3 1293 10417 3558

307

100 A181

ABSTRACT

INTERRELATIONSHIPS AMONG SPECIAL EDUCATION TEACHER TRAINEE RESPONSES TO INTEREST, ATTITUDE AND PERSONALITY MEASURES

by

James M. Van Tassel

This study was an exploratory investigation of the utility of several self-report measures of vocational interests, values, needs and other non-pathological personality variables with a population of undergraduate special education-mental retardation majors. It was the initial activity of a longitudinal study at Michigan State University which has the overall objective of accumulating data that will facilitate development of individualized teacher-training programs in special education and may identify criteria upon which future selection decisions can be based.

The study has the following major objectives:

1. To establish norms for the selected instruments for this particular student population.

2. To determine the correlates of responses to variables measured by the Gordon Personal Inventory and the Gordon Personal Profile.

3. To determine the utility of alternate methods of scoring the Gordon Personal Inventory and the Gordon Personal Profile.

4. To explore the meaning of high and low response scores on the Minnesota Teacher Attitude Inventory.

5. To contrast groups scoring low and high on various tests in an effort to identify measures potentially useful for selection purposes.

The sample selected for the study was composed of sixty-four female students drawn from the fall 1971 training group in mental retardation which consisted of seventy-four undergraduate special education-mental retardation majors. Four male students were not included in the study, and six female students failed to complete the battery of instruments.

Data were gathered by means of a battery of self-report instruments which included the Gordon Personal Inventory (GPI), Gordon Personal Profile (GPP), Edwards Personal Preference Schedule (EPPS), Minnesota Teacher Attitude Inventory (MTAI) and Allport-Vernon-Lindzey Study of Values (AVL). Tables presenting obtained distributions and comparisons with manual norms were prepared. Two alternate scoring procedures for the Gordon measures--Weighted Response Scoring and Popular Response Score--were developed to assess effects of the social desirability response set. Intercorrelations of all variables were shown in tabular form. Analyses of the array of accumulated data resulted in the following conclusions.

Conclusions

1. On the basis of comparisons of sample data with manual norms and examination of the EPPS "Consistency" measure and SVIB administrative indices, it was concluded that subjects responded conscientiously and appropriately to the selected instruments.

2. Distributions of responses indicated that the measures differentiated among subjects adequately for use in individual prediction within this restricted sample.

3. According to SVIB measures, subjects' mean "T" values of 61.3 on the "Teaching" scale and 39.23 on the "Elementary Teacher" scale indicated that, as a group, they do not have interest patterns similar to practicing elementary teachers.

4. Subjects' mean MTAI score of 67.08 is commensurate with norms previously reported for persons at similar training and experience levels.

5. Low MTAI scorers differed from high scorers in that they were more often undecided or took a less extreme position, as opposed to adopting an opposite view. Low scorers appeared more cautious on other measures, indicating some MTAI variance may be attributable to a "cautious" personality disposition rather than to differing attitudes toward children and classroom procedures.

6. Potential utility of GPP profiles consisting of high or low "Ascendancy-Sociability" versus high or low "Responsibility-Emotional Stability" scores was suggested. No similar pattern on the GPI emerged.

7. The alternate Gordon weighted score developed for this study was found to have little utility, since no new relationships appeared. This supported Gordon's control of social desirability response set by the tetrad design.

8. Gordon trait definitions and interpretations were tentatively expanded--based upon relationships of these scores to variables measured by the other instruments.

9. Popular Response scores developed separately for the GPI and GPP correlated .39. Thus, these scores were rejected as a general measure of a subject's tendency to select socially desirable alternatives.

10. Popular Response Score analyses suggest particular weight should be given to low "Responsibility", "Emotional Stability" and "Personal Relations" scores. Conversely, high scores on these traits should be given less weight, since in this population they represent the effects of social desirability response set.

11. Use of subjects' highest or lowest Gordon trait scores revealed relationships not apparent from correlational data, suggesting the utility of strategies which exploit intra-individual rank-oderings of trait scores.

12. Interest in teaching, as measured by the SVIB "Teaching" scale, was not significantly related to any other measures.

13. Comparisons of subjects attaining high and low Gordon total scores revealed some potentially significant relationships. High total scorers expressed stronger needs for "Deference," "Succorance" and "Aggression" and lesser needs for "Affiliation" and "Endurance" and appeared introverted in their interest patterns.

INTERRELATIONSHIPS AMONG SPECIAL EDUCATION TEACHER TRAINEE RESPONSES TO INTEREST, ATTITUDE AND PERSONALITY MEASURES

by

James M. Van Tassel

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Elementary and Special Education

1972

G78877

ACKNOWLEDGMENTS

Since the doctoral study for the writer has been an unusually lengthy process, it is reasonable to assume that he must have received direct or indirect assistance from many individuals during his years at Michigan State University. The writer has indeed been blessed with an outstanding group of colleagues and supervisors. It is appropriate that their contributions be acknowledged at this time.

The role of Dr. J. Edwin Keller, chairman of the guidance committee during the critical thesis stage, was especially significant. Without his wise counsel, continuing encouragement and many days of direct labor, completion of the degree would still be a hope for the future.

Dr. Donald Burke served as chairman of the guidance committee during the coursework stage. He provided invaluable assistance in developing the overall program in college teaching and was able to maintain his composure throughout several unproductive years during which the writer floundered for a research topic. Dr. Charles Henley, Dr. Daniel Kruger and Dr. William Sweetland also served on the guidance committee. Their assistance in developing the total program and with the thesis is sincerely appreciated.

Barbara Cook, an undergraduate special education major, served as general clerical and research assistant during much of the thesis preparation period. Her accuracy and devotion to often monotonous tasks and her personal encouragement when frustrating problems arose were far beyond the call of duty

Mrs. Vivian Stevenson provided encouragement and counsel at several instances when it was especially meaningful. Dr. Charles Mange, Director of Special Education, always seemed to arrange some type of employment opportunity on those occasions when ecnonmic pressures tempted the writer to withdraw from graduate study.

On a highly personal level, Anne, Eric, and Timmy, my family, somehow managed to survive several household moves, lengthy separations and other disruptions. Their willingness to accommodate made doctoral study possible. It is hoped that the quality of their lives will improve from this point onward.

Mrs. Elaine Van Tassel, my mother, and Francis Van Tassel, my late father, never lost faith in my abilities. Their continuing support made undergraduate and graduate study a reality.

TABLE OF CONTENTS

LIST OF TABLES

Chapter 1

INTRODUCTION AND BACKGROUND

INTRODUCTION

This study is an exploratory investigation of the utility of several self-report inventories which purport to measure vocational interests, values, needs and other non-pathological personality variables, with a population of undergraduate majors in special education who are preparing to teach the mentally retarded. It is also the initial phase of a proposed departmental longitudinal study which will gather a broad variety of data from students completing mental retardation training programs at Michigan State University, maintain permanent records of their professional teaching experiences and conduct periodic follow-up studies. The overall objective of the longitudinal study is to create a body of knowledge about students that will make it possible to more accurately design individual training programs to meet their unique characteristics and needs and, for selection purposes, to more reliably differentiate between those likely to become successful teachers and those lacking in talent, interest or commitment.

Need for Research

Enrollments in undergraduate teacher-training programs in special education have increased rapidly in recent years at Michigan State University and elsewhere. Part of this growth is a result of greater

public awareness and acceptance of exceptional children and their life needs which have accompanied the expansion of special education services during the past decade. The emergence of special education as a component of the total educational program in most large and medium-sized communities has increased the visibility of special education teaching as a potential career choice and attracted the interest of many high school and college students. Others may have turned to special education teaching as a result of well-publicized reductions in the numbers of new regular elementary and secondary teaching positions which have resulted in part from the declining birthrate of the 1960's and the serious financial difficulties of many school districts during the 1970's. For a variety of reasons, perhaps ranging in validity from realistic interest in professional involvement with exceptional children to purely mercenary motives, students have enrolled in special education training programs in increasing numbers in recent years.

At Michigan State University, an institution with a very large regular teacher-training program, special education enrollments have nearly doubled within the 1969-1971 period. Two specific types of problems have developed as a result of this situation. While many school systems still need additional professional staff trained in mental retardation, Michigan should attain projected, full-service objectives within the next three years (State Plan, 1971). Thus, the potential for saturation of this segment of the employment market for newly-graduated teachers exists, and students currently completing training are likely to find it increasingly difficult to secure appropriate teaching positions. The fact that Michigan leads many

states not only in providing special education services, but also in the production of teachers and teacher salary levels, further complicates this aspect of the enrollment problem at Michigan State University, since large numbers of students desire to teach in Michigan schools after graduation.

Increased undergraduate enrollment also poses the threat of seriously inhibiting faculty efforts to maintain or upgrade program standards. As class size increases, instruction may well become less individualized, advisement less personalized or more dependent upon printed materials and possibilities for an array of related field experiences for every student in the program diminished. Overall quality can be maintained only by continuing faculty dedication in the face of heavier teaching, advisement and administrative loads and by creative use of available resources. Yet, if criticism of existing special education programs for the retarded and current practices in the field voiced by Dunn (1968), Lilly (1970) and Reynolds and Balow (1972) are valid, part of the indicated action for change centers around extensive modification and upgrading of teacher-training procedures, since a basic area of criticism is the performance of teachers in the field. In similar fashion, if the programming proposals of Deno (1970) or Dunn (1968) are to be fully implemented, teacher-training programs must adapt to changing service models. Enrollment increases, therefore, not only make it extremely difficult to maintain existing standards at Michigan State University and other special education training centers, but also limit the ability of faculty to prepare students for the new types of professional positions that are likely to be available to them upon graduation.

In response to these enrollment pressures, Michigan State University has implemented a quota system limiting enrollment in each disability area. Beginning with the 1972-73 freshman class, students will be initially admitted only to "pre-major" status. At the end of the sophomore year, they must apply for final admission to a specific training area program. In the area of mental retardation, it is anticipated that applications will exceed available positions. Thus, it is necessary to develop specific procedures for identifying students who appear to be the best prospects. Varied field experiences early in the college career are one means of assessment and may be particularly valuable as a self-selection process among marginal students. However, placements are usually limited to special education programs in the immediate campus area, placing heavy emphasis upon traditional programming approaches and the special class model. Prescriptive teaching, resource room and consultant teacher programs recommended in the literature will require quite different teaching skills than today's special classes. It appears reasonable to assume that they may also require different personality characteristics. For this reason, it is essential to develop objective means of gathering data about potentially significant interest, attitude and other personality variables to supplement the subjective ratings of supervising teachers in the field. If this is possible, the validity and reliability of the selection process will be greatly enhanced.

The reduction in size of future training groups also raises the possibility of increased individualization of a student's program, particularly in view of Michigan's proposed shift to a competency-based

approach to basic teacher certification (Teacher Certification and Professional Development, 1971). The development of diversified modules or individualized sequences of required courses would be facilitated by accurate knowledge of each student's particular personality traits, interests and attitudes regarding teaching. The present study is a preliminary investigation of a specific population of students which may in time prove to be a meaningful aid to curricular planning for future majors in mental retardation at Michigan State University.

Purposes

As the initial phase of a longitudinal effort exploring relationships between personal characteristics of students majoring in special education-mental retardation as they are observable during undergraduate training and the later performance of these students in the field, the present study is also an investigation of the utility of several well-known instruments in this context. During this phase, no attempt is being made to validate these instruments against students' post-training teaching performance. Rather, interrelationships among a battery of popular tests are explored in an effort to isolate variables that appear to be of promise for use in future validity studies. Of primary concern is the identification of personality variables which have a direct relationship to elements of the teacher-training program in mental retardation--such as those which enhance a student's self-understanding of his personal feelings about teaching children. Another area of particular interest is the differentiation, is possible, of a "bottom" or "poor risk" group within the general

population sample. A detailed analysis of these students' responses may be particularly revealing. The present study tentatively identifies potentially significant variables; the longitudinal study may in time validate them.

Secondary purposes of the present study include a search for model response patterns which might prove useful in future validity studies, a check on the reliability of responses from this population--as revealed by established indices for certain of the instruments which presumably evaluate the meaningfulness of a subject's total test performance--and the exploration of other interrelationships among the instruments which facilitate the clarification of response meanings. These objectives are further discussed in the methodological descriptions which follow in Chapter 2.

RELATED LITERATURE

A wide variety of studies directed toward the overall objective of identifying improved methods of predicting teacher effectiveness through the assessment of personality variables has been a major category of educational research activities during much of the twentieth century. Getzels and Jackson (1963) cited bibliographies containing over 1000 entries dealing with selected characteristics of teachers in the introduction to their own review of this research area for which they stated that an additional 800 studies published during the 1950-1963 period were initially examined (p. 506). They concluded that many of these studies, unfortunately, were relatively insignificant--particularly when results were evaluated against the criterion of the addition of

useful knowledge to the field of teacher assessment. Most tended to describe the characteristics of good teachers in non-behavioral terms, using such adjectives as "friendly, cheerful, sympathetic, and morally virtuous rather than depressed, unsympathetic, and morally depraved (p. 574)." Despite the range and size of the research effort of the past half century, much is still unknown about relationships between teacher effectiveness and personality variables.

General Problems in Teacher Personality Research

Barr, a pioneer in the measurement of teacher effectiveness, listed eight basic problems inhibiting research efforts attempting to relate teachers' personality characteristics to effective classroom performance in his review (1961).

1. Many different words are used to describe the personal characteristics of teachers. One of the problems confronting workers in this area is how to reduce the list of descriptive terms according to some meaningful pattern.

2. The problem of measurement has not been solved. While a variety of data gathering devices were employed, . . . none, except possibly the measurement of temperament and social competency, showed much validity.

3. The different investigators and constructors of data gathering devices defined the characteristics differently, and . . . chose to measure different aspects of personality even where similar vocabulary was employed.

4. There is a serious problem of definition. The terms employed in discussing the personal characteristics of teachers mean many different things to different people.

5. While the terms used to characterize the personal prerequisites to teacher effectiveness need to be solidly anchored in observable behavior, behaviors . . . are too numerous to provide a useful system for describing teacher effectiveness . . . there is need for simplified schemata of reducing the number of things that educators need to keep in mind in the evaluation of teacher effectiveness.

6. . . . different criteria measure different aspects of teacher effectiveness. Not too much can be achieved in the validation of personality measures until better criteria are developed.

7. Possibly less use might well be made of self-reporting devices . . . and more use might be made of tests, observable behaviors, and measurable personal characteristics.

8. The most promising positive relationships were found for objective measures of emotional stability, social competence . . . and the tests of temperament (pp. 105-106).

Getzels and Jackson (1963) arrived at conlusions somewhat similar to those of Barr, but identified only three general problem areas--definition, instrumentation and criterion.

1. There are profound differences in what is meant by the term personality . . . Definitions are often contradictory, and observations based on one definition will contradict observations based on another definition.

2. . . . What devices are available for assessing personality, and from these how is one to choose the most appropriate measure? . . . the data provided by one instrument called a personality test are not necessarily the same as the data provided by another instrument also called a personality test.

3. Perhaps the most intransigent of the difficulties is the matter of the criterion. Although teacher effectiveness need not be involved in the study of teacher personality, it usually does enter, at least indirectly . . . the crucial question cannot be avoided: What are we selecting and predicting to? How does one define the effective teacher in some distinctive and characteristic way (pp. 574-575)?

Smith (1971) questioned the use of the term "personality" in the evaluation of teacher effectiveness.

> The use of the term personality as an inclusive category of behavior is being discarded in the field of psychology and in teacher education. The tendency now is to think in terms of attitudes. Consequently, research on teaching is becoming more concerned with the problem of determining the effects of the teacher's attitudes on what he does in the classroom and on the achievement of his pupils. There can be little doubt that the attitudes a teacher has toward himself

> influence his behavior in the classroom. . . There can be no doubt that personality in the attitudinal sense is a factor in teaching behavior. The question is what elements of personality make a difference in such behavior, and how these elements can be modified in directions that increase pupil growth (p. 8).

These few reviews consistently portray the very minimal progress that has been made in predicting teacher effectiveness from personality. In the present study, it is not assumed that the personality scales used will necessarily be highly predictive of "superior" teaching. But, there are other uses to which personality measures can be applied. First, self-report inventories can form the basis for guidance or counseling sessions with the student. This has been a major use of vocational interest inventories such as the Strong Vocational Interest Blank included in this study. The "personality" measures used in this study, the Gordons and the Edwards scale, were chosen in part because they assess non-pathological traits and, thus, can be used in a relatively non-threatening manner as a basis for initiating self-evaluation with the student. Second, even though a personality measure may show discouragingly low correlations with a criterion, it may contribute to the task of identifying extremely poor prospects. In selection, this is all that may be asked of a measure--whereas in many of the studies to which reference has been made above, the researchers were interested in theoretical relationships and were, of course, dismayed by validity correlation coefficients accounting for a negligible amount of variance. Third, in selection one if not solely concerned with identifying the best teachers. Of concern also is whether the student is committed to the field and has qualities that will enable him to derive satis-faction from teaching--questions which knowledge of personality patterns

may help to answer. Finally, a training center can contribute to the field by describing the kind of service assignment for which an applicant is particularly suited. For example, does the student's personality structure suggest that he can exert leadership, assert his point-of-view in a group setting, or is he "introversive" in makeup and inclined to quietly go about his personal affairs?

Thus, although Barr concluded that self-report devices might well be used less, this conclusion does not necessarily apply to these other purposes, for which self-report inventories may be well suited.

Early Attitude Studies in Special Education

Special education developed rapidly during the 1950's and 1960's. Teacher recruitment was a major concern during most of this period, since the shortage of trained staff could delay needed program expansions. Perhaps in response to the chronic need for additional qualified teachers and supportive staff, the literature contains many studies which might be described as having a strong "recruitment" component because they attempted to explore various aspects of the attitudes toward exceptional children held by different populations. In some instances, subjects were directly or indirectly involved in some way with exceptional children, while in other studies they were high school or college students who might be regarded as potential special education teachers. In either situation, an objective of the research was increased understanding of the status of special education and exceptional children. Findings may have played a significant role in the improvement of public relations efforts and other aspects of the

recruiting tactics utilized during this period in the history of special education. Representative studies are summarized below.

Badt (1957) administered questionnaires to a sample of undergraduate college students from education and other curricula in an exploration of attitudes toward different disability groupings of exceptional children. She noted basic inconsistencies among her subjects in regard to perceived need for special education services as compared to willingness to teach. Badt's subjects ranked emotionally maladjusted children as most in need of service, but they were ranked least desirable to teach. Similarly, gifted children were considered least in need of special education, but were ranked most desirable to teach (p. 288). She concluded, however, that commonly held attitudes toward the handicapped appeared to be slowly moving in a favorable direction.

Meyers (1964) replicated Badt's study with similar results, using a population of college students about to enter the professional education phase of undergraduate training. He also obtained data from a group of practicing teachers of the retarded which revealed that most had become interested in special education teaching after leaving college. On this basis, he concluded that regular class teachers represented the best source of additional staff in the area of mental retardation.

In a comprehensive year-long effort, Haring, Stern and Cruickshank (1958) attempted to modify the existing attitudes toward exceptional children of a representative population of regular class teachers. They presented a series of workshops, featuring both formal lecture presentations and group discussions, which essentially covered

the material on the various disability areas that currently makes up the content of an introductory, survey course in special education. Evaluation was based upon five instruments developed specifically for the study and briefly described by the present writer as follows:

1. General Information Inventory. This instrument measured the basic information and understanding teachers had about exceptional children. Subjects as a group showed significant gains between pretest and posttest.
2. Classroom Integration Inventory. The teachers' degree of acceptance toward exceptional children and their ability to be realistic about placement decisions were assessed by this test. Results showed teachers from schools in which exceptional children were currently enrolled made significantly greater gains.
3. Activities Index. It was proposed to determine the personality structure of the teachers by means of this instrument. However, results were inconclusive.
4. Picture Judgment Test. By using specially designed pictures portraying specific disability types or teaching situations involving exceptional children, this test was utilized in an attempt to evaluate the teachers' feelings and attitudes. In general, subjects became more positive in establishing specific teaching procedures and less likely to respond in terms of sympathy or rejection.
5. Critical Incident Technique. This was an attempt to determine the extent to which the experiences and knowledge of

> the workshops were actually utilized by the teachers in their daily relationships with exceptional children. Results showed significantly positive modifications in teaching practices (pp. 119-128).

The authors concluded that efforts to integrate exceptional children into the regular activities of a school are enhanced when a means of concurrently providing information to the regular teachers is provided. Teachers in daily contact with exceptional children appeared to be much more receptive to the workshop as sessions continued throughout the school year than did those teachers whose schools either has no exceptional children enrolled or where enrollment was limited. This was interpreted as particularly meaningful in terms of in-service training efforts with similar objectives.

Semmel (1959) compared a group of regular class teachers with a group of special class teachers of retarded children on a questionnaire containing both factual and attitudinal items dealing with mental retardation. While the teachers of the retarded scored significantly higher on the factual questions, there was no difference between the two groups on the attitudinal items. In addition, there was little correlation between the factual and attitudinal scores of the regular teachers. Mahoney and Pangrace (1960) reported a similar lack of relationship between knowledge and attitudes in a study which compared the views held by college students about mental retardation before and after they completed courses in which factual information about retardation was presented. These findings appear to be somewhat in opposition to those of Haring and his associates reported above.

The Work of Reginald Jones

Jones, alone and in collaboration with other researchers, carried out an extensive series of investigations within the general problem area of attitudes toward selected aspects of special education teaching and exceptional children during the past decade. Several of these studies are summarized in the following section, since they appear to represent a comprehensive effort to attack a general problem from several points-of-view.

Jones and Gottfried (1962), in an attempt to identify patterns of relationships between teaching preferences, asked three hundred undergraduate education students to rank their preferences for teaching twelve types of exceptional children. Rank orderings only partially followed those of the Badt study. Significant relationships between several pairs of disability types emerged, and three clusters of preferences were identified by the authors: (a) Positive-Negative Empathy Arousal--deaf, blind, emotionally disturbed and delinquent; (b) Mild-Extreme Dependency--partially seeing, hard of hearing and severely retarded; (c) High-Low Intelligence--gifted and mildly retarded.

Responses of college students in both regular and special education curricula and of teachers of regular and exceptional children to a questionnaire which forced comparisons of the perceived prestige of seventy-eight pairs of general and special education teaching positions were tabulated (Jones and Gottfried, 1966a). Analysis determined the relative prestige of specific special education positions in comparison to the baseline of regular class teaching. Findings in general revealed that special education teaching was higher in prestige than regular classroom teaching.

High school students rated occupations, including special education teaching, regular teaching and other job descriptions, in terms of job prestige, in a similar study by Jones (1966b). Both boys and girls rated special education positions higher than average, but girls assigned higher ratings than did boys.

A questionnaire presenting seventy-eight pairs of handicapped and non-handicapped persons in all possible combinations was completed by a large sample of high school students (Jones, Gottfried and Owens, 1966). The objective was an analysis of the relative social acceptability of various disabilities. Differences not only among these groups, but also among various interpersonal situations were observed. The authors concluded that additional studies with strict subject controls would lead to more conclusive results.

