

A COMPARATIVE ANALYSIS OF PERSONALITY CHARACTERISTICS OF
INDUSTRIAL ARTS TEACHERS IN THE UNITED STATES

by

George Robert Herbert

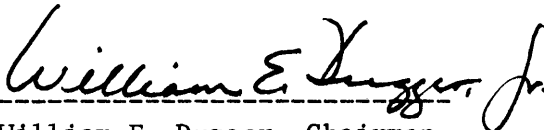
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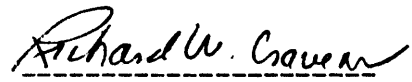
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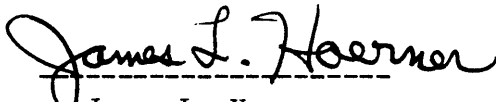
William E. Dugger, Chairman




E. Allen Bame



Richard W. Cravens



James L. Hoerner



Lee M. Wolfle

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Blacksburg, Virginia

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Chapter 1

INTRODUCTION

The pursuit of quality education has been the goal of educators, parents, psychologists, and students for many years. Many approaches have been tried in an effort to improve the learning process in schools.

A critical factor to most educational endeavors is the teacher. How the teacher views the profession and his or her role in life affects students' behavior and learning (Anderson, 1972; Stanton, 1973).

As in most occupations, persons employed as teachers achieve varying degrees of success. Some are dissatisfied, frustrated, and disappointed while others thrive on the satisfaction which comes from daily contacts with students. Personality and motivational characteristics appear to be predominant factors in deciding whether one chooses teaching for a career or finds fulfillment, satisfaction, and success in another profession or occupation (Baranyai, 1955; Anderson, 1969; Hamachek, 1968). David Ausubel makes this point most concisely in discussing the teacher's personal commitment to the intellectual development of students:

It determines in large measure whether the teacher will use the necessary effort to teach for real gains in the intellectual growth of pupils, or will merely go through the formal motions of teaching (Ausubel, 1968:412).

Dr. Ernest L. Minelli, Vice Provost for Instruction and Research, Central Michigan University, cited the need for industrial arts educators (Minelli, 1972:73). He felt that such a teacher should be:

Mature, intelligent, insightful, and ingenious--a universal man possessing a professional, liberal, and specialized education.

Student oriented--must know the student's needs and be able to bring about changes in his behavior.

An instructional specialist--familiar with the latest instructional media, able to perform with a high degree of efficiency, employing instructional techniques with great precision.

A versatile person--able to function under a variety of circumstances and in a constantly changing instructional setting.

Skilled in the identification and development of specifically measurable objectives that reflect student needs in the cognitive, affective and psychomotor domains.

Skilled in designing learning experiences and evaluating student progress.

Capable of working cooperatively with others as a team planner and teacher.

A super realist--with up-to-date knowledge of the world of work.

This call for industrial arts teachers implies that new procedures are needed for identifying potential teachers as well as for training prospective teachers.

The remaking of American public education requires, and indeed will not be possible without, fundamental changes in the education of teachers without, in a sense, the creation of a new breed of teacher-educator, educated to self scrutiny and to serious thought about purpose (Silberman, 1970:374).

Differences in teaching characteristics and job satisfaction may be related to teacher personality variables. Research findings suggest that improvement of the teacher may depend more on changes related to personality factors than on those involving classroom procedures (Sherman, 1975; Hamachek, 1968).

Bonfadini (1975:144) stated:

The overall factors associated with the student rating scores of individual student teachers appeared to be associated with elements of the student teachers' personality. Also certain personality characteristics in teachers appear to be more important to influencing positive student behaviors.

The problem then was: Can distinguishable characteristics be readily identified in industrial arts teachers?

The present study was concerned with the relationships of personality in industrial arts teaching. Recognition was made of the fact that not only are personality behavioral dimensions multivariate in nature but serve the industrial arts teaching situations commonly found in various educational settings in the United States.

NEED FOR THE STUDY

The primary need for this study was that because little current research has been compiled dealing with the general personality profiles of practicing industrial arts teachers and that research studies dealing with personality and industrial arts students (Crist, 1961; Vacek, 1962; Nelson, 1963; Messman, 1963) and teachers of industrial arts (Monroe, 1960; Morgan, 1961) were conducted during the early sixties. It is important that this research be updated in this area. It was also imperative that this research be completed involving the American Industrial Arts Association teacher of the year recipients who are potentially a great source of untapped knowledge about the makeup and complexity of the industrial arts teacher.

It was also felt that teacher educators might benefit from the knowledge of the relationship of psychological tests and industrial arts teaching for program planning, counseling and advising of prospective industrial arts teachers, as well as in planning and developing in-service

teacher education programs for industrial arts teachers. However, little research has been conducted to determine that personality tests can be used to provide information which might help in the selection and recruitment of industrial arts teachers (Monroe, 1960; Morgan, 1961). This investigation, therefore, has provided the basis for further study of the psychology of personality as it relates to industrial arts education.

STATEMENT OF THE PROBLEM

This study was concerned with the personality variables of a group of industrial arts teachers and their relationship to teaching. Persons in a given occupation have been found to have patterns of interests and personality variables peculiar to the group (Holland, 1963; Cattell, 1965; Lovinger, 1957; Strom, 1970).

The purpose of this study was: (1) to develop a current personality profile for the industrial arts teacher, (2) to assess relationships between certain personality variables of a group (A) of American Industrial Arts Association teacher of the year recipients in the United States and a national group (B) of randomly selected industrial arts teachers, and (3) to compare these groups demographically in terms of:

- a. age
- b. highest degree earned
- c. years teaching experience
- d. marital status

- e. number of own children
- f. major grade level
- g. type of laboratory
- h. major industrial arts area taught
- i. size of school
- j. size of community
- k. job satisfaction

This study attempted to answer the following questions:

1. Did the industrial arts teachers who form the population of this study have, as two groups (A and B), mean scores of personality variables as measured on the Personality Research Form (PRF) (Appendix D) by Douglas N. Jackson and others and published by the Research Psychologists Press, Inc. (1966-68), which differentiate them from the normative group for the PRF?
2. Was there a difference in mean scores, as determined by the statistical analysis of data derived from the application of the Personality Research Form, between the American Industrial Arts Association teacher of the year recipients and the randomly selected group of industrial arts teachers?
3. Was there a difference between the (A) group of AIAA teachers of the year recipients and the national (B) group of randomly selected industrial arts teachers on the demographic variables?

ASSUMPTIONS

The researcher made the following assumptions with regard to this investigation:

1. The Personality Research Form can measure the personality variables of people (Jackson, 1974).

2. The American Industrial Arts Association teacher of the year recipients, as a group, have manifest needs which can be differentiated from those of the entire population of industrial arts teachers by using the Personality Research Form.

LIMITATIONS

1. This study was limited to the personality variables or psychological factors measured by the Personality Research Form (PRF) (See Chapter 3, Table 1, pages 42-44, Personality Research Form Scales).

2. The subject groups were limited to the (A) group of AIAA teachers of the year recipients and the national (B) group of randomly selected industrial arts teachers.

3. The demographic variables were limited to:

- a. age
- b. highest degree earned
- c. years teaching experience
- d. marital status
- e. number of own children
- f. major grade level
- g. type of laboratory
- h. major industrial arts area taught

- i. size of school
- j. size of community
- k. job satisfaction

DEFINITIONS

The following meanings are assigned to the terms used in this study:

Affectivity--sensitivity to emotional stimuli; tendency to make a pretense of being, feeling, liking, or emotional responses (Webster, 1966:24).

Cognition--the process of knowing or perceiving; perception; anything that is known or perceived (Webster, 1966:284).

Cognition--the act or faculty of striving or making an effort (Webster, 1966:284).

