection of residential schools was based on geographical location (the objective was to get a geographically representative distribution) and on the numbers and availability of subjects for testing in each school. BVRs were also chosen on the basis of geographic representativeness. Public schools were selected on the basis of a male census, i.e., all public schools that had over 100 deaf males were selected for testing.

Table I shows the number of persons tested initially in each of the major groupings. After an interval of 3½ months, the same samples were retested. Table 2 indicates the number of people still in the samples at that time and retested. Although considerable attrition had occurred, it is believed that only the usual reasons for absence from school or work were operating. No known selective factors were observed to make the retested samples different from the initially tested samples.

TABLE 1

Numbers of people tested initially
categorized by type of organization

	Initial Sample
Residential Schools	1029
Bureaus of Vocational Rehabilitation	897
Public Day Schools	122
Gallaudet College	123
	2171

TABLE 2

Numbers of people retested in each category
showing mean ages

	Final Sample	Mean Age
Residential School	549	18.1
Bureaus of Vocational Rehabilitation	494	26.1
Public Day Schools	96	17.1
Gallaudet College	118	22.4
	1659	

An effort was made to categorize the student samples by grade level. Inasmuch as grade levels do not have the same meaning in all schools for the deaf, standings on school achievement tests were sometimes used to estimate grade level. The results of this categorization are believed to present a reasonably accurate picture of distribution of students by grade. Table 3 shows the number of students tested at each grade level, in the secondary schools.

The definition of deafness for the purpose of this study was an operational one. The subjects were all people who had been admitted to schools for the deaf, special classes for the deaf in public schools or to a college for the deaf; clients of the State Bureaus of Vocational Rehabilitation, whose eligibility for service was based on deafness; and people whose inclusion in a survey of deaf people was contingent upon their being deaf. No audiometric measures were applied but it is safe to say that these subjects think of themselves as deaf, participate in the activities of the deaf and for the most part were partaking of benefits intended for the deaf. In the case of BVR clients, "deaf" was defined as a 70 decibel loss in the speech frequency range, 200 CPS to 2000 CPS.

TABLE 3

Numbers of People Retested at Each Grade Level
In the Residential Schools

7th grade		136
8th grade		148
9th grade		157
10th grade		156
11th grade		132
12th grade		97
manual	*	85
vocational	**	38
		949

* Manual - People for whom the primary mode of communication is manual

** Vocational - People enrolled in vocational training courses.

Table 4 shows the regional distribution of the final samples. Table 5 indicates the occupations of the people tested in the employed sample. The employed deaf were identified through a previous study, "Occupational Conditions Among the Deaf," 4/ and letters were sent to approximately 2,000 of these individuals inviting their participation. Of the 2,000, 400 could not be located and 35 had died. Altogether about 700 failed to return the test materials. Thus the 931 tested represent about a 60% return from the locatable, living, original sample of employed deaf.

4/ Lunde, Anders and Bigman, Stanley, "Occupational Conditions Among the Deaf," Gallaudet College, September 1959.

TABLE 4

Regional Distribution of Final Samples

Regions	Residential Schools		Public Schools		Bureau Vocational Rehabilitation	
	No. of Subjects	No. of Schools	No. of Subjects	No. of Schools	No. of Subjects	No. of BVRs
New England	64	1	67	3	35	4
Middle Atlantic	120	3	67	3	68	9
East North Central	180	4	24	2	24	3
West North Central	98	3	5	1	44	6
South Atlantic	210	7			150	21
East South Central	60	1			30	5
West South Central	124	2			65	10
Mountain					23	3
Pacific	93	2			57	3
	949	23	96	6	496	64

TABLE 5

Number of employed male deaf tested in each occupational group

Occupational Group			N
Sales Workers, Insurance Agents and Attorneys			17
Clerks			51
Printers	Pressmen	40	
	Compositors	43	
	Linotype Operators	175	
	Floorman	22	
	Photoengravers	17	
	Miscellaneous printers	25	322
Draftsmen			21
Cabinet Makers and Carpenters			62
Machinists			51
Tool and Die Makers			41
Miscellaneous Mechanical			100
Butchers and Bakers			13
Medical and Dental Technicians, Chemists Science Teachers, and Natural Scientists			24
Athletes and Athletic Coaches			10
Farmers			28
Authors, Editors, Reporters, and Librarians			15
Accountants, Bookkeepers, and IBM Operators			25
Mathematics Teachers			15
Artists and Art Teachers			14
Clergymen			15
Social Welfare Workers and Guidance Counselors			10
Teachers - Academic Teachers			42
- Vocational and Printing Teachers			30
Actors and those interested in dramatics			25
Entire Employed Occupational Group			931

Instrument Preparation

1. Rationale for item selection.

It was believed that if an individual were shown a number of pictures, each representing some occupation or type of work, and asked to choose the pictures he liked best, he would thereby reveal his liking or disliking for the occupations shown. In view of the fact that the test was intended for use with deaf people, care was taken to represent those occupations in which deafness would not constitute a handicap.

Thirty nine pictures were taken from the Geist Picture Interest Inventory. 5/ An additional 42 pictures were drawn to represent occupations named in "The Survey of Occupational Conditions Among the Deaf" mentioned above.

A pilot study was conducted on 120 deaf students at the California School for the Deaf, Berkeley, to ascertain the recognizability of the occupation or other activity portrayed by each of the pictures. Each individual was asked to indicate what he thought was represented by each picture. Their answers were compared with a key prepared by the principal investigator. Since the test was intended to measure interests in broad occupational areas, specific job titles were not required for identification. If a subject labelled a picture of a chemist as scientist, it was counted as correct. This pilot study accomplished two objectives: a) It identified those pictures which were recognized by the majority of the subjects, and b) It furnished a base of information for deciding at what age and intelligence levels the test could be used. As a result of this pilot study, three pictures were eliminated and three new ones meeting the criterion of 85 percent recognizability were substituted. Those pictures not recognized by at least 85 percent of the group were eliminated, leaving a total of 81 pictures for arrangement in test form. As a result of the study, it was decided the test could be used with deaf males 16 years or older, with I.Q.'s 85 and above and should be restricted to such people.

2. Format of the Test

Three pictures, each judged to represent a different occupation or activity, were grouped as a triad. Twenty-seven such triads comprised the experimental test. Assignment of pictures to triads was done a priori, on the basis of expert judgment. Care was taken to insure that the pictures grouped in a triad represented occupations of equal prestige and status. Items taken from the General Form of the Geist Picture Interest Inventory were already in triad format and their content was not changed.

Items were presented as line drawings, one triad to each page of the test booklet. Instructions to the examinee were: "On these pages are pictures of jobs or things you use in jobs. Look at the pictures on each page and decide upon one at which you would like to work....Pick only one picture on each page." No time limit is set but the examinee is urged to work as fast as he can. The test can be administered to individuals or to groups. It requires a minimum of verbal instruction by the test administrator.

5/ Geist Picture Interest Inventory, published by Psychological Test Specialists, P.O. Box 1141, Missoula, Montana

3. Scales Included

Historically the deaf have been employed in relatively few occupations. It seemed desirable to test whether their interests transcended this restricted range. For this reason, it was decided to attempt to measure interests in the same areas covered by the Kuder Preference Record with the exception of the musical scale. A dramatics scale was included instead.

Experience with the Geist Picture Interest Inventory suggested grouping the items into 10 scales. Items were assigned to a given scale on the basis of "expert judgment." 6/ Descriptions of the scales are:

Scale 1. Persuasive: Enjoys influencing people and likes to deal with people; likes such activities as selling and promoting; likes those occupations and hobbies which call for inducing or urging people to take a certain course of action.

Examples of occupations which people who score high on the persuasive scale might enter are: the clergy, selling, law, and teaching.

Scale 2. Clerical: Likes office work; likes to keep records, accounts, correspondence, and files.

Examples of occupations which people who score high on the clerical scale might enter are: bookkeeping, filing, shipping and receiving, stock, supply and inventory, billing, banking, mail order and postal office work, office machine operation and typing.

Scale 3. Mechanical: Enjoys using manual skills and likes working with or repairing tools or machines.

Examples of occupations which people who score high on the mechanical scale may consider are: Printing, mechanics, sheet metal work, shoemaking, upholstering, mechanical assembly work, welding, blacksmithing, steel furnace work, carpentry and watch repair.

Scale 4. Scientific: Likes to acquire knowledge or to discover new facts and ideas: interested in knowing the how and why of things, particularly in the natural sciences.

In this group are classified those whose interests are primarily in the physical and biological sciences rather than the behavioral sciences. Most of the occupations characterized by interests in this field are professional.

Examples of occupations which people who score high in this area might consider are: Chemistry, bacteriology, meteorology, nuclear physics, and astronomy.

6/ Judges were: Dr. E.K. Strong, Jr., Harold Carter, and Dr. Harold Geist

Scale 5. Outdoor: Prefers activities in the open air.

Examples of occupations which people who score high in this area might consider are: Physical education, coaching, farming, telephone line repair, truck driving, fishing, surveying, and delivery work.