Jones and Gottfried (1966b) probed relationships between psychological needs and preferences for teaching various types of exceptional children in a sample of 534 regular and special education undergraduate students and 192 teachers of regular and handicapped children, using the Edwards Personal Preference Schedule and the Teacher Preference Schedule in conjunction with a rank ordering questionnaire. Comparisons of high and low preferrers were regarded by the authors as inconclusive. Certain results based upon the Edwards Personal Preference Schedule will be discussed in a following section of this review which deals with usage of that instrument.

The Purdue Teacher Opinionaire was used with samples of regular teachers and teachers of retarded children as subjects to investigate the comparative morale of special education teaching

(Jones, 1969). Results showed no differences which could be considered reliable when subjects were classified according to sex and/or elementary vs. secondary levels.

Job satisfaction of a sample of teachers of educable mentally retarded children was assessed with a questionnaire and the Sterns Scales of Unconscious Motivation for Teaching. Differences between satisfied and unsatisfied elementary teachers were found on three Sterns scales--Nondirective, Preadult Fixated and Orderly--while results for secondary teachers were not significant. The authors concluded that it is inappropriate to consider all teachers of educable mentally retarded as a single group (Gottfried and Jones, 1970).

Using factor analysis, Jones (1971) compared preferences for teaching gifted and educable mentally retarded children in a large sample of teachers and teacher trainees. Results indicated that preferences for teaching the various age levels of educable retardates were closely related, preferences for teaching kindergarten and regular elementary classes were related to teaching elementary age educable retarded children, but secondary teaching of educable retardates was negatively related to preferences for regular secondary teaching. Jones indicated a need for additional research at the secondary level in the area of vocational interests.

In his review of the status of research in special education teaching, Jones (1966a) suggested that future efforts might be directed toward analyses of the personal characteristics and satisfactions of teachers in the field, the extent to which the occupational desires of of adolescents are met by special education teaching and interactions

among these and similar related variables. The overall objective of such research would be to better understand why it is that relatively small numbers of individuals choose special education teaching careers (p. 251). Jones categorized existing research according to five general approaches and commented upon each as follows:

1. Experience. . . .there is some evidence that preteaching experience is related to a decision to teach exceptional children. . .Unexplained are the reasons why some individuals having such experiences elect to work in other occupational areas or why some without such experience elect to work in special education.

2. Preferences. . . .studies reveal that certain teaching specialties have greater attractiveness than do others. . . .The populations included subjects who were largely unfamiliar with the characteristics of exceptional children. . . . they may not have clearly understood what is involved in teaching such children. . . .their responses could have been little more than random in nature.

3. Personality. One methodological shortcoming. . .is their failure to use teachers of nonexceptional children or persons employed in other occupations as contrast subject. Thus, while a given group of traits may be seen as characteristic of teachers of a given exceptionality, they may be . . . no different from those possessed by persons employed in a wide variety of seemingly diverse occupations.

4. Prestige. . . .results revealed that special education teaching carried higher prestige than regular class teaching and also that certain differential perceptions of prestige occurred among the various specialties subsumed under special education teaching.

5. Multivariate Approach. Any understanding of the dynamics underlying attraction to special education teaching will require consideration of a number of variables. . .there is always the possibility that complex interactions underlie the phenomena under study. These interactions are not uncovered by the study of single variables in isolation (pp. 252-254).

Jones also cautioned against the tendency of researchers to consider special education teaching as a single entity, since entirely different personality variables may be significant across disability groupings or even within disabilities.

In this section, some of the major studies on attitudes of teachers and teacher trainees were reviewed. These studies are not directly relevant to the purposes of the present investigation. However, they were reviewed for whatever suggestions they may offer in regard to selection and attitudes that may be supportive of the teaching of exceptional children as a career choice.

Studies Predicting Special Education Teacher Effectiveness

In recent years the numbers of trained special education teachers and college students preparing to become special education teachers have increased to the point where some reliable means of predicting future effectiveness in the classroom could be an extremely valuable tool. While such an endeavor is clearly in its infancy, some research has been carried out which appears to be promising.

Bruno (1968) contrasted a group of teachers of emotionally disturbed children who reported that they were comfortable in that teaching role and planned to continue in the field (control group) with a group of teachers who had either left the field or planned to do so (experimental group) in an effort to identify differentiating personality variables. His conclusions, based in part upon data gathered with instruments utilized in the present study, included the following summary statement:

> . . . the control group could best be described as power-oriented, autonomous people who had high manifest needs for dominance and succorance and who resembled social science teachers in terms of their interests. The experimental group could best be described as nurturing people with a social service orientation, and who resembled psychologists in terms of their orientations (p. 85).

Bruno stated that those individuals not happy teaching disturbed children more closely approximated descriptions of the ideal teacher of emotionally disturbed children found in the literature than did the controls. In his review of Bruno's study, Urban (1972) suggested a conflict apparently existed between the actual personal demands of the teacher of disturbed children role and the personality traits of those teachers who abandoned the field and stated that ". . .expectations for the job were incongruent with the personality structure of those who dropped out of teaching the emotionally disturbed (p 29)." Replications of Bruno's procedures in other disability areas, as well as in the area of emotional disturbances, would appear to be potentially useful--in view of the selection problems currently plaguing special education teacher-training programs and the potential excess supplies of teachers in certain disability areas.

In two closely related studies, Dobson (1970) and Pernell (1971) attempted to develop procedures whereby future behaviors among student teachers in the area of emotional disturbance could be reliably predicted. Dobson's stated objectives included (a) the description of student teaching-environment interaction in multivariant terms and (b) predicting individual student teacher strengths and weaknesses according to subjective values considered important for work with emotionally disturbed children (p. 38). Twenty-two pre-student teaching trainees completed the Taylor Manifest Anxiety Scale; the Tennessee Self Concept Scale; an Opinion, Attitudes and Interest Survey; a Biographical Questionnaire and a Teacher Practices Questionnaire. Obtained data were organized according to the following variables:

anxiety, defensiveness, self-concept, stability, personality adjustment, creativity, warmth, enthusiasm, organization, sensitivity, coping ability and teaching philosophy. Based upon these variables, Dobson formulated seventy specific predictions regarding student teaching behaviors. Results showed fifty of the seventy to be accurate--including all predictions which dealt with the variables of warmth, enthusisam and organization. With only minor modifications, Pernell replicated the Dobson methodology with a larger sample of sixty trainees. His results proved 127 of a possible 193 predictions were accurate. These studies appear to be a significant preliminary contribution to the complex task of devising valid special education teacher-trainee selection procedures.

Studies Using Selected Instruments with Teachers

The instruments utilized in the present study are among the best known and most widely used measures of various personality variables available. However, in some instances, their use has been primarily confined to industrial psychology, personnel administration and similar disciplines. The purpose of the following review section is to acquaint the reader with a few representative studies in which each of these measures has been used with teachers or teacher-trainees for purposes which to a degree approximate those of the present study.

According to Getzels and Jackson (1963), the Minnesota Teacher Attitude Inventory is "by far the most popular instrument for the measurement of teacher attitudes (p. 508)." It has been employed in a wide variety of studies during the past two decades. In an early entry in the literature, Callis (1950), one of its developers, used the

MTAI in an effort to determine whether attitudes related to teaching changed during student teaching or during the initial period of professional teaching following graduation. He concluded that "It would appear that the attitudes . . . are well formed by the time the subject enter pre-professional training and are influenced only a minor extent by training and the first half year of teaching (p. 726)." He also reported significant differences between attitudes of subjects according to major teaching area. In a somewhat similar study of 393 education seniors, Sandgren and Schmidt (1956) found attitudes improved during student teaching, but reported little correlation between MTAI scores and critic teacher ratings. Elementary education students scored significantly higher than majors in other teaching curricula.

Rocchio and Kearney (1956) examined the effects of completion of a mental hygiene course upon teachers' ability "to maintain harmonious relationships with pupils (p. 91)," using the MTAI as criterion. Subjects were 1,175 teachers from all levels and subject matter areas. Since they found no significant differences between control and experimental groups, the authors concluded ". . . the attitudes measured by the MTAI are basic and deeply rooted in the personality of the teacher (p. 93)." Sheldon, Coale and Copple (1959) compared high and low MTAI scorers among a sample of college freshmen on several other instruments. The groups differed significantly in intelligence, authoritarianism and "certain manifest and latent needs (p. 40)." In a study of special education student teachers of mentally and physically handicapped children, Meisgeier (1965) reported a significant positive correlation between MTAI scores and "successful" student teaching. These studies

appear to lend support to the use of the MTAI in research efforts similar in objectives to the present study.

The Edwards Personal Preference Schedule measures the relative strength of fifteen personality needs. Sheldon, Coale and Copple (1959) found significant differences between high and low MTAI scorers on six of these needs--Affiliation, Nurturance, Aggression, Dominance, Succorance and Abasement (p. 38). Garrison and Scott compated 530 female education students from five teaching areas on the EPPS. Special education majors displayed a significantly greater need for Achievement than elementary physical education or business education students. They also were lowest of all areas in need for Succorance. Jones and Gottfried in a study discussed previously (1966b) compared high preferrers with low preferrers in twelve special education teaching areas and found significant differences between Deference, Exhibition and Dominance scores. Smith (1968) compared EPPS scores of graduate students before and after a one year training program in teaching emotionally disturbed children and reported that needs remained stable. It would appear that the EPPS might provide one means of differentiating between good and poor prospects in accordance with the long-term objectives of the present study, despite the conclusion of Getzels and Jackson (1963) that "Published studies using the EPPS with teachers are as yet too few to justify any conclusions concerning the ultimate usefulness of the instrument in studying teacher personality (p. 547)."

The Strong Vocational Interest Blank provides scores for basic vocational areas, specific occupation and non-occupational scales. Ringness (1952) reported no relationship between teaching success and

SVIB scores and minimized its utility for predictive purposes. However, Tanner (1954) in a comparison of students rated superior during student teaching with those given an inferior rating stated: ". . . they (superior female prospective teachers) put much greater stress on social and human values in contrast to technical, scientific and physical advancement (p. 277)." Schultz and Ohlsen (1955) also compared interest patterns of superior and inferior student teachers. For their female subjects they reported the superior group ". . . indicated preferences which gave them opportunities to direct the thinking and improve the lives of others," while the inferior group ". . . considered salary to be of prime importance in selecting occupations (p. 110)." The inferior group also tended to make preferences related to working with inanimate objects. These studies seem to indicate that the SVIB may have some merit as a possible criterion for identifying clusters of interests related to teaching.

The Allport-Vernon-Lindzey Study of Values measures the relative strength of six basic personality interests or values. Tanner (1954) found significant differences between inferior and superior student teachers on the Economic and Social scales. The inferior group was higher on the Economic scale; the superior on the Social scale. He also reported ". . . the superior women teachers had a very definite irreligious, even agnostic trend . . .(p. 277)." In their comparison of high and low MTAI scorers, Sheldon, Coale and Copple (1959) found no significant differences for any of the AVL scales. Getzels and Jackson (1963) cited several studies in which AVL scales differentiated between education students according to teaching area and stated

comparisons of this type were more meaningful than those which only compared scale scores of education students with published norms (p. 526). The AVL appears to be of doubtful utility in the longitudinal study of which the present investigation is a part.

The Gordon Instruments

The Gordon Personal Inventory and Gordon Personal Profile are the instruments of particular interest in the present study. When combined they provide measurements of the relative strength of eight personality traits--Cautiousness, Original Thinking, Personal Relations, Vigor, Ascendancy, Responsibility, Emotional Stability and Sociability.

Arbuckle (1958) used the GPP in an investigation of possible relationships between a college student's self-ratings of the GPP traits and his actual scores on the GPP. Subjects were college freshmen, and the author only used Ascendancy and Responsibility scores from the GPP. After dividing subjects into high and low groups according to the Gordon measure of emotional stability, it was found that the low group differed significantly (low) in Ascendancy.

One of the most interesting studies utilizing the GPP was reported by Hughes (1960) and Hughes and Dodd (1961). Subjects were men enrolled in a sales training program for new International Business Machines Corporation (IBM) personnel. The authors developed a scoring procedure in which trait scores (converted to percentile ranks based upon college male norms) were arranged in rank order. At the end of the program, it was found that the highest traits of trainees rated at the top of the group were Ascendancy and Sociability. This was interpreted by the authors as follows:

> These results corresponded generally to what would be expected from the popular personality sterotype of a successful salesman who is generally regarded as a dominant, assertive, and self-assured type who likes people and gets along easily with them rather than as a conscientious and thorough individual who shows great persistence in completing a job while maintaining a high standard of performance (Hughes and Dodd, 1961, p. 344).

When sales and promotion records were reviewed three years later it was found that the true best performers were men who had scored highest on Responsibility. Sociability correlated negatively with the sales performance, indicating that the popular stereotype did not conform to reality--in this particular setting in industry--and demonstrating the relative superiority of an objective personality instrument over the subjective ratings of experiences company sales personnel.

Braun, Alexander and Weiss (1961) investigated relationships between peer ratings of four GPI traits and scores attained on the instrument. Subjects were college women living in small living units. Significant positive intercorrelations were found for Cautiousness and Original Thinking in each of two independent samples and for Personal Relations in one of two samples. The authors concluded their results demonstrated the utility of the GPI as a predictor of peer ratings.

In a previously reviewed study concerned with student teaching success among special education trainees, Meisgeier (1965) found a positive correlation (significant at the .01 level) between successful student teaching and the GPI Vigor scale. This characteristic contributed to one of the patterns of successful student teaching identified by the author. "They were found . . . to possess the physical energy, the vitality and the enthusiasm necessary to meet the demands of special class teaching . . . (p. 231)."

Urban (1972) used both the GPI and GPP in his study of job satisfaction among elementary teachers and teachers of educable mentally retarded children. Vigor, Personal Relations and Original Thinking were positively related to scores on instruments measuring job satisfaction, and elementary teachers were significantly higher on Cautiousness. However, the author concluded that the latter relationship was possibly due to the fact that the elementary teachers were an older group (pp. 99-100).

The Gordon instruments appear to be potentially useful for differentiating among subgroups of subjects in the present study in a variety of different ways. If they should be proven valid during the term of the longitudinal study, their utility will be assured, since they are quickly and easily administered--in comparison to the other instruments used in the present study.

SUMMARY

The preceding chapter discussed the need for improved selection procedures in special education-mental retardation training programs to help alleviate problems caused by increased enrollments which have limited the effectiveness of current teacher-training efforts at a point in history where programming for the retarded is changing rapidly and present procedures are under fire. Purposes of the present study were described in terms of exploring the potential utility of several self-reporting interest, attitude and personality instruments as valid predictors of future teaching success and, at a very practical level, as screening devices for future students. Interrelationships tentatively

identified in the present investigation will be validated in future research efforts carried out during a departmental longitudinal study at Michigan State University.

Related literature was reviewed in terms of general problems involved in attempts to relate personality variables and teaching competency, studies concerned with attitudes of varied populations toward different aspects of special education, some promising recent studies attempting to develop means of predicting teacher effectiveness in special education and a variety of studies using the instruments selected for the present study.

Chapter 2

METHODOLOGY

OBJECTIVES

As a first step in a programmatic series of studies, the present study has the very limited aim of exploring the potential usefulness of several widely used personality, attitude and value inventories. Technical features of the instruments themselves and the response characteristics of this particular student population are the primary concerns. Although the various questions to be raised share this common goal, they do not form a single entity which can be easily described in general terms. Therefore, the various stated goals or purposes of the present study must be considered relatively independent, and the study itself should be viewed as a series of related, but separate, subordinate studies. Following are brief descriptions of the purposes of these subordinate studies. The more specific questions which guided exploratory analyses will be elaborated upon as findings are presented in Chapter 3.

1. <u>To establish norms for the selected instruments for this population of students</u>.

   It is assumed that as social forces alter attitudes, responses to these self-report inventories will also change. It is also recognized by test users that local

norms are essential, if one wishes to use such scores for selection or placement decisions. Local norms will permit meaningful descriptions of the characteristics of this population of special education-mental retardation trainees, since no appropriate norms for the selected instruments are known to exist.

A major issue to be explored is whether there is a sufficient dispersion of scores to permit differentiation among subjects in the sample. Or, is this population sufficiently homogeneous so that there is a minimal level of discrimination among individuals?

2. To determine the correlates of responses to the variables measured by the Gordon Personal Inventory and the Gordon Personal Profile.

   The Gordon instruments are of major concern in the present study because of their potential utility. They are designed to measure, in a relatively brief period of time and in a manner presumably nullifying the effects of the "socially approved" response set, eight specific personality traits. One intent of the present study is to clarify interpretations of various scores and to search for trait profiles that occur with sufficient regularity to be useful in guidance or prediction.

3. To determine the utility of alternate methods of scoring the Gordon Personal Inventory and the Gordon Personal Profile.

   Two alternate methods for scoring responses which have been developed for the present study which weight scores

according to response popularity within this particular population. These scoring procedures are evaluated in order to determine whether they result in significantly different distributions of scores on the traits measured.

4. To explore the meaning of high and low response scores on the Minnesota Teacher Attitude Inventory.

   This instrument appears to be a potentially useful measure for continuing use in the longitudinal study, since it is allegedly a measure of teacher effectiveness. While the MTAI is a popular test, no norms for special education trainees are available. An item analysis based upon the discimination between highest and lowest scorers has been undertaken to shed light upon the meaning of scores within this particular student population.

5. To contrast groups scoring low and high on various tests in an effort to locate measures potentially useful for screening purposes.

   The basic question raised is whether persons at the lowest extreme on one or more of the measures display patterns of test scores on other variables that would strongly suggest, on the basis of this test evidence, that they are not good prospects for teacher training. This objective is based on the assumption, stated earlier, that an assessment procedure can be considered useful if its sole function is to eliminate the least desirable applicants rather than to accurately assess the relative merits of an entire population.

SAMPLE

Most subjects in this study were seniors completing the conventional four year teacher-training curriculum leading to a Michigan Elementary Provisional Teaching Certificate with approval to teach retarded children and youth. Others were juniors who elected to participate in the Elementary Intern Program (EIP), an innovative approach to teacher-training developed by the Department of Elementary and Special Education. By attending two summer sessions, an EIP major completes basic university and professional coursework requirements by the end of the junior year--leaving senior year for a fulltime, paid teaching internship in one of several cooperating Michigan school districts. Since students from both curricula must enroll in a twelve credit block of basic coursework in mental retardation and related field experiences offered only during fall term of the academic year, throughout the longitudinal study subjects may readily be divided into mutually exclusive training groups for purposes of identification, comparison and/or analysis. Subjects for the present study were drawn from the fall 1971 training group.

Excluding the relatively small numbers of graduate students and undergraduates majoring in other disability areas who also enrolled in the netal retardation block, the fall 1971 training group included 74 special education-mental retardation majors. There were 54 students from the conventional teacher-training curriculum and 20 EIP majors. Of the conventional majors, only 23 has completed elementary student teaching prior to fall term. While the department lists regular student teaching as a junior level requirement for all special education majors,

it is not at present an enforced prerequisite for the mental retardation training block. Many students because of scheduling difficulties or for other reasons have elected to defer regular student teaching until the senior year. EIP majors complete elementary methods and student teaching requirements during the winter and spring terms immediately following their mental retardation coursework. Possible relationships between prior professional training in elementary education, including student teaching with normal children, and training in teaching retarded children cannot be documented at this time.

The fall 1971 training group appeared to be a representative sample of undergraduates completing special education-mental retardation teacher-training curricula at Michigan State University. Ages ranged from 19 through 41, but only five students exceeded 24 years of age as of October 1, 1971. Only four men, an unusually small proportion, were enrolled. Approximately one-fourth of the students were married. Previous contacts or continuing experiences with retarded children, other types of exceptional children and with normal children varied as did time of entry to the special education-mental retardation training program. Only the low incidence of males appeared to differentiate between this sample and other groups of students who have completed this program at Michigan State University.

Following completion of the instruments selected for the present study, the sample was reduced to 64 female subjects--46 from the conventional program and 18 EIP students. The four men were excluded because they were too small a sample for independent analysis, and because published normative scores for all instruments except the MTAI differentiate

on the basis of sex, precluding any attempts to combine scores. Six women failed to complete all six instruments and were dropped. Lack of data for all potential female subjects was a possible weakness in the representativeness of this sample, since dropped individuals may differ significantly from the overall sample on some of the personality variables being measured and analyzed. However, these women appeared to be randomly distributed throughout the group in terms of age, marital status, curriculum reported experiences with children and scores upon those instruments which they did complete, and, in any event, they represented only about 10 per cent of the original sample of female subjects.

It should be noted that these individuals entered the mental retardation training program during a period in which admission was still open and prior to the surge in enrollment presumably produced by student awareness of decreasing vocational opportunities within general education. It is probably that future samples of equivalent training groups may show different characteristics--as a result of forces that may stimulate applications and control future admissions.

INSTRUMENTS

Gordon Personal Inventory and Gordon Personal Profile

The Gordon Personal Inventory (GPI) and the Gordon Personal Profile (GPP) are brief, self-administering questionnaires which, if used in combination, measure a total of eight different distinct personality variables. The GPI consists of twenty tetrads or sets of

four descriptive statements. Each of four traits--Cautiousness, Original Thinking, Personal Relations and Vigor--is represented in each tetrad. The GPP contains 18 tetrads, relating to traits labeled Ascendancy, Responsibility, Emotional Stability and Sociability. Each tetrad contains two statements judged to be of equally high preference value and two of equally low preference value. The subject marks one statement "most like himself" and one "least like himself" for each tetrad. Tests are scored by hand, using cardboard keys for each variable. Raw scores are then converted to percentile ranks based upon normative tables provided for several populations. A definite asset of the Gordon instruments is the brief time required for administration. Each takes only about 10-15 minutes.

Operational definitions of the variables are as follows:

1. Cautiousness (C): Individuals who are highly cautious, who consider matters very carefully before making decisions, and do not like to take chances or run risks, score high on this Scale. Those who are implusive, act on the spur of the moment, make hurried or snap decisions, enjoy taking chances, and seek excitement, score low on this Scale.

2. Original Thinking (O): High scoring individuals like to work on difficult problems, are intellectually curious, enjoy thought-provoking questions and discussions, and like to think about new ideas. Low scoring individuals dislike working on difficult or complicated problems, do not care about acquiring knowledge, and are not interested in thought-provoking questions or discussions.

3. Personal Relations (P): High scores are mady by those individuals who have great faith and trust in people, and are tolerant, patient and understanding. Low scores reflect a lack of trust and confidence in people, and a tendency to be critical of others and to become annoyed or irritated by what others do.

4. Vigor (V): High scores on the Scale characterize individuals who are vigorous and energetic, who like to work and move rapidly, and who are able to accomplish more than the average person. Low scores are associated with low vitality

or energy level, a preference for setting a slow pace, and a tendency to tire easily and be below average in terms of sheer output or productivity (Gordon, 1963a, p. 3).

5. Ascendancy (A): Those individuals who are verbally ascendant, who adopt an active role in the group, who are self-assured and assertive in relationships with others, and who tend to make independent decisions, score high on this Scale. Those who play a passive role in the group, who listen rather than talk, who lack self-confidence, who let others take the lead, and who tend to be overly dependent on others for advice, normally make low scores.

6. Responsibility (R): Individuals who are able to stick to any job assigned them, who are persevering and determined, and who can be relied on, score high on this Scale. Individuals who are unable to stick to tasks that do not interest them, and who tend to be flighty or irresponsible, usually make low scores.