Industrial Arts--those phases of general education which deal with industry--its organization, materials, occupations, processes, and products--and with the problems resulting from the industrial and technological nature of society (Wilber, 1954:2).

The Industrial arts program is concerned with common learning needed by all persons to function effectively in our industrial-technological society; the development of attitudes, interests, abilities, and skills, as well as the acquisition of information about occupations and professions. The program includes problem-solving techniques, an activity approach, the interpretation of humanistic values, appreciations and understandings, and provisions for essential individual success (American Council of Industrial Arts Supervisors and the American Industrial Arts Association, 1971:3).

Industrial arts teacher--person who is employed full time to teach one or more of the industrial arts subject areas in elementary, junior, or senior high school.

Manifest needs--a need that is discernible from behavior or one that causes overt behavior (Murray, 1938:111).

Personality variable--one of twenty sections or divisions of the inner organization of integration of cognition, cognition, and affectivity of an individual which the Personality Research Form was designed to measure. The twenty personality variables are abasement, achievement, affiliation, aggression, autonomy, change, cognitive structure, defence, dominance, endurance, exhibition, harmavoidance, impulsivity, nurturance, order, play, sentience, social recognition, succorance, and understanding (Jackson, 1974:4-7).

Elementary school--that primary grade level indicated by specific school system as either 1-2-3-4-5-6 depending on local districts' arrangements.

Secondary school--combination of middle and senior high school.

Senior high school--those secondary grades usually 9-10-11-12 or combination designated by local school districts as senior high school.

SUMMARY

This study represented one of the steps in the total assessment of the industrial arts teacher. It has involved a group of American

Industrial Arts Association teacher of the year recipients, who have not been studied as of this writing, and a national group of randomly selected industrial arts teachers. The intention of this study was to assess and identify those characteristics which were identifiable to the two groups.

The need for the study and statement of the problem were presented with researchable questions. Clearly defined limitations and assumptions were provided in this chapter, and these limitations provided the necessary parameters for conducting this research.

This chapter also provided the reader with a list of terms incorporated in the body of this research. These definitions served as a glossary for the reader and were appropriate terms used by various agencies involved.

Chapter 2

REVIEW OF THE LITERATURE

INTRODUCTION

The writer's point of view in relation to this study was that a clear understanding of the industrial arts teacher's personality traits and characteristics was necessary to discover their relationship to the teacher's degree level, age, marital status, number of own children, instructional area, size of school employed in, type of community employed in, and level of satisfaction with industrial arts teaching as a profession.

The areas of concern in the review of the literature for this study were identified through the literature in the following manner:

1. Personality and the Industrial Arts Student
2. Teacher-Student Attitudes
3. Teacher and Teaching Characteristics
4. Personality and the Teacher
5. Personality and Vocational Preference.

PERSONALITY AND THE INDUSTRIAL ARTS STUDENT

Crist (1961), Vacek (1962), and Messman (1963) found that differentiation could be made on a basis of certain personality variables peculiar to industrial arts students. Their studies incorporated

the use of the Edwards Personal Preference Schedule to determine the need variables of college seniors and freshman industrial arts majors in comparison to Edward's normative group of college men.

Their conclusions were that differentiation could be made between freshman industrial arts majors and other major freshman groups, such as, business education, humanities education, mathematics education, music education, science education, and social studies education. They also concluded that differentiation could be made between the least successful and most successful industrial arts majors.

The industrial arts students were found to have higher mean scores (than the normative group) which were significant at the .05 alpha level on three variables: deference, order, and endurance. The normative group of college men have higher mean scores (than the I.A. majors), .05 alpha level, on six variables: exhibition, autonomy, succorance, dominance, change, and heterosexuality.

Nelson (1963) concluded the EPPS: would effectively aid in the guidance of incoming college freshmen for a major in industrial arts education; that it can be used as an instrument for predicting success in teaching industrial arts; it can be used as an instrument for differentiating industrial arts personnel from the normative group of college men; and should not be used as an instrument for predicting academic success in the area of industrial arts.

Bonfadini (1976:149) concluded there are certain personality characteristics in student teachers which appear to be important to influencing positive student behavior. He asks the question: "Can

these characteristics be readily identified in prospective freshman education majors?"

In reference to the preceding review of literature, the answer then would have to be, yes. However, the need for current studies in this area are evident.

TEACHER-STUDENT ATTITUDE

Attitudes of teachers remaining in the teaching profession as compared to those leaving the profession were found significantly different. In a study of the comparison of the professional attitudes of active industrial education teachers to those who leave the profession, Anderson (1969) found the reasons for leaving the profession were:

1. poor salary
2. lack of commitment to the profession
3. falseness of the school situation
4. the inadequacy of being employed for only ten months of the year.

A study conducted in the Detroit public schools found that favorable adjustment responses were associated more frequently with older teachers and that higher morale was associated with higher levels of formal education (Baranyai, 1955). A positive professional attitude was also associated with having had student teaching. The overall professional adjustment was related to personality factors, quality of administration, and quality of physical facilities.

In an analysis of the interrelationships of selected psychological characteristics inherent to vocational industrial teachers, Gelina (1972) using the Minnesota Teacher Attitude Inventory (MTAI) and the Study of Values and Work Values Inventory concluded that there is a strong relationship between attitudes and values of vocational industrial teachers. "Teaching attitude is an important variable in the make up of the total teacher" (Gelina, 1972:197).

Windham (1972) found industrial arts teachers to be significantly (.01 alpha level) more traditional in attitudes than supervisors or college instructors. He found the teachers to have more innovative attitudes if they belonged to and participated in the industrial arts professional organizations. Ninety-one percent of the teachers in Lee's (1972) study were found to be generally satisfied with their profession of industrial arts teaching.

TEACHER AND TEACHING CHARACTERISTICS

The area of teaching characteristics as presented here was intended merely to support the notion that positive teaching characteristics are related to personality variables. For instance, in 1971 a student opinionnaire was administered to five hundred high and low achieving students in grades nine through twelve in schools of varied types in the states of Colorado, Illinois, Indiana, Iowa, and Missouri (Buser, 1974). The schools were selected because of their setting: rural, small city, large urban, suburban, and large city.

Buser (1974) concluded: The high school students of this study regardless of achievement level preferred (and maybe even respected) those teachers who:

1. are knowledgeable about their subject
2. have a sense of humor
3. are tolerant with students
4. listen to students
5. are interested in students as individuals
6. are free and open with students
7. are warm and friendly with students.

Additionally teachers' dress, appearance, age, and sex are likely to continue to be of greater concern to administrators, teaching colleagues, school boards, and parents than to students.

These general characteristics tend to agree with those of Bobell (1973) who had vocational industrial high school seniors rank teacher traits. Bobell's study identified thirty-six teacher trait statements representing personality, attitude, and technical skills. The teacher traits most desired and ranked highest were:

1. democratic
2. patient
3. communicative techniques
4. knowledgeable of his/her subject matter
5. courteous, helpful, friendly and has the ability to listen to students
6. informative

7. sense of humor
8. cleanliness
9. orderly

A third but somewhat different approach to defining teaching characteristics was directed by Warren W. Starr (1974). He used the Delphi technique to select the competency statements which should be included in the profile of an effectively coping first year teacher. Starr (1974) concluded by presenting twenty-three items which were subdivided into three areas as follows:

Knowledge--A coping first year teacher must have a demonstrable knowledge of:

1. instructional materials
2. instructional methods
3. classroom (environment) management techniques
4. human learning processes
5. child growth and development
6. school building policy
7. motivational techniques
8. positive disciplinary techniques

Skill--A coping first year teacher must:

1. set reasonable behavior standards
2. effectively enforce behavior standards
3. maintain personal health and vitality
4. be truthful when communicating with people
5. be considerate

6. be self-confident
7. demonstrate courteous moral behavior
8. demonstrate interest in pupils and their progress
9. be enthusiastic when working with children

Behavior--A coping first year teacher must be able to:

1. assess student achievement levels
2. provide for individual learning
3. organize for instruction
4. be flexible in use of plans
5. relate well with others
6. think of students as individuals

Weber (1967) indicated his agreement with the above characteristics as they apply to industrial arts teachers. Weber stated:

The industrial arts teacher should have to respond in the affirmative to the following: Does he like to work with people, particularly young people? Do people like to work with him? Does he enjoy helping his classmates? Is he active in youth groups, scouts, church school and similar group activities (1967:38)?