Scale 6. Literary: Likes to read books and other forms of writing and may like to write.

Examples of occupations in this area are: editing, reporting, English and foreign language teaching.

Scale 7. Computational: Likes to perform numerical calculations; enjoys estimating, counting, enumerating or figuring.

The following kinds of activities are included in the computational areas; accounting and auditing, drafting and cartography, all kinds of engineering, mathematics, bookkeeping, banking.

Scale 8. Artistic: Likes to do creative work himself and enjoys beauty in other people's work; interested in the esthetic aspects of life.

Suggested activities for people who score high on this scale are: painting, drawing, sculpture, photography, commercial art, and cartooning.

Scale 9. Social Service: Likes to help others; enjoys promoting and participating in social welfare activities such as the assistance of the sick, destitute or unfortunate.

Examples of such activities are: clergy, guidance and counselors, social welfare work, probation work and recreation.

Scale 10. Dramatic: Likes acting or other activities closely connected with the cinema or the theatre.

Examples of such activities are: acting roles in plays or movies, puppetry, and pantomime.

Some alternatives were judged to be indicative of interest in more than one area, hence certain items appeared in more than one scale. Table 6 indicates the number of alternatives in each scale which were also keyed in other scales. There is, as would be expected, much more overlap between some scales than others, e.g., Scale 1 overlaps considerably with Scale 9 and not at all with Scale 3.

A serious weakness of the test, inherent in its construction, must be pointed up at this time. While each of the triads included pictures representing three specific and different occupational activities, it is apparent that sometimes more than one of the activities represented in a triad belonged to the same occupational area. Triad number 7, for example, presents pictures of: (1) a man painting walls, (2) a man operating a floor polishing machine and (3) a man shaping a piece of metal on an anvil. Judging that each of these activities belonged to the larger occupational area usually described as "mechanical," the test constructors keyed all three alternatives for Scale 3, Mechanical. Hence, no matter which alternative the test taker chooses he must, perforce, earn one point on Scale 3. Obviously the item has no power to discriminate. The extent to which this type of construction and/or keying error occurred in the test is partially revealed by Table 6a which shows maximum and minimum scores for each of the scales.

TABLE 6

Number of Items in Each Scale Occurring in One or More Additional Scales

Scale	2	3	4	5	6	7	8	9	10
1 Persuasive	1	0	1	1	1	2	0	6	1
2 Clerical		2	0	0	2	0	0	0	0
3 Mechanical			2	4	0	2	15	0	0
4 Scientific				1	0	4	0	1	0
5 Outdoor					0	1	1	1	0
6 Literary						0	0	1	1
7 Computational							1	1	0
8 Artistic								0	0
9 Social Service									1
10 Dramatic									

TABLE 6a

Maximum and Minimum Scores for the Scales of the Picture Interest Inventory

Scale	Maximum Score Possible	Minimum Score Possible	Number of Items Potentially Capable of Discriminating
1 Persuasive	7	0	7
2 Clerical	7	0	7
3 Mechanical	16	3	13
4 Scientific	9	1	8
5 Outdoor	11	0	11
6 Literary	5	0	5
7 Computational	7	1	6
8 Artistic	20	0	20
9 Social Service	6	0	6
10 Dramatic	3	0	3

In some instances the discrimination power of the items was not reduced to zero, but was partially reduced by the keying of two of the three alternatives in a triad. This kind of keying makes the triad a two alternative item instead of a three alternative item. Table 6b shows the number of triads in each scale having one, two or three alternatives keyed.

The occurrence of the same keyed alternative in more than one Scale, as mentioned above, and the reduction in discriminative power of some of the items by the method just described is particularly unfortunate in this instance, since there were so few items to begin with. An attempt to measure interests in ten

occupational areas would seem to have demanded more than a 27 item pool of untried experimental items. It would have been wiser to attempt the development of one or two scales if 27 items were all that could be found.

TABLE 6b

Numbers of Items in Each Scale Having
One, Two or Three Keyed Alternatives

Scale	One Keyed	Two Keyed	Three Keyed
1 Persuasive	7	0	0
2 Clerical	7	0	0
3 Mechanical	5	8	3
4 Scientific	7	1	1
5 Outdoor	11	0	0
6 Literary	5	0	0
7 Computational	6	0	1
8 Artistic	17	3	0
9 Social Service	6	0	0
10 Dramatic	3	0	0

Data Collection

1. Securing cooperation

Letters explaining the project were sent to the Superintendents of the residential schools selected for testing. The letter asked each school to name a person who would be responsible for administering the test. Upon receipt of these names, Dr. Geist, Principal Investigator, sent detailed instructions to each responsible person.

In the case of the Bureaus of Vocational Rehabilitation, an initial letter explaining the project was sent by the Principal Investigator to all OVR regional chiefs and BVR State directors who, in turn, relayed the information to the district managers of the BVR's. The district managers named responsible persons to whom the Principal Investigator sent letters explaining the method of administering the test and the testing materials.

A personal letter, signed by the President of Gallaudet College, was sent to each person in the employed deaf sample. This letter explained the project, stressed its importance and urged active participation in it. The Principal Investigator sent a letter giving instructions for taking the test, together with the necessary materials and an addressed stamped envelope.

Three months after the original testing, the Principal Investigator sent directions for retesting at the same locations. Copies of this correspondence are shown in Appendix C.

2. Testing

The locally named person, in the case of schools and BVRs administered the test and forwarded the answer sheets to the Principal Investigator. In the case of the employed deaf sample, test materials were shipped directly to the examinees, who took the test by themselves and returned their answer sheets to the Principal Investigator.

Three months after the initial testing of the residential schools and BVRs the tests were returned to the cooperating agencies and administered a second time.

Data Analysis

1. Scoring *

Scoring consisted of determining the number of times the alternatives belonging to a given scales were selected by the examinee. To facilitate comparison and interpretation, raw scores were converted to standard scores with an arbitrary mean of 50 and a S.D. of 10 (T-scores). Distributions were obtained for the residential schools (grade 8-12), oral and manual, Gallaudet College, public schools, deaf male clients of the State Bureaus of Vocational Rehabilitation and for each of 15 occupational groups. These distributions are shown in Appendix A, Tables 10 through 35.

A word of caution should be said here regarding interpretations of these norms. The translation of raw scores to T-scores makes for comparability, but it also makes the size of the difference between the various scores more apparent than real. For example, a brief look at Table 10 in Appendix A will show that 1 raw score point is equal to 6 T-score points on Scale 1, to 7 T-score points on Scale 2, to 9 T-score points on Scale 6 and to 16 T-score points on Scale 10. In other words, an inadvertent choosing of an alternative not intended would change the subject's position on the norms from half a standard deviation to $1\frac{1}{2}$ standard deviations. Counselors accustomed to interpreting tests in T-score form are quite likely to think of such position shifts as significant and meaningful. It must be admitted here that they have little meaning for the purposes of counseling.

2. Statistics Obtained.

A. Reliability. Test-retest ($3\frac{1}{2}$ months) correlations were determined for all samples except the employed deaf. The product moment method of correlation was used for this purpose.

B. Means, standard deviations and intercorrelations were computed for all samples.

C. Correlation of each alternative with each of the 10 scale scores. This analysis was performed to obtain information regarding the extent to which each alternative "belonged" in the scale to which it was assigned a priori.

D. Product moment correlations were determined between each of the scales of the Picture Interest Inventory and corresponding scales of the Kuder Preference Record. This analysis was performed on the Gallaudent sample only.

* Scoring was done at the Oakland California Public Schools and all statistical work was done at the Computer Center, Radiation Laboratory, Univ. Calif., Berkeley.

TABLE 7

MEANS AND STANDARD DEVIATIONS BY SCALES FOR RESIDENTIAL SCHOOLS, PUBLIC SCHOOLS, BUREAUS OF VOCATIONAL REHABILITATION, GALLAUDET COLLEGE AND TOTAL EMPLOYED DEAF SAMPLE

Sample	Number		Scales									
			1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
Residential Schools	949	Mean	2.2	2.6	10.9	3.6	4.6	1.2	2.8	6.6	1.9	.4
		S.D.	1.5	1.4	1.8	1.5	1.8	1.1	1.3	2.4	1.4	.5
Public Schools	96	Mean	2.0	2.7	11.0	4.0	4.2	8.4	3.4	6.4	1.6	.25
		S.D.	1.4	1.4	2.1	1.7	1.8	1.0	1.5	2.9	1.3	.48
BVRs	496	Mean	2.3	2.4	10.9	3.8	4.1	1.1	2.9	7.4	2.0	.48
		S.D.	1.6	1.5	2.0	1.6	2.0	1.2	1.4	2.9	1.5	.60
Gallaudet	118	Mean	3.3	2.8	9.8	3.2	4.9	1.6	2.9	6.3	3.0	.56
		S.D.	1.7	1.5	2.0	1.8	2.0	1.3	1.4	2.6	1.7	.64
Employed Deaf	931	Mean	2.8	2.3	10.7	3.3	4.3	1.2	2.9	6.9	2.5	.45
		S.D.	1.6	1.5	2.4	1.6	2.0	1.2	1.4	2.8	1.6	.60

TABLE 8

MEDIAN RELIABILITIES FOR RESIDENTIAL SCHOOLS, PUBLIC SCHOOLS, BUREAUS OF VOCATIONAL REHABILITATION, AND GALLAUDET COLLEGE

	Scales	Residential Schools	Public Schools	BVRs	Gallaudet
1	Persuasive	.597	.676	.678	.738
2	Clerical	.575	.482	.643	.698
3	Mechanical	.555	.700	.619	.712
4	Scientific	.596	.658	.626	.700
5	Outdoor	.674	.615	.593	.754
6	Literary	.567	.572	.655	.815
7	Computational	.501	.589	.729	.704
8	Artistic	.703	.556	.735	.764
9	Social Service	.578	.511	.732	.738
10		.303	.720	.534	.625
Median		.571	.602	.649	.733
N		949	96	496	118

Results.