7. Emotional Stability (E): High scores on this Scale are generally made by individuals who are well-balanced, emotionally stable, and relatively free from anxieties and nervous tension. Low scores are associated with excessive anxiety, hypersensitivity, nervousness, and low frustration tolerance. Generally, a very low score reflects poor emotional balance.

8. Sociability (S): High scores are mady by individuals who like to be with and work with people, and who are gregarious and sociable. Low scores reflect a lack of gregariousness, a general restriction in social contacts, and, in the extreme, an actual avoidance of social relationships (Gordon, 1963B, p. 3).

The GPP, the older and more widely used of the Gordon instruments, is based upon repeated factor analyses of the responses of varied populations by Gordon and earlier studies by Cattell and Mosier (Buros, 1965, p. 230[1]). The present study used the 1963 revision, the fifth version of the original Gordon instrument, which differs from earlier forms only in terms of certain minor modifications in scoring procedures. Use of

---

[1]Several references to reviews from The Sixth Mental Measurements Yearbook will appear on forthcoming pages. The simplified citation (Buros, 1965) should be interpreted as a reference to a specific test review contained in this volume.

the forced-choice technique, according to Gordon (1963b), leads to higher concurrent and predictive validity than does the usual questionnaire approach. The manual offers the following rationale statement:

> As its name implies, this approach forces the subject to choose one of several statements as being most nearly descriptive of himself and one as least descriptive of himself, even though, in fact, he may not consider any of the statements as particularly accurate in this regard. The use of this technique rests upon certain assumptions with respect to self-perception and psychometric scaling that may be summarized as follows: In general if two items have the same average preference value or are equally complimentary from the point of view of a given group, a member of that group to whom one of the items is more applicable usually will tend to perceive that item as being the more complimentary. Thus, if an individual who is motivated to make only socially acceptable responses is forced to select one of the items as being most like himself, he will select the item that he perceives to be the more complimentary, which will tend to be the item that <u>is</u> more like himself. Conversely, when presented with two items that are equally uncomplimentary for the group and forced to select one as <u>least</u> like himself, he will tend to perceive the item that is more like himself as the less uncomplimentary, and will thus tend to select the item that <u>is</u> least like himself as his "least" choice (pp. 11-12).

Buros (1965) supports Gordon's argument that the forced-choice approach is less amenable to "faking" than questionnaires. However, it is possible to "role play" in situations where the subject is aware of the perceived relative desirability of the various traits. Correlations with other measures of personality are considered acceptable. While the four variables are theoretically independent facets of personality, scales A and S and scales E and R are usually highly intercorrelated. Buros concludes that the GPP is as valid and reliable as other similar instruments (pp. 230-231).

The GPI may be viewed as an extension of the GPP, since the same rationale and factor analytic approach were used in its development,

and the test format is similar. The GPP used alone provides a rather narrow assessment of the normal personality. When the GPI is combined with it, a broader and more meaningful profile emerges. Buros (1965) reports that evidence of validity is less than for the GPP (perhaps because the GPI is a newer and less widely utilized instrument) and indicates that further refinement may be necessary before the two instruments can be considered to be of equal merit. Correlations among the four scales are insignificant, while Scale O correlates positively with several measures of intelligence (pp. 228-229).

The Gordon scales have several features which commend them as measures of personality traits. First, the forced-choice technique tends to reduce the social desirability response set. In most forced-choice inventories, however, traits are compared by pairing statements of any two traits in the scale. The result is that a reciprocal relationship is necessary among trait scores: that is, highness on one trait must be compensated for by lowness on other traits. The tetrad arrangement of the Gordon scales, while still reducing the effect of the social desirability response set, permits some independence among trait scores so that a subject can score relatively high or relatively low on all four traits. This is possible because he may choose an "undesirable" self-description instead of one of the two "desirable" statements. If a person did this consistently, it can be seen that he would achieve low scores on all traits, although there would remain some reciprocal relationship among these low scores. This relative independent of trait scores is the second feature recommending the Gordon instruments.

The usual scores for the Gordon traits are derived, in principle, by simply scoring as +1 every choice of a response indicating the presence of the trait, and as -1 every choice indicating rejection of the trait item as self-descriptive. There is no weighting of responses, although an adjustment is present to insure that all scale scores will be positive. This method results in scores which will be referred to hereafter as "Gordon regular scores."

Several additional scoring procedures devised for the present study are discussed in the following sections.

Gordon Weighted Response Scores

The derivation of the Weighted Response Score (WRS) and its underlying rationale can perhaps best be understood by a comparative analysis of the methods used in scoring a single tetrad. Following is a tetrad from the GPP with the number of persons in this sample responding to each of the choices. The letters L and H indicate that the given item, as stated, has low or high social desirability. The other column of letters indicates the traits to which each statement refers: Ascendancy (A), Responsibility (R), Emotional Stability (E) and Sociability (S). The underlinings indicate a hypothetical subject's choices for this tetrad.

	Preference Value	Trait	Most	Least
Acts somewhat jumpy and nervous	L	E	<u>6</u>	33
A strong influence on others	H	A	13	5
Does not like social gatherings	L	S	5	<u>23</u>
A very persistent and steady worker	H	R	40	3

In the regular scoring procedure, all items have equal weight. This subject would have one point subtracted from his Emotional Stability score, since he accepted the statement "Acts somewhat jumpy and nervous" as most like himself. Similarly, one point would be added to his sociability score because he rejected a statement indicating non-sociability. The assignment of equal weights is justified by the author on the grounds that the positive and negative pairs of statements have equal social desirability. According to Gordon (1963b, p. 3), "Each of the four personality traits (A, R, E, S) is represented by one of the descriptive phrases, or items, in each tetrad. Of the four, two phrases are of similar high average preference value (that is, are considered by typical individuals to be equally complimentary) and two are of similar low average preference value (equally uncomplimentary)."

These equivalencies were determined during development of the GPP. However, it is obvious that in this tetrad choices do not appear equally attractive to the present subjects. The "most" sections for the two "high" items total 13 and 40. If one uses these obtained figures as estimates of social desirability, he can say that for this sample being a "persistent and steady worker" is perceived as a more desirable response than being "a strong influence on others."

Thus, it would seem reasonable to utilize these obtained data in some manner to adjust the social desirability of the items in accordance with the perceptions of this particular sample. It will be noted that 39 persons chose to respond to the E item, six giving a "most" response and 33 giving a "least" response. In the weighted

scoring method that was developed, this relationship between numbers of "most" and "least" responses was the crucial one. A subject who was among the six made a choice opposed by 33 persons. The number 33 was conceived of as the strength of the social desirability force opposing his choice. Accordingly, he was awarded a score of 33, meaning in a sense that he had to overcome 33 "units" of social desirability in describing himself as "jumpy and nervous." Conversely, a subject among the 33 was given a score of six.

It should be noted that exactly the same number of subjects responded to each tetrad so that scores from the various tetrads were considered additive without other transformations being necessary.

Stated more generally, the WRS was based on the same assumptions as the standard scoring procedure. If a subject chooses a socially undesirable response, he is either being more frank and undefensive in describing himself, or because he possesses the trait he does not perceive its social undesirability. In either case it is assumed here that a "deviant" response should be given more weight than a response which merely echoes a popular perception. The essential difference between the two scoring methods is that the WRS uses obtained scores to improve the estimate of the relative social desirability of item statements.

So far in this discussion only variance due to "social desirability" has been mentioned. However, it must be assumed that some variance in these choices is also attributable to accurate self-evaluation. In this sample, for example, the item "a strong influence on others" may fail to be chosen because young people in a student

role are not likely to perceive themselves as strongly influential. Until trait descriptions, using the two scoring systems, can be compared with an outside criterion it is not possible to accurately assess the relative contribution of social desirability to the regular score.

If the WRS and the regular score prove to be highly correlated with each other, there would be little justification for the extra effort of calculating weighted scores. Such an outcome would suggest that somehow the scale as originally constructed is not seriously distorted by patterns of preference in different populations. If the two sets of scores do appear to be measuring different things, then it could be anticipated that the WRS would be more predictive of later measures of subject behaviors or traits in which social desirability could not contribute to the variability of the measures. Therefore, for purposes of the present study it was the hope and expectation that the Gordon regular and weighted scores would not be highly correlated. Since weighted scores for single tetrads varied from 0 to 45, it was considered highly unlikely that trait values would be comparable for the two scoring methods.

The Gordon Popular Response Score

The Popular Response Score (PRS), a second alternative scoring procedure, was developed to provide a measure of the overall tendency of subjects to respond as did other students in this sample. The score for each choice was the number of subjects selecting that choice. Thus, subjects with high scores are those choosing the most popular responses. Since sub-scores for the various traits are ignored, there is only a single PRS for each Gordon instrument.

It is apparent that this measure is similar in purpose to the WRS. However, while the WRS serves to alter trait values, the PRS provides a single index of a subject's tendency to describe himself as do others in the group. In the illustration above, the subject's score for this tetrad would be 29, the number of persons responding to his choices (6 and 23). It was anticipated that scores at either extreme might prove to be associated with undesirable characteristics. High scorers could prove to be over-conforming or defensive. Low scorers may be excessively self-deprecating, since low scores are generated by consistent choices of unpopular statements considered by the majority of this group to be undesirable qualities.

Highest and Lowest Gordon Scores

The third derived score used in this study is not, strictly speaking, a new score. Rather, it is a way of treating the Gordon regular scores in relating test results to other variables. In the study by Hughes and Dodd (1961) reviewed in Chapter 1, it was demonstrated that prediction of job success using the GPP appeared to be enhanced when, rather than using simple correlations of Gordon traits and an outside criterion, the individual's highest Gordon score was used to predict success. Specifically, for example, while it is of interest to know that a subject scored at the fiftieth percentile on a certain trait, it is, perhaps, equally important to note whether this was his highest or lowest score. One is not predictable from the other, in spite of the fact that scores on the four traits of one instrument are not completely independent. The GPI manual (Gordon, 1963a) states, in this regard:

> It should be noted that the particular tetrad structure used in the Inventory (two high-and two low-preference items) permits an individual to obtain high percentile ranks on all four Scales in many populations, and low percentile ranks on all four Scales in almost any population. (This could not occur if all four items in each tetrad were equal in preference value.) The Inventory scores, therefore, do not constitute completely ipsative measures for each individual. While he cannot achieve very high ranks on all four traits, this is not considered a practical limitation, since only very rarely would all four "true" scores deviate both so extremely and in the same direction (p. 11).

The fact that some interdependence exists between the four scores of one scale suggests the validity of the use of trait rankings, such as "highest" and "lowest" score. For example, Cautiousness is not measured on an "absolute" scale; rather its strength in an individual's personality structure is, in part, estimated in relation to the other three traits. An individual is more cautious than he is original, vigorous, etc. Many would argue that this use of scores is the most appropriate one when, as in the Gordon instruments, measures are not completely independent.

In the present study, traits on which subjects scored highest and lowest were recorded for each Gordon instrument. To determine an individual's highest and lowest scores, standard scores for this sample were computed. Thus, a subject's highest score was the one on which he ranked highest in this particular sample. The few ties occurring among raw scores were eliminated by comparing subjects' weighted scores for the traits that were tied. It is apparent that this procedure is a simplified form of profile analysis. The use of all four traits to form a profile pattern was rejected because of (a) the profusion of patterns that developed from the permutations of four

factors, and (b) the obvious fact that rank ordering all four traits would have assumed true differences in trait rankings. This assumption would not be tenable for all four traits, but it can be reasonably held for high and low scores.

Edwards Personal Preference Schedule

The Edwards Personal Preference Schedule (EPPS) measures the relative strength of 15 manifest personal needs. The instrument consists of 225 pairs of descriptive statements. For each pair, the subject indicates the statement which he views as more characteristic of himself. Completion time averages about 45 minutes, and machine-scoring is available. Results are plotted on an individual profile showing the relative strength of each variable as a raw score, "T" value and percentile rank. This profile also contains a measure of response consistency. The manual (Edwards, 1959) provides only general norms based upon large college and adult samples (pp. 10-14). The present study utilized norms for college women for purposes of comparison. Operational definitions of the manifest needs are as follows:

1. Achievement (ACH): To do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.

2. Deference (DEF): To get suggestions from other, to find out what others think, to follow instructions and do what is expected, to praise others, to tell others that they have done a good job, to accept the leadership of others, to read about great men, to conform to custom and avoid the unconventional, to let others make decisions.

3. Order (ORD): To have written work neat and organized, to make plans before starting on a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip, to organize details of work, to keep letters and files according to some system, to have meals organized and a definite time for eating, to have things arranged so that they run smoothly withou change.

4. Exhibition (EXH): To say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance, to say things just to see what effect it will have on others, to talk about personal achievements, to be the center of attention, to use words that others do not know the meaning of, to ask questions others cannot answer.

5. Autonomy (AUT): To be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants, to do things that are unconventional, to avoid situations where one is expected to conform, to do things without regard to what others may think, to criticize those in positions of authority, to avoid responsibilities and obligations.

6. Affiliation (AFF): To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships, to make as many friends as possible, to share things with friends, to do things with friends rather than alone, to form strong attachments, to write letters to friends.

7. Intraception (INT): To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place, to judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act.

8. Succorance (SUC): To have others provide help when in trouble, to seek encouragement from others, to have others be kindly, to have others by sympathetic and understanding about personal problems, to receive a great deal of affection from others, to have others do favors cheerfully, to be helped by others when depressed, to have others feel sorry when one is sick, to have a fuss made over one when hurt.

9. Dominance (SOM): To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader, to be elected or appointed chairman

of committees, to make group decisions, to settle arguments and disputes between others, to persuade and influence others to do what one wants, to supervise and direct the actions of others, to tell others how to do their jobs.

10. Abasement (ABA): To feel guilty when one does something wrong, to accept blame when things do not go right, to feel that personal pain and misery suffered does more good than harm, to feel the need for punishment for wrong doing, to feel better when giving in and avoiding a fight than when having one's own way, to feel the need for confession of errors, to feel depressed by inability to handle situations, to feel timid in the presence of superiors, to feel inferior to others in most respects.

11. Nurturance (NUR): To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others, to do small favors for others, to be generous with others, to sympathize with others who are hurt or sick, to show a great deal of affection toward others, to have others confide in one about personal problems.

12. Change (CHG): To do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions.

13. Endurance (END): To keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved, to work at a single job before taking on others, to stay up late working in order to get a job done, to put in long hours of work without distration, stick at a problem even though it may seem as if no progress is being made, to avoid being interrupted while at work.

14. Heterosexuality (HET): To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite six, to kiss those of the opposite sex, to be regarded as physically attractive by those of the opposite sex, to participate in discussions about sex, to read books and plays involving sex, to listen to or to tell jokes involving sex, to become sexually excited.

15. Aggression (AGG): To attack contrary points of view, to tell others what one thinks about them, to criticize others publicly, to make fun of others, to tell others off when disagreeing with them, to get revenge for insults, to become angry, to blame others when things to wrong, to read newspaper accounts of violence (Edwards, 1959, p. 11).

The EPPS utilizes a forced-choice technique in which each need is paired twice with every other need. In order to evaluate response consistency, one of these pairs is repeated. During test development each of the 135 statements was assigned a "social-desirability" scale value, and each pair on the EPPS contains statements judged on equal desirability. Buros (1965) lists this control of the effect of social-desirability upon response patterns as one of the commonly regarded strengths of the EPPS, but also cites several studies demonstrating that the presumed control is weaker than indicated by the author. While this limitation is not regarded as directly reducing validity, it complicates efforts to evaluate the validity of the EPPS (pp. 195-196).

Edwards (1959) discusses the problem of validating the EPPS or similar inventories at length in the manual.

> . . . the determination of the validity of an inventory would involve the correlation between scores on the inventory and some "pure criterion measure" of what the inventory purports to measure. Such pure criterion measures are, of course, generally not available. As a result, self-ratings or ratings by peers have frequently been substituted for the pure criterion measures (p. 21).

Unfortunately, results of studies which have attempted to utilize peer ratings for this purpose are inconclusive. Another approach used in validity studies is the analysis of relationships between scores on EPPS variables and scores for similar variables on other scales. Few

significant correlations have been obtained (Edwards, 1959, pp. 21-22). Despite apparently unresolved questions regarding its validity, Buros (1965) lists 326 studies in which the EPPS was utilized (pp. 190-195). This must be regarded as evidence of the relative worth of the EPPS in comparison to similar instruments.

Strong Vocational Interest Blank

As described in the manual (Campbell, 1969), the Strong Vocational Interest Blank (SVIB) is:

> . . . a device to identify the different interests of college students and, thus, to suggest to them occupations that they might find stimulating. For this purpose, the SVIB provides an index of the similarity between a person's interests and those of successful men (or women) in a wide range of occupations.

The instrument includes 398 items which assess an individual's interest in 58 common occupations and 19 general vocational areas. Part I consists of specific job titles to which the subject indicates whether he (a) likes the kind of work, (b) is indifferent toward it or (c) dislikes the work. Parts II, III, and IV measure in similar fashion interests in amusements, various activities and types of people, while parts V-VIII require rank orderings of various preferences, abilities, personal characteristics and school subjects. Completion time varies considerably, but averages about 30 minutes. Machine-scoring is necessary.

The obtained individual profile plots "T" values for the above categories on a complex chart. In addition, the profile includes the following non-occupational scales:

1. Academic Achievement (AACH): This scale contrasts the interests of those who do well in school, both in high school and college, with those who do poorly, but the results are more related to persistence in school than to level of performance.

2. Diversity of Interests (DIV): This scale was developed to learn something of the concept "breadth of interests." It contains 24 statistically unrelated items; if a person answers "Like" to a large number of these items, he is reporting preferences for a wide range of activities.

3. Masculinity-Femininity (MFII): This scale contrasts the interests of men and women working in the same occupations. Samples of men and women from each of 18 occupations were used to identify the SVIB items that men and women answered differently.

4. Occupational Introversion-Extroversion (OIE): This scale was constructed by contrasting the SVIB responses of MMPI-defined "introverts" and "extroverts." The items that differentiated between these two groups were primarily concerned with public speaking, working with other people, being involved with groups--in general extrovertish activities (Campbell, 1969, pp. 9-19).

Six administrative indices are provided as measures of validity. These include (a) Total Responses, (b) Unpopular Responses, (c) Form Check, (d) Like Percentage, (e) Indifferent Percentage and (f) Dislike Percentage.

The SVIB has a long history of use in vocational counseling, both at high and college levels. The men's edition first appeared in 1927, and Buros (1965) lists 614 studies in which it has been utilized. The less widely used (76 references) women's version was originally published in 1933. Follow-up studies have demonstrated the SVIB's favorable record in predicting long-term occupational placement. Criticism is directed toward efforts to utilize the instrument in general counseling at the high school level, since no research supports this extension of usage. However, the SVIB is regarded as "the best constructed and most thoroughly validated instrument of its kind. (pp. 1070-1071)."

Allport-Vernon-Lindzey Study of Values

The Study of Values is based directly upon the psychological theories of Spranger which hold that the best way of understanding an individual's personality is to study his values or evaluate life attitudes. It has been widely used since its introduction in 1931, and three revisions have appeared. The present study used the 1970 form which consists of 120 responses to questions or statements about familiar life situations, controversies or problems. Each value--Theoretical, Economic, Aesthetic, Social, Political and Religious--is equally represented. The test features a unique, easily followed format. In Part I the subject indicates his view of the relative strength of two alternate responses by distributing three points between them, while in Part II he rank orders four divergent responses to each stated question by assigning point values from 1 through 4. Completion time is about 20 minutes. Subject responses are marked in boxes positioned in six randomly arranged, coded columns. Hand-scoring is somewhat laborious, involving summing column totals for each page, entering page totals on a coded scoring grid, summing each value column on the grid and applying listed correction figures (designed to produce a constant average score of 40 for each value). Obtained scores are entered on a profile and can be compared with listed norms for several populations (Allport, Vernon and Lindzey, 1970, p. 3).

Manual descriptions of the six variables measured by the Study of Values are summarized as follows:

1. The Theoretical. The dominant interest of the theoretical man is the discovery of truth . . . he characteristically takes a "cognitive" attitude, one that looks for identities and differences, one that divests itself of judgments regarding the beauty or utility of objects, and seeks only to observe and to reason . . . His chief aim in life is to order and systematize his knowledge.

2. The Economic. The economic man is characteristically interested in what is useful. Based originally upon the satisfaction of bodily needs (self-preservation), the interest in utilities developes to embrace the practical affairs of the business world . . .This type is thoroughly "practical" and conforms well to the prevailing stereotype of the average American businessman.

3. The Aesthetic. The aesthetic man sees his highest value in form and harmony. Each single experience is judged from the standpoint of grace, symmetry, or fitness . . . He need not be a creative artist, nor need he be effete; he is aesthetic if he but finds his chief interest in the artistic episodes of life.

4. The Social. The highest value for this type if love of people . . . the social man prizes other persons as ends, and is therefore himself kind, sympathetic, and unselfish. He is likely to find the theoretical, economic, and aesthetic attitudes cold and inhuman. . . .the social man regards love as itself the only suitable form of human relationship.

5. The Political. The political man is interested primarily in power. His activities are not necessarily within the narrow field of politics . . . There are . . . certain personalities in whom the desire for a direct expression of this motive is uppermost, who wish above all else for personal power, influence and renown.

6. The Religious. The highest value of the religious man may be called unity. He is mystical, and seeks to comprehend the cosmos as a whole, to relate himself to its embracing totality . . . Some men of this type are "immanent mystics," that is, they find their religious experiences in the affirmation of life and in active participation therein (Allport, et al, 1970, pp. 3-5).

Criticisms of the Study of Values, as reviewed in Buros (1965), center around questions regarding the validity of the Spranger concept of personality upon which the test is based. There is little evidence

that the six values are in fact distinct personality variables. There is, however, evidence that the instrument itself is useful, particularly in counseling or selection contexts, since its scope is broader than traditional interest inventories such as the Strong Vocational Interest Blank or the Kuder Preference Record. The Study of Values is considered especially appropriate for use with collegiate populations (pp. 384-385).

Minnesota Teacher Attitude Inventory

The MTAI should be a useful tool for selecting students for teacher-training programs or screening prospective teachers prior to employment, if, as the authors suggest, it has the power to differentiate between superior and inferior teachers by discriminating between those who have, possibly due to the subtle interaction of many factors, good rapport with children and those who don't. The manual (Cook, Leeds, and Callis, 1965) states that the instrument ". . . is designed to measure those attitudes of a teacher which predict how well he will get along with pupils in interpersonal relationships, and indirectly how well satisfied he will be with teaching as a vocation (p. 3)." The two extremes ("superior" and "inferior" teachers) are described in the following terms:

> It is assumed that a teacher ranking at the high end of the scale should be able to maintain a state of harmonious relations with his pupils characterized by mutual affection and sympathetic understanding. The pupils should like the teacher and enjoy school work. The teacher should like the children and enjoy teaching . . .At the other extreme of the scale is the teacher who attempts to dominate the classroom. He may be successful and rule with an iron hand, creating an atmosphere of tension, fear and submissiveness; or he may be unsuccessful and become nervous, fearful and distraught in a classroom characterized by frustration, restlessness, inattention, lack of respect, and numerous disciplinary problems. In either case both teacher and pupils dislike school work; there is a feeling of mutual distrust and hostility (p. 3).

The popularity of the MTAI is probably based at least in part upon this positive view of its validity as a predictor of teaching success.