Weber believes that no matter how brilliant a scholar or how expert a craftsman the industrial arts teacher will not be satisfied unless he/she finds a genuine joy in showing how it is done and in guiding other people as they learn.

A survey of 264 public school teachers and administrators in the state of Delaware was conducted by Jenkins and Bausell (1974), which resulted in the following conclusions. A rank order of the criteria used to assess teaching follows:

1. Relationship with the class (good rapport)
2. Willingness to be flexible, to be direct or indirect as the situation demands
3. Effectiveness in controlling the class
4. Capacity to perceive the world from the student's point of view
5. Personal adjustment and character
6. Influence on student behavior
7. Knowledge of subject matter and related areas
8. Ability to personalize teaching
9. Extent to which his verbal behavior in the classroom is student oriented
10. Extent to which he uses inductive (discovery) methods.

It is interesting to observe the commonalities throughout the lists, personal amenities, knowledge of subject, ability to cope with discipline, personal-social skills and attitude. Personality then is, to a large extent, incorporated in the above characteristics.

While assessing the characteristics of teachers of secondary mathematics, Robitaille (1975) found highly effective teachers to be significantly higher on the variables; age, number of years teaching experience, percent of time teaching mathematics as opposed to any other discipline, the number of years since the undergraduate degree had been received, the scores on the Contemporary Mathematics Test, the adjective check list, the Teaching Situation Reaction Test, the Minnesota Teacher Attitude Inventory, and satisfaction with teaching.

PERSONALITY AND THE TEACHER

The emphasis upon the teacher's personality is not a new idea by any means. In what was probably the most exhaustive study of teacher behavior yet undertaken, David Ryans (1964) began with a detailed study of teaching procedures, skills, and methodology, but finished by placing emphasis upon highly personal characteristics. From the mass of data he collected, Ryans was able to abstract only three major dimensions of teacher behavior:

- Pattern X₀ Friendly, understanding, sympathetic versus aloof, egocentric, restricted teacher behavior.
- Pattern Y₀ Responsible, systematic, businesslike, versus unplanned, slipshod teacher behavior.
- Pattern Z₀ Stimulating, imaginative, surging versus dull, routine teacher behavior.

It is hard to interpret these dimensions in terms of competencies or specific teaching skills. Rather they are integral aspects of personality, characteristics of the way a person operates over a wide range of human experience, not just in a teaching situation. Perceptual organization rather than an emphasis on competencies is reflected in other behaviors reported by Ryan. For example, outstanding teachers tend to: "manifest extreme generosity in appraisals of the behavior and motives of other persons" (Ryans, 1964:76).

This finding--that it is more what a person is, rather than what he/she does that is important to the full development of his pupils--is supported by other studies (Hughes, 1962).

Lortie (1973) stated that Harvey, White, Prather, and Hoffmeister (1968) indicated that present evidence that teacher beliefs, arrayed on the continuum of abstract to concrete, are associated with different levels of performance. Cogan (1963) relates the capacity of the teacher to be "inclusive" to student willingness to expand learning effort. Hart (1965) shows that socially mobile teachers are harder on lower class students. Lortie (1973:114) concludes: "Social characteristics may be more important than we currently believe particularly in terms of matching teachers and students."

Flanagan (1961) compared Minnesota Multiphasic Personality Inventory (MMPI) scores of 147 female teachers with ratings made in four categories of teaching by supervisors. A high coding of Hy (hysteria) was positively related to supervisor ratings of teachers. Bowers and Soar (1962) also found Hy to be a useful predictor of teaching when using the MMPI, and in addition, the scale psychasthenia. Flanagan (1961:353) concluded that ". . . the MMPI has potential usefulness in aiding in the prediction of the success of (teachers)." In this same area of research can be placed studies which made use of the Minnesota Teacher Attitude Inventory (MTAI) test of teacher attitudes. Ellis (1961) and Munro (1964) both compared MTAI scores with ratings by either principals or supervisors. Although some correlations were statistically significant, Munro (1961:139) stated: "The magnitude of the coefficients . . . suggests that making predictions based on MTAI scores would be an extremely hazardous undertaking." Ellis (1964:28) concluded: ". . . none of the factors

herein considered are determinative in predicting outstanding teachers of the social studies." To these conclusions Lawler (1964:86) added, after comparing principals' ratings with pupil achievement: "Principals were not good raters of teacher efficiency." Lawler's conclusion was reached after comparing the academic progress of 294 fifth-grade classes who were taught by 98 teachers. However, Lawler raised some questions about his use of academic progress as a criterion of teaching because he was able to document cases of variability in progress of classes under the same teacher.

Medley (1961) administered the Edwards Personal Preference Schedule to ninety-one female student teachers. Several months later pupil reactions were collected and used as a measure of pupil-teacher rapport. There were no relationships between personality and rapport scores when the data from all teachers were analyzed. When the scores on all but twenty-five teachers were discarded on the basis that they scored high on the "consistent" scale suggesting insincere responses, certain correlations became significant. Those teachers with the best rapport scores expressed a greater need to understand others, to analyze their own motives, to be successful, to feel guilty and accept blame when wrong, to attack contrary points of view, to blame others when things go badly, and to be timid in the presence of superiors.

Flanders, Morrison, and Brode (1968) reported that loss in positive attitude toward teacher and school was not related to intelligence, socioeconomic status or grade assignment but was due

to the externability-internability dimension of personality. There was a greater negative shift in attitude of students who thought that their degrees of success was determined by sources beyond their control (external) than students who believed that their success or failure was self-determined (internal). Goldberg (1968) investigated the extent to which students' perceptions of teachers' behavior are influenced by students' own attitudes. He found that highly compulsive students perceived teachers as less authoritarian than did less compulsive students, and those students who differed on measures of authoritarian and flexible attitudes did not perceive teachers differentially.

There were a few studies dealing with industrial arts teachers and personality. The results of the study by Monroe (1960) showed that the Edwards Personal Preference Schedule tended to differentiate between industrial arts teachers and the normative group of college men and between the most successful industrial arts teachers and the least successful industrial arts teachers. In a pattern analysis of the scores on the EPPS, the schedule tended to differentiate between most successful industrial arts teachers and least successful industrial arts teachers.

A study completed by Crist (1961) used senior industrial arts majors in four mid-western teacher education colleges. Crist found that the industrial arts majors tended to have the same differentiation of need variables as the industrial arts teachers studied by Monroe (1960).

Morgan (1961) found the industrial arts teachers to have the same need variables, deference, order and endurance, as were prominent in the studies of industrial arts teachers done by Monroe (1960) and industrial arts majors done by Crist (1961).

The overpowering difficulty with these studies is in the use of t-test of means on multivariable lists comprising the scales of the Edwards Personal Preference Schedule. These data were multi-dimensional in nature and univariate statistics were applied rather than multivariate statistical analysis. It is for this reason that some reservations are held toward the total acceptance of these results.