A. Means and Standard Deviations

Table 7 shows means and standard deviations for residential schools, public schools, Bureaus of Vocational Rehabilitation, Gallaudet College and for the employed deaf sample. Inspection of Table 7 reveals stability of means across the range of ages involved. This seems to suggest that there is relatively little change in interests within the age range represented by the progression from secondary school to job.

B. Reliability

Table 7 shows the test-retest reliability coefficients for: residential schools, public schools, Bureaus of Vocational Rehabilitation and for the Gallaudet College samples for each of the ten scales. The median reliability coefficient for all ten scales is also presented. Inspection of this table suggests a greater consistency for college students than for secondary school and rehabilitation client samples. The reliability coefficients for the College sample average approximately .1 higher than that for the other samples. These higher coefficients may result from a greater maturity on the part of the college students. In any event, the reliability indices are fairly high in all samples. In this respect, they compare favorably with other interest measures in current use. 7/ More information regarding the reliability of the instrument is presented in Table 37, Appendix B.

C. Validity

In constructing the present measure, an effort was made to "build" validity into the test. Items were selected for inclusion in a scale because they were recognized by the majority of subjects (and judges) as belonging to a given occupation. The only assumption involved in this approach was that when a subject was asked to choose the picture he liked best, he would thereby reveal an interest in the occupation represented by the pictured alternative. It is true that this procedure results in a high degree of "face validity" and brings with it both advantages and disadvantages. On the advantage side is the observed fact that people generally respond more enthusiastically to items which they can recognize and understand. On the disadvantage side is the fact that, by including only "face valid" items, one must necessarily exclude other items not so obviously related to the criterion, but more highly correlated with it. A concomitant of this point is that we learn little about the test taker that could not be learned by simply asking him what job he would like.

Two efforts were made to demonstrate the validity of the Picture Interest Inventory: correlation of scores obtained with those obtained on another test purporting to measure the same thing and comparison of scores earned on the different scales by people employed in different occupations.

7/ Traxler and McCall report test-retest reliabilities for the original seven scales of the Kuder to be .78 based on a sample of 52 college students over a two months interval. The finding for Gallaudet College is almost identical being .73.

As a check on the Picture Interest Inventory, the scale scores obtained on the Gallaudet College sample were correlated with their scores on corresponding scales of the Kuder Preference Record. The results of this analysis are shown in Table 9.

TABLE 9

Product-Moment Correlations of Geist Picture Interest Inventory For Deaf with Kuder Scales

Gallaudet Sample

	Corresponding Kuder Scales.								
N	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Lit	7 Comp	8 Art	9 SoSer
116	.259	.404	.417	.612	.398	.525	.410	.539	.511

Median 417

Within the limits of this study there appears to be a fairly close relationship between the two tests (only nine scales are compared, as the musical scale of the Kuder was not common to any scale of the Picture Interest Inventory). Coefficients range from .26 to .61 with a median of .42. Table 9 shows this relationship in terms of product moment correlation coefficients.

A second means of demonstrating the validity of the scales involved the administering of the test to a sample of employed deaf people in 22 different occupations. It was hypothesized that people working in any given job would score higher on the scale purporting to tap interests in that job than they would on other scales in the test. Table 35, Appendix A shows the means and standard deviations on each of the scales for all 22 occupations.

Inspection of Table 35 suggests that the scales do tend to discriminate among the various occupational groups represented. If one considers the raw score mean in reference to the total possible score for each scale, it will be seen that in most instances an occupational group has its highest score on the scale which measures interests in that occupation and higher scores on its pertinent scales than do other occupational groups. Or to put it another way, mechanics have higher mean scores on Scale 3 than clerical workers. This is not always true, however, e.g., academic teachers have a higher Dramatics Scale mean than actors. The difference in raw score points between the means for clerks and machinists on the Mechanical Scale is only .6. Butchers and bakers have the same mean on the Artistic Interest Scale as artists and art teachers. Accountants, bookkeepers and IBM operators have lower mean scores on the Clerical Scale than clergymen, social welfare workers, teachers, actors and athletic coaches.

The failure of some of the scales to discriminate in the expected direction is not unusual in an experimental effort. A more serious concerned raised by this part of the analysis is the lack of practical significance of the differences between the means for the great majority of the occupations tested. In many instances the difference between the mean score for an occupational group on a scale pertinent to it and the mean score of other occupational groups on the same scale is only one or two raw score points with standard deviations of 1.0 or greater. Obviously, when the means of occupational groups are so close, the distributions of individual scores overlap so much as to make the instrument most unreliable for the guidance of any one individual. It should be remembered, however, that this is the result of a first experimental run of the test. The encouraging finding is that in general the differences between occupational groups are in the expected direction. This is an indication of some progress and a suggestion that continued development in the same way may yield an instrument to aid the counselor and the client in decision making.

D. Intercorrelation.

To determine the extent to which the scales were actually measuring something different, intercorrelations were computed among the 10 scales on the different samples. The results of these computations are shown in Tables 38 through 45 in Appendix B. Inspection of the tables reveals a considerable amount of overlap in what is being measured by the separate scales. In all eight samples the r between Scale 1 and Scale 6 is .5 or above. The same is true for the relationship between Scales 1 and 9, and in seven of the eight samples, and is true also for the correlation between Scales 1 and 10. In all eight samples, Scales 2 and 6 are interrelated to the extent of .5 or greater.

A correlation of .9 between Scale 1 and Scale 9 will be noted. The explanation for it is readily apparent when it is known that the two scales are identical except for one item. Scale 1 has seven items, Scale 9 has six. All but one of the keyed alternatives in Scale 1 are common to the six keyed alternatives in Scale 6. Obviously, no clinical use could be made of the separate scoring and interpretation of these scales. The fact of this almost complete overlap is a commentary on the rational construction of scoring keys and points up the need for empirical testing of "judgment" keys.

While many of the scales are highly intercorrelated some are not. Some r's approach zero and some are negative. Because of the small numbers of items in the scales, each time an item appeared in more than one scale it contributed heavily to the intercorrelation between the scales involved.

When the scales of a test are scored and interpreted separately, it is implied that each scale represents a different factor. In actual practice, we generally find (as is the case here) considerable intercorrelation between the scores obtained on the different scales. When this intercorrelation is high, the researcher is obliged to show that the differential score patterns obtained do not occur through errors of measurement only. It is necessary, therefore, to consider the reliability of the differences obtained between the separate scales of the test. Gullicksen 8/ discusses this question and describes a method for estimating the reliability of the differences between two sub-test scores,

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8/ Gullicksen, Harold, Theory of Mental Tests, John Wiley & Sons, Inc. New York, 1950: Pp 351 -355.

where their intercorrelation and the reliability of each is known. Application of this method to the present situation reveals that the reliability of the difference between the separate scales range from .00 to .79 with an average of .56. This finding, while not discouraging, suggests the need for caution in assuming the observed differences to be real.

F. Norms.

Norms in T score terms are presented for all grades in the residential and public schools, BVRs, Gallaudet College, and for 15 selected occupational groups. Admittedly the Picture Interest Inventory has not proceeded far enough in its development to justify the use of these norms for personnel selection or for counseling. Comment was made earlier about the problem of interpretation and the reader is cautioned again that the use of standard scores with arbitrary means of 50 and S.D.'s of 10 make patterns or profile difference appear significant when, in fact, they may not be. The T-score distributions would lead the counselor astray if he were to assume that the difference between a T-score of 41 and a T-score of 55 is meaningful when in fact it is only the difference between a raw score of 1 and a raw score of 3. Yet, 41 is almost a standard deviation below the mean and 55 is half a S.D. above the mean.

The justification for conversion to T-scores is simply that it makes reading and comparability easier.