The instrument consists of 150 attitude statements randomly arranged in positive or negative form. The subject may select one of five possible responses--strongly agree, agree, undecided, disagree or strongly disagree--by marking the appropriate space on a machine-score answer sheet. Scoring is on a "rights" less "wrongs" basis, yielding an "attitude score" which may be compared to published norms for several student and experienced teacher populations.

Despite the popularity of the MTAI, the literature contains references to several factors which may limit its validity. While one of the authors (Callis, 1950) concluded that the MTAI is only "slightly susceptible" to faking (p. 725), Getzels and Jackson (1963) cite investigations which demonstrate that the attitude score can be changed significantly by adopting a "progressivist" or "traditionalist" set (p. 519) or by asking subjects to sign their names (as opposed to anonymity) when responding (p. 520). Another possible source of validity is discussed by Loree (1971):

> One limitation of self-reporting inventories is that a person's behavior and his belief statements may not correspond. The teacher who is very restrictive may report that children should be allowed more freedom in the classroom. There is the possibility that a teacher who gets along poorly with her pupils may score high on the MTAI. Hence validity studies for self-reporting inventories may appropriately take the form of investigating the correspondence between beliefs and behaviors (p. 104).

One of the problems involved with the MTAI is directly related to its development. Items are not scored in accordance with any logical, consistent pattern. Rather, the responses of teachers considered "superior" or "inferior" by their principals were natives. Gage (1957)

developed a "logical" scoring system in an attempt to better understand teachers' attitudes. Budd and Blakely (1958) concluded that subjects who consistently selected extreme responses earned higher attitude scores than those who tended to choose the moderate alternatives (p. 709). Although the above criticisms may be regarded as evidence confirming the need for improved methods of assessing teachers' attitudes, it should be kept in mind that many of the same investigations confirm that the MTAI as it currently exists tends to differentiate between superior and inferior teachers--even though the precise manner in which this is accomplished may not be clearly understood.

PROCEDURES

All data for the present study were gathered by the six instruments described above and a questionnaire administered during the 1971 fall term at Michigan State University between approximately October 1, 1971 and December 1, 1971. The rationale and specific objectives of the proposed longitudinal study were described to students by members of the mental retardation faculty during the first meeting of the training group on September 24, 1971. Undergraduate majors in mental retardation were urged to participate by completing the instruments and questionnaire. Students were assured that their test results would be handled confidentially, used only for research purposes and not made available to any persons in a position to make any decisions about them. Students were told that a subject's university program or future teaching career could in no way be affected by performance on any of the instruments or by

inferences made later during the longitudinal study. In addition to this preliminary orientation discussion, small group sessions were scheduled later in the term for any students who wished to examine and discuss their personal response patterns or scores. These procedures were designed to maximize voluntary completion and return of complete sets of six instruments.

Instrument completion required about three hours of each subject's time. Three group testing sessions during October and early November resulted in the return of approximately 50 per cent of the instruments. The author then began individually contacting absentees and other students who had not finished all six tests, briefly repeating study objectives, answering any further questions and emphasizing the need for a total return of completed instruments. These activities continued throughout November. By the end of the term, 429 of a potential 444 instruments were returned--a completion rate of approximately 96 per cent. Six subjects failed to submit a total of 15 tests. This completion rate was viewed as acceptable, since participation was voluntary.

TREATMENT OF THE DATA

Since the present study, because of its many-sided exploratory nature, cannot utilize a straightforward experimental design, it was decided that to attempt to describe data treatment procedures apart from findings and exploratory analyses would be clumsy and place an undue burden upon the reader. Thus, the analytic procedures are included, as appropriate, with the findings in Chapter 3.

A reference to the attitude adopted toward statistical significance is, however, in order at this point. Use is sometimes made of trends in the data which do not attain the usual .05 or .01 levels of significance. It is recognized that this can lead to speculations based on error variance. However, ignoring trends in an exploratory study of this nature, particularly when comparisons are based upon small numbers of subjects, may lead to another type of error--that of ignoring leads for further study by rejecting what are, in fact, "true" relationships.

Chapter 3

FINDINGS

As discussed in Chapter 2, the statement of exploratory research goals and description of some of the methodological considerations were delayed, to be presented here along with the findings. The findings are presented in the order in which the objectives of the study were outlined in Chapter 2.

Adequacy of Responses to the Self-Report Inventories

Prior to any use of the data, a check was made on test indices designed to determine whether tests were completed in a meaningful way. Under testing conditions and procedures utilized in the present study, did subjects respond conscientiously to the selected instruments? Were explanations given students regarding research objectives and utilization of data sufficient to overcome the natural reluctance of some individuals to portray themselves honestly on personality inventories? The data provide three means of investigating these overall concerns.

The EPPS includes a "Consistency" scale described in the test manual (Edwards, 1965) in the following terms:

> Scores on the consistency variable are based upon a comparison of the number of identical choices made in two sets of the same 15 items . . . . For the two complete sets . . ., the expected number of identical choices, i.e., the consistency score, on the basis of chance, is 7.5 . . . and the probability of 11 or more identical choices occurring by chance is approximately .06 . . .The binomial distribution would lead

> us to expect only 50 per cent of the scores to equal or exceed 8, whereas in the observed distribution 98 per cent of the scores equal or exceed this value . . . .approximately 75 per cent of the subjects have consistency scores equaling or exceeding the value of 11 . . . (pp. 15-16).

Inspection of the distribution of "Consistency" scores for this sample (Appendix B, Table 16) reveals that the normative distribution described above is closely approximated. About 72 per cent of the subjects attained a score of at least 11, only two subjects (about 3 per cent) scored below 8 and means were almost equal (normative 11.74 vs. sample 11.81). Therefore, it can be concluded that these subjects were, in fact, "consistent" in responding to EPPS items.

The SVIB provides six technical administrative indices as measures of test reliability--Total Responses, Unpopular Responses, Form Check, Like Percentage, Indifferent Percentage and Dislike Percentage. While distributions are not presented in tabular form, scores listed on individual subject profiles in every case were within accepted ranges as shown in the test manual (Campbell, 1969, pp. 20-21). On this basis, responses can be considered reliable.

A third method of estimating response validity within the present sample consisted of comparing descriptive statistics for distributions of scores obtained from the present sample with similar values from other groups described in the test manuals. It is apparent by inspection of the Appendix tables that the descriptive statistics are of appropriate magnitudes. Thus, all of the evidence indicates that the way subjects responded to the instruments produced group data consistent with expectations. There is every reason to believe, therefore, that conditions under which the instruments were completed in this study

led to appropriate response sets on the part of subjects. That is, there is no evidence that they reported on themselves in a superficial, resistive, or stereotypical manner. This fact is of crucial significance if these instruments are to be used for selection, guidance or predictive purposes. It had been anticipated that there was a possibility that a sample of female students specializing within the area of mental retardation within special education would be sufficiently homogeneous that these self-report inventories would fail to provide useful discrimination among them. This was not the case, except perhaps for the SVIB Basic Interest Scale "Teaching" (Appendix C, Table 1). This is perhaps predictable within a sample of teacher-trainees where vocational commitment is relatively strong. In general, however, the obtained distributions not only appear to indicate that the subjects responded adequately to the study instruments, but they also clearly differentiate among subjects across a wide variety of personality traits.

Normative Data

Local norms are universally recommended when psychological tests are used for selection or guidance purposes. It is difficult to interpret the meaning for this sample of percentile ranks, "T" values or other derived scores when they are based upon normative populations such as "college women" or even "students in education," both much broader categories than "special education-mental retardation trainees." Not only may special education trainees differ as a group from these general populations, but, as discussed by Jones (1966a), there may be significant differences in personality variables among students interested in different disability areas.

Thus, it appeared that establishment of "special education-mental retardation" norms for each instrument used in the present study was a worthwhile research objective. Tables in each appendix present precentile ranks for the present sample to serve as the basis for interpretation of scores for this population. Where data are provided in the test manuel, "T" values or percentile ranks are also shown for the most appropriate normative populations. Using these tables, it is possible to evaluate an individual in relation to either the specific or general student populations of which he is a part. Such comparisons may prove to be meaningful tools for vocational counseling, particularly where distributions within the sample differ significantly from the general norms reported in the test manuals.

Subjects attained a mean "T" value of 61.30 on the SVIB Basic Interest Scale "Teaching" which is over one standard deviation above the expected general population mean of 50 and well above the expected mean of 58 for individuals in related occupations listed in the manual (Campbell, 1969, p. 8). No score was below 50 in this sample. Clearly, these students are interested in teaching as a general occupational area. In contrast, subjects scored over one standard deviation below the expected mean (39.23) for elementary teachers on the SVIB Occupational Scale "Flementary Teacher," and only 10 of the 64 subjects scored above 50. This discrepancy appears to support the assumption that special education trainees differ from the general population of students enrolled in teacher-training programs. In view of the fact that special education majors at Michigan State University and many other institutions receive considerable training and basic teacher

certification in elementary education, this relationship appears to be worthy of further investigation. Since elementary teaching is perhaps the most likely professional alternative open to a student unable to secure a special education position upon graduation, the relatively low level of interest in this job identified in the present study could be significant.

A mean score of 67.08 was attained on the MTAI--in comparison to means reported in the test manual (Cook, et al, 1965) of 59.5 for beginning elementary education juniors, 77.4 for the same sample at graduation and 55.1 for experienced elementary teachers (pp. 8-9). While professional training of present subjects prior to the time of data collection varied significantly, if the sample is viewed as falling somewhere between the two student samples described above, obtained MTAI scores appear to be at approximately the level that might be predicted.

Analyses of the Gordon Instruments

The GPI and GPP were initially considered the most promising of the six instruments selected for this exploratory study. Positive features of these instruments were thought to include relatively simple administration and scoring procedures, the short amount of subject time required for completion and the non-pathological nature of the personality traits measured.

Because the Gordon traits are relatively non-threatening it was felt that discussion of them with a student in a counseling session could be productive and would be met with a minimum of resistance. Experience gained during the present study has confirmed the merit of

the Gordon instruments based upon administrative criteria. In addition, feedback interviews were held with approximately half of the subjects on a volunteer basis. As anticipated, discussion of personal Gordon trait scores did not appear threatening to students, and, in fact, seemed to be enlightening to some and fascinating to the majority. Thus, it is appropriate to thoroughly investigate these test results to determine whether they strengthen or detract from the potential utility of the Gordon instruments. Accordingly, greater attention has been devoted to analyses of the GPI and the GPP than to the other four instruments.

Intercorrelations of Gordon regular trait scores are presented below for each Gordon test (Table 1) and for the combined instruments (Table 2). For purposes of comparison, normative values based upon a

TABLE 1

INTERCORRELATIONS: GORDON PERSONAL INVENTORY AND GORDON PERSONAL PROFILE

(N = 64)

Gordon Personal Inventory					Gordon Personal Profile				
	C	O	P	V		A	R	E	S
C					A				
O	-.07 (.03)*				R	-.32** (-.01)			
P	.30** (.37)	.13 (.20)			E	-.13 (.09)	.60** (.60)		
V	-.02 (.07)	.21 (.30)	-.08 (.15)		S	.63** (.65)	-.12 (.00)	-.22 (-.09)	

*Coefficients in parentheses are from the manuals (Gordon, 1963a), p. 17, and Gordon, 1963b, p. 22).

**Significant at .05 level.

TABLE 2

COMBINED INTERCORRELATIONS: GPI AND GPP

(N = 64)

GPI Scales	GPP Scales			
	A	R	E	S
C	-.30 (-.18)*	.42 (.40)	.30 (.31)	-.37 (-.21)
O	.48 (.35)	-.04 (.17)	-.10 (.15)	.35 (.15)
P	-.04 (.15)	.20 (.38)	.24 (.47)	.06 (.12)
V	.31 (.24)	.16 (.37)	.18 (.23)	.21 (.25)

*Coefficients in parentheses are from the GPI manual (Gordon, 1963a, p. 18).

sample of 315 female college freshman are included in the tables. In this study, with an N of 64, a correlation coefficient must be .25 or greater to be significantly different from zero at the .05 level. It can be noted in Table 1 that for the GPP the correlation coefficient for "Responsibility" and "Emotional Stability" is .60, and that for "Ascendancy" and "Sociability" is of the same order: .63. All other correlations are in the opposite direction and are consistently of greater magnitude than those from the college freshman sample. These data suggest the potential utility, for this population, of differentiating between subjects on the basis of a high "Ascendancy-Sociability" (A-S) vs. a low "Emotional Stability-Responsibility" (E-R) profile, or

the reverse. The GPI data on the other hand, do not clearly suggest a useful pattern for GPI profiles. These conclusions were corroborated by a separate attempt to discover clusters of similar profile patterns by inspection of the individual profiles. On the A-S vs. the E-R patterns produced sizable sub-groups of subjects.

Comparisons of Gordon Regular and Weighted Scores

Do the Gordon weighted scores generate trait values differing significantly from those based upon the regular scoring procedure? Comparisons of intercorrelations between regular and weighted scores (Table 3), a cross-break scatter diagram for the GPI (Table 4) and intercorrelations with other variables (Tables 5 and 6) are presented. No cross-break scatter diagram for the GPP was included, since the distribution was similar to that in Table 4.

TABLE 3

INTERCORRELATIONS: GORDON REGULAR AND WEIGHTED SCORES

(N = 64)

Gordon Personal Inventory				Gordon Personal Profile			
C	O	P	V	A	R	E	S
.98	.93	.89	.89	.94	.87	.92	.97

TABLE 4

DISTRIBUTION OF SUBJECTS ACCORDING TO HIGHEST GPI REGULAR AND WEIGHTED SCORES

Highest Regular Score	Highest Weighted Score			
	C	O	P	V
C	11	1	1	1
O		16	1	
P	1	1	15	1
V	1	1	1	12

Data presented in the Tables 3 and 4 clearly show that with only minor exceptions Gordon regular and weighted scores provide similar measurements of relative trait strength. The most directly relevant information is provided by the correlations in Table 3. Coefficients are all greater than .86. Since these would all be considered very respectable reliability coefficients for a single instrument, the conclusion must be that the two scores are essentially similar. Apparently taking into greater consideration the unique factors determining response desirability within this particular sample is unnecessary. This finding supports Gordon's assertion that his tetrad design controls for social desirability response set. It does so even when applied to a population in which responses suggest differing perceptions of what is desirable. While little was gained by the computation of weighted scores for the GPI and GPP, this conclusion speaks well for the quality of the development and standardization of the Gordon instruments.

Relationship of Gordon Traits to Other Variables

What can be learned about Gordon traits by analyses of their patterns of relationship to variables measured by other instruments included in the present study? In Table 5, correlations of at least .21 (.10 level) and of at least .25 (.05 level) are utilized in the following evaluations of the correlates of each trait. The higher correlation, whether for the Gordon regular or weighted score, is reported.

The significant correlates of "Cautiousness," with those of similar sign grouped together, are:

EPPS:	Achievement	.27	SVIB:	Elem. Tchr.	.30
	Order	.25	AVL:	Religious	.24
	Intraception	.25	EPPS:	Autonomy	-.31
	Endurance	.30		Change	-.30

These relationships support the interpretation of the trait given in the manual. They suggest, in addition, a conservatism in disposition and a preference for order, only hinted at by the Gordon interpretation. A high score on "Cautiousness" would suggest an individual who liked to operate within a well-defined frame of reference, who is not particularly desirous of self-direction and who finds comfort or safety in conformity. This dimension would appear to have considerable relevance to the kind of classroom setting in which a teacher would function best. One would not, for example, expect a person high in this trait to function well in a "free school" type of organization.

TABLE 5

INTERCORRELATIONS OF GORDON REGULAR AND GORDON WEIGHTED SCORES WITH OTHER VARIABLES

(N = 64)

Other Variable	Gordon Personal Inventory				Gordon Personal Profile			
	C	O	P	V	A	R	E	S
MTAI	-.10 (-.06)	.18 (.15)	.22 (.26)	.22 (.18)	.12 (-.06)	.00 (.04)	.01 (.04)	.16 (.20)
EPPS								
ACH	.27 (.25)	.01 (-.02)	-.10 (-.14)	.14 (.19)	.00 (-.03)	-.07 (-.03)	-.05 (-.14)	-.26 (-.23)
DEF	.11 (.08)	-.11 (-.05)	-.01 (-.01)	-.09 (-.02)	-.19 (-.10)	.09 (-.04)	-.01 (-.07)	-.16 (-.14)
ORD	.25 (.20)	-.20 (-.22)	-.28 (-.26)	.02 (.11)	-.34 (-.28)	.23 (.15)	.05 (-.01)	-.22 (-.23)
EXH	-.01 (-.01)	-.02 (.05)	.10 (.16)	.28 (.21)	.23 (.27)	.07 (.00)	.10 (.03)	.25 (.28)
AUT	-.31 (-.30)	.14 (.07)	-.13 (-.14)	-.16 (-.26)	.27 (.18)	-.19 (-.19)	-.14 (-.09)	.10 (.09)
AFF	-.01 (-.01)	.02 (.07)	.37 (.33)	-.07 (-.06)	.01 (.05)	.01 (.03)	.23 (.32)	.22 (.24)
INT	.22 (.25)	.36 (.36)	.08 (.01)	-.03 (-.07)	.06 (.09)	.06 (.00)	-.02 (-.01)	-.08 (-.09)
SUC	-.13 (-.14)	-.37 (-.33)	-.12 (-.09)	-.09 (-.08)	-.18 (-.23)	-.10 (-.02)	.01 (-.01)	-.07 (-.05)
DOM	.01 (.05)	.23 (.23)	-.03 (-.09)	.14 (.09)	.46 (.42)	-.23 (-.12)	-.18 (-.20)	.20 (.21)
ABA	.14 (.10)	-.15 (-.08)	.00 (.05)	-.11 (-.03)	-.34 (-.31)	.17 (.15)	.01)-.02)	-.10 (-.13)
NUR	-.12 (-.11)	-.10 (-.08)	.16 (.26)	.04 (.03)	-.03 (-.04)	-.13 (-.10)	.09 (.14)	.10 (.11)

NOTE: Upper figure is for Gordon Regular scores; figure in parentheses is for Gordon weighted scores. Coefficients exceeding $\pm$ .24 are significant at .05 level.

TABLE 5 (continued)

Other Variable	Gordon Personal Inventory				Gordon Personal Profile			
	C	O	P	V	A	R	E	S
CHG	-.30 (-.27)	.13 (.10)	.21 (.19)	.01 (-.01)	.20 (.18)	-.05 (-.15)	-.01 (.12)	.21 (.22)
END	.27 (.30)	.46 (.46)	.30 (.27)	.12 (.16)	-.15 (-.12)	.36 (.27)	.09 (.16)	-.08 (-.09)
HET	-.16 (-.15)	-.24 (-.29)	.02 (.04)	-.27 (.36)	-.06 (-.10)	-.11 (.00)	-.01 (.00)	.06 (.02)
AGG	-.15 (-.15)	-.15 (-.20)	-.54 (-.56)	.17 (.18)	.11 (.12)	-.11 (-.08)	-.14 (-.29)	-.16 (-.19)
SVIB								
TEAC	-.13 (-.12)	-.07 (-.04)	.00 (-.00)	.06 (-.01)	.05 (.03)	-.20 (-.22)	-.15 (-.18)	.04 (.03)
ELTE	.30 (.30)	-.18 (-.12)	.11 (.09)	-.01 (.00)	-.24 (-.20)	.16 (.08)	.05 (-.03)	-.13 (-.10)
AACH	.05 (.08)	.42 (.40)	-.02 (-.08)	-.09 (-.10)	.11 (.11)	-.09 (-.12)	-.10 (-.09)	-.17 (-.20)
DIV	.07 (.11)	.38 (.42)	-.04 (.03)	.09 (.10)	.33 (.30)	-.02 (-.09)	-.11 (-.02)	.22 (.24)
OIE	.16 (.12)	-.48 (-.44)	.01 (-.11)	-.24 (-.17)	-.63 (-.61)	.20 (.17)	.14 (-.02)	-.58 (-.57)
AVL								
THEO	-.03 (-.03)	.20 (.16)	-.24 (-.32)	-.03 (-.02)	-.03 (-.07)	.03 (.12)	-.03 (-.09)	-.17 (-.19)
ECON	-.05 (-.10)	-.31 (-.29)	-.03 (-.01)	.01 (-.02)	-.13 (-.08)	.12 (-.05)	-.17 (.06)	-.12 (-.08)
AEST	-.19 (-.19)	.06 (.08)	-.05 (-.03)	.13 (.11)	.06 (.05)	-.03 (-.12)	.08 (.19)	.03 (-.02
SOC	.00 (.03)	.13 (.10)	.17 (.20)	-.28 (-.34)	.09 (.09)	-.15 (-.13)	-.12 (-.08)	.10 (.09)
POL	-.02 (-.03)	.15 (.02)	-.25 (-.12)	.28 (.36)	.15 (.10)	.00 (.09)	-.09 (-.07)	.16 (.19)
REL	.22 (.24)	-.19 (-.08)	.24 (.17)	-.04 (-.01)	-.14 (-.10)	.06 (.09)	.01 (.02)	-.01 (-.03)

The significant correlates of "Original Thinking" are:

EPPS:	Intraception	.36	EPPS:	Order	-.22
	Dominance	.23		Succorance	-.37
	Endurance	.46		Heterosexuality	-.29
SVIB:	Achievement	.42	SVIB:	OIE	-.48
	Diversity	.42	AVL:	Economic	-.31

These relationships add a distinctly different dimension to the Gordon manual interpretation of this trait. The intellectual curiosity and interest in new ideas described in the manual are confirmed by the diversity of interests measure (OIE) from the SVIB. But, these correlates suggest an added element of self-directedness, independent and tenacity. The negative correlation with the SVIB-OIE scale means that high scores on "Original Thinking" tend to be associated with an interest in "extroverted" kinds of occupations--one involving self-assertion of frequency of involvement with people rather than things. Thus, to the Gordon emphasis on originality of thinking an interpretation of this trait should, tentatively include the quality of originality in action--doing as well as thinking. It would seem reasonable that persons assuming successful leadership roles would have some strength on this trait.

Significant correlates of the Gordon trait "Personal Relations" include the following:

MTAI:		.22	AVL:	Religious	.24
EPPS:	Affiliation	.37	EPPS:	Order	-.28
	Nurturance	.26		Aggression	-.56
	Change	.21	AVL:	Theoretical	-.32
	Endurance	.30		Political	-.25

The Gordon manual includes faith in people, trust, tolerance and understanding as descriptors for this trait. These results generally support this interpretation. It is of interest that this trait is one

of only two Gordon traits that show an appreciable relationship to the MTAI, a finding in accord with the assumption that the MTAI measures a tolerant, empathic and warm attitude toward children.

The significant correlates of "Vigor" are:

MTAI:		.22	EPPS:	Autonomy	-.26
EPPS:	Exhibition	.28		Heterosexuality	-.36
AVL:	Political	.36	SVIB:	OIE	-.24
			AVL:	Social	-.34

These findings raise serious questions about the quality of the "vigor" represented by this trait score. The relationship to "Exhibition" and AVL "Political" suggests that a center-of-attention and power orientation may be an essential component. The negative relationship with "Autonomy" implies that the vigor measured here is not associated with a need for independence. It is noteworthy that "Vigor" is not associated with achievement on either the EPPS or SVIB scales, nor with "Diversity" on the SVIB. Thus, in the absence of other evidence, it would seem unwise to interpret a high score on "Vigor" as desirable.