Morgan's study dealt with a sample of ninety-three industrial arts teachers employed as full-time elementary, junior, or senior high school industrial arts instructors of a large mid-western city school system, with a combined enrollment of 83,606 students. His return rate was seventy-one for a 76.3 percent response. Through the use of supervisory evaluations of the industrial arts teachers, Morgan identified fifteen most successful and ten least successful industrial arts teachers. By the use of t-test procedures the normative group of college men had significantly higher (.05 level) mean scores in six variables than the industrial arts teachers: exhibition, autonomy, succorance, dominance, change, and heterosexuality (Morgan, 1961).

Monroe (1960) and Morgan (1961) found four variables which discriminated significantly (t-test .05 level) between the most

successful and least successful industrial arts teachers. Achievement and dominance were significantly higher for the successful group of industrial arts teachers, whereas, abasement and nurturance had a mean score significantly higher for the least successful group.

Unfortunately the two studies, Monroe (1960) and Morgan (1961), are the only two available on personality and industrial arts teaching.

The following studies give some further insight into the problem.

Krueger (1974) directed a very extension project funded through the Office of Education (OHEW) to investigate personality and music teaching success. The success criteria investigated were class mean residual gain scores of pupils and teacher ratings by pupils, building principals, supervisors, peers, and teachers themselves.

The problems considered by Krueger (1974) were the relationships among the success criteria, the relationships and interrelationships of the personality variables and motivational variables, personality profiles for successful and unsuccessful male and female music educators, and the implications of the use of personality measures for counseling and advising undergraduate music education students. The subjects of the study were 209 music educators and 73 music student teachers. Multiple regression and discriminant function analysis investigated the relationships. Significant relationships beyond the .05 alpha level were found and cross validated between the motivational variables measured by the Motivation Analysis Test and the gain and gain plus rating criteria. The relationships

between the 16 PF test and the four criterion variables were significant but did not cross validate. There were significant profile differences beyond the .05 level between successful and unsuccessful groups of male and female music educators for both personality trait and motivational variables when stratified for both gain and rating criteria.

Krueger (1974) concluded that by partitioning the sample into homogeneous teacher groups, the size of the multiple correlation coefficients was made larger. Combining this information with the profile analysis which also generated large multiple R's, Krueger (1974:335) stated:

Evidence exists that personality and motivational variables are related to music teaching success. The profile analysis include multiple correlation coefficients ranging from $R=.45$ to $R=.72$, which indicates that between 20 and 52 percent of the variance in the profile could be attributed to personality and motivational variables.

By examining the profiles of music educators who had high scores on student gain and ratings the successful male is more intelligent, stubborn, imaginative, apprehensive, socially precise, unconsciously defensive and hostile, interested in his career as well as being interested in accomplishing things, than is the unsuccessful male music teacher who is somewhat less enthusiastic, conscientious, highly suspicious, imaginative, unconsciously interested in his career, has unsatisfied drive toward security, and is generally defensive and hostile.

The successful female on the other hand is more sensitive, tense, unconsciously interested in social approval and reputation, and status, while being interested in and receiving satisfaction from the opposite sex, while the unsuccessful female is intelligent, sensitive, somewhat apprehensive, tense, and has some unsatisfied needs relating to the opposite sex (Krueger, 1974:333).

The above descriptions highlighted the major profile differences in personality traits and motivations between male and female music educators. While the equations were significant beyond the .05 level, the magnitude of the weights was not large indicating that profile differences were in degree.

Krueger concluded that personality and motivational variables should be used in advising and counseling potential teachers, but advising and counseling should be personal, a one-to-one basis. Krueger further recommended that cross validation of the teaching situation, socioeconomic nature of the school, size of the school district, ages of the teachers, years experience, post bachelor's degree training of the teachers should be conducted to determine how these variables relate to the teaching criteria (Krueger, 1974: 425).

Main's (1971) study was concerned with personality and science teaching. An effort was made to determine: (1) whether secondary science teachers had unique personality factors that were significantly different from secondary teachers in other

subject areas and (2) if personality factors of these science teachers were reflected in their classroom behavior as measured by a classroom observation instrument. The eighty science teachers of the study had state certification in science. The personality factors of two subgroups within the science teacher population were selected for statistical comparison from the upper and lower quarter of the ranked scores of a classroom observation instrument on all the science teachers. A comparison group of thirty-five nonscience teachers was randomly selected from the secondary teacher population of the same school systems. The following conclusions are among those reached from the data analyzed in this investigation: (1) science teachers were found to be generally more reserved, calm and mature, and appeared more serious and taciturn; (2) in the group dependent versus self-sufficient factor, science teachers placed more toward the self-sufficient, resourceful polarity than the other teachers; and (3) female science teachers appeared to be more outgoing and warm-hearted, while male science teachers were more tough-minded, self-reliant, and realistic.

Mattsson (1974) found that certain cultural variables associated with size of community are strong determinants of the particular patterns of teachers' personality traits. In this study the Cattell Sixteen Personality Factor Questionnaire was administered to seventy-three secondary students at the start of their student teaching. Near the end of the quarter their teaching was assessed by administering the Hoyt-Grim Pupil Reaction Inventory to their pupils. Different

patterns of personality traits associated with teaching were found when subjects were grouped by level, by major field, and most distinctly, by size of community. Teaching correlated in medium cities with Outgoing, Emotionally Mature, Trusting, Confident, Group Dependent, Relaxed, and Low Anxiety factors and in small towns with Sober, Shy, Sensitive, Trusting, and Introverted factors. On eight of the above factors there were direct and almost linear relationships between size of community and strength of the correlation with teaching.

The size of the community was a more powerful factor than were teaching level or subject area in the relationship between teaching and personality traits of the teacher (Mattsson, 1974: 127).

The clear implication is that similarly there may be associated with inner-city neighborhoods certain cultural variables that operate, in a sense, to require particular patterns of personality traits for teaching or at least for the avoidance of failure.

Wakefield's (1974) investigation of personality and the special educators provided a ranking of the Edwards Personal Preference Schedule personality needs which were attributed to the teacher of exceptional children. The ranking of needs was as follows:

1. Intraception
2. Nurturance
3. Endurance
4. Achievement
5. Order
6. Affiliation
7. Deference

8. Change
9. Autonomy
10. Dominance
11. Succorance
12. Exhibition
13. Heterosexuality
14. Abasement
15. Aggression

Collectively, the teacher of exceptional children was seen as one who has the desire to analyze the behavior and motives of others, to predict how others will act, to assist others less fortunate, to sympathize and show affection for the sick or hurt, to work hard at a task, to put in long hours or work without interruption, to accomplish tasks requiring skill and effort, and to do a difficult job well.

Similarly, the teachers of exceptional children were seen as those who had relatively little need to make fun of others, to display anger, feel depressed by inability to handle situations, to feel generally inferior to others, or to be the center of attention and talk about personal achievement. "The review of related studies in personality and special education supports this case" (Wakefield, 1974:88).

Three studies, Goodman (1974), Chou (1974) and Buckley (1975), give some insight into the personality characteristics of trade and industrial education teachers.

Using the EPPS, Goodman (1974) found the trade and industrial education teachers in North Carolina had higher scores on the following

scales: deference, order, abasement, and endurance than did the EPPS normative group: while Edward's normative group had higher scores on the affiliation, dominance, and heterosexuality scales than did the trade and industrial education teachers. The most successful trade and industrial education teachers had higher mean scores on deference and intraception, while the least successful trade and industrial education teachers had a higher mean score on change.

These findings were also supported by pattern analysis and univariate tests (t-test) of significant differences between the mean scores.