G. Integrity of Scales.

It will be remembered that the scales were assembled on the basis of expert judgment. Each item alternative was considered by the judges and assigned to one of the scales because it seemed to belong to the area measured by that scale. In order to determine whether the item alternative assigned to a particular scale "belonged" to it, and also to find whether items not assigned to a given scale should have been included, an item-scale score correlation was run for each of the 81 item alternatives. That is, the biserial correlation between each item alternative and each of the 10 scale scores was computed. Table 46, Appendix B shows the results of this analysis. Unfortunately, the very small number of items in some of the scales nullifies much of the value of this type of analysis and makes it inappropriate for all except Scales 3,4,5 and 8. Where a scale contains fewer than 10 items, the correlation of any one item with the total scale score means that the correlation of that item with itself accounts for a large part of the total correlation found. In testing the significance of correlation obtained under these conditions one cannot simply determine whether the coefficient is significantly different from zero. He must test whether the amount of correlation remaining after that due to the item vs itself is removed is significantly different from zero. A method for making this test is described by Guilford. 9/ Applying this method to the data in Table 46, it will be seen

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9/ Guilford, J.P., Fundamental Statistics in Psychology and Education, McGraw-Hill Book Company Inc., New York, 1956. Pp 326 - 328.

that statistical evidence for the items belonging in the scales to which they were assigned is lacking in a large number of cases. The numbers of item alternatives which appear to have been properly assigned range from one for Scale 10 to 12 for Scale 3. 10/

Summary and Conclusions

1. Because large numbers of deaf people are sufficiently handicapped in communication to make conventional interest measures not feasible, an effort was made to develop an interest inventory with a minimum of verbal content.

2. An experimental pool of 27 pictured interest items in triad form was administered to male students in residential schools, and in special classes for the deaf in public schools, male clients of Bureaus of Vocational Rehabilitation, male students at Gallaudet College and to a sample of employed deaf males. The purpose of giving the test to the school students and to the BVR clients was to obtain information about feasibility of the measure and to determine its reliability. The objectives in testing college students and employed people were to obtain evidence of validity.

3. The test met acceptable standards of reliability by test-retest method. Evidence of validity is less encouraging. No criterion data were available for the school people and none were collected from the BVR people. Correlations with the Kuder Preference Record range from .26 to .61. Some evidence of validity was found in the differential scores of people employed in different occupations; however, many of these differences were neither statistically nor practically significant and the average reliability of the differences between scales was not high.

4. Intercorrelation coefficients indicate a significant amount of overlap in the variance tapped by the separate scales. Some of this intercorrelation is accounted for by actual overlap of items.

5. To permit ease of reading and comparability, scale scores were converted to T-scores with an arbitrary mean of 50 and a S.D. of 10.

6. An item scale score correlation analysis was performed to find how well the items of a given scale clustered. The results of this analysis are indeterminate, however, because of the small numbers of items in some of the scales.

7. The experimental test appears to be understandable by a wide range of ages and levels of intelligence. There is, however, a real question whether it is not too transparent to yield information not readily ascertainable by other means.

8. This study has demonstrated that pictorial items are useable with deaf people. The test directions are understandable and deaf people have no unusual difficulty in dealing with the problem situation presented by the pictures.

10/ Unfortunately, five of the alternatives meeting the satisfactory significance level occurred in the non-discriminating items, i.e., those in which all three alternatives are punched thereby forcing the subject to obtain a point no matter how he responds.

9. The findings in the study, both positive and negative, are not greatly different from what is expected in the first tryout of a pool of items. It is regrettable that the total experimental pool contained so few items. Divided among the ten scales, the number of items in any one scale is so small as to permit coverage of only a limited part of the criterion variance, and when the test is validated against an independent criterion, it is highly likely that some of these few items will be found not valid.

10. It is the opinion of the writer that the Picture Interest Inventory has not been sufficiently developed and tested to warrant its use in a clinical situation. In order to make the test ready for operational use, several steps are necessary:

a. The number of items in each scale of the experimental test must be increased so that after the normal attrition incurred in the validation process has taken place, there will still remain a sufficient number of items to provide stable predictors of a meaningful criterion.

b. The format of the test should be changed to permit more use of each item alternative. For example, the item alternatives might be regrouped to permit comparison with a wide range of alternates, a la Kuder.

c. After the item pool is increased, it should be tried out again in a situation in which criterion data can be obtained. Keys constructed on the basis of this tryout should be cross-validated on a part of the sample reserved for that purpose in a second run on an independent sample.

The development of a test to measure interests in deaf people must follow the same steps as are followed in developing similar measures for hearing people -- item construction, tryout, modification, validation and cross-validation. With both hearing and deaf people, this process takes a long time. With deaf people it is likely to be especially long because of the difficulty of finding sizeable samples of people with similar backgrounds and to whom the same sets of criteria will apply. There are no shortcuts. The present research has accomplished a necessary first step, albeit a short one. There is much more to be accomplished before the over-all objective of this effort is accomplished viz., to put an instrument in the hands of counselors which will help them and their counselees in the difficult task of vocational choice making.

APPENDIX A

T-Score Conversions for Bureaus of Vocational Rehabilitation Clients Residential and Public School Students College Students and for People in the Employed Samples

TABLE 10

T-SCORES FOR BUREAUS OF VOCATIONAL REHABILITATION

N = 494

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	35	34			29	40		25	37	42
1	42	40		32	34	49	36	28	44	59
2	48	47		39	39	57	43	31	50	75
3	54	54	11	45	44	66	51	35	57	
4	60	61	16	51	49	75	58	38	64	
5	67	68	21	58	55	83	65	42	70	
6	73	75	26	64	60		72	45		
7	79	82	31	70	65		79	49		
8			36	77	70			52		
9			41	83	75			56		
10			45		80			59		
11			50		85			63		
12			55					66		
13			60					69		
14			65					73		
15			70					76		
16			75					80		
17								83		
18								87		
19								90		
20								94		

TABLE 11

T-SCORES FOR GRADE 7, RESIDENTIAL SCHOOLS

N = 136

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	35	29			25	39		24	37	44
1	42	37		33	31	48	37	28	44	60
2	49	44		39	36	58	45	32	51	77
3	56	52	7	46	42	67	53	36	58	
4	63	59	12	52	47	76	62	40	64	
5	70	67	18	58	53	85	71	44	71	
6	78	74	23	65	59		79	48		
7	85	82	28	71	64		88	52		
8			34	78	70			56		
9			39	84	75			60		
10			44		81			64		
11			49		87			68		
12			55					72		
13			60					76		
14			65					80		
15			71					84		
16			76					88		
17								92		
18								96		
19								100		
20								104		

TABLE 12

T-SCORES FOR GRADE 8, RESIDENTIAL SCHOOLS

N = 148

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 At	9 SoSe	10 Dra
0	37	30			24	39		20	38	44
1	43	37		32	30	48	36	25	44	66
2	50	45		39	35	56	43	29	51	88
3	56	52	11	45	41	65	50	33	58	
4	63	60	16	52	47	73	57	38	64	
5	69	68	21	58	52	82	64	42	70	
6	76	75	26	65	58		71	46		
7	82	83	31	72	64		78	51		
8			36	78	69			55		
9			41	85	75			59		
10			46		80			63		
11			51		86			68		
12			56					72		
13			61					76		
14			65					81		
15			70					85		
16			75					89		
17								94		
18								98		
19								102		
20								107		

TABLE 13

T-SCORES FOR GRADE 9, RESIDENTIAL SCHOOLS

N = 157

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	36	32			27	40		24	37	43
1	42	39		35	32	49	35	28	43	64
2	48	46		41	38	59	43	32	50	84
3	55	53	14	47	43	68	51	36	56	
4	61	60	19	52	49	78	59	39	62	
5	67	67	23	58	54	88	67	43	68	
6	73	74	28	64	60		75	47		
7	79	81	32	69	65		83	51		
8			37	75	71			55		
9			41	81	76			59		
10			46		82			63		
11			50		87			67		
12			55					70		
13			59					74		
14			64					78		
15			68					82		
16			73					86		
17								90		
18								94		
19								98		
20								102		
21										
22										
23										

TABLE 14

T-SCORES FOR GRADE 10, RESIDENTIAL SCHOOLS

N = 156

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	33	34			25	38		20	34	42
1	40	40		33	30	48	37	25	41	57
2	47	46		40	35	57	45	29	48	72
3	53	53	6	47	41	68	53	33	56	
4	60	59	11	54	46	76	61	37	63	
5	67	65	17	61	51	86	69	42	70	
6	74	72	23	67	56		78	46		
7	81	78	29	74	61		86	50		
8			34	81	66			54		
9			40	88	71			59		
10			46		76			63		
11			51		81			67		
12			57					71		
13			63					76		
14			68					80		
15			74					84		
16			80					88		
17								93		
18								97		
19								101		
20								106		
21										
22										
23										

Table 15

T-SCORES FOR GRADE 11, RESIDENTIAL SCHOOLS

N = 132

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	36	31			24	41		23	37	45
1	43	38		32	30	50	36	28	44	68
2	50	46		38	36	60	43	32	52	92
3	57	53	14	44	41	69	51	36	59	
4	64	61	19	51	47	78	58	40	66	
5	71	69	23	57	53	88	65	44	73	
6	79	76	28	63	58		72	48		
7	86	84	32	70	64		80	53		
8			37	76	69			57		
9			41	82	75			61		
10			46		81			65		
11			50		86			69		
12			55					73		
13			59					78		
14			64					82		
15			68					86		
16			73					90		
17								94		
18								98		
19								103		
20								107		
21										
22										
23										