Significant correlates of "Ascendancy" include the following:

EPPS:	Exhibition	.27	EPPS:	Order	-.34
	Dominance	.46		Succorance	-.23
SVIB:	Diversity (DIV)	.33		Abasement	-.34
			SVIB:	Elem. Tchr.	-.24
				OIE	-.63

The manual interpretation of "Ascendancy" is congruent with the statement that high scores on this trait indicate extroversiveness and leadership qualities. These findings support this interpretation. The picture is one of an extroverted individual who is not compulsively orderly and who received gratification through social recognition.

The significant correlates of the trait "Responsibility" are:

EPPS:	Order	.23	EPPS:	Dominance	-.23
	Endurance	.36	SVIB:	Teaching	-.22

"Responsibility" appears to be relatively independent of the other measures, and all but one of the correlations are of only marginal significance. These findings add little to the interpretation of this trait. "Endurance" is defined in the EPPS manual primarily in terms of dogged persistence at a task. Given the positive correlation with "Order" and the negative one with "Dominance", it would be reasonable to hypothesize that factors in this trait may include introversiveness and passive conformity to expectations. After these conclusions were reached, it was predicted that this trait would be positively correlated with the SVIB-OIE measure (indicating introversiveness) and negatively correlated with "Autonomy." The predictions were confirmed, since both coefficients approach significance at the .10 level. Thus, in this population, the "Responsibility" measure may represent a virtue primarily when associated with traits indicative of strengths that would indicate some self-assertiveness and independence.

Significant correlates of "Emotional Stability" include:

EPPS: Affiliation	.32	EPPS: Aggression	-.29

The Gordon manaul interpretation of this trait is almost solely related to freedom from worry, nervousness and resistance to getting upset. The two EPPS variables with which it has its only significant correlations are concerned, instead, with the quality of interpersonal relationships. Presumably, high Gordon scores on "Emotional Stability" are associated with a strong need for friends and freedom from desires to hurt others. This adds support to the labeling of this trait, since good mental health is generally regarded as inextricably related to good interpersonal relationships. There is every reason to believe

that high scores on this trait would be desirable in teachers. However, it will be noted that this trait scores are unrelated to the MTAI or to the two SVIB teaching scales.

The significant correlates of "Sociability" are:

EPPS:	Exhibition	.28	EPPS:	Achievement	-.26
	Affiliation	.24		Order	-.23
	Dominance	.21	SVIB:	OIE	-.58
	Change	.22			
SVIB:	Diversity (DIV)	.24			

Gordon defines this trait in terms of gregariousness, liking to work and be with people. The positive correlation with "Exhibition" and the negative one with "Achievement" suggest that a high score on this trait may be characteristic of individuals seeking the quick rewards of social approval. Again, as with the trait "Responsibility" a high score on "Sociability" should perhaps be regarded as desirable only in the presence of traits suggesting some capacity for work and some striving for achievement. The high negative correlation with SVIB-OIE confirms the essential correctness of Gordon's interpretation.

Several general conclusions can be drawn from these data. First, it is apparent that Gordon trait descriptions are generally accurate, if the other inventories used in this analysis are assumed to be valid criteria. Use of these other measures in this manner is reasonable in that they have been widely used and accepted as reasonably valid measures. Second, it is apparent that the correlations account for a relatively small amount of the variance common to any two traits being compared. Thus, the Gordon scales are measuring traits differing from those of the other instruments and, therefore, add new information to this test battery.

Utility of Highest and Lowest Gordon Scores

The goal of the analyses that follow is to determine whether the use of highest and lowest scores as predictors in this study will show relationships that are not revealed by the correlations of Gordon traits with the other variables.

A first method of approaching this problem is to see whether the correlation matrix for GPI and GPP trait scores is comparable to a comparison of highest and lowest traits for the two tests. If two traits are highly correlated, it would be expected that highest scores on one would tend to be associated with highest scores on the other, and lowest scores would be similarly related. These distributions for highest and lowest scores are presented in Tables 6 and 7.

TABLE 6

DISTRIBUTION OF SUBJECTS ACCORDING TO HIGHEST GPI AND HIGHEST GPP SCORES

Highest GPI Score	Highest GPP Score			
	A	R	E	S
C	2 (-.30)*	4 (.42)	6 (.30)	1 (-.37)
O	6 (.48)	4 (-.04)	3 (-.10)	5 (.35)
P	4 (-.04)	2 (.20)	6 (.24)	6 (.06)
V	3 (.31)	3 (.16)	5 (.18)	4 (.21)

*trait correlations

TABLE 7

DISTRIBUTION OF SUBJECTS ACCORDING TO LOWEST GPI AND LOWEST GPP SCORES

Lowest GPI Score	Lowest GPP Score			
	A	R	E	S
C	(-.30)*	10 (.42)	6 (.30)	1 (-.37)
O	7 (.48)	3 (-.04)	1 (-.10)	6 (.35)
P	3 (-.04)	1 (.20)	4 (.24)	3 (.06)
V	6 (.31)	6 (.16)	1 (.18)	6 (.21)

*trait correlations

The results are inconclusive. As expected, the distribution is somewhat predictable from the correlations. Few cases tend to occur in cells with negative correlations, and more cases occur with positive correlations. But there are discrepancies. While the highest correlation for "Cautiousness" is with "Responsibility," the greatest number of cases occurs in the cell for "Cautiousness" and "Emotional Stability." The writer knows of no way to test the significance of the associations or discrepancies, but it is sufficient to vote that a person may receive his highest GPP and GPI scores or two traits that appear unrelated on the basis of correlational data.

A second approach to this problem is suggested by the following question. Can relationships be identified between a subject's highest (or lowest) Gordon trait score and some independent variable which <u>can not</u> be predicted equally well from the correlation between the regular trait score and the variable?

Since the purpose was to answer the single question regarding the value of highest and lowest Gordon scores, only selected variables from the other instruments were used in comparisons. First, three measures which were regarded as inherently of interest were selected: MTAI score, SVIB "Teaching" and SVIB "Elementary Teacher." Then seven other variables that had shown interesting patterns of correlation with Gordon scores were added. The variables to be compared were divided into High, Low and Middle groups. These groups are not all identical in size, since occasionally ties occurred. When this happened subjects were placed in a group so that the three subgroups would be as close to equal in size as possible or added to the middle group.

Tables were then prepared showing the distribution of subjects on Gordon traits and on the non-Gordon variables. Table 8, for example, shows the distribution of subjects according to their highest GPP score and their ranking in the High, Middle or Low group on the EPPS "Dominance" scale. The Chi Square for Table 8 is 13.28 which, with 6 degrees of freedom, is significant at the .05 level. The table suggests that subjects whose highest scores are in "Ascendancy" and "Sociability" tend to be high on "Dominance," while persons whose highest scores are on "Responsibility" or "Emotional Stability" tend to be low on "Dominance."

Forty sub-tables were prepared and Chi Square values determined. Significance levels based on Chi Square analyses are presented in Table 9. For example, the significance level of .05 for the sub-tables presented in Table 8 is shown in the cell for Dominance and Gordon Profile, Highest. When significance level and direction of the relevant correlations were considered in respect to data in this table it was

TABLE 8

DISTRIBUTION OF SUBJECTS ACCORDING TO THEIR HIGHEST GORDON PROFILE SCORE AND HIGH, MIDDLE OR LOW RANKING ON THE EPPS DOMINANCE SCALE

Highest Gordon Profile Score	EPPS Ranking on Dominance			
	Low	Middle	High	Totals
Ascendance	1	8	5	14
Responsibility	6	6	2	14
Emotional Stability	10	6	4	20
Sociability	2	6	8	16
Totals	19	26	19	64

apparent that to some degree data are predictable from correlations. However, there are discrepancies, suggesting that use of highest and lowest Gordon trait scores will provide non-redundant information.

Correlations of a Gordon trait with an outside variable can be more directly compared with data derived by use of highest and lowest scores when distributions by highest and lowest scores for each trait are presented together, as in Table 10. Here the distribution for GPP scores compared with SVIB "Occupational Introverson-Extroversion" scores (OIE) is shown. OIE columns are labeled "Intro" (introversive), "Mid" (middle) and "Extr" (extroversive) to indicate the meaning of high and low scores.

TABLE 9

SIGNIFICANCE LEVELS FOR TABLES COMPARING HIGHEST AND LOWEST GORDON SCORES WITH TEN VARIABLES

Non-Gordon Variables		Gordon Inventory		Gordon Profile	
		Highest	Lowest	Highest	Lowest
MTAI		--*	.10	--	--
SVIB:	Teaching	--	--	--	--
	Elementary Reacher	--	--	--	--
	Law	--	--	.05	--
	Physical Science	.10	.05	--	--
	OIE	--	.10	.05	.05
EPPS:	Order	.10	.10	--	--
	Dominance	--	.10	.05	.05
	Endurance	--	--	.05	--
	Aggression	.10	.10	--	--

*a dash indicates non-significance

TABLE 10

DISTRIBUTION OF SUBJECTS ACCORDING TO HIGHEST AND LOWEST GORDON PROFILE SCORES AND STRONG OIE SCORES, CORRELATIONS OF GORDON TRAITS AND STRONG OIE SCORES AND PERCENTAGE OF CORRECT PREDICTIONS OF EXTREME GROUP MEMBERSHIP FROM THE CORRELATION COEFFICIENTS

Gordon Trait		Extro	Mid	Intro	X^2 Sing. Level	Correlations (N=64)	Per cent Correctly Predicted
Ascendancy	High	6*	6	2	NS	-.62	74
	Low	3	6	8			
Responsibility	High	3	6	5	.10	.19	78
	Low	9	9	1			
Emotional Stability	High	2	7	11	.02	.14	78
	Low	7	3	2			
Sociability	High	10	2	4	.01	-.57	82
	Low	2	6	8			

*Response categories underlined are those that would be predicted from the direction of the correlation coefficient.

It will be noted that the correlation of OIE and "Ascendancy" is -.62. Since in the OIE scale high scores indicate introversiveness, this negative correlation suggests that persons high in "Ascendancy" should be extroversive. This, if the correlation were perfect and if use of highest and lowest scores gave exactly the same information, it would be predicted that all cases in the extreme groups would fall in the cell indicated by the underlining of number in that cell. That is, the correlations could be used to predict the distributions of cases in the cross-break. For the cross-break of "Ascendancy" and OIE, 8 + 6, or 14 of the 19 cases in the extreme groups, fall in the cells predicted from the negative correlation of the two variables. Thus, the per cent of cases correctly predicted is approximately 74, the number provided in the right-hand column.

It is apparent that although correlations for the four traits and OIE are markedly different, numbers indicating the percent correctly predicted differ very little. Correlational data tell us that "Responsibility" and "Emotional Stability" are not significantly related to OIE scores (an "r" of approximately .25 is required for significance at the .05 level). Yet it can be seen that knowledge that these traits were a subject's highest or lowest Gordon score would allow us to predict membership in the extreme groups with 78 per cent accuracy. It is obvious that if a person has achieved his highest Gordon score on "Emotional Stability" he is much more likely to have introversive occupational interests than if his lowest score was on this trait. Therefore, these data rather convincingly demonstrate the potential value of the use of highest and lowest Gordon trait scores or

other similar but more complex strategies for exploiting rankings of an individual's trait scores.

Discrepancies similar to those in Table 10 were observed between correlations and direction of crossbreaks based on highest and lowest scores for other comparisons, including crossbreaks directly opposite in direction to a significant correlation. No effort was made to further analyze these relationships, since it is sufficient to demonstrate that the two different ways of relating Gordon scores to external variables lead, in some instances, to different results. This conclusion supports the findings of Hughes and Dodd (1961) and adds the suggestion that lowest scores, which their study did not use, appear as useful as highest scores.

Analysis of Popular Response Scores

It will be recalled that these scores are assumed to measure the subject's overall tendency to respond in a socially stereotypical way. If this assumption is correct, it would be anticipated that scores derived from the GPI and the GPP should be highly correlated. This coefficient of correlation should be interpreted as a reliability coefficient since the GPI and GPP, in a sense, represent alternate forms of the test.

Surprisingly, the correlation of the Popular Response Score (PRS) for the two tests is only .39. Obviously, this score is not a valid measure of the response set it was presumed to assess. However, while original purposes for its use are frustrated by this finding, the PRS can still shed some light on evaluating Gordon trait scores.

In Table 11, intercorrelations of each PRA and the regular score for traits in the scale from which it was derived are presented.

TABLE 11

INTERCORRELATIONS: GORDON REGULAR SCORES AND POPULAR RESPONSE SCORES

(N = 64)

Gordon Personal Inventory Traits				Gordon Personal Profile Traits			
C	O	P	V	A	R	E	S
.48	.54	.67	.34	.12	.77	.75	.17

These correlations, although based on non-independent measures, indicate which traits are most closely associated with response conformity. Subjects achieving high scores on "Emotional Stability" tend to give conforming responses more frequently than those who receive low scores. On the other hand, persons having high scores on "Ascendancy" may be conforming or non-conforming. Since the PRS was the sum of the number of persons responding to each item as did the subject, it follows that the trait which has the most popular items would contribute most to PRS variance. These correlations may be interpreted then as estimates of the relative desirability of these traits in this population. Thus, for example, since the correlation with "Responsibility" is high, it can be assumed that responsibility is seen as distinctly virtuous. Conversely, subjects were not distrubed by their unwillingness to describe themselves as "Ascendant."

Thus, for this population, traits could be ranked as to their social desirability--those with highest correlations being most desirable. It would also be reasonable in interpreting trait profiles to give special consideration to low scores on those traits with the highest correlations. The rationale is similar to that used in developing the WRS: to achieve a low score on a trait such as "Responsibility", the subject has resisted the pull of social desirability.

The initial plan to use these scores as estimates of the social desirability factor in other test scores was abandoned when it was discovered that the PRS was not a reliable measure of social desirability.

Analysis of the MTAI

Contrast groups chosen to explore the meaning of variability in MTAI scores in this population were those scoring at the high and low extremes. Inspection of the distribution of raw scores (Appendix E, Table 1) suggested that sufficient contrast could be achieved by selecting subjects with scores beyond approximately one standard deviation from the mean. On this basis, MTAI scores ranged from 84 to 96 for the high group and from 25 to 52 for the low group. Comparisons of these raw scores with percentile rank equivalents for score distributions of various populations presented in the MTAI manual (Cook, et. al., 1965) reveal that these high and low groups are not particularly extreme. For example, using percentile ranks listed for the norm group of graduating elementary seniors, high group scores in this sample would range only from the 54th to 75th percentile, while low group scores would range from the 3rd to 19th percentile (p. 8). However, analysis of differences between high and low groups can clarify sources of variability for this sample.

Group Differences in Strength of Responses

Scatter diagrams showing the frequency of subjects in high and low MTAI groups responding to each of the five response categories--Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree--were prepared for each of the 150 items. It was immediately apparent from inspection of these 150 arrays that there was a definite tendency for the low MTAI group to be less decisive, to more frequently select "Undecided" as their response and to less frequently choose the "Strongly Agree" or "Strongly Disagree" alternates. This observation is confirmed by comparison of the mean number of responses to each response alternative for the two groups presented in Table 12.

TABLE 12

MEAN NUMBER OF RESPONSES PER INDIVIDUAL TO EACH RESPONSE CATEGORY FOR THE HIGH AND LOW MTAI GROUPS

Group	MTAI Response Category				
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Highs	10.5	20.7	16.9	60.5	41.5
Lows	7.0	29.1	35.3	62.8	15.8

Table 12 is read as follows: Of 150 possible responses, the average subject with a high MTAI score selected 41.5 "Strongly Disagree" responses, while the low MTAI scorers averaged only 15.8 such responses.

It can be seen that, on the average, a subject in the low group gave over twice as many "Undecided" responsea and between one-half and

one-third fewer "Strongly Disagree" responses as a high group subject. To determine whether differences were generated by a few highly deviant individuals, distributions of responses to the "Undecided" and extreme alternatives were prepared and are presented in Table 13.

TABLE 13

DISTRIBUTION OF SUBJECTS IN HIGH AND LOW MTAI GROUPS ACCORDING TO "STRONGLY AGREE," "UNDECIDED," AND "STRONGLY DISAGREE" RESPONSES TO MTAI ITEMS

Strongly Agree			Undecided			Strongly Disagree		
No. of Responses	High	Low	No. of Responses	High	Low	No. of Responses	High	Low
17-19	0	1	80-89	0	1	60-69	1	0
14-16	2	1	70-79	0	0	50-59	1	0
11-13	3	1	60-69	0	0	40-49	3	0
8-10	3	0	50-59	0	1	30-39	1	0
5-7	3	4	40-49	2	2	20-29	2	2
2-4	0	4	30-39	1	4	10-19	3	8
			20-29	0	3	0-9	0	1
			10-19	3	0			
			0-9	5	0			

It is apparent that differences in means cannot be attributed to a few subjects. For example, 8 of 11 high group subjects gave fewer than 20 "Undecided" responses, while all of the low group gave 20 or more. The other two distributions are similar. It can be concluded that low

scores in this sample are related to a tendancy toward indecision and/or less strongly expressed opinion. This finding is in agreement with the conclusions in Budd and Blakely (1958) discussed in Chapter 2.

Group Differences in Direction of Response

Were there items which discriminated between the two groups, not on the basis of strength of opinion, but because the majority of each group were on different sides of the issue? Surprisingly, on all but a very few items the two groups tended to agree in the direction of their responses. On only 9 of the 150 items were differences worthy of note. For this analysis, categories on each side of "Undecided" were collapsed. These items and the distribution of responses for the two groups are presented in Table 14.

It is apparent that even in these few most-discriminating items there is considerable overlap between high and low scorers. These findings, coupled with the obvious differences in the "strength" of response categories selected by the two groups, suggest that, for this particular population, variation in MTAI score is primarily a function of the certainty subjects are willing to express in regard to item statements. Several explanations appear plausible. First, low scorers may be persons who are cautious in their personality structure, or who are inclined to "play it safe" in expressing opinions. This hypothesis can be explored in the data by looking at the relationship with the Gordon variable "Cautiousness." Its correlation with MTAI scores is -.10--not significant, but in the predicted direction. However, the negative correlation is more apparent when the highest and

lowest Gordon trait scores are considered: that is, when subjects for whom "Cautiousness" is the highest or lowest score are compared on the MTAI. This comparison appears in Table 15.

TABLE 14

MTAI ITEMS MOST DISCRIMINATIVE OF HIGH AND LOW MTAI GROUPS

No.	Item Statement	Group	Response Categories		
			A	U	D
17	There are times when a teacher cannot be blamed for losing patience with a pupil.	H	4	2	5
		L	6	5	0
24	Too many children nowadays are allowed to have their own way.	H	1	5	5
		L	5	5	1
26	The teacher is usually to blame when pupils fail to follow directions.	H	6	4	1
		L	2	5	4
51	Discipline problems are the teacher's greatest worry.	H	0	4	7
		L	4	0	7
60	It is easier to correct discipline problems than to prevent them.	H	1	2	8
		L	4	2	5
79	Children usually have a hard time following directions.	H	0	4	7
		L	4	4	3
81	All children should start to read by the age of seven.	H	0	0	11
		L	3	2	6
108	"Lack of Application" is probably one of the most frequent causes of failure.	H	2	5	4
		L	5	6	0
148	Most pupil behavior is done to annoy the teacher.	H	0	5	6
		L	4	5	2

TABLE 15

DISTRIBUTION OF SUBJECTS HIGHEST AND LOWEST ON CAUTIOUSNESS ACCORDING TO HIGH, MIDDLE, OR LOW MTAI SCORE

Gordon Personal Inventory "Cautiousness"	MTAI Score Group			Total N
	High	Middle	Low	
Highest Score	3	4	7	14
Lowest Score	8	7	1	16

It can be seen that for 7 of 8 low MTAI scorers "Cautiousness" was the highest score, while for the large majority (8 of 11) of high MTAI scorers "Cautiousness" was lowest. These data support the hypothesis that the personality trait "Cautiousness" tends to be associated with low MTAI scores, since for 15 of 19 subjects in extreme MTAI groups the prediction is confirmed--a finding well beyond chance expectancy.

Another approach to this question is to look at statistically significant correlates of MTAI scores among all other variables. Following are the four correlations significant at the .05 level.

Instrument		Correlation Coefficient
EPPS	Order	-.26
SVIB	Office	-.28
SVIB	Writing	.30
SVIB	Academic Achievement	.27

These suggest that high MTAI scores tend to be associated with absence of a need for order, low interest in office type jobs, interest in jobs involving writing and high academic achievement drive. If it is assumed

that orderliness and office type vocational interests would be more characteristic of persons with a cautious approach, while an interest in writing and a high academic achievement drive are more compatible with a risk-taking personality, these results are in accord with the hypothesis that "Cautiousness" is associated with low MTAI scores.

Another plausible interpretation of the conclusion that strength or decisiveness of subjects' responses to attitude statements is a major source of variance is perhaps more in accord with the views of the MTAI authors discussed in Chapter 2. Those subjects with genuinely permissive, child oriented, democratic, progressive attitudes attain high MTAI scores because their attitudes are well-formed and in agreement with the philosophy upon which the MTAI was based. Thus, it is easy for them to choose, for example, "Strongly Disagree." Conversely, a subject with basically non-permissive attitudes, while sophisticated enough to know that he should disagree with an item statement, gives only partial expression to his underlying antagonism to the expected answer by responding with only "Disagree" or "Undecided." The significant correlates of MTAI scores listed above do not offer any basis for accepting or rejecting this explanation.

Some Comparisons of High and Low Groups

It was stated earlier that for selection purposes it would be valuable to be able to identify the bottom group of applicants--those most likely to fail as teachers. An attempt was made, therefore, to isolate several groups whose scores on a measure would suggest, on a prior basis, that they would be poor risks and then to determine whether

their scores on other variables would confirm this assumption. As a basis for comparison, a group of those scoring high on the same measure was also identified. In addition, the GPP profile "High Ascendancy-Sociability vs. Low Responsibility-Emotional Stability," or its opposite, was selected for further study, since findings reported earlier suggested that a sizable sub-group of subjects could be differentiated on the basis.

High vs. Low Total Gordon Score

Since, in spite of some trait score interdependence, it is possible, as discussed earlier, for subjects to be relatively high or relatively low on all Gordon traits, it is meaningful to add all trait raw scores on the two tests to provide a total score. Presumably, persons with lowest scores would be those with the fewest personality assets. On the basis of total scores, the ten lowest and ten highest subjects were identified.

Distributions were prepared for scores on the non-Gordon measures, and these scores were divided at the median to form high and low groups. Ties were resolved in a manner to create groups as equal in size as possible. Thus, it was possible to create four-fold tables for testing relationships between the variables by Chi Square analysis.

The four-fold tables for those variables most significantly related to Gordon total scores on the basis of a significant Chi Square and the corresponding significance levels are presented in Table 16.