Chou (1974) used Cattell's Sixteen Personality Factor Questionnaire and related research to determine the personality traits and characteristics of vocational industrial teachers of Minnesota. The population of the study consisted of 159 full-time vocational-industrial teachers in four selected instructional areas: (1) auto body repair, (2) carpentry, (3) electricity, and (4) machine shop. Questionnaires were returned by 139 of the 159 teachers for an 87.5 percent return. Mean scores were tested for statistical significance using Scheffe's confidence intervals.

Vocational-industrial teachers in the area vocational technical institutes of Minnesota were found to be more intelligent, quick to grasp ideas, more cultured, alert, more sober, dependable, more conscientious, responsible and persevering, more tough-minded, self-reliant, realistic and responsible, more placid, confident, more self-sufficient, independent, and resourceful, in stronger control

of their emotions, more alert, poised, and not guided by emotions as much as the general adult population. In general the vocational-industrial teachers were more: reserved, intelligent, sober, conscientious, tough-minded, placid, self-sufficient, controlled, alert, and poised than the general adult population.

The vocational-industrial teachers with eleven or more years of teaching experience tended to be more sober, more shrewd, and more conservative than those teachers with less experience. The vocational-industrial teachers with five or more years of post-secondary education tended to be more conservative and more tolerant of traditional difficulties than the teachers with one to two years or the teachers with three or four years post-secondary education.

Chou (1974:86) recommended that similar research be conducted in each vocational education program to determine if any traits common to the group can be identified. Chou (1974:87) further recommended that research be conducted to determine the relationship of teaching and job satisfaction.

Buckley (1975), on the other hand, after concluding that there was a significant difference between the composite personality scores of the academic teacher group and the composite personality scores of the tradesman both teaching and non-teaching, recommended recruitment of future trade and industrial teachers with tendencies toward extroversion.

In view of the added effectiveness of a teacher with good interpersonal qualities, it would seem that the time has arrived in which these personality elements should enter the employment picture (Buckley, 1975).

PERSONALITY AND VOCATIONAL PREFERENCE

Crist (1961), Vacek (1962), and Nelson (1963) have all dealt with the use of the Edward's (EPPS) scales and the notion that industrial arts attract certain personalities.

Crist (1961) found the same need variables, deference, order and endurance, as were prominent in the studies of industrial arts teachers done by Monroe (1960) and Morgan (1961) which set them apart from Edward's normative group. "The EPPS does tend to differentiate between the industrial arts majors and Edward's normative group" (Crist, 1961; Vacek, 1962).

Nelson (1963) stated: "The EPPS would effectively aid in the guidance of incoming freshman majors in industrial arts education."

In other studies, Jones (1969), personality characteristics of successful students in each of four occupational areas was investigated:

1. data processing
2. secretarial administration
3. nursing
4. engineering

After analyzing the scores on Cattell's 16 PF Form B, Jones concluded:

1. The engineers were more reserved, detached and critical, and more aggressive and independent than any of the other three groups.

2. The secretaries were much more conforming and accommodating, more out-going, and more conservative than the other three groups.

3. The nurses were significantly more shrewd, calculating, and worldly than the other three groups.

4. There is no one personality trait which would distinguish the data processors from all other groups tested.

In an investigation of the personality correlates of American architects and their creativity, McKinnon (1962:37) concluded:

The group profiles as reflected on the California Psychological Inventory (Gough, 1957) supported the belief of the architect's relative rejection of external restraints, freedom from crippling inhibitions and independence in thought and action.

Considerable work of this type has been compiled by John L. Holland (1958, 1963, 1973) which does indicate a relationship between scores on each of Holland's six personality scales and vocational choice. However, little relation has been shown with student achievement (Holland, 1973).

Hoffman (1970) assessed the personality of student nurses as measured by Jackson's (1967) Personality Research Form (PRF) with respect to possible difference with a general student population. In comparison with the normative group, student nurses scored higher in Harmavoidance, Nurturance, Order, and Desirability but lower in Affiliation, Aggression, Autonomy, Change, Defenceence, Dominance, Impulsivity, and Understanding. "These results gave a much clearer picture of student nursing than did the earlier research using the Edwards Personal Preference Schedule" (Hoffman, 1970:1004).

Siess (1970) conducted a study designed to identify common dimensions in personality and interest measures in order to better understand the personological significance of vocational interests. The Personality Research Form (PRF) and the Strong Vocational Interests Blank (SVIB) were administered to 212 males. A multimethod factor analysis, which focuses on correlations between rather than within, methods of measurement, yielded seven interpretable factors, each being defined jointly by PRF and SVIB scales. These factors were associated with orientations toward achievement-related goals, human relations management, impulse expression, practical goals, managerial control, aesthetic-intellectual goals, and social contact. Implications for interest theory and counseling were derived from results. "This data provided a basis for the interpretation of the personality scales of the PRF in occupational terms" (Siess, 1970: 33).

SUMMARY

The research literature tends to reveal the following:

1. Personality and industrial arts student achievement are to some extent related.
2. Positive or innovative attitudes tend to be related to membership in professional organizations.
3. A high percentage of industrial arts teachers tend to be satisfied with industrial arts teaching as a profession.

4. Teaching characteristics to some extent are related to personality variables.

5. Personality and teacher characteristics tend to be interrelated.

6. Personality variables are most likely to be closely related to teacher characteristics in various subject areas.

Various descriptions or profiles of teachers in many subject areas have been assessed. Most studies tend to show high correlations with the social aspects of personality and certain other characteristics such as:

- a. age
- b. degree level
- c. teaching experience
- d. major area taught
- e. size of school
- f. size of community
- g. job satisfaction
- h. knowledge of subject
- i. organizational abilities.

Very little is known about the personality profile of industrial arts teachers as research since the early sixties is nonexistent. Comparisons could be made, however, with research conducted at that period of time and with other disciplines. Statistical analyses have, traditionally, dealt with various regression and factoring practices as well as the common F and t tests.

In reference to the commonalities found to exist in the studies compiled by Monroe (1960), Morgan (1961), and Crist (1961), there appeared to emerge a semblance for what might prove to be the profile of the industrial arts teacher. The profile consisted of a need to be conservative, organized, conventional, to follow instructions, and to keep at a job until it is finished or more precisely to see things to their end. Morgan (1961) further expanded this profile by comparisons made with the normative group's need for free expression, outgoing attitude, even to the point of searching for new and different things to do, and more generally being interested in finding change from daily routine than were the industrial arts teachers. Morgan further found the most successful industrial arts teachers to possess a stronger need to accomplish tasks requiring skill and effort, and to generally need to be able to do things better than others than was the case for those of the least successful industrial arts teacher group.

The writer, after reviewing all available research literature, found few current studies directly concerned with the measurement of general characteristics and personality traits of industrial arts teachers or the analyses of the relationship between the following: the degree level, age, marital status, number of own children, major grade level, type of laboratory, major industrial arts area taught, size of school, size of community, and job satisfaction of the industrial arts teacher. Thus, little information exists concerning the characteristics and personality profiles of industrial arts teachers. For these reasons, this writer undertook this study to add to the knowledge in this area.

Chapter 3

PROCEDURES OF THE STUDY

INTRODUCTION

The purpose of this chapter is to present the hypotheses tested, the population of the study, the statistical treatment, collection and tabulation of data, and the evaluation of the instrument utilized in the study.

HYPOTHESES TO BE TESTED

The following hypotheses were tested in this study:

1. There are differences between the personality variables of industrial arts teachers as shown by the mean scores on the Personality Research Form and the mean scores of the PRF normative group.

2. There are differences between the mean scores on the scales of the PRF for the (A) group of AIAA teacher of the year recipients and a national (B) group of randomly selected industrial arts teachers.