Table 16

T-SCORES FOR GRADE 12, RESIDENTIAL SCHOOLS

N = 97

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	32	32			28	38		24	35	44
1	39	38		35	33	48	35	28	41	64
2	45	45		41	37	59	42	32	47	83
3	52	51	3	47	42	69	50	36	54	
4	59	57	9	53	47	80	57	40	60	
5	66	64	15	59	52	90	64	44	67	
6	73	70	21	64	57		72	48		
7	79	76	27	70	62		79	52		
8			34	76	67			56		
9			40	82	72			60		
10			46		77			64		
11			52		81			68		
12			59					72		
13			65					77		
14			71					81		
15			77					85		
16			84					89		
17								93		
18								97		
19								101		
20								105		

Table 17

T-SCORES FOR MANUAL

N = 85

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	35	33			24	40		17	36	43
1	42	42		35	30	49	41	22	43	60
2	49	50		41	35	58	47	26	50	77
3	56	58	-11	48	40	67	54	31	57	
4	62	67	- 4	55	45	76	61	36	64	
5	69	75	3	62	50	85	68	40	71	
6	76	83	11	69	56		75	45		
7	83	92	18	76	61		82	50		
8			25	83	66			54		
9			32	89	71			59		
10			39		76			64		
11			47		82			69		
12			54		87			73		
13			61					78		
14			69					83		
15			76					87		
16			83					92		
17								97		
18								101		
19								106		
20								111		
21										
22										
23										

TABLE 18

T-SCORES FOR VOCATIONAL

N = 38

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	35	31			25	33		22	35	43
1	42	38		30	30	43	41	26	43	63
2	50	45		37	36	54	49	31	52	83
3	57	52	2	45	41	64	57	35	60	
4	64	59	9	52	47	75	65	39	68	
5	72	66	15	59	52	85	73	44	76	
6	79	73	22	66	57		81	48		
7	87	80	28	73	63		89	52		
8			35	81	68			56		
9			41	88	74			61		
10			48		79			65		
11			54		84			69		
12			61					74		
13			67					78		
14			73					82		
15			80					86		
16			86					91		
17								95		
18								99		
19								103		
20								108		
21										
22										
23										

Table 19

T-SCORES FOR GALLAUDET COLLEGE

N = 118

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	31	31			25	38		26	33	41
1	37	38		38	30	45	36	30	39	57
2	43	45		44	35	53	44	34	44	73
3	48	51	16	49	41	60	51	37	50	
4	54	58	21	55	46	68	58	41	56	
5	60	64	26	60	51	75	65	45	62	
6	66	71	31	66	56		73	49		
7	72	77	36	71	61		80	53		
8			41	77	66			57		
9			46	82	71			61		
10			51		76			65		
11			56		81			68		
12			61					72		
13			66					76		
14			71					80		
15			76					84		
16			81					88		
17								92		
18								96		
19								99		
20								103		
21										
22										
23										

Table 20

T-SCORES FOR PUBLIC SCHOOLS

N = 96

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	36	30			27	42		28	38	45
1	43	38		33	32	52	34	31	46	66
2	50	45		38	38	61	41	35	53	87
3	57	52	11	44	43	71	47	38	61	
4	64	60	16	50	49	80	54	42	69	
5	72	67	21	56	55	90	61	45	77	
6	79	75	26	62	60		67	49		
7	86	82	31	68	66		74	52		
8			36	74	72			56		
9			40	80	77			59		
10			45		83			63		
11			50		89			66		
12			57					69		
13			60					73		
14			65					76		
15			69					80		
16			74					83		
17								87		
18								90		
19								94		
20								97		
21										
22										
23										

Table 21

T-SCORES FOR SALES WORKERS, INSURANCE AGENTS AND ATTORNEYS

N = 17

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	32	19			21	31		16	34	37
1	37	28		33	29	39	31	20	40	50
2	42	38		41	36	48	41	24	46	63
3	46	48	25	49	44	56	51	29	51	
4	51	57	29	57	52	65	61	33	57	
5	56	67	33	65	60	74	71	37	63	
6	61	77	37	73	68		82	41		
7	65	86	42	81	75		92	46		
8			46	89	83			50		
9			50	97	91			54		
10			54		99			59		
11			58		107			63		
12			63					67		
13			67					71		
14			71					76		
15			75					80		
16			79					84		
17								89		
18								93		
18								97		
19								102		
20										
21										
22										
23										

Table 22

T-SCORES FOR CLERKS

N = 51

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	31	29			29	38		25	34	43
1	38	37		33	34	49	38	29	40	59
2	45	44		39	39	60	45	33	47	76
3	51	52	10	46	44	71	52	36	54	
4	58	60	15	53	49	81	60	40	60	
5	65	67	20	60	54	92	67	44	67	
6	72	75	26	66	59		74	47		
7	79	83	31	73	64		81	51		
8			36	80	69			55		
9			41	87	74			59		
10			47		79			62		
11			52		84			66		
12			57					70		
13			62					73		
14			68					77		
15			73					81		
16			78					84		
17								88		
18								92		
19								95		
20								99		
21										
22										
23										

Table 23

T-SCORES FOR ALL PRINTING OCCUPATIONS

N = 322

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	34	32			28	38		24	35	43
1	40	39		36	34	47	38	28	42	61
2	46	46		42	39	56	45	31	48	79
3	52	52	14	48	45	65	52	35	54	
4	58	59	19	53	50	74	59	39	60	
5	64	66	24	59	55	82	66	43	66	
6	70	72	29	65	61		73	47		
7	76	79	33	71	66		80	51		
8			38	77	72			54		
9			43	83	77			58		
10			47		83			62		
11			52		88			66		
12			57					70		
13			62					74		
14			66					77		
15			71					81		
16			76					85		
17								89		
18								93		
19								97		
20								100		
21										
22										
23										

Table 24

T-SCORES FOR ALL MECHANICAL OCCUPATIONS

N = 100

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Mi	7 Comp	8 Ar	9 SoSe	10 Dra
0	34	36			27	43		25	35	44
1	40	45		36	32	54	36	28	42	61
2	47	53		42	37	66	42	32	49	77
3	54	62	16	49	42	77	49	36	56	
4	61	70	20	56	47	88	56	39	63	
5	68	78	24	63	52	99	62	43	70	
6	74	87	28	70	57		69	46		
7	81	95	32	77	62		76	50		
8			36	83	67			53		
9			40	90	72			57		
10			44		77			60		
11			48		82			64		
12			52					67		
13			56					71		
14			60					74		
15			64					78		
16			68					81		
17								85		
18								88		
19								92		
20								95		
21										
22										
23										

Table 25

T-SCORES FOR MEDICAL AND DENTAL TECHNICIANS, CHEMISTS, SCIENCE TEACHERS, AND NATURAL SCIENTISTS

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	39	33			34	35		33	38	47
1	45	39		11	38	44	30	36	46	83
2	50	45		19	42	54	40	39	53	119
3	56	51	22	28	46	63	50	43	61	
4	62	58	27	36	50	73	60	46	69	
5	68	64	31	44	54	82	70	49	76	
6	73	70	36	52	58		80	52		
7	79	77	40	60	62		90	55		
8			44	68	66			59		
9			49	76	70			62		
10			53		74			65		
11			57		78			68		
12			62					71		
13			66					74		
14			71					78		
15			75					81		
16			79					84		
17								87		
18								90		
19								94		
20								97		
21	N = 24									
22										
23										

Table 26

T-SCORES FOR ATHLETES AND ATHLETIC COACHES

N = 10

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 ScSe	10 Dra
0	10	34			26	36		21	10	39
1	21	40		37	30	43	30	27	21	57
2	32	46		44	34	50	40	33	32	76
3	43	52	-102	50	39	57	50	39	43	
4	54	58	-80	56	43	64	60	45	54	
5	66	64	-57	63	47	71	70	51	66	
6	77	70	-35	69	52		80	57		
7	88	76	-13	75	56		90	63		
8			10	82	60			69		
9			32	88	65			76		
10			54		69			82		
11			77		73			88		
12			99					94		
13			122					100		
14			144					106		
15			166					112		
16			189					118		
17								124		
18								130		
19								136		
20								143		
21										
22										
23										

Table 27

T-SCORES FOR FARMERS

N = 28

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	29	33			22	41		19	31	43
1	36	42		38	27	53	39	23	37	59
2	43	51		45	32	65	45	28	44	75
3	50	59	-31	52	37	76	52	33	50	
4	57	68	-21	59	41	88	58	37	56	
5	63	77	-12	66	46	100	65	42	63	
6	70	86	- 3	73	51		71	47		
7	77	95	7	80	56		78	51		
8			16	87	61			56		
9			25	94	66			60		
10			34		71			65		
11			44		76			70		
12			53					74		
13			62					79		
14			71					84		
15			81					88		
16			90					93		
17								98		
18								102		
19								107		
20								112		
21										
22										
23										