It can be argued that in every instance those in the low Gordon group tend to be at the least desirable end of the continuum measured

TABLE 16

DISTRIBUTION OF SUBJECTS HIGH AND LOW ON GORDON TOTAL SCORE ACCORDING TO HIGH AND LOW SCORES ON OTHER MEASURES

Variable		Gordon Total Score		Significance Level
		Low	High	
MTAI	High	3	7	
	Low	7	3	
EPPS				
Succorance	High	8	2	.05
	Low	2	8	
Affiliation	High	2	7	.10
	Low	8	3	
Endurance	High	3	8	.10
	Low	7	2	
Order	High	9	3	.05
	Low	1	7	
Aggression	High	7	3	.20
	Low	3	7	
Deference	High	7	3	.20
	Low	3	7	
SVIB				
Public Speak.	High	3	8	.10
	Low	7	2	
Achievement	High	3	7	.20
	Low	7	3	
Diversity	High	3	7	.20
	Low	7	3	

by the other variable. They have greater needs for "Deference," "Succorance" and "Aggression" and less for "Affiliation" and "Endurance." They tend to have less diversity of interests, and their interests are not those of persons with a strong achievement drive. Their need for

"Order" may be open to conflicting interpretations. However, in this study the need for order seems to be related to insecurity and to introversive tendencies. The SVIB-OIE measure, while not achieving significance using the Chi Square test, appears to separate high and low Gordon groups quite effectively; the low Gordon group appearing as distinctly more introverted in their interest patterns. Seven of ten subjects occupy the range of scores from 50 to 79, while all ten high group subjects score below 50.

In view of the presumed relevance of these variables to desirable qualities in a teacher and the predictable consistency of the relationships, it can be concluded that low total scores hold promise of identifying poor prospects for the teaching profession.

High vs. Low SVIB "Teaching" Scale

The SVIB Basic Interest Scale "Teaching" presumably measures the subject's overall interest in the teaching profession. Interest is perhaps the second most important variable to be considered in differentiating between "high risk" and "low risk" groups of applicants--after measures pertaining to potential effectiveness as a teacher have been analyzed. On this basis, the eleven lowest and eleven highest subjects on the "Teaching" scale were identified, and four-fold tables similar to those described above were prepared for Chi Square analysis.

The four-fold tables for variables significantly related to the SVIB "Teaching" scale and significance levels are presented in Table 17.

Interpretation of the data shown in Table 17 is dependent upon one's view of certain variables. While "Social Service," "Sports" and

Table 17

DISTRIBUTION OF SUBJECTS HIGH AND LOW ON SVIB BASIC INTEREST SCALE "TEACHING" ACCORDING TO HIGH AND LOW SCORES ON OTHER MEASURES

Variable		SVIB "Teaching" Score		Significance Level
		Low	High	
SVIB				
Sports	High	2	9	.01
	Low	9	2	
Art	High	3	8	.05
	Low	8	3	
Merchandising	High	3	8	.05
	Low	8	3	
Office	High	3	8	.05
	Low	8	3	
Social Service	High	3	8	.05
	Low	8	3	

"Merchanding" are clearly activities related to a general interest in working with people as opposed to working with things and are, therefore. desirable traits in prospective teacher, a decision must be made in regard to "Art" and "Office" before the relative merits of these traits can be determined. Are they basically solitary activities of a manual or clerical nature? Or, are they essentially activities associated by the subjects with groups of people working together? Depending upon choice of alternative, results of Chi Square analyses for these variables either support the general trend exhibited by the other three variables reported or, by offsetting one trend with its opposite, cloud the issue.

It is noteworthy that the "Teaching" score was significantly related to no other variables than those from the SVIB. In this study, expressed interest in teaching is not predictable from self-reported personality traits and needs. Nor can one predict MTAI scores from teaching interest. Part of the difficulty may lie in the relatively narrow range of scores in this sample on the SVIB "Teaching" scale. A second major difficulty is that this scale is a composite of interests in various kinds of teaching at both elementary and secondary levels. Findings of this study would suggest the need for a scale standardized on successful special education teachers or, if the SVIB is to be used, a study of unique patterns of special educators' responses on its existing scales.

High Gordon "Ascendancy-Sociability" Pattern vs.
High "Responsibility-Emotional Stability" Pattern

Eight subjects with each of these two contrasting profiles were identified. Groups were limited to this relatively small number to keep the two patterns as divergent and distinct as possible. Mean percentile ranks for the two groups, using norms for this sample, are presented in Table 18. It is apparent that the groups are well-differentiated.

TABLE 18

MEAN PERCENTILE RANKS: GPP PROFILE GROUPS

GPP Profiles	GPP Traits			
	A	R	E	S
High AS-Low RE	78.3	16.4	15.5	82.8
High RE-Low AS	20.9	69.8	73.1	12.4

Small size of the groups militated against obtaining statistically significant differences in comparisons of these groups on other measures. Nevertheless, strong trends were apparent when distributions were prepared as described in the section above dealing with Gordon total scores. To display these trends, Table 19 was prepared by listing those measures from other tests on which one profile group tended to have a higher score and those on which no differences between groups were discernible. SVIB-OIE scores for the two groups were statistically significant when Fisher's exact test was applied. There was, in fact, no overlap between the two groups; the A-S group achieving scores indicating extroversiveness, the E-R group introversiveness. OIE results are entered in both A-S and E-R columns to highlight this difference, since the nature of the continuum of scores in this case differs from the others. In all cases the mean score for a test limited under one group is higher than that for the other.

Relationships in Table 19, although based on non-significant trends, present a picture that is consistent with the significant extroversive-introversive contrasts. On a prior basis, the A-S pattern appears a more desirable one for teachers. On the basis of SVIB measures, the A-S group appears to have greater diversity on interest with a consistent tendency to have interest patterns similar to persons in leadership roles, occupations emphasizing service to others and occupations requiring self-expression and creativeness. Similarly, the EPPS need measures would seem to favor the A-S group. It is noteworthy that the E-R group tends to be higher in "Abasement" and "Aggression," while the A-S group tends to be higher in "Autonomy," "Affiliation" and "Change."

TABLE 19

TEST MEASURES ON WHICH A-S OR E-R GROUPS TENDED TO SCORE HIGHER THAN THE OTHER OR ON WHICH NO DIFFERENCE APPEARS

E-R High	A-S High	No Difference
SVIB		
Numbers	Public Speaking	Home Making
Outdoors	Law	Religious
OIE (Introversive)	Merchandising	Music
	Office	Elementary Teacher
	Physical Science	AACH (Academic Achievement)
	Mechanical	
	Biological Science	
	Medical Service	
	Teaching	
	Social Service	
	Sports	
	Art	
	Performing Arts	
	Writing	
	DIV (Diversity of Interests)	
	OIE (Extroversive)	
EPPS		
Deference	Autonomy	Achievement
Intraception	Affiliation	Order
Abasement	Dominance	Exhibition
Endurance	Change	Succorance
Aggression		Nurturance
		Heterosexuality
AVL		
Religious	Political	Theoretical
		Economic
		Aesthetic
		Social

These findings suggest that a high "Emotional Stability" score occurring in this profile pattern is not necessarily a desirable indicator. The personality picture which would most seem to fit the high E-R group would be that of a somewhat dependent, constricted individual, eager to

please and sensitive to others, but, perhaps, with underlying aggressive trends against which introversiveness has developed as a defense.

Although based only on trends in the data, the pattern of relationships in Table 19 is sufficiently coherent and meaningful to suggest that profile patterns discussed here merit further study and can well serve as useful clues in the interpretation of individual profiles.

Other Exploratory Analyses

In addition to the detailed analyses of the GPI, GPP and MTAI described above, various relationships among some of the other measures selected for the present study were determined. Brief summaries of these analyses follow.

Table 20 presents intercorrelations of EPPS scores and the SVIB "Teaching" and "Elementary Teacher" scales. It can be noted that the relationship between "Autonomy" and "Elementary Teacher" is the only significant correlation, and that there is a higher negative correlation between these variables than when "Autonomy" is compared to the "Teaching" scale. This is perhaps a factor in the relatively low level of interest present subjects expressed in elementary teaching as a career.

TABLE 20

INTERCORRELATIONS: EPPS SCORES AND SVIB TEACHING SCALES

(N = 64)

EPPS Variable	SVIB		EPPS Variable	SVIB	
	TCHG	EL TCHR		TCHG	EL TCHR
ACH	.00	-.03	DOM	.18	.12
DEF	.12	.08	ABA	.03	.11
ORD	-.15	.21	NUR	.01	-.06
EXH	.05	-.06	CHG	-.03	-.20
AUT	-.12	-.36	END	-.02	.09
AFF	.03	.01	HET	-.06	-.01
INT	.12	.09	AGG	.05	-.04
SUC	-.12	.04			

Table 21 compares the MTAI attitude score and EPPS scores. The only significant relationship is a negative correlation between MTAI score and the EPPS variable "Order." This is perhaps predictable in light of the view of successful teaching upon which the MTAI was based.

TABLE 21

INTERCORRELATIONS: MTAI SCORE AND EDWARDS PERSONAL PREFERENCE SCHEDULE SCORES

(N = 64)

ACH	DEF	ORD	EXH	AUT	AFF	INT	SUC	DOM	ABA	NUR	CHG	END	HET	AGG
-.09	.14	-.26	.00	.07	.16	.19	-.18	-.12	-.12	.12	.16	.04	.01	-.04

In Table 22, relationships between MTAI score and a number of SVIB variables are listed. Most of the correlations are insignificant. However, it can be concluded that present study sugjects with high MTAI scores tended to prefer occupations emphasizing writing and were inclined toward academic achievement. In contract, they avoided occupations involving office work.

TABLE 22

INTERCORRELATIONS: MTAI SCORE AND STRONG VOCATIONAL INTEREST BLANK SCORES

(N = 64)

SVIB Variable	r	SVIB Variable	r	SVIB Variable	r	SVIB Variable	r
PUB SPKG	.13	MECH	-.10	SOC SERV	.11	ART	.09
LAW	.08	OUTDOOR	.21	SPORTS	.16	PERF ARTS	.08
MERCH	-.14	BIO SCI	.06	HOME MKG	-.09	WRITING	.30
OFFICE	-.28	MEDICINE	.04	RELIGIOUS	-.13	EL TCHR	-.23
NUMBERS	-.19	TEACHING	.07	MUSIC	.10	AACH	.27
PHYS SCI	-.04	DIV	.04	OIE	-.17		

Table 23 presents comparisons of MTAI scores and the six Allport-Vernon-Lindzey Study of Values variables. It is apparent that none of these correlations is significant. However, the relationship between MTAI score and "Economic" approaches a significant negative correlation. Thus, it can be stated that subjects with high MTAI scores tended to be relatively less inclined to hold economic values.

TABLE 23

INTERCORRELATIONS: MTAI SCORE AND STUDY OF VALUES SCORES

(N = 64)

Variable	r	Variable	r	Variable	r
Theoretical	-.10	Aesthetic	.15	Political	-.03
Economic	-.24	Social	.16	Religious	-.07

The reader's attention is once more directed to the appendices where detailed tables listing raw scores obtained on the six selected instruments with this sample can be inspected.

Summary of Findings

The following is a summary of the major findings of the present study.

1. On the basis of the EPPS "Consistency" measure, the six SVIB administrative indices, and comparisons of group data for this population with normative data, it is concluded that subjects responded conscientiously and appropriately to the selected instruments.

2. The distributions of responses to the self-report inventories indicate that these measures differentiate among subjects adequately for use in individual prediction among this restricted subgroup of students.
3. According to the SVIB measures, subjects attained a mean "T" value of 61.30 on the "Teaching" scale (compared to an expected mean of 58 for individuals in teaching professions) and a mean "T" value of 38.23 on the "Elementary Teacher" scale (compared to elementary teachers). It is concluded that, as a group, these special education students do not have interest patterns similar to practicing elementary teachers.
4. The subjects obtained a MTAI mean score of 67.08, a value which is commensurate with norms previously reported for persons at their level of training and experience.
5. Those subjects scoring low on the MTAI differ from those scoring high in that they are more frequently undecided or take a less extreme position, rather than that they actually ascribe to an opposite point of view. Those scoring low appear more cautious on self-report instruments. Thus, some of the variance of MTAI scores may be attributable to a personality disposition relating to "cautiousness" rather than to attitudes toward children and their classroom management.
6. Analysis of the GPP trait interrelationships suggest the potential utility of a profile pattern consisting of relatively high or low scores on Ascendancy and Sociability

versus relatively low or high scores on Responsibility and Emotional Stability. On the basis of the relationships of these profiles to other scores it was hypothesized that persons with relatively high scores on Ascendancy and Sociability would be more effective teachers. A similar clear-cut pattern of traits did not emerge for the GPI.

7. The Weighted Gordon scores developed for this study were not found to differ appreciably from the regular score developed according to procedures described in the manual and thus have no utility. This finding supports Gordon's contention that social desirability response set has been adequately controlled through the development of tetrads composed of pairs of items of equal social desirability.
8. Re-interpretations of, and additions to, the definitions of the eight Gordon traits provided in the manuals were offered, based on the relationships of these trait scores to scores for traits from the other self-report inventories.
9. The Popular Response scores developed separately for the GPI and the GPP correlated .39. Thus, these scores were rejected as a general measure of a subject's tendency to select socially desirable alternatives.
10. Analyses using the Popular Response score suggest that, in interpreting Gordon protocols, particular weight should be given to low scores on Responsibility, Emotional Stability, and Personal Relations. Conversely, high scores in these traits should be given less weight since, in this population,

they represent conforming responses and, thus, can be assumed to be heavily weighted with social desirability response set.

11. The use of a subject's highest or lowest Gordon trait scores revealed relationships which were not apparent from correlational data, suggesting the utility of strategies which exploit intra-individual rankings of trait scores rather than, or in addition to, the use of a percentile rank.
12. Interest in teaching as measured by the SVIB Teaching scale was not significantly related to the personality or value measures contained in the other self-report inventories.
13. Comparisons of persons achieving high and low Total Gordon scores revealed some potentially significant relationships. Those with low Total Gordon scores expressed greater needs for "deference," "succorance," and "aggression" and less need for "affiliation" and "endurance," and they also appeared to be introverted in their interest patterns. Thus, use of the total score may be of value in future studies.

Chapter 4

SUMMARY AND DISCUSSION

SUMMARY

This study explored the utility of a battery of popular self-report measures of vocational interests, values, needs and other non-pathological personality variables with a sample of undergraduate students in special education-mental retardation at Michigan State University. It was the initial phase of a longitudinal effort which proposes to accumulate a variety of data about students completing the mental retardation training program and to conduct validity studies in the field as the students continue teaching careers. Long term objectives include indentification of improved selection procedures and development of individualized approaches to teacher-training based upon students' personal needs.

Rapid increases in training program enrollments during recent years thought to be related to the expansion of special education services and a con-current decline in numbers of new teaching positions in regular education have created a need for research of this type. It has become difficult to maintain program quality in the face of rising enrollments, and in future years it will be even more difficult to modify programs in accordance with developments in the field which are likely to emphasize different professional skills. At Michigan State

University, establishment of a quota system has created a need for valid selection criteria. While field experiences provide one source of information about a student's potential teaching abilities, supplementary objective data regarding potentially significant personality variables are needed to insure the validity of selection procedures and to provide a basis for proposed models for teacher-training which emphasize individualization.

The present study was designed to explore relationships among variables measured by the selected instruments which appeared to be promising for use in future validity studies. While no specific efforts were directed toward validating these instruments at this time, identification of a "poor risk" group was attempted, since it was thought that these subjects' responses would be particularly meaningful.

While the literature includes several hundred references to studies which attempted to relate teacher effectiveness to a wide variety of personality variables, results to date have been minimal. The application of research findings has been limited by a tendency to use non-behavioral descriptive terminology, difficulties in defining effective teaching and use of instruments were considered to be acceptable for the present study because of their proven merit in counseling settings and their potential ability to identify meaningful personality traits.

A number of studies in special education were reviewed which investigated different aspects of attitudes toward exceptional children held by varied populations of students and teachers. These included a series of studies authored by Reginald Jones who is perhaps the leader

in this particular phase of educational research. It was observed that these studies appeared to share a common objective, the recruitment of additional special education staff, which was during the 1950's and 1960's a relatively major concern in the field.

The studies of Bruno (1968), Dobson (1970) and Pernell (1971) were reviewed as representative of more recent efforts in special education to investigate the effectiveness of teachers. Although they were concerned with teachers of the emotionally disturbed, the objectives of these studies were quite similar to those of the present study. Several significant relationships were identified between test performance and teacher effectiveness and interest.

The instruments selected for this study have been used repeatedly with varied populations--both in education and in other disciplines such as industrial psychology. Studies reviewed were often critical of various test features, such as susceptability to faking or control of the social desirability response set, but it was usually concluded that the instruments were as good as any others of their type.

Technical features of the six instruments and response characteristics of this particular sample were primary concerns of the present study which should be viewed as a series of related, but somewhat independent, smaller investigations rather than as a single unit. Specific research objectives included:

1. Establishment of norms for the selected instruments for this particular sample.

2. Determination of response correlates of variables measured by the two Gordon inventories.

3. Determination of the validity of three alternate methods of scoring the Gordon inventories.

4. Exploration of the meaning of high and low Minnesota Teacher Attitude Inventory scores.

5. Comparison of high and low response groups on other instruments for the purpose of locating measures potentially useful for screening students.

Subjects were drawn from a population of seventy-four undergraduate majors in special education-mental retardation who were enrolled in the fall 1971 mental retardation training block. The study sample included sixty-four female students who completed the necessary six instruments. Four males were excluded because it was impossible to combine their socres with those of the women, and six females were dropped for failure to complete all tests. The sample was considered to be representative of students completing the mental retardation training program at Michigan State University.

Instruments used in the present study were all self-report inventories and included the following:

1. The Gordon Personal Inventory (GPI) is a brief questionnaire measuring four personality variables--Cautiousness, Original Thinking, Personal Relations and Vigor. In addition to the usual trait scores, three alternate scoring procedures were developed for this study. The Weighted Response Score (WRS) and the Popular Response Score (PRS) attempted to adjust distributions by taking into greater consideration response patterns within this particular sample, and highest and lowest trait scores were compared to determine if rank ordering resulted in different distributions and correlates.

2. The Gordon Personal Profile (GPP) is a companion to the GPI, and it is recommended that they be used together. Traits

measured include Ascendancy, Responsibility, Emotional Stability and Sociability, and the WRS, PRS and highest-lowest scoring procedures were used as above.

3. The Edwards Personal Preference Schedule (EPPS) measures 15 manifest personal needs--Achievement, Deference, Order, Exhibition, Autonomy, Affiliation, Intraception, Succorance, Dominance, Abasement, Nurturance, Change, Endurance, Heterosexuality and Aggression. A consistency score is also provided as a measure of validity.
4. The Strong Vocational Interest Blank (SVIB) assesses relative interest in 58 common occupations and 19 vocational areas and included four non-occupational scales--Academic Achievement, Diversity of Interests, Masculinity-Feminity and Occupational Introversion-Extroversion--as well as six scales which measure validity of responses.
5. The Allport-Vernon-Lindzey Study of Values (AVL) measures the strength of six basic values--Theoretical, Economic, Aesthetic, Social, Political and Religious.
6. The Minnesota Teacher Attitude Inventory (MTAI) purports to differentiate between "superior" and "inferior" teachers on the basis of their ability to relate to their students.

Instruments were administered during the fall term 1971 on both group and individual bases, following an introductory session in which longitudinal study objectives and related matters were explained to potential subjects. A completion rate of 96 per cent was realized. Small group sessions were held with those students who wished to discuss personal test results.

No summary of Chapter 3 appears at this point, since a listing of specific study findings can be found at the end of that chapter.

DISCUSSION AND IMPLICATIONS

It is not possible to evaluate in a single summary discussion the major findings of this study detailed at the end of Chapter 3. However, in the following sections an attempt is made to delineate what are regarded as the major conclusions to be drawn from the data.

Variability of Response Patterns

The subjects in this study would appear to be a relatively homogeneous group of individuals. They are all female college students, varying little in age, and with very similar vocational goals. It was considered not unlikely that their responses to the tests would also display a homogeneity that would provide only small, and therefore unreliable, discriminations among them. This tendency could also be assumed to be supported by the fact that the self-report inventories are transparent; that is, the subject can easily discern the intent of the items. Thus, it would be anticipated that these individuals, sharing common values and perceptions of what is socially desirable, and at the same time displaying the universal desire to portray oneself in a desirable light, would often agree in their choices of response alternatives. Finally, the testing conditions were relaxed, with many of the tests being taken by subjects to be completed at their leisure, a factor which would appear designed to permit the subject to marshall his defenses against self-revelation. In spite of these influences in favor of homogeneity of responses a wide range of individual differences

was obtained. While this fact has been reported above in referring to the distributions of scores for this population, it is difficult to portray the significance of this without immersion in the total set of scores for individuals in the group. The writer was impressed by the varied nature of the response patterns. Subjects appeared willing, to a remarkable degree, to portray themselves as emotionally unstable, or aggressive in an undesirable sense, or as lacking in responsibility, etc.

The important conclusion from this finding is that this type of personality-trait, self-report inventory may very well provide useful data for a selection or guidance program. Because this study lacked a criterion of teaching effectiveness nothing has been added to our ability to improve selection procedures. However, experience gained during the study suggests that these measures may contribute to the guidance functions and to the assessment of competencies that involve personality qualities. In a series of feedback interviews the subjects appeared to accept as accurate the personality traits ascribed to them. And discussions with them of discrepancies between their perceptions of themselves and apparently contradictory test findings led to seemingly fruitful re-evaluations on the subjects' part or modification of the personality picture on the part of the interviewer.

In short, it was the writer's impression that the widely differing score patterns that were found were related to genuine differences in the individuals concerned. It is suggested on the basis of the variability that was found, and the subjects' inherent interest in the results of the tests, that inventories of this type

could serve very well as vehicles for developing self-awareness on the part of students and for more sophisticated guidance of students on the part of the training staff. If the trend toward competency-based teacher training continues, and if competencies are to include the important area of interpersonal skills, better means of assessing and guiding students in this area will be imperative. The findings of this study suggest that self-report inventories could serve a useful function in this regard.

It should be noted that these findings are based on tests given without the threat that decisions would be made on the basis of the test results. Subjects were told that the results would have no bearing on their evaluation as prospective teachers. It is conceivable that if the tests were given as part of a selection battery the responses would become more homogeneous and less self-revelatory.

Establishment of Norms for this Population

Establishment of tentative norms for this specific population may be one of the most useful products of the present study. While the obtained descriptive statistics tend to approximate normative values reported in the various test manuals, some discrepancies were found. Following the recommendations of Jones (1966), it is important that the unique personal characteristics of special education trainees can be identified; both within and across disability areas. One of the long range objectives of the present study and of others that are to follow at Michigan State University is the development of means of individualizing the various special education training programs to

reflect an assessment of each student's personal needs, interests and attitudes. Thus, establishment of local norms will be of considerable value even if they cannot be used in selection procedures.

Gordon Instruments

The GPI and GPP were viewed as the primary instruments of the present study because of their ability to provide a relatively broad, non-pathological period. In order to better understand the meaning of individual responses and to evaluate Gordon's position that the tetrad design controls for social desirability response set, three alternate scoring methods were devised to supplement the standard scoring procedure, and Gordon results were repeatedly compared with scores attained on other scales. Although the Weighted Response Score (WRS) generated no new data and was accordingly discarded, it thereby supported the validity of the basic Gordon design. Use of the Popular Response Score (PRS), highest and lowest trait scores and comparisons with other scale scores was more productive, since several new dimensions of the Gordon traits emerged. Analyses based upon rank-orderings of trait scores, as originally reported by Hughes and Dodd (1961), and comparisons using the A-S vs. E-R profiles on the GPP appear to be worthy of further inventories. While various relationships identified in the present study hint at trait interpretations which differ from those listed in the Gordon manuals, it should be kept in mind that correlations accounted for only a relatively small proportion of the variance in most instances.