3. There are differences between the (A) group of AIAA teacher of the year recipients and the (B) group of randomly selected industrial arts teachers on the following variables:

- a. age
- b. highest degree earned
- c. years teaching experience

- d. marital status
- e. number of own children
- f. major grade level
- g. type of laboratory
- h. major industrial arts area taught
- i. size of school
- j. size of community
- k. job satisfaction

POPULATION OF THE STUDY

This study examined samples from two conceptually overlapping populations:

1. AIAA teacher of the year recipients (group A)
2. A randomly selected group of industrial arts teachers (group B)

The AIAA industrial arts teachers were comprised of the recipients of the American Industrial Arts Association Outstanding Teacher Award for 1972, 1974, 1975, and 1976.

The AIAA criteria for awards is as follows:

The teachers who receive the awards should be selected by peers on the basis of demonstrated ability in the classroom teaching of industrial arts. The following factors are suggested for consideration while teachers are being evaluated:

1. Rapport with students.
2. Ability to motivate student interest in industrial arts.
3. Success in upgrading industrial arts in the total instructional program of the school.
4. Ability to use his own ingenuity in organizing the situation at hand.
5. A well-grounded philosophy in industrial arts education.

The recipient must be an active participant in pertinent professional educational associations on the local, state, and national levels.

The recipient must be a member of the American Industrial Arts Association at the time of nomination.

The individuals are nominated by their respective state as based upon the above criteria and presented with the award at the National Convention each year (AIAA Teacher Awards Program, 1975:4).

The national group of randomly selected industrial arts teachers was composed of 163 industrial arts teachers representing twenty states as provided by the industrial arts supervisors of those various states. A systematic sample procedure (Kish, 1965) was used to select the individuals for this group. The procedure was as follows:

1. Totaling of the industrial arts teachers representing the twenty states = 18,122
2. Sample size $N = 163$
3. Constant = $18,122 \div 163 = 111.178$
4. Arranging the state directories in alphabetical order
5. Selecting a random number from a random table = 32.877
6. Constant = 111.178
 $+ 32.877$ random number
 $\underline{\hspace{1.5cm}}$
 144.055 = the first number in list, continuing

to add the constant as follows:

144.055	first name #144
$+ \quad C$	
$\underline{\hspace{1.5cm}}$	
255.233	second name #255
$+ \quad C$	
$\underline{\hspace{1.5cm}}$	
366.411	third name #366

This procedure gave the following representation from the twenty states for (group B) the general population of industrial arts teachers involved in this study:

	# Selected	# In State
Arizona	6	728
Florida	9	1,050
Georgia	5	560

	# Selected	# In State
Idaho	3	312
Indiana	7	750
Kentucky	5	565
Louisiana	5	546
Minnesota	13	1,440
Mississippi	3	308
Missouri	12	1,419
New Mexico	3	342
New York	41	4,500
North Carolina	5	573
North Dakota	5	509
Oklahoma	5	660
Tennessee	5	469
Texas	16	1,855
Utah	4	376
Vermont	1	186
Virginia	10	974

COLLECTION AND TABULATION OF THE DATA

Through correspondence (Appendix A) with the executive director and the vice president of classroom teachers of the American Industrial Arts Association, the names and mailing addresses of the AIAA teacher of the year recipients (group A) were obtained for the years 1972, 1974, 1975, and 1976. This constituted a group of 156 teachers.

The names and mailing addresses of the randomly selected group B of industrial arts teachers were obtained through correspondence (Appendix B) from the state supervisors, coordinators, and/or directors. Using a systematic sample procedure, 163 names were selected from the directories provided by the state supervisors.

An envelope was mailed to each industrial arts teacher. This envelope contained the Personality Research Form; a letter from the investigator (Appendix D); and a short questionnaire (Appendix C) requesting the teacher's age, marital status, number of own children, degree level, instructional area, approximate size of school enrollment, approximate size of community, and response to a short statement concerning job satisfaction. Also included was a return envelope addressed to the writer. The questionnaires served to identify the returns.

The answer sheets used in this study were hand scored. A total of 319 forms were distributed to the two groups A and B.

The keypunch was used to punch cards from the tabulated data. These punched cards were read into the computer and various statistical analyses were applied as stated in the "Statistical Treatment of the Data" section found in this chapter. Graphs were also constructed from the mean scores for each group of industrial arts teachers illustrating the effect or relationship of the personality variables.

It was anticipated that a 50 to 60 percent return would be achieved. It was felt that such a response, both by percentage and by a representation of all states involved in this study, established a sufficiently strong sample population.

STATISTICAL TREATMENT OF THE DATA

In order to thoroughly understand the statistical treatment of the data, the writer has presented the following statements providing the framework of the design.

The Personality Research Form was used to determine the group mean scores for each of the personality scales (Table 1, pages 42-44 of this chapter) of the PRF for both group A and group B.

The degree levels reported were:

1. Bachelors
2. Masters

The major grade levels were categorized into:

1. elementary
2. middle school
3. junior high
4. senior high

Type of laboratory was reported as:

1. unit
2. general
3. comprehensive
4. other

The major industrial arts areas taught were categorized into:

1. American Industries
2. Communications

Table 1

Personality Research Form Scales

SCALE	DESCRIPTION OF HIGH SCORER	DEFINING TRAIT ADJECTIVES
Abasement	Shows a high degree of humility; accepts blame and criticism even when not deserved; exposes himself to situations where he is in an inferior position; tends to be self-effacing.	mEEK, self-accusing, self-blaming, obsequious, self-betitting, surrendering, resigned, self-critical, humble, apologizing, subservient, obedient, yielding, deferential, self-subordinating.
Achievement	Aspires to accomplish difficult tasks; maintains high standards and is willing to work toward distant goals; responds positively to competition; willing to put forth effort to attain excellence.	striving, accomplishing, capable, purposeful, attaining, industrious, achieving, aspiring, enterprising, self-improving, productive, driving, ambitious, resourceful, competitive.
Affiliation	Enjoys being with friends and people in general; accepts people readily; makes efforts to win friendships and maintain associations with people.	neighborly, loyal, warm, amicable, good-natured, friendly, companionable, genial, affable, cooperative, gregarious, hospitable, sociable, affiliative, good-willed.
Aggression	Enjoys combat and argument; easily annoyed; sometimes willing to hurt people to get his way, may seek to "get even" with people whom he perceives as having harmed him.	aggressive, quarrelsome, irritable, artumetative, threatening, attacking, antagonistic, pushy, hot-tempered, easily-angered, hostile, revengeful, beligerent, blunt, retaliative.
Autonomy	Tries to break away from restraints, confinement, or restrictions of any kind; enjoys being unattached, free, not tied to people, laces, or obligations; may be rebellious when faced with restraints.	unmanageable, free, self-reliant, independent, autonomous, rebellious, unconstrained, individualistic, ungovernable, self-determined, nonconforming, uncompliant, undominated, resistant, lone-wolf.
Change	Likes new and different experiences; dislikes routine and avoids it; may readily change opinions or values in different circumstances; adapts readily to changes in environment.	inconsistent, fickle, flexible, unpredictable, wavering, mutable, adaptable, changeable, irregular, variable, capricious, innovative, flighty, vacillating, inconstant.
Cognitive Structure	Does not like ambiguity or uncertainty in information; wants all questions answered completely; desires to make decisions based upon definite knowledge, rather than upon guesses or probabilities.	precise, exacting, definite, seeks certainty, meticulous, perfectionist, clarifying, explicit, accurate rigorous, literal, avoids ambiguity, defining, rigid, needs structure
Defendance	Readily suspects that people mean him harm or are against him; ready to defend himself at all times; takes offense easily; does not accept criticism readily.	self-protective, justifying, denying, defensive, self-condoning, suspicious, secretive, has a "chip on the shoulder," resists inquiries, protesting, wary, self-excusing, rationalizing, guarded, touchy.