Table 28

T-SCORES FOR AUTHORS, EDITORS, REPORTERS, AND LIBRARIANS

N = 15

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	25	10			29	23		27	36	35
1	32	20		26	35	33	37	30	41	56
2	39	30		35	41	42	43	34	47	76
3	45	40	31	44	47	51	48	38	52	
4	52	50	35	53	52	61	54	41	58	
5	59	60	39	62	58	70	60	45	63	
6	65	70	43	71	64		65	48		
7	72	80	48	80	70		71	52		
8			52	89	76			56		
9			56		82			59		
10			60		87			63		
11			64		93			67		
12			69					70		
13			73					74		
14			77					77		
15			81					81		
16			86					85		
17								88		
18								92		
19								96		
20								99		
21										
22										
23										

Table 29

T-SCORES FOR ACCOUNTANTS, BOOKKEEPERS, AND IBM OPERATORS

N = 25

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	35	39			34	41		33	39	45
1	41	44		38	38	52	29	35	45	57
2	47	49		43	42	60	37	37	51	69
3	52	54	30	48	47	70	46	39	57	
4	58	59	33	53	51	80	54	42	63	
5	64	64	36	58	55	89	62	44	69	
6	70	69	39	63	59		71	46		
7	76	74	42	68	64		79	48		
8			45	73	68			51		
9			48	78	72			53		
10			51		76			55		
11			54		80			57		
12			56					60		
13			59					62		
14			62					64		
15			65					66		
16			68					68		
17								71		
18								73		
19								75		
20								77		
21										
22										
23										

Table 30

T-SCORES FOR MATHEMATICS TEACHERS

N = 15

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	31	34			30	38		24	34	31
1	36	40		33	35	45	38	29	39	50
2	41	46		39	40	52	44	34	44	69
3	46	52	24	45	45	58	49	39	48	
4	51	58	28	52	50	65	55	44	53	
5	56	64	32	58	55	72	60	49	58	
6	61	70	35	64	60		66	54		
7	66	76	39	71	65		71	60		
8			43	77	70			65		
9			47	83	75			70		
10			50		80			75		
11			54		85			80		
12			58					85		
13			62					90		
14			66					95		
15			69					100		
16			73					106		
17								111		
18								116		
19								121		
20								126		
21										
22										
23										

Table 31

T-SCORES FOR ARTISTS AND ART TEACHERS

N = 14

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	32	26			36	36		21	32	36
1	39	35		36	40	45	41	24	39	56
2	45	44		42	44	53	49	27	46	77
3	52	54	22	48	48	62	58	30	54	
4	59	63	26	54	52	70	66	33	61	
5	65	72	30	60	55	79	74	36	68	
6	72	82	34	66	59		83	39		
7	79	91	38	72	63			42		
8			42	78	67			45		
9			46	83	71			48		
10			50		75			52		
11			54		79			55		
12			58					58		
13			62					61		
14			66					64		
15			70					67		
16			74					70		
17								73		
18								76		
19								79		
20								82		
21										
22										
23										

Table 32

T-SCORES FOR ACADEMIC TEACHERS, VOCATIONAL AND PRINTING TEACHERS

N = 72

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	18	31			25	34		21	26	38
1	26	37		38	30	41	36	25	33	53
2	34	44		45	36	48	44	30	39	68
3	42	50	20	52	42	55	52	34	46	
4	50	57	25	59	47	63	60	39	52	
5	58	63	29	66	53	70	68	44	59	
6	66	70	34	72	58		76	48		
7	74	76	39	79	64		84	53		
8			43	86	70			57		
9			48	93	75			62		
10			53		81			66		
11			57		87			71		
12			62					76		
13			67					80		
14			71					85		
15			76					89		
16			81					94		
17								99		
18								103		
19								108		
20								112		
21										
22										
23										

Table 33

T-SCORES FOR CLERGYMEN

N = 15

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	24	30			28	31		20	24	39
1	31	36		31	34	38	40	25	31	58
2	38	43		38	39	46	50	30	38	77
3	45	49	17	44	44	53	60	36	45	
4	52	56	22	51	49	61	70	41	52	
5	58	62	28	57	55	68	80	46	58	
6	65	69	33	64	60		90	52		
7	72	75	39	70	65		100	57		
8			44	77	70			62		
9			50	83	76			68		
10			56		81			73		
11			61		86			79		
12			67					84		
13			72					89		
14			78					95		
15			83					100		
16			89					105		
17								111		
18								116		
19								121		
20								127		
21										
22										
23										

Table 34

T-SCORES FOR SOCIAL WELFARE WORKERS AND GUIDANCE COUNSELORS

N = 10

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	17	33			36	24		25	15	40
1	25	38		40	39	34	36	29	24	52
2	32	43		47	42	43	45	33	34	64
3	39	48	10	54	45	52	54	37	43	
4	47	53	17	62	48	61	62	41	52	
5	54	58	25	69	51	70	71	45	61	
6	62	63	32	77	54		80	49		
7	69	68	40	84	57		89	53		
8			47	92	61			57		
9			54	99	64			61		
10			62		67			65		
11			69		70			69		
12			77					73		
13			84					77		
14			92					81		
15			99					85		
16			107					89		
17								93		
18								97		
19								101		
20								105		
21										
22										
23										

Table 35

T-SCORES FOR ACTORS

N = 25

Raw Score	1 Per	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
0	19	24			19	34		23	26	36
1	26	32		42	26	42	38	28	32	57
2	34	40		48	32	49	45	32	38	77
3	41	47	19	55	38	56	52	36	45	
4	49	55	23	62	44	64	58	41	51	
5	57	62	28	69	51	71	65	45	58	
6	64	70	33	75	57		72	49		
7	72	78	38	82	63		79	54		
8			43	89	70			58		
9			48	96	76			62		
10			52		82			67		
11			57		89			71		
12			62					75		
13			67					80		
14			72					84		
15			77					88		
16			81					93		
17								97		
18								102		
19								106		
20								110		
21										
22										
23										

APPENDIX B

Statistical Tables
Means and Standard Deviations by Occupation, Reliability Coefficients for Each School Grade in the Residential and Public Schools
and
Intercorrelations for Eight Different Samples

Table 36.5

MEANS AND STANDARD DEVIATIONS BY OCCUPATIONAL GROUPS

SCALES

Occupational Group	N		1 Pers	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
Total Possible			7	7	16	9	11	5	7	20	6	3
1. Sales Workers, Ins. Agents and Attorneys	17	Mean	4.8	3.3	9.0	3.1	3.8	2.3	2.9	8.0	2.8	1.0
		S.D.	2.1	1.0	2.4	1.2	1.3	1.2	.99	2.3	1.8	.76
2. Clerks	51	Mean	2.8	4.1	10.7	3.6	4.2	1.1	2.7	6.7	2.5	.45
		S.D.	1.5	1.3	1.9	1.5	2.0	.92	1.4	2.7	1.5	.60
3. Printers												
Pressmen	40	Mean	3.1	2.3	12.0	2.5	4.2	.86	2.4	7.2	3.0	.43
		S.D.	1.6	1.2	2.3	1.5	1.3	.73	1.1	2.6	1.8	.51
Compositors	43	Mean	2.9	2.7	13.2	3.0	3.8	1.5	2.6	7.5	2.6	.46
		S.D.	1.7	1.6	2.4	1.8	1.7	1.4	1.4	2.5	1.6	.51
Linotype Operators	175	Mean	2.7	2.7	13.3	3.5	4.0	1.4	2.7	6.5	2.4	.40
		S.D.	1.6	1.5	1.9	1.6	2.0	1.2	1.5	2.3	1.6	.57
Floormen	22	Mean	2.6	2.4	12.4	3.7	4.6	1.1	2.9	6.3	2.1	.36
		S.D.	1.9	1.7	1.9	2.2	1.2	1.0	1.7	3.0	1.8	.50
Photoengravers	17	Mean	2.3	1.8	12.[illegible]	4.3	3.1	.78	3.6	7.8	1.8	.22
		S.D.	1.6	.83	2.8	1.8	2.1	.67	1.1	4.5	1.3	.44
Misc'l. Printing	25	Mean	2.0	2.7	12.6	3.6	3.7	1.3	2.7	7.6	1.7	.37
		S.D.	2.0	1.7	2.2	1.4	1.6	1.2	1.1	3.0	1.7	.60
Printing Total	322	Mean	2.7	2.6	12.9	3.4	4.0	1.3	2.7	6.8	2.4	.40
		S.D.	1.7	1.5	2.1	1.7	1.8	1.1	1.4	2.6	1.6	.55
4. Draftsmen	21	Mean	1.9	1.1	12.0	3.1	3.6	.47	4.1	9.4	1.7	.20
		S.D.	1.5	.92	1.9	1.4	1.7	.74	1.2	3.9	1.3	.56
5. Cabinet Makers and Carpenters	62	Mean	2.0	1.3	11.6	2.9	4.6	.49	3.0	7.6	1.7	.34
		S.D.	1.2	1.1	3.8	1.3	2.3	.88	1.5	3.0	1.2	.64
6. Machinists	51	Mean	2.4	1.9	11.3	3.5	4.6	.88	3.0	6.8	2.2	.38
		S.D.	1.3	1.4	1.9	1.4	1.8	1.0	1.4	2.8	1.3	.55
7. Tool and Die makers	41	Mean	2.5	1.2	12.2	3.4	4.7	.36	3.4	7.1	2.1	.23
		S.D.	1.4	1.0	1.5	1.5	2.1	.49	1.5	2.3	1.3	.43