Minnesota Teacher Attitude Inventory

It was mentioned above that the MTAI has been the most widely used measure of teacher attitudes and has, in some studies, effectively predicted various criteria of teacher effectiveness. The present study, however, raises a serious questions concerning what it is that the MTAI measures. Variations in scores for this population appear to be a function of the subject's willingness to express his opinions strongly. There is some evidence that this willingness, or unwillingness, is related to a general personality trait. If this is so, the MTAI may be measuring a general personality trait rather than a set of attitudes toward children.

This issue, which should have confronted users of the MTAI since similar results were found by Budd and Blakely (1956), has received little attention in the literature. The two different interpretations of the meaning of MTAI scores have different implications. If "good" teachers have high MTAI scores and this is interpreted as due to democratic, child-centered attitudes, then teacher trainers should select persons with such attitudes or see that they are effectively fostered during training. If, however, "good" teachers have high MTAI scores because they are not cautious and uncertain, then this personality characteristic should be considered in selection and training.

The literature on the MTAI is characterized by the presence of research studies presenting conflicting results. This study and the Budd and Blakely findings may provide a partial explanation for this confusion: that is, the MTAI scores may not be straight-forward attitude measures, but may be confounded with essentially irrelevant

personality variables. If this is the case, then varying experimental conditions or validating criteria would lead to differing results depending on whether the attitude or the personality factor component of the MTAI scores was of major relevance. At any rate, on the basis of the findings of this study, the writer would be reluctant to again use the MTAI in its present form. It is suggested that any attitude scale of this type should consist of many items that differentiate between those subjects who basically agree or disagree with the item statement. When this is not true, as is the case with the MTAI, one can only measure the strength of the subject's position on the items.

Strong Vocational Interest Blank

While the vast majority of data derived from the SVIB has little direct relationship to the practical problem of identifying potentially successful special education teachers, awareness of a student's overall vocational interests may be a particularly meaningful counseling tool. Aside from the assessment of potentially significant personality variables, commitment or interest is perhaps the most important factor to consider in the development of valid selection procedures and an individualized teacher-training program. Even within the seemingly narrow vocational area represented by special education-mental retardation the student must select from among several specific teaching positions, and, ideally, his personal training program should emphasize specific skills needed in the particular job selected. By evaluating the relative strength of a broad range of occupations, the SVIB can be expected to identify potentially significant data about a prospective teacher-trainee.

In the present study, the SVIB clearly differentiated between teaching as a general occupational choice and elementary teaching as a specific occupation. Subjects were extremely interested in teaching, but they were equally uninterested in being elementary teachers. Data suggest a basic difference exists between the vocational interests of special education trainees and elementary teachers--even though elementary teaching is often regarded as the occupational choice closest to special education teaching. This appears to further support the establishment of norms based upon special education students for the selected instruments. As the size of the normative group begun by the present study is increased by future data collection at Michigan State University, additional significant differences between special education trainees and general student populations may emerge which are at present either not apparent or which by chance don't happen to occur in strength within the present sample. Another reason for further exploration of differences in vocational interests is the current requirement at Michigan State University and many other training institutions that undergraduate special education trainees devote a large share of their academic career to fulfilling requirements for an elementary teaching credential--in effect becoming legally qualified for teaching positions in which as a group they are apparently relatively uninterested. Since it appears to have the ability to differentiate the vocational interests of special education trainees, the SVIB could generate data of value to future program development activities. On this basis, it is worthy of inclusion in future research activities similar to the present study.

Other Instruments

The Edwards Personal Preference Schedule (EPPS) and the Allport-Vernon-Lindzey Study Values were not major components of the present study. Initially, their established ability to measure a broad range of personality characteristics was considered significant, since some 23 variables were added to the array of data collected, scored and preserved for future use. As analysis of the Gordon data developed, the EPPS was used chiefly as a tool in the interpretations of Gordon traits which were based upon correlations. These unique interpretations may, in future studies, prove to be meaningful. On this basis, the EPPS adds to the potential utility of studies of this type. However, the AVL must be regarded as of only marginal value at best, since it cannot be shown to have added significantly to the present study.

Limitations and Suggestions for Further Research

The present sample included students in their third and fourth years of university training. Conclusions drawn from these data cannot, therefore, be safely generalized to younger populations. If it were desired to use these instruments as selection devices for incoming Freshmen it would be necessary to gather data on this group. Similarly, students in the present study responded to instructions indicating that the test results would have no effect on their careers. Again, before using these tests for selection it would be necessary to determine the effects on responses of threat and no-threat instructions.

The most obvious follow-up to the present study would be to relate the test scores on these subjects to various criteria of teaching performance in the field. The most relevant criterion, of course, would be a measure of teaching effectiveness. This task has proven to be extremely difficult. A second approach is suggested as a more easily accomplished alternative. Happiness, or satisfaction with the vocation of teaching exceptional children, can be assumed to have some relevance to the skill and mastery which the individual attains. Therefore, measures of job satisfaction may serve as one criterion of success in teaching. This would be true particularly if the job satisfaction could be limited to satisfaction with the classroom interaction itself and not to extraneous variables in the life of the teacher. The index of job dissatisfaction utilized by Bruno (1968) would serve as one measure: namely, withdrawal from teaching because of a dislike for teaching exceptional children.

BIBLIOGRAPHY

BIBLIOGRAPHY

BOOKS

Allport, G., Vernon, P., & Lindzey, G. Study of Values: A Scale for Measuring the Dominant Interests in Personality. New York: Houghton-Mifflin, 1970.

American Psychological Association, Council of Editors. Publication Manual of the American Psychological Assocation. (Revised edition) Washington: American Psychological Association, 1967.

Barr, A. The personal prerequisites to teacher effectiveness. In Barr, A., Worcester, D., Abell, A., Beecher, C., Jensen, L., Peronto, A., Ringness, T., & Schmitc, J. Wisconsin Studies of the Measurement and and Prediction of Teacher Effectiveness. Madison: Dembar Publications, Inc., 1961, 99-106.

Buros, O. (Ed.) The Sixth Mental Measurements Yearbook. Highland Park N.J.: Gryphon Press, 1965.

Campbell, D. Strong Vocational Interest Blanks. (1969 supplement) Stanford: Standford University Press, 1969.

Cook, W., Ledds, C., & Callis, R. The Minnesota Teacher Attitude Inventory. (manual) New York: Psychological Corp., 1965.

Edwards, A. Edwards Personal Preference Schedule. (1959 revision) New York: Psychological Corp., 1959.

Getzels, J., & Jackson, P. The teacher's personality and characteristics. In Gage, N. (Ed.) Handbook of Research on Teaching. Chicago: Rand McNally, 1963, 506-582.

Gordon, L. Gordon Personal Inventory. (manual) New York: Harcourt, Brace & World, 1963a.

Gordon, L. Gordon Personal Profile. (manual) New York: Harcourt, Brace & World, 1963b.

Haring, N., Stern, G., & Cruickshank, W. Attitudes of Educators Toward Exceptional Children. Syracuse: Sycracuse University Press, 1958.

Loree, M. R. Shaping teachers' attitudes. In Smith, B. O. (Ed.) Research in Teacher Education: A Symposium. Englewood Cliffs: Prentice-Hall, 1971, 99-118.

Smith, B. O. (Ed.) Research in Teacher Education: A Symposium. Englewood Cliffs: Prentice-Hall, 1971.

Turabian, K. A Manual for Writers of Term Papers, Theses, and Dissertations. (Third edition) Chicago: University of Chicago Press, 1967.

ARTICLES AND PERIODICALS

Arbuckle, D. Self-ratings and test scores on two standardized personality inventories. Personnel and Guidance Journal, 1958, 37, 292-293.

Badt, M. Attituds of university students toward exceptional children and special education. Exceptional Children, 1967, 23, 286-290, 336.

Braun, J., Alexander, S., & Weiss, R. Relationship between the Gordon Personal Inventory and consensus of peer ratings. Psychological Reports, 1961, 9, 455.

Budd, W., & Blakely, L. Response bias in the Minnesota Teacher Attitude Inventory. Journal of Educational Research, 1958, 51, 707-709.

Callis, R. Change in teacher-pupil attituds related to training and experience. Educational and Psychological Measurement, 1950, 10, 718-727.

Deno, E. Special education as developmental capital. Exceptional Children, 1970, 37, 229-237.

Dunn, L. Special education for the mildly retarded--is much of it justifiable? Exceptional Children, 1968, 35, 5-22.

Gage, N. Logical versus empirical scoring keys: The case of the MTAI. The Journal of Educational Psychology, 1957, 48, 213-216.

Garrison, K., & Scott, M. A comparison of the personal needs of college students preparing to teach in different teaching areas. Educational and Psychological Measurement, 1961, 21, 955-965.

Gottfried, N., & Jones, R. Noncognitive correlates of satisfaction in teaching educable mentally retarded children. Education and Training of the Mentally Retarded, 1970, 5, 37-43.

Hughes, J. Comparison of the validities of trait and profile methods of scoring a personality test for salesmen. Engineering and Industrial Psychology, 1960, 2, 1-7.

Hughes, J., & Dood, W. Validity versus stereotype: Predicting sales performance by ipsative scoring of a personality test. Personnel Psychology, 1961, 14, 343-355.

Johnson, G. O. Special education for the mentally handicapped-- a paradox. Exceptional Children, 1962, 29, 62-69.

Jones, R. Morale of teachers of mentally retarded children: An exploratory investigation. Education and Training of the Mentally Retarded, 1969, 4, 4-10.

Jones, R. Preferences for teaching intellectually exceptional children. Education and Training of the Mentally Retarded, 1971, 6, 43-48.

ARTICLES AND PERIODICALS (cont.)

Jones, R. Research on the special education teacher and special education teaching. Exceptional Children, 1966a, 33, 251-257.

Jones, R. Special education teaching in the occupational structure. Journal of Special Education, 1966b, 1, 67-70.

Jones, R., & Gottfried, N. Preferences and configurations of interest in special class teaching. Exceptional Children, 1962, 28, 371-377.

Jones, R., & Gottfried, N. The prestige of special education. Exceptional Children, 1966a, 32, 465-468.

Jones, R., & Gottfried, N. Psychological needs and preferences for teaching exceptional children. Exceptional Children, 1966b, 32, 313-321.

Jones, R., & Gottfried, N., & Owens, A. The social distance of the exceptional: A study at the high school level. Exceptional Children, 1966, 32, 551-556.

Lilly, M. S. Special education: A teapot in a tempest. Exceptional Children, 1970, 36, 43-49.

Mahoney, S., & Pangrace, I. Misconceptions of college students about mental deficiency. American Journal of Mental Deficiency, 1960, 64, 671-678.

Meisgeier, C. The identification of successful teachers of mentally or physically handicapped children. Exceptional Children, 1965, 32, 229-235.

Meyers, C. Realities in teacher recruitment. Mental Retardation, 1964, 2, 42-46.

Reynolds, M., & Balow, B. Categories and variables in special education. Exceptional Children, 1972, 39, 357-366.

Ringness, T. Relationships between certain attitudes towards teaching and teaching success. Journal of Experimental Education, 1952, 21, 1-55.

Rocchio, P., & Kearney, N. Does a course in mental hygiene help teachers? Understanding the Child, 1956, 25, 91-94.

Sandgren, D., & Schmidt, L. Does practice teaching change attitudes toward teaching? Journal of Educational Research, 1956, 49, 673-680.

Schultz, R., & Ohlsen, M. Interest patterns of best and poorest student teachers. Journal of Educational Sociology, 1955, 29, 108-112.

ARTICLES AND PERIODICALS (cont.)

Semmel, M. Teacher attitudes and information pertaining to mental deficiency: A comparison of regular grade and special class teachers' responses to an attitude-information questionnaire. American Journal of Mental Deficiency, 1959, 63, 566-574.

Sheldon, M., Coade, J., & Copple, R. Concurrent validity of the "warm teacher scales." Journal of Educational Psychology, 1959, 50, 37-40.

Smith, I. Similarity of psychological needs before and after a program for the preparation of teachers for emtionally disturbed children. Exceptional Children, 1968, 34, 754-755.

Tanner, W. Personality bases in teacher selection. The Phi Delta Kappan, 1954, 35, 271-277.

PUBLIC DOCUMENTS

State Plan for the Delivery of Special Education Programs & Services. Lansing: Michigan Department of Education, 1971.

Teacher Certification and Professional Development: Four Position Statements. Lansing: Michigan Department of Education, 1971.

UNPUBLISHED MATERIALS

Bruno, F. "Life values, manifest needs, and vocational interests as factors influencing professional career satisfaction among teachers of emotionally distrubed children." Unpublished doctoral dissertation, Wayne State University, 1968.

Dubson, J. "Predictions of individual student teacher behavior in classrooms for emotionally disturbed children." Unpublished doctoral dissertation, University of Michigan, 1970.

Pernell, E. Predictions of individual student teacher behavior in classrooms for emotionally disturved children. Unpublished doctoral dissertation, University of Michigan, 1971.

Urban, S. A study of the relationship of certain personality and situational variables to job satisfaction in regular elementary teachers and elementary level teachers of the educable mentally retarded in second class school districts in Michigan. Unpublished doctoral dissertation, Michigan State University, 1972.

APPENDIX A

GORDON PERSONAL INVENTORY

GORDON PERSONAL PROFILE

TABLE A-1

GORDON PERSONAL INVENTORY

CAUTIOUSNESS

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
39	1	71	74	98	99
35	2	65	68	95	98
34	3	64	67	91	97
33	3	62	65	86	96
31	3	59	62	81	91
30	3	58	60	77	87
29	6	57	59	67	82
28	2	55	57	64	67
27	5	54	56	56	72
26	4	52	54	50	67
25	3	51	53	45	61
24	5	51	51	38	55
23	2	48	50	34	49
22	2	47	48	31	43
21	2	45	47	28	37
20	2	44	45	25	32
19	1	42	44	23	28
18	2	41	42	20	24
17	4	20	41	14	20
16	1	38	39	13	17
15	2	37	38	9	14
14	1	35	36	8	11
12	1	33	33	6	7
11	1	31	32	5	6
10	1	30	30	3	5
8	1	27	27	2	3
6	1	24	24	1	1

	Sample	Normative
Mean	24.36	23.1
Standard Deviation	7.21	6.6

[1]Source: Manual norms for college women (Gordon, 1963, p. 5)

TABLE A-2

GORDON PERSONAL INVENTORY

ORIGINAL THINKING

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
35	1	70	68	98	97
33	2	66	65	95	94
32	7	64	63	84	92
31	4	61	62	78	89
30	2	59	60	75	86
29	4	57	58	69	82
28	3	55	57	64	77
27	1	53	55	63	71
26	6	51	53	53	65
25	8	49	52	41	58
24	4	46	50	34	51
23	6	44	48	25	44
22	4	42	46	19	37
21	3	40	45	14	31
20	5	38	43	6	25
19	1	36	41	5	20
17	1	32	38	3	14
15	1	27	35	2	10
13	1	23	31	1	6

	Sample	Normative
Mean	25.64	24.1
Standard Deviation	4.75	6.0

[1]Source: Manual norms for college women (Gordon, 1963, p. 5)

TABLE A-3

GORDON PERSONAL INVENTORY

PERSONAL RELATIONS

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
38	1	71	73	98	99
37	1	69	71	97	98
36	1	68	70	95	97
34	3	64	67	91	95
33	2	62	65	88	93
32	3	60	63	83	91
31	4	59	62	77	89
30	4	57	60	70	86
29	6	55	58	61	82
28	5	53	57	53	77
27	2	51	55	50	72
26	4	49	53	44	66
25	6	48	52	34	59
24	4	46	50	28	52
23	1	44	49	27	45
22	5	42	47	19	39
21	2	40	45	16	33
20	3	38	44	11	27
18	3	35	40	6	18
15	4	33	35	1	9

	Sample	Normative
Mean	26.34	23.9
Standard Deviation	5.55	6.1

[1]Source: Manual norms for college women (Gordon, 1963, p. 5)

TABLE A-4

GORDON PERSONAL INVENTORY

VIGOR

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percnetile Ranks Sample	Percnetile Ranks Normative
35	1	70	70	98	99
34	2	68	68	95	98
33	3	66	66	91	97
32	2	64	65	88	95
31	1	62	63	86	92
30	3	60	61	81	89
29	2	58	60	78	85
28	3	56	58	73	80
27	5	54	56	66	75
26	7	52	55	55	69
25	6	50	53	45	62
24	3	48	51	41	56
23	6	46	50	31	50
22	6	44	48	22	44
21	1	42	47	20	38
20	4	40	45	14	32
19	3	38	43	9	27
18	2	36	42	6	22
17	1	34	40	5	18
15	3	30	37	1	12

	Sample	Normative
Mean	24.91	23.1
Standard Deviation	4.90	6.1

[1]Source: Manual norms for college women (Gordon, 1963, p. 5)

TABLE A-5

GORDON PERSONAL PROFILE

ASCENDANCY

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percnetile Ranks Sample	Percnetile Ranks Normative
33	2	69	70	97	99
32	1	68	69	95	98
31	1	66	67	94	97
30	3	64	65	89	95
28	3	61	62	84	88
27	5	59	60	77	83
26	6	57	59	67	77
25	3	56	57	63	71
24	4	54	55	56	65
23	3	52	54	52	59
22	3	51	52	47	52
21	2	49	50	44	44
20	1	47	48	42	37
19	2	46	47	39	31
18	6	44	45	30	27
17	4	42	43	23	23
16	4	40	42	17	19
15	2	39	40	14	15
14	2	37	38	11	12
13	5	35	37	3	9
12	1	34	35	2	7
8	1	27	28	1	3

	Sample	Normative
Mean	21.61	20.9
Standard Deviation	6.00	6.0

[1]Source: Manual norms for college women (Gordon, 1963, p. 5)

TABLE A-6

GORDON PERSONAL PROFILE

RESPONSIBILITY

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
35	1	68	73	98	99
34	1	66	71	97	99
33	4	64	69	91	98
32	3	62	67	86	96
31	3	60	65	81	94
29	8	56	62	69	86
28	7	54	60	58	81
27	6	53	58	48	75
26	3	51	56	44	69
25	4	49	54	38	62
24	2	47	52	34	55
23	4	45	50	28	47
22	4	43	48	22	40
21	3	41	46	17	33
20	3	39	44	13	27
19	1	37	42	11	22
17	1	33	38	9	13
16	3	32	36	5	10
15	1	30	34	3	8
14	1	28	32	2	6
13	1	26	30	1	5

	Sample	Normative
Mean	25.55	23.1
Standard Deviation	5.31	5.1

[1]Source: Manual norms for college women (Gordon, 1963, p. 5)

TABLE A-7

GORDON PERSONAL PROFILE

EMOTIONAL STABILITY

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
35	1	71	71	98	99
33	2	68	68	95	98
31	2	64	65	92	94
30	3	62	63	88	91
29	3	60	62	83	87
28	3	58	60	78	83
27	5	56	58	70	78
26	8	55	57	58	72
25	5	53	55	50	66
24	6	51	53	41	59
23	4	49	52	34	52
22	2	47	50	31	45
21	3	45	49	27	38
20	3	43	47	22	32
19	3	41	45	17	27
18	3	40	44	13	23
17	1	38	42	11	19
16	1	36	40	9	16
15	1	34	39	8	13
14	3	32	37	3	11
13	1	30	35	2	9
7	1	19	36	1	1

	Sample	Normative
Mean	23.69	21.9
Standard Deviation	5.44	6.1

[1]Source: Manual norms for college owmen (Gordon, 1963, p. 5)

TABLE A-8

GORDON PERSONAL PROFILE

SOCIABILITY

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
34	1	71	68	98	98
32	2	67	64	95	93
31	1	66	63	94	90
30	4	64	61	88	86
29	2	62	59	84	81
28	4	61	58	78	76
27	4	59	56	72	70
26	4	57	54	66	64
25	1	56	52	64	57
24	3	54	51	59	51
23	2	52	49	56	45
22	4	51	48	50	39
21	5	49	46	42	33
20	2	47	44	39	28
19	3	45	43	34	24
18	2	54	41	31	20
17	3	42	39	27	17
16	5	40	38	19	14
15	3	39	36	14	11
14	6	37	34	5	9
13	2	35	33	2	7
12	1	34	31	1	5

	Sample	Normative
Mean	21.84	23.4
Standard Deviation	5.95	6.0

[1]Source: Manual norms for college women (Gordon, 1963, p. 5)

APPENDIX B

EDWARDS PERSONAL PREFERENCE SCHEDULE

TABLE B-1

EDWARDS PERSONAL PREFERENCE SCHEDULE

ACHIEVEMENT

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
23	1	73	74	98	99
21	1	71	69	97	97
20	1	68	67	95	96
19	2	66	64	92	93
18	4	63	62	86	90
17	3	61	59	81	84
16	5	58	57	73	79
15	6	56	55	64	72
14	5	53	52	56	64
13	5	51	50	48	58
12	3	48	47	44	47
11	4	45	45	38	36
10	9	43	43	23	27
9	6	40	40	15	19
8	5	38	38	6	13
7	3	35	35	2	8
5	1	30	31	1	3

	Sample	Normative
Mean	12.81	13.08
Standard Deviation	3.98	4.19

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-2

EDWARDS PERSONAL PREFERENCE SCHEDULE

DEFERENCE

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
17	2	71	62	97	91
16	1	68	60	95	85
15	2	65	57	92	80
14	6	61	54	83	73
13	8	58	52	70	62
12	8	54	49	58	50
11	8	51	46	45	41
10	8	47	44	33	29
9	9	44	41	19	21
8	2	40	38	16	14
7	4	37	35	9	9
6	4	34	33	3	6
4	2	27	27	1	2

	Sample	Normative
Mean	10.77	12.40
Standard Deviation	2.94	3.72

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-3

EDWARDS PERSONAL PREFERENCE SCHEDULE

ORDER

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
25	1	83	84	98	99
21	1	74	75	97	99
18	1	68	68	95	96
17	1	66	65	94	95
16	3	64	63	89	91
14	5	59	59	81	83
13	3	57	56	77	77
12	6	55	54	67	72
11	4	53	52	61	64
10	8	51	49	48	55
9	4	49	47	42	46
8	4	46	45	35	37
7	6	44	43	27	28
6	2	42	40	23	20
5	7	40	38	13	14
4	4	38	36	6	9
3	1	36	33	5	5
2	1	34	31	3	3
1	2	32	29	1	1

	Sample	Normative
Mean	9.59	10.24
Standard Deviation	4.70	4.37

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-4

EDWARDS PERSONAL PREFERENCE SCHEDULE

EXHIBITION

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
22	1	75	71	98	99
20	2	69	66	95	96
19	3	66	63	91	92
18	3	63	60	86	88
17	2	60	57	83	82
16	7	58	55	72	73
15	4	55	52	66	63
14	10	52	49	50	52
13	7	49	50	39	42
12	3	46	44	34	30
11	6	43	41	25	21
10	10	40	38	9	15
9	4	37	36	3	10
8	1	34	33	2	6
5	1	25	25	1	1