Table 1 (continued)

SCALE	DESCRIPTION OF HIGH SCORER	DEFINING TRAIT ADJECTIVES
Dominance	Attempts to control his environment, and to influence or direct other people; expresses opinions forcefully; enjoys the role of leader and may assume it spontaneously.	Governing, controlling, commanding, domineering, influential, persuasive, forceful, ascendant, leading, directing, dominant, assertive, authoritative, powerful, supervising.
Endurance	Willing to work long hours; doesn't give up quickly on a problem; persevering, even in the face of great difficulty; patient and unrelenting in his work habits.	Persistent, determined, steadfast, enduring, unflinching, persevering, unremitting, relentless, tireless, dogged, energetic, has stamina, sturdy, zealous, durable.
Exhibition	Wants to be the center of attention, enjoys having an audience; engages in behavior which wins the notice of others; may enjoy being dramatic or witty.	Colorful, entertaining, unusual, spellbinding, exhibitionistic, conspicuous, noticeable, expressive, ostentatious, immodest, demonstrative, flashy, dramatic, pretentious, showy.
Harmavoidance	Does not enjoy exciting activities, especially if danger is involved; avoids risk of bodily harm; seeks to maximize personal safety.	Fearful, withdraws from danger, self-protecting, pain-avoidant, careful, cautious, seeks safety, timorous, apprehensive, precautionary, unadventurous, avoids risks, attentive to danger, stays out of harm's way, vigilant.
Impulsivity	Tends to act on the "spur of the moment" and without deliberation; gives vent readily to feelings and wishes; speaks freely; may be volatile in emotional expression.	Hasty, rash, uninhibited, spontaneous, reckless, irrepressible, quick-thinking, mercurial, impatient, incautious, hurried, impulsive, foolhardy, excitable, impetuous.
Nurturance	Gives sympathy and comfort; assists others whenever possible, interested in caring for children, the disabled, or the infirm; offers a "helping hand" to those in need; readily performs favors for others.	Sympathetic, paternal, helpful, benevolent, encouraging, caring, protective, comforting, maternal, supporting, aiding, ministering, consoling, charitable, assisting.
Order	Concerned with keeping personal effects and surroundings neat and organized; dislikes clutter, confusion, lack of organization; interested in developing methods for keeping materials methodically organized.	Neat, organized, tidy, systematic, well-ordered, disciplined, prompt, consistent, orderly, clean, methodical, scheduled, planful, unvarying, deliberate.
Play	Does many things "just for fun," spends a good deal of time participating in games, sports, social activities, and other amusements; enjoys jokes and funny stories; maintains a light-hearted, easy-going attitude toward life.	Playful, jovial, jolly, pleasure-seeking, merry, laughter-loving, joking, frivolous, prankish, sportive, mirthful, fun-loving, gleeful, carefree, blithe.

Table 1 (continued)

SCALE	DESCRIPTION OF HIGH SCORER	DEFINING TRAIT ADJECTIVES
Sentience	Notices smells, sounds, sights, tastes, and the way things feel; remembers these sensations and believes that they are an important part of life; is sensitive to many forms of experience; may maintain an essentially hedonistic or aesthetic view of life.	aesthetic, enjoys physical sensations, observant, earthy, aware, notices environment, feeling, sensitive, sensuous, open to experience, perceptive, responsive, noticing, discriminating, alive to impression.
Social Recognition	Desires to be held in high esteem by acquaintances; concerned about reputation and what other people think of him; works for the approval and recognition of others.	approval seeking, proper, well-behaved, seeks recognition, courteous, makes good impression, seeks respectability, accommodating, socially proper, seeks admiration, obliging, agreeable, socially sensitive, desirous of credit, behaves appropriately.
Succorance	Frequently seeks the sympathy, protection, love, advice, and reassurance of other people; may feel insecure or helpless without such support; confides difficulties readily to a receptive person.	trusting, ingratiating, dependent, entreating, appealing for help, seeks support, wants advice, helpless, confiding, needs protection, requesting, craves affection, pleading, help-seeking, defenseless.
Understanding	Wants to understand many areas of knowledge; value synthesis of ideas, verifiable generalization, logical thought, particularly when directed at satisfying intellectual curiosity.	inquiring, curious, analytical, exploring, intellectual, reflective incisive, investigative, probing, logical, scrutinizing, theoretical, astute, rational, inquisitive.
Desirability	Describes self in terms judges as desirable; consciously or unconsciously, accurately or inaccurately, presents favorable picture of self in responses to personality statements.	
Infrequency	Responds in implausible or pseudo-random manner, possibly due to carelessness, poor comprehension, passive non-compliance, confusion, or gross deviation.	

3. Crafts
4. Construction
5. Drafting
6. Electricity/Electronics
7. Exploring Technology
8. General Industrial Arts
9. Graphic Arts (Printing)
10. Manufacturing
11. Metals
12. Modern Industry and Technology
13. Plastics
14. Power Mechanics
15. Woods
16. Other

Job satisfaction was reported as:

1. Totally satisfied
2. Generally satisfied
3. Generally unsatisfied
4. Totally unsatisfied

Hypotheses were tested to determine whether or not there were statistically significant differences between mean scores for each personality factor of the PRF between group A, group B, and the PRF normative group.

The null hypotheses were rejected at the .05 alpha level. A system of computer programs and the facilities at the Virginia Polytechnic

Institute and State University's Computer Center were used to analyze the data.

EVALUATION OF THE INSTRUMENT

Designed as a self-report personality inventory for use within normal range, the Personality Research Form (PRF) is available in two parallel short forms (A and B) yielding fourteen trait scores and a revised form E yielding twenty trait scores (Jackson, 1974). These scales are shown in Table 1, pages 42-44.

The trait scales have also been grouped into a few broader units suggested partly by theoretical considerations and partly by the results of several factor-analytic studies. For instance, Measures of Impulse Expression and Control include five scales: Impulsivity and Change at one pole and Harmavoidance, Order, and Cognitive Structure at the other.

There is also a "validity scale" (in the sense of tests taking attitudes): an infrequency scale based on the number of highly unlikely responses chosen by the respondent, the infrequency scale provides an index of carelessness, failure to understand direction, and other non-purposeful responding.

The original items were formulated so as to conform to the theoretically-based trait definitions and to ensure distinctness among traits and reduction of irrelevant variance. Taking Henry Murray's (1938) personality framework as a starting point, the author reformulated the trait definitions in the light of subsequent research and

and theoretical developments. All scales are bipolar, half of the items being expressed in terms of one pole and half in terms of the other. This procedure also provides an effective control of acquiescence response bias. From an initial pool of nearly three thousand items, provisional scales were prepared and administered to samples of college students totaling over four thousand cases. Items were selected on the basis of high biserial correlation with total scores on other trait scales. Items yielding extreme endorsement proportions were also eliminated at this stage. Through a specially developed computer program, the selected items were assigned to the two parallel forms in terms of endorsement frequencies and biserial correlations with total scale score.

The inventory is self-administering. Reusable answer sheets are hand scored with a template, the items in each scale having been arranged in a simple pattern to facilitate scoring.

Separate profile sheets based on male and on female norms are available. When raw scores on each scale are transferred to these profile sheets, they are automatically expressed as t scores derived from samples of over one thousand male and one thousand female students from more than thirty North American colleges and universities. Tables are also given in the manual for the numerical conversion of raw scores to both t scores and percentiles.

Reliability was checked in several ways and compares favorably with that of other personality scales of equal length. Odd-even reliability coefficients for the individual twenty-item trait scales ranges

from .48 to .90; KR 20 coefficients range from .54 to .86 (see Table 2 on page 49). The manual suggests the combined use of the parallel forms if the time permits in order to increase score reliability. Odd-even reliabilities of Forms A and B, administered over a two-week interval and combined to yield a single score for each scale, range from .72 to .92 (see Table 3 on page 50). It should be noted that for the fourteen trait scales the reliability coefficients--by whatever method obtained--clustered close to .80 and none were below .60.