Table 36

MEANS AND STANDARD DEVIATIONS BY OCCUPATIONAL GROUPS

SCALES

Occupational Group	N		1 Pers	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
Total Possible			7	7	16	9	11	5	7	20	6	3
8. Miscl Mechanical	100	Mean	2.8	1.9	11.4	3.0	4.7	.69	3.1	6.5	2.5	.44
		S.D.	1.6	1.2	2.0	1.6	2.0	.94	1.6	2.4	1.6	.65
9. Total Mechanical	275	Mean	2.4	1.6	11.6	3.1	4.6	.62	3.2	7.1	2.2	.36
		S.D.	1.5	1.2	2.5	1.5	2.0	.89	1.5	2.8	1.4	.60
10. Butchers and Bakers	13	Mean	2.3	1.5	10.0	3.0	3.3	.83	3.0	9.8	1.8	.67
		S.D.	1.8	1.4	2.6	1.1	1.5	1.3	1.1	1.7	1.9	.52
11. Medical and Dental Technicians, Chemists Science Teachers, and Natural Scientists	24	Mean	1.9	2.8	9.3	5.8	4.0	1.6	3.0	5.3	1.5	.08
		S.D.	1.8	1.6	2.3	1.2	2.5	1.0	1.0	3.1	1.3	.28
12. Athletes and Ath. Coaches	10	Mean	3.6	2.6	9.8	3.0	6.6	2.0	3.0	4.8	3.6	.60
		S.D.	.89	1.7	.45	1.6	2.3	1.4	1.0	1.6	.89	.55
13. Farmers	28	Mean	3.1	1.9	11.7	2.7	5.6	.75	2.8	6.8	3.0	.44
		S.D.	1.4	1.1	1.1	1.4	2.0	.86	1.5	2.1	1.5	.63
14. Authors, Editors Reporters, Librarians	15	Mean	3.7	4.0	7.6	3.7	3.6	2.9	3.3	6.4	2.6	.71
		S.D.	1.5	1.0	2.4	1.1	1.7	1.1	1.8	2.8	1.8	.49
15. Accountants, Bookkeepers, and IBM Operators	25	Mean	2.6	2.1	9.8	3.4	3.8	.93	4.5	7.7	1.9	.40
		S.D.	1.7	2.0	34	2.0	2.4	1.0	1.2	4.5	1.6	.83

Table 36

MEANS AND STANDARD DEVIATIONS BY OCCUPATIONAL GROUPS

SCALES

Occupational Group	N		1 Pers	2 Cler	3 Mec	4 Sc	5 Out	6 Li	7 Comp	8 Ar	9 SoSe	10 Dra
Total Possible			7	7	16	9	11	5	7	20	6	3
16. Mathematics Teachers	15	Mean	3.8	2.6	9.9	3.8	4.0	1.8	5.1	5.1	3.4	1.0
		S.D.	2.0	1.7	2.6	1.6	2.0	1.5	1.8	2.0	2.1	.53
17. Artist and Art Teachers	14	Mean	2.7	2.6	10.0	3.3	3.6	1.6	2.1	9.5	3.5	.70
		S.D.	1.5	1.1	2.5	1.7	2.5	1.2	1.2	3.2	1.4	.48
18. Clergymen	15	Mean	3.8	3.1	9.0	3.9	4.1	2.6	2.0	5.7	4.8	.56
		S.D.	1.5	1.5	1.8	1.5	1.9	1.3	1.0	1.9	1.5	.53
19. Social Welfare workers and Guidance Counselors	10	Mean	4.4	3.4	8.4	2.4	4.6	2.8	2.6	6.2	4.8	.80
		S.D.	1.3	1.9	1.3	1.3	3.2	1.1	1.1	2.5	1.1	.84
20. Teachers												
Academic teachers	42	Mean	4.5	3.3	8.5	2.5	4.5	2.8	2.4	6.2	4.2	1.2
		S.D.	1.3	1.4	1.7	1.6	1.5	.90	.77	2.1	1.3	.55
Vocational and Printing Teachers	30	Mean	3.6	2.7	10.1	2.9	4.4	1.8	3.0	6.6	3.1	.50
		S.D.	1.1	1.6	2.3	1.4	2.1	1.5	1.5	2.3	1.5	.63
21. Actors	25	Mean	4.1	3.4	9.5	2.3	4.9	2.1	2.8	6.1	3.8	.69
		S.D.	1.3	1.3	2.1	1.5	1.6	1.4	1.5	2.3	1.6	.48
22. Entire Employed Occupational Group	931	Mean	2.8	2.3	10.7	3.3	4.3	1.2	2.9	6.9	2.5	.45
		S.D.	1.6	1.5	2.4	1.6	2.0	1.2	1.4	2.8	1.6	.60

Table 37

RELIABILITY COEFFICIENTS FOR THE VARIOUS GRADES

AND TYPES OF RESIDENTIAL SCHOOLS

Scale	Grade						Voca-tional	Manual	Median
	7	8	9	10	11	12*			
1	676	682	624	708	570	539	465	263	597
2	487	544	774	713	496	684	600	471	575
3	479	543	567	385	660	731	251	586	555
4	688	607	690	549	635	557	450	584	596
5	715	484	667	656	794	596	681	787	674
6	349	593	605	592	530	678	542	210	567
7	421	546	601	424	540	643	357	462	501
8	671	599	707	702	738	704	723	471	703
9	696	689	581	576	556	640	338	243	578
10	558	372	313	477	259	153	149	483	343
Median	614	570	615	584	564	641	457	471	
N	136	148	157	156	132	97	85	38	949

* A split half (corrected for the whole) reliability estimate was made for this sample. It came out on an average of .15 higher than test-retest on all the scales. It is assumed that this would be true for all other samples as well.

Table 38

INTERCORRELATIONS - RESIDENTIAL SCHOOLS

Scale	1	2	3	4	5	6	7	8	9	10
1		233	-564	-595	171	482	-121	585	945	450
2			-395	-194	-145	566	061	-291	171	128
3				-132	065	-473	118	251	-053	-101
4					-099	-222	088	-314	-558	-310
5						-210	-096	-389	212	-038
6							-255	-105	470	479
7								-100	-209	-262
8									-078	-068
9		N = 949								401
10										

Table 39

INTERCORRELATIONS - PUBLIC SCHOOLS

Scale	1	2	3	4	5	6	7	8	9	10
1		316	-151	-541	819	261	-205	739	903	554
2			-439	-040	219	571	028	-33?	200	297
3				-344	-069	-576	255	245	-086	-346
4					009	109	-085	-458	-508	-141
5						-153	119	-483	120	-027
6							-390	-046	177	486
7								-245	-334	-216
8									115	-109
9		N = 96								455
10										

Table 40

INTERCORRELATIONS - GALLAUDET

Scale	1	2	3	4	5	6	7	8	9	10
1		424	-231	-649	135	505	-412	-135	950	629
2			-535	-192	003	659	-274	-303	360	236
3				-183	-062	-539	260	294	-149	-176
4						-232	179	-303	-665	-395
5						-129	057	-478	149	009
6							-620	-065	498	550
7								-017	-489	-481
8									-137	-099
9		N = 118								636
10										

Table 41

INTERCORRELATIONS - BUREAUS OF VOCATIONAL REHABILITATION

Scale	1	2	3	4	5	6	7	8	9	10
1		441	-506	-405	-130	593	-358	-111	942	516
2			-493	-192	-156	615	-090	-396	392	183
3				-044	-080	-524	234	171	-444	-235
4					177	-264	249	-461	-412	-240
5						-233	080	-339	-139	-164
6							-433	-142	572	500
7								-158	-428	-379
8									-122	-047
9		N = 496								515
10										

Table 42

INTERCORRELATIONS - PRINTING TOTAL

Scale	1	2	3	4	5	6	7	8	9	10
1		214	-248	-571	245	476	-259	-115	953	598
2			-505	-048	-131	693	-159	-352	186	065
3				-156	-094	-555	046	308	-168	-109
4					052	-203	358	-408	-571	-373
5						-103	107	-467	220	-003
6							-342	-210	442	446
7								-156	-375	-237
8								-124	-066	
9		N = 322							594	
10										

Table 43

INTERCORRELATIONS - MISCELLANEOUS MECHANICAL

Scale	1	2	3	4	5	6	7	8	9	10
1		216	-244	-528	112	512	-239	-312	944	592
2			-484	-085	-226	500	213	-283	076	094
3				-115	092	-494	-032	384	-159	-043
4					131	-151	306	-171	-538	-259
5						-088	017	-390	176	-046
6							-217	-124	454	363
7								-119	-345	-214
8									-264	-111
9		N = 100								582
10										

Table 44

INTERCORRELATIONS - TOTAL MECHANICAL

Scale	1	2	3	4	5	6	7	8	9	10
1		199	-132	-432	155	469	-150	-219	937	532
2			-217	041	-164	552	093	-311	106	068
3				034	120	-332	151	410	-088	-061
4					136	-040	212	-141	-430	-212
5						-017	051	-303	176	022
6							-235	-145	425	360
7								-049	-268	-193
8									-204	-150
9		N = 275								504
10										

Table 45

INTERCORRELATIONS - ENTIRE EMPLOYED OCCUPATIONAL GROUP

Scale	1	2	3	4	5	6	7	8	9	10
1		301	-286	-505	183	509	-226	-192	941	546
2			-462	009	-170	666	-077	-340	220	150
3				-107	024	-539	120	360	-196	-160
4					020	-088	242	-292	-511	-288
5						-140	094	-389	199	-081
6							-355	-167	465	453
7								-121	-348	-244
8									-177	-041
9		N = 931								522
10										

Table 46

Correlations Between Each Item Alternative and Each of the Ten Scale Scores

GALLAUDET COLLEGE STUDENTS

N = 118

Note: Circled items are those that are scored on each scale.