	Sample	Normative
Mean	13.45	14.28
Standard Deviation	3.43	3.65

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-5

EDWARDS PERSONAL PREFERENCE SCHEDULE

AUTONOMY

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
24	1	72	77	98	99
23	1	69	75	97	99
22	1	67	72	95	99
21	2	65	70	92	98
20	2	62	68	89	97
19	9	60	65	75	96
18	3	58	63	70	92
17	2	56	61	67	87
16	3	53	59	63	82
15	11	51	56	45	77
14	3	52	54	41	70
13	6	46	52	31	62
12	5	44	49	23	53
11	5	42	47	16	45
10	2	39	45	13	36
9	4	37	42	6	28
7	1	35	38	5	13
6	1	32	36	3	9
5	1	28	33	2	6
3	1	23	29	1	1

	Sample	Normative
Mean	14.61	12.29
Standard Deviation	4.41	4.34

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-6

EDWARDS PERSONAL PREFERENCE SCHEDULE

AFFILIATION

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
27	1	72	74	98	99
25	1	68	69	97	98
24	2	65	66	94	96
23	3	63	64	89	94
22	3	61	61	84	90
21	3	59	59	80	84
20	7	57	56	69	77
19	6	54	54	59	68
18	6	52	51	50	58
17	4	50	49	44	50
16	6	48	47	34	41
15	4	45	44	28	32
14	5	43	42	20	24
13	4	41	39	14	17
12	4	39	37	8	12
10	1	34	32	6	4
8	1	30	27	5	2
7	2	28	24	2	1
4	1	21	17	1	1

	Sample	Normative
Mean	17.03	17.40
Standard Deviation	4.57	4.07

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-7

EDWARDS PERSONAL PREFERENCE SCHEDULE

INTRACEPTION

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
28	1	72	73	98	99
27	1	70	71	97	99
26	2	67	68	94	99
25	1	65	66	92	97
24	3	62	64	87	94
23	4	59	62	81	90
22	9	57	60	67	85
21	3	54	58	63	80
20	7	52	56	52	73
19	6	49	62	42	66
18	8	46	51	30	58
17	7	44	49	19	49
16	4	41	47	13	43
15	2	39	45	9	35
14	2	36	43	6	28
13	2	33	41	3	22
10	1	26	34	2	9
7	1	18	28	1	1

	Sample	Normative
Mean	19.36	17.32
Standard Deviation	3.91	4.70

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-8

EDWARDS PERSONAL PREFERENCE SCHEDULE

SUCCORANCE

Scores	N	"T" Values		Percentile Ranks	
		Sample	Normative[1]	Sample	Normative
23	2	73	74	97	99
22	2	71	71	94	99
21	1	68	69	92	98
18	3	62	62	88	90
17	4	60	60	81	86
16	4	58	58	75	81
15	2	55	56	72	76
14	5	53	53	64	67
13	10	51	51	48	59
12	6	49	49	39	51
11	5	47	47	31	44
10	4	44	44	25	33
9	5	42	42	17	25
8	4	40	40	11	18
7	1	38	38	9	13
6	1	36	35	8	9
5	2	34	33	5	6
3	3	29	28	1	1

	Sample	Normative
Mean	12.55	12.53
Standard Deviation	4.64	4.42

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-9

EDWARDS PERSONAL PREFERENCE SCHEDULE

DOMINANCE

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
21	1	71	65	98	95
19	2	67	60	95	87
18	3	64	58	91	83
17	5	62	56	83	74
16	1	60	54	81	67
15	7	57	52	70	59
14	10	55	50	55	51
13	2	52	47	52	42
12	3	50	45	47	36
11	6	47	43	38	28
10	5	45	41	30	23
9	5	43	39	22	17
8	4	40	37	16	11
7	4	38	34	9	9
6	1	36	32	8	5
5	3	33	30	3	3
3	1	29	26	2	1
2	1	26	24	1	1

	Sample	Normative
Mean	12.00	14.18
Standard Deviation	4.24	4.60

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-10

EDWARDS PERSONAL PREFERENCE SCHEDULE

ABASEMENT

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
23	2	71	66	97	96
22	2	69	64	94	93
20	2	64	60	91	86
19	3	62	58	86	81
18	4	60	56	80	74
17	4	58	54	73	66
16	5	56	52	66	58
15	5	53	50	58	51
14	6	51	48	48	45
13	3	49	46	44	37
12	7	46	44	33	31
11	2	44	42	30	25
10	4	42	40	23	19
9	5	40	38	16	14
8	6	38	36	6	11
7	2	35	34	3	7
6	1	33	32	2	4
3	1	26	26	1	1

	Sample	Normative
Mean	13.55	15.11
Standard Deviation	4.52	4.94

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-11

EDWARDS PERSONAL PREFERENCE SCHEDULE

NURTURANCE

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
28	1	73	76	98	99
26	2	69	72	95	99
25	2	66	69	92	99
24	4	64	67	86	97
23	2	61	65	83	95
22	2	60	63	80	91
21	5	57	60	72	87
20	4	55	58	66	82
19	6	53	56	56	74
18	6	51	54	47	66
17	4	48	51	41	58
16	1	46	49	39	50
15	8	44	47	27	41
14	5	41	45	19	32
13	5	39	42	11	26
12	3	37	40	6	20
11	1	35	38	5	14
10	2	32	35	2	9
9	1	30	33	1	6

	Sample	Normative
Mean	17.78	16.42
Standard Deviation	4.48	4.41

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-12

EDWARDS PERSONAL PREFERENCE SCHEDULE

CHANGE

Scores	N	"T" Values		Percentile Ranks	
		Sample	Normative[1]	Sample	Normative
26	4	66	68	94	99
25	1	64	66	92	96
24	5	62	64	84	94
23	4	59	62	78	90
22	3	57	60	73	85
21	9	55	58	59	81
20	7	53	56	48	73
19	3	50	54	44	68
18	3	48	52	39	59
17	5	46	50	31	52
16	6	44	48	22	42
15	6	41	45	13	35
14	2	39	43	9	28
13	2	37	41	6	21
12	1	35	39	5	17
10	1	30	35	3	10
9	1	28	33	2	7
3	1	14	21	1	1

	Sample	Normative
Mean	18.84	17.20
Standard Deviation	4.49	4.87

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-13

EDWARDS PERSONAL PREFERENCE SCHEDULE

ENDURANCE

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
24	1	77	72	98	99
19	3	66	62	94	90
18	3	64	60	89	85
17	2	62	58	86	80
16	2	59	56	83	76
15	8	57	55	70	69
14	5	55	53	63	63
13	3	53	51	58	57
12	8	51	49	45	50
11	7	48	47	34	44
10	4	46	45	28	36
9	3	44	43	23	30
8	2	42	41	20	24
7	3	40	39	16	18
6	2	38	37	13	13
5	3	36	35	8	9
3	4	31	31	2	3
2	1	29	29	1	1

	Sample	Normative
Mean	11.69	12.63
Standard Deviation	4.66	5.19

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-14

EDWARDS PERSONAL PREFERENCE SCHEDULE

HETEROSEXUALITY

Scores	N	"T" Values		Percentile Ranks	
		Sample	Normative	Sample	Normative
26	1	72	72	98	99
24	1	68	68	97	97
23	3	66	66	92	96
21	3	62	62	88	91
20	3	60	61	83	87
19	6	58	59	73	81
18	2	56	57	70	76
17	10	54	55	55	69
16	2	52	53	52	63
15	7	50	51	41	57
14	4	47	49	34	52
13	3	45	48	30	45
12	6	43	46	20	38
11	2	41	44	17	31
10	4	39	42	11	24
8	2	35	38	8	15
7	2	33	36	5	11
6	2	31	34	2	8
2	1	23	27	1	1

	Sample	Normative
Mean	15.19	14.34
Standard Deviation	4.86	5.39

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-15

EDWARDS PERSONAL PREFERENCE SCHEDULE

AGGRESSION

Scores	N	"T" Values		Percentile Ranks	
		Sample	Normative	Sample	Normative
25	1	81	81	98	99
22	1	75	75	97	99
20	1	71	70	95	98
17	2	64	64	92	92
16	2	62	62	89	89
15	3	60	60	84	84
14	6	58	57	75	79
13	4	55	55	69	74
12	6	53	53	59	66
11	9	51	51	45	60
10	5	49	49	38	51
9	1	47	47	36	44
8	4	44	44	30	36
7	5	42	42	22	27
6	5	40	40	14	21
5	4	38	38	8	14
4	2	36	36	5	9
3	2	34	34	2	5
1	1	29	29	1	1

	Sample	Normative
Mean	10.56	10.59
Standard Deviation	4.63	4.61

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-16

EDWARDS PERSONAL PREFERENCE SCHEDULE

CONSISTENCY

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks Sample	Percentile Ranks Normative
15	2	64	68	97	99
14	15	60	63	73	96
13	14	55	57	52	83
12	10	51	51	36	63
11	5	46	46	28	43
10	7	42	40	17	24
9	7	37	35	6	11
8	2	33	29	3	4
6	1	24	18	2	1
4	1	15	7	1	1

	Sample	Normative
Mean	11.81	11.74
Standard Deviation	2.25	1.79

[1]Source: Manual norms for college women (Edwards, 1959, p. 10)

TABLE B-17

GORDON PERSONAL PROFILE AND EDWARDS PERSONAL PREFERENCE SCHEDULE INTERCORRELATIONS

EPPS	Gordon Personal Profile											
	Ascendancy			Responsibility			Emotional Stability			Sociability		
	N[1]	R[2]	W[3]	N	R	W	N	R	W	N	R	W
ACH	-.13	-.01	-.03	.00	-.07	-.03	.07	-.05	-.14	.21	-.26	-.23
DEF	-.19	-.19	-.10	.15	.09	-.04	.08	-.01	-.07	-.16	-.16	-.14
ORD	-.27	-.34	-.29	.35	.23	.16	.14	.05	-.02	-.18	-.22	-.23
EXH	.14	.23	.27	-.12	.07	.00	-.03	.02	.04	.10	.25	.28
AUT	-.03	.27	.18	-.16	-.19	-.13	.08	-.15	-.10	-.23	.10	.09
AFF	.14	.01	.05	.00	.01	.04	.03	.23	.32	.31	.22	.24
INT	.12	.06	.09	-.03	.06	.00	.01	-.02	-.01	.03	-.08	-.10
SUC	-.18	-.18	-.23	-.07	-.10	-.02	-.14	.01	-.01	-.04	-.07	-.05
DOM	.55	.46	.42	.14	-.23	-.12	.16	-.18	-.20	.31	.20	.21
ABA	-.21	-.34	-.31	.15	.17	.15	.14	.01	-.02	-.09	-.10	-.14
NUR	.01	-.04	-.04	-.01	-.13	-.11	-.06	.09	.15	.16	.11	.12
CHG	.13	.01	.18	-.03	-.05	-.15	.14	-.01	.12	.06	.21	.22
END	-.17	-.15	-.12	.39	.37	.27	.06	.09	.16	-.02	-.08	-.09
HET	.11	-.06	-.10	-.12	-.11	.00	-.06	-.01	.00	.08	.06	.02
AGG	.12	.11	.12	-.10	-.11	-.08	-.03	-.14	-.29	.01	-.16	-.19

[1]Normative values (Gordon, 1963b, p. 24)

[2]Regular Gordon Personal Profile scores for sample

[3]Weighted Gordon Personal Profile scores for sample

APPENDIX C

STRONG VOCATIONAL INTEREST BLANK

TABLE C-1

STRONG VOCATIONAL INTEREST BLANK

BASIC INTEREST SCALE: TEACHING

Scores[1]	N	Sample "T" Values	Sample Percentile Ranks
69	4	66	94
67	7	62	83
65	8	58	70
64	6	56	61
62	12	51	42
61	1	49	41
60	5	47	33
59	7	45	22
57	2	41	19
55	4	37	13
54	4	35	6
52	3	31	2
50	1	27	1
		Normative	Sample
Mean		50.00	61.30
Standard Deviation		10.00	4.82

[1]Reported on profile in form of standard scores, (Strong, 1969, p. 8).

TABLE C-2

STRONG VOCATIONAL INTEREST BLANK

OCCUPATIONAL SCALE: ELEMENTARY TEACHER

Scores[1]	N	Sample "T" Values	Sample Percentile Ranks
57	2	69	97
56	1	68	95
55	1	67	94
54	1	66	92
53	1	64	91
51	2	63	88
50	2	62	84
49	2	61	81
48	1	59	80
47	1	58	78
46	1	57	77
45	3	56	72
44	1	55	70
43	4	54	64
42	1	53	63
41	4	52	56
40	4	51	50
39	3	50	45
38	1	49	44
37	4	48	38
36	1	47	36
35	2	45	33
34	3	44	28
33	2	43	25
32	2	42	22
31	4	41	16
30	3	40	11
29	2	39	8
28	1	38	6
26	1	36	5
22	1	31	3
16	2	25	1

	Normative	Sample
Mean	50.00	39.23
Standard Deviation	10.00	9.26

[1]Reported on profile in form of standard scores (Strong, 1969, p. 9)

TABLE C-3

STRONG VOCATIONAL INTEREST BLANK

NONOCCUPATIONAL SCALE: ACADEMIC ACHIEVEMENT

Scores[1]	N	Sample "T" Values	Sample Percentile Ranks
70	1	71	98
69	2	70	95
65	1	66	94
64	2	65	91
63	2	64	88
62	1	64	86
61	1	63	84
58	4	60	78
57	2	59	75
56	1	58	73
55	4	57	67
50	4	52	61
49	2	51	58
48	2	51	55
47	5	49	47
45	1	48	45
44	2	48	42
43	3	46	38
42	4	45	31
41	2	44	28
40	3	43	23
39	2	42	20
37	1	40	19
36	1	39	17
35	4	38	11
34	2	37	8
32	1	36	6
30	1	34	5
29	1	33	3
28	2	32	1

	Normative	Sample
Mean	50.00	47.84
Standard Deviation	10.00	10.98

[1]Reported on profile in form of standard scores (Strong, 1969, p. 9)

TABLE C-4

STRONG VOCATIONAL INTEREST BLANK

NONOCCUPATIONAL SCALE: DIVERSITY OF INTERESTS

Scores[1]	N	Sample "T" Values	Sample Percentile Ranks
75	1	72	98
73	2	70	95
71	2	68	92
67	2	63	89
65	4	61	83
64	2	60	80
62	2	58	77
60	5	56	69
58	4	54	63
56	4	52	56
54	4	50	50
53	5	49	42
51	4	47	36
49	4	45	30
47	4	42	23
45	6	40	14
43	1	38	13
42	3	37	8
40	3	35	3
38	1	33	2
34	1	29	1

	Normative	Sample
Mean	50.00	54.14
Standard Deviation	10.00	9.57

[1]Reported on profile in form of standard scores (Strong, 1969, p. 9)

TABLE C-5

STRONG VOCATIONAL INTEREST BLANK

NONOCCUPATIONAL SCALE:
OCCUPATIONAL INTROVERSION-EXTROVERSION

Scores[1]	N	Sample "T" Values	Sample Percentile Ranks
75	1	74	98
70	1	70	97
66	2	66	94
64	2	65	91
63	3	64	86
62	1	63	84
60	1	61	83
59	2	60	80
58	2	60	77
56	1	58	75
55	2	57	72
54	1	56	70
53	1	55	69
52	3	54	64
51	1	54	63
50	2	53	59
49	1	52	58
47	3	50	53
46	2	49	50
44	2	48	47
43	1	47	45
42	6	46	36
41	1	45	34
40	1	44	33
39	3	43	28
38	3	42	23
37	2	42	20
36	3	41	16
35	1	40	14
34	1	39	13
33	2	38	9
32	1	37	8
31	1	36	6
30	1	36	5
28	1	34	3
26	2	32	1
		Normative	Sample
Mean		50.00	46.83
Standard Deviation		10.00	11.75

[1]Reported on profile in form of standard scores (Strong, 1969, p. 9)

APPENDIX D

ALLPORT-VERNON-LINDZEY

STUDY OF VALUES

TABLE D-1

ALLPORT-VERNON-LINDZEY STUDY OF VALUES

THEORETICAL

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks[2]
49	1	70	68	98
48	1	69	67	97
47	1	67	66	95
46	2	65	64	92
44	5	62	61	84
43	4	61	60	78
42	3	59	59	73
41	1	57	57	72
40	3	56	56	67
39	2	54	55	64
38	5	53	53	56
37	3	51	52	52
36	4	50	50	45
35	4	48	49	39
34	3	46	48	34
33	1	45	46	33
32	3	43	45	28
31	3	42	43	23
30	5	40	42	16
29	2	38	41	13
28	2	37	39	9
27	3	35	38	5
25	1	32	35	3
24	2	31	34	1

	Sample	Normative
Mean	36.25	35.75
Standard Deviation	6.39	7.19

[1]Source: Manual norms for college women (Allport, Vernon, Lindzey, 1970, p. 12)

[2]Obtained values: no normative percentile ranks available

TABLE D-2

ALLPORT-VERNON-LINDZEY STUDY OF VALUES

ECONOMIC

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks[2]
49	1	70	65	98
47	1	69	63	97
46	1	67	61	95
45	2	65	60	92
44	1	63	58	91
43	3	62	57	86
42	2	60	56	83
41	7	58	54	72
40	4	57	53	66
39	3	55	52	61
38	3	53	50	56
37	2	51	49	53
36	7	50	47	42
35	2	48	46	39
34	3	46	45	34
33	2	45	43	31
32	4	43	42	25
31	4	41	41	19
30	1	39	39	17
29	4	38	38	11
28	2	36	36	8
27	2	34	35	5
26	1	33	34	3
25	1	31	32	2
23	1	28	30	1

	Sample	Normative
Mean	36.14	37.87
Standard Deviation	5.94	7.30

[1]Source: Manual norms for college women (Allport, Vernon, Lindzey, 1970, p. 12)

[2]Obtained values: no normative percentile ranks available

TABLE D-3

ALLPORT-VERNON-LINDZEY STUDY OF VALUES

AESTHETIC

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks[2]
59	1	72	70	98
55	2	66	65	95
54	1	64	64	94
53	4	63	62	88
52	1	61	61	86
51	4	60	60	80
50	1	58	59	78
49	4	57	58	72
48	3	55	56	67
47	6	54	55	58
46	5	52	54	50
45	6	51	53	41
44	2	49	52	38
43	3	47	50	33
42	4	46	49	27
41	3	44	48	22
40	2	43	47	19
39	3	41	46	14
38	1	40	44	13
36	2	37	42	9
34	1	34	40	8
32	2	31	37	5
31	1	29	36	3
30	1	28	35	2
28	1	25	32	1

	Sample	Normative
Mean	44.77	42.67
Standard Deviation	6.55	8.34

[1]Source: Manual norms for college women (Allport, Vernon, Lindzey, 1970, p. 12)

[2]Obtained values: no normative percentile ranks available

TABLE D-4

ALLPORT-VERNON-LINDZEY STUDY OF VALUES

SOCIAL

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks[2]
60	3	65	76	95
58	7	62	73	84
57	1	61	71	83
56	5	60	70	75
55	3	58	68	70
54	2	57	67	67
53	3	55	66	63
52	2	54	64	59
51	5	53	63	52
50	1	51	61	50
49	4	50	60	44
48	4	48	59	38
47	4	47	57	31
46	3	46	56	27
45	2	44	54	23
43	2	41	51	20
42	1	40	50	19
41	3	39	49	14
40	1	37	47	13
39	1	36	46	11
38	2	34	44	8
36	1	32	41	6
34	2	29	39	3
33	2	27	37	1

	Sample	Normative
Mean	49.13	42.03
Standard Deviation	7.38	7.02

[1]Source: Manual norms for college women (Allport, Vernon, Lindzey, 1970, p. 12)

[2]Obtained values: no normative percentile ranks available

TABLE D-5

ALLPORT-VERNON-LINDZEY STUDY OF VALUES

POLITICAL

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks[2]
53	1	77	74	98
50	1	72	69	97
49	1	70	68	95
47	2	67	65	92
46	1	65	63	91
45	1	63	61	89
44	2	62	60	86
43	2	60	58	83
42	5	58	57	75
41	1	56	55	73
40	2	55	53	70
39	4	53	52	64
38	4	51	50	58
37	4	50	49	52
36	9	48	47	38
35	3	46	45	33
34	6	44	44	23
33	6	43	42	14
31	2	39	39	11
30	1	38	37	9
29	2	36	36	6
28	1	34	34	5
27	1	32	33	3
25	1	29	29	2
23	1	26	26	1

	Sample	Normative
Mean	37.22	37.84
Standard Deviation	5.91	6.23

[1]Source: Manual norms for college women (Allport, Vernon, Lindzey, 1970, p. 12)

[2]Obtained value: no normative percentile ranks available

TABLE D-6

ALLPORT-VERNON-LINDZEY STUDY OF VALUES

RELIGIOUS

Scores	N	"T" Values Sample	"T" Values Normative[1]	Percentile Ranks[2]
59	1	76	66	98
56	1	72	63	97
52	1	68	59	95
50	2	66	57	92
48	1	63	54	91
47	3	62	53	86
46	2	61	52	83
45	3	60	51	78
43	1	58	49	77
42	3	57	48	72
41	1	56	47	70
40	2	54	46	67
39	2	53	45	64
38	2	52	44	61
37	3	51	43	56
36	6	50	42	47
35	1	49	41	45
34	3	48	40	41
33	3	47	38	36
32	1	45	37	34
31	2	44	36	31
30	6	43	35	22
28	1	41	33	20
27	2	40	32	17
26	2	39	31	14
25	3	38	30	9
24	2	37	29	6
23	1	35	28	5
22	1	34	27	3
19	1	31	24	2
18	1	30	23	1

	Sample	Normative
Mean	35.98	43.81
Standard Deviation	9.04	9.40

[1]Source: Manual norms for college women (Allport, Vernon, Lindzey, 1970, p. 12)

[2]Obtained values: no normative percentile ranks available

APPENDIX E

MINNESOTA TEACHER ATTITUDE INVENTORY

TABLE E-1

MINNESOTA TEACHER ATTITUDE INVENTORY

Scores	N	"T" Values Sample	Percentile Ranks Sample	El. Ed. Srs.	Exp. Tchrs.
96	1	68	98	75	
94	2	67	95	70	
90	1	64	94		
89	1	63	92		
88	1	63	91	60	80
87	1	62	89		
86	1	62	88		
85	1	61	86		
84	2	60	83		
83	2	60	80		
82	3	59	75	50	75
81	1	59	73		
80	1	58	72		
79	1	57	70		70
78	3	57	66		
76	3	56	61		
75	2	55	58		
73	2	54	55	40	
69	2	51	52		
68	2	51	48		
66	2	49	45		
65	1	49	44		
63	2	47	41	30	
62	1	47	39		
61	1	46	38		50
59	1	45	36	25	
58	2	44	33		
57	2	44	30		
55	3	43	25	20	
54	1	42	23		
53	4	41	17		
50	3	39	13		
48	1	38	11		40
47	1	38	9		
41	2	34	6	10	
39	1	33	5		
38	1	32	3		
35	1	30	2		25
27	1	25	1	5	

	Sample	El. Ed. Srs.	Exp. Tchrs.
Mean	67.08	77.4	55.1
Standard Deviation	16.46	24.7	36.7

[1]Source: Manual norms for (a) graduating seniors in elementary education and (b) experienced elementary teachers in systems employing 21 or more teachers (Cook, Leeds, & Callis, 1965, pp. 8-9)

MICHIGAN STATE UNIV. LIBRARIES
31293104173558