ITEM	1	2	3	4	5	6	7	8	9	10
1	.013	-.136	(.422)	-.440	.080	-.243	.224	(.251)	-.023	-.124
2	-.289	.027	-.297	(.570)	-.045	.032	-.029	-.285	-.280	-.072
3	(.418)	-.149	-.187	-.199	-.066	-.294	-.265	.058	(.387)	.303
4	.021	-.027	.154	.100	(.237)	-.058	-.002	-.233	.035	.090
5	.073	.111	.023	-.049	.028	.000	.044	-.191	.089	-.145
6	-.111	-.108	.044	-.043	-.279	.059	-.052	(.474)	-.144	.084
7	-.152	-.335	.151	(.347)	.382	-.278	.090	-.142	-.153	-.154
8	-.100	-.331	(.233)	-.037	-.339	-.058	.015	(.414)	-.096	.002
9	-.202	(.521)	-.291	-.285	-.113	-.287	-.090	-.151	-.200	.136
10	-.317	-.554	(.517)	.107	.106	-.647	.205	-.025	-.274	-.309
11	-.144	-.420	(.672)	-.069	-.059	-.083	-.085	(.223)	.139	.128
12	-.230	(.622)	-.554	-.065	-.070	(.692)	-.152	-.108	.189	.231
13	-.104	-.392	(.398)	-.120	.263	-.230	-.003	-.209	-.067	-.019
14	-.307	(.614)	-.305	-.190	.121	(.245)	.016	-.301	-.299	.090
15	-.250	-.326	-.028	.102	-.383	-.061	-.016	(.536)	-.275	-.084
16	.078	-.017	-.023	-.056	.055	.008	-.070	-.217	.053	(.474)
17	-.127	.058	.123	-.313	(.163)	.083	-.352	(.166)	.167	.012
18	-.196	-.055	-.123	(.316)	-.221	-.099	(.443)	-.043	-.223	-.330
19	-.019	.036	(.366)	-.023	-.135	.010	-.054	(.242)	-.012	-.144
20	-.136	.037	(.138)	-.123	-.080	.111	.033	.117	.111	.054
21	-.077	-.063	(.609)	.110	.131	-.088	.030	-.326	-.067	.106
22	.095	.034	(.135)	.038	(.380)	.103	-.130	-.063	.079	.228
23	-.102	-.058	(.149)	-.032	-.339	-.118	.163	.031	-.088	-.201
24	.024	.074	-.046	-.016	-.115	.050	-.106	(.095)	.029	-.078
25	.099	.002	(.117)	-.173	-.290	.045	-.112	.249	.088	-.020
26	-.041	.029	(.255)	.016	-.167	.008	-.064	-.151	.002	-.006
27	-.034	-.028	-.317	.110	(.361)	-.040	.140	-.042	-.065	.020
28	.026	.044	(.131)	-.006	-.017	.131	-.109	(.210)	.021	.033
29	-.166	-.216	(.152)	-.143	-.210	-.274	.087	-.108	-.137	-.159
30	.102	.124	(.598)	-.103	-.144	.087	.035	-.112	.085	.090
31	.070	-.262	.063	-.171	-.234	-.119	-.183	(.417)	.065	.117
32	-.282	-.230	.134	-.221	(.425)	-.494	(.547)	-.362	-.258	-.224
33	-.253	(.467)	-.199	-.103	-.277	(.641)	-.453	.058	.231	.152
34	.119	-.156	(.333)	-.118	-.103	.167	-.085	(.163)	.100	.128
35	.069	-.013	(.453)	-.060	-.133	.037	.041	-.038	.063	-.036
36	-.167	-.100	(.763)	.156	-.228	-.166	.017	-.078	-.147	-.054
37	-.036	-.044	(.199)	-.078	-.116	-.026	-.134	-.260	.006	-.017
38	(.305)	(.392)	-.433	.047	.013	.191	.031	-.078	.080	.121
39	-.186	-.241	(.137)	.034	.090	-.114	.093	-.168	-.062	-.071
40	-.180	.091	-.425	(.559)	-.168	-.025	.110	-.291	-.215	-.126
41	-.023	-.108	(.217)	-.207	-.277	.189	-.127	(.519)	-.009	.082
42	-.198	.006	(.401)	-.368	(.414)	-.145	.005	-.177	-.220	.051

(continued)

Table 46 (continued)

Correlations Between Each Item Alternative and Each of the Ten Scale Scores

ITEM	1	2	3	4	5	6	7	8	9	10
43	-.062	-.012	.271	-.178	.040	-.159	.233	.004	-.018	-.091
44	.070	.111	.186	.377	.074	.171	-.108	.313	.023	.085
45	.014	-.082	-.171	-.113	-.114	.045	-.192	.271	.002	.037
46	.011	-.162	.017	-.004	.062	-.059	.113	.081	-.029	.106
47	-.004	.298	.064	.075	.051	-.008	.012	.275	-.001	.012
48	-.005	-.189	.013	-.075	-.101	.053	-.098	.225	.023	-.093
49	-.328	.021	.062	.181	-.041	-.105	.516	-.072	-.333	-.177
50	.676	-.188	.042	.444	.085	.272	-.442	.034	.672	.410
51	-.450	-.237	.014	.330	-.057	-.207	-.008	.033	-.439	-.295
52	.049	-.091	-.087	.051	-.004	.083	-.097	.070	.017	.072
53	-.034	.063	.072	.019	-.290	-.051	.026	.025	-.022	-.053
54	-.010	.017	.003	-.073	.343	-.024	.067	-.100	.008	-.010
55	.005	-.125	.040	.040	.499	-.100	.114	-.505	.068	-.171
56	-.049	-.181	.028	-.032	-.497	.030	-.075	.543	-.099	-.029
57	.096	-.109	-.152	-.022	-.051	.161	-.096	-.035	.062	.449
58	-.233	-.363	.399	-.042	-.047	-.615	.020	-.126	-.229	-.224
59	.106	-.076	.223	-.033	.131	-.199	-.149	-.043	.100	-.044
60	.173	-.415	-.541	.062	-.031	.746	-.540	-.102	.173	.254
61	.135	-.313	.018	-.067	.298	.053	-.194	-.075	.161	.024
62	.156	-.013	.079	-.150	-.118	.144	-.136	.093	.137	-.205
63	-.214	-.290	.026	.146	-.217	-.129	.258	.019	-.228	-.135
64	-.649	-.293	-.174	.527	.051	-.344	.113	.010	-.581	-.326
65	.011	.004	.017	.026	-.047	-.073	.322	.060	-.229	-.092
66	.576	.261	-.169	-.494	-.011	.363	-.338	-.054	.691	-.360
67	.136	-.178	.035	-.182	-.215	.280	-.177	.271	.130	.034
68	-.049	.060	-.427	.272	.339	.178	-.051	-.217	-.070	.011
69	-.047	-.173	.408	-.124	-.162	-.347	.164	.006	-.023	-.033
70	-.264	-.144	-.003	.102	-.289	-.112	.050	.287	-.253	-.092
71	.440	-.253	-.155	-.087	.453	.114	-.126	-.562	.425	.143
72	-.303	-.184	.217	.004	-.292	-.029	.116	.444	-.295	-.092
73	.597	.168	-.009	-.634	-.017	.138	.090	.052	.651	.232
74	-.299	-.036	.027	.487	.022	-.043	.005	-.173	-.346	-.105
75	-.454	-.180	-.018	.297	-.001	-.133	.113	.120	-.473	-.189
76	-.163	.053	.034	.058	-.422	-.027	-.206	-.038	-.145	-.192
77	-.163	.053	.152	-.025	.537	.041	-.144	-.156	.138	.089
78	.042	-.128	.118	-.050	-.015	-.003	-.120	.218	.046	-.161
79	-.566	-.128	-.092	.719	.024	-.253	.022	-.224	-.556	-.456
80	.726	.246	-.189	-.545	-.027	.619	-.558	.010	.757	.833
81	-.232	-.144	-.310	-.133	.005	.437	.610	.223	-.278	.468