Special investigations of response bias in the final scales suggested that both acquiescence and desirability bias have been satisfactorily controlled. Both convergent and discriminant validity of the trait scales have been investigated. The manual cites three studies of college students in which PRF scores were correlated with pooled peer ratings as well as self-ratings. In one study, combined scores on the two parallel forms yielded a median r of .52 with peer ratings and a median r of .56 with self-ratings. In the other studies, correlations were somewhat lower because a single form was used and the criterion ratings were less reliable. The data from 202 college students were subjected to a multimethod factor analysis, using a 60 x 60 matrix with twenty traits and three methods (PRF, peer ratings, and self-ratings). The trait factors that emerged across different methods corresponded so closely with the original trait scales as to provide good evidence of both convergent and discriminant validity. Trott and Morf (1972:102) concluded:

The high scores on many Personality Research Form scales, particularly Dominance and Affiliation, are contradictions of pathology. They are then useful in the assessment of personality strengths.

Table 2

PRF Reliability Data

Scale	Odd-Even Reliability Form			KR-20 Form AA	
	A+B	AA (N=192)	BB	Sample 1 (N=71)	Sample 2 (N=202)
Achievement	.86	.77	.77	.73	.72
Affiliation	.88	.81	.80	.81	.76
Aggression	.87	.68	.82	.78	.76
Autonomy	.86	.78	.73	.78	.69
Dominance	.92	.86	.88	.86	.85
Endurance	.89	.82	.82	.75	.78
Exhibition	.89	.81	.82	.79	.77
Harmavoidance	.91	.82	.90	.80	.83
Impulsivity	.87	.66	.83	.72	.67
Nurturance	.85	.68	.75	.76	.73
Order	.92	.86	.84	.85	.85
Play	.80	.72	.71	.78	.69
Social Recognition	.91	.84	.83	.79	.80
Understanding	.85	.68	.78	.62	.66
Infrequency	.51	.33	.41	.57	.33
Abasement	.79	.66	.65	.65	.63
Change	.80	.68	.51	.66	.54
Cognitive Structure	.78	.75	.62	.80	.72
Defendence	.72	.75	.62	.80	.72
Sentience	.77	.60	.66	.65	.68
Succorance	.91	.85	.82	.80	.78
Desirability	.82	.63	.73	.59	.62

Table 3

Means, Standard Deviations, and
Test-Retest Reliabilities of
PRF (Form AA) Scales
(N=135)

Scale	Occasion				Test-Retest Reliability
	Mean	One SD	Mean	Two SD	
Abasement	7.1	3.0	6.8	3.3	.75
Achievement	12.2	3.2	12.5	3.6	.80
Affiliation	15.2	3.4	14.9	3.5	.79
Aggression	7.2	3.5	6.8	3.8	.85
Autonomy	8.2	3.1	8.6	3.6	.77
Change	12.2	3.1	12.2	2.9	.69
Cognitive Structure	10.5	3.4	10.5	3.8	.73
Defendence	7.9	3.1	8.0	3.4	.72
Dominance	9.9	4.5	10.0	5.2	.88
Endurance	10.9	3.9	11.3	4.0	.81
Exhibition	10.4	4.2	10.2	4.5	.88
Harmavoidance	8.1	4.6	8.3	5.4	.90
Impulsivity	10.3	3.6	10.1	3.7	.81
Nurturance	13.7	3.2	13.3	3.7	.82
Order	10.9	4.3	11.1	4.6	.85
Play	11.6	3.4	11.8	3.7	.81
Sentience	15.8	2.5	16.0	2.8	.70
Social Recognition	11.7	4.1	11.5	4.3	.78
Succorance	8.7	4.2	8.7	4.4	.84
Understanding	12.2	3.3	12.6	3.5	.85
Infrequency	.8	1.2	.6	1.1	.46
Desirability	15.3	2.9	15.6	2.8	.81

This study was concerned, however, in assessing pathological tendencies and for this reason was of little use other than as previously stated. The interesting and probably most important item for this study is that the PRF correlated positively with variables it should and negatively with variables it should have, such as:

neg. - Exhibition (PRF) with + Social Introversion
(MMPI) and

neg. - Harmavoidance (PRF) + Impulsivity (DPI) (MMPI)
as well as many others.

Edwards, Abbott, and Klockars (1972) undertook a factor analysis of the EPPS and PRF personality inventories to determine the degree to which corresponding PRF and EPPS scales were correlated and also the degree to which the scales had loadings on a common factor.

The forty scales were intercorrelated and factor analyzed by the method of principle components. Eleven factors, accounting for 71 percent of the total variance, were extracted and rotated using Kaiser's Varimax orthogonal rotation method.

The correlations of each of the PRF scales with each of the EPPS scales are given in Table 1, pages 42-44. Of interest were the correlations of PRF scales with EPPS scales which had the same or similar trait names. These correlations are circled in Table 4.

The scales included in the EPPS were: Achievement (ach), Deference (def), Order (ord), Exhibition (exh), Autonomy (aut), Affiliation (aff), Intraception (int), Succorance (suc), Dominance (dom), Abasement (aba), Nurturance (nur), Change (chg), Endurance (end), Heterosexuality (het), and Aggression (agg).

Table 4
Correlations Between the EPPS and PRF Scales

PRF Scales	EPPS Scales														
	ach	def	ord	exh	aut	aff	int	suc	dom	aba	nur	chg	end	het	agg
Abasement	-33	29	-16	-17	-22	26	05	07	-22	40	42	05	-01	-16	-23
Achievement	25	02	-01	-14	-09	-13	07	-38	25	-11	-11	01	46	-19	08
Affiliation	-29	-05	-23	03	-32	43	01	18	12	08	31	-01	-27	18	-20
Aggression	19	-26	03	11	13	-30	-12	01	20	-14	-34	-17	-08	21	49
Autonomy	17	-21	-12	-01	54	-21	07	-39	-10	-15	-18	32	21	-11	19
Change	-03	-21	-44	02	28	10	10	-18	06	-15	00	57	-16	02	06
Cognitive Structure	07	30	58	-09	-33	-13	-04	-03	12	02	-16	-32	26	-16	-06
Defendence	21	-29	00	13	18	-28	-03	00	16	-16	-36	-18	04	13	41
Dominance	22	-25	-07	18	-06	-17	-01	-19	73	-43	-22	-11	-02	08	27
Endurance	22	00	-01	-14	-04	-12	09	-33	25	-14	-10	04	52	-27	-01
Exhibition	11	-33	-25	43	05	-04	-10	-06	38	-23	-14	-04	-22	27	16
Harmavoidance	-06	31	44	-13	-36	00	-08	35	-07	14	02	-26	00	-11	-17
Impulsivity	-16	-39	-54	15	32	21	-03	06	-06	02	18	25	-37	22	11
Nurturance	-26	01	-29	-17	-31	34	20	14	-04	114	54	14	-21	-04	-26
Order	-06	21	29	-10	-32	-12	04	-01	19	06	-08	-24	16	-15	-12
Play	-28	-26	-25	32	06	23	-22	13	-03	-02	08	14	-33	44	02
Sentience	-01	-16	-29	-05	05	11	25	-12	-05	-08	17	28	00	-01	-12
Social Recognition	14	09	06	24	-40	00	-14	18	20	06	-06	-20	-20	09	-02
Succorance	-31	03	-05	-08	-30	21	-08	55	-13	29	24	-15	-29	12	-11
Understanding	19	00	-16	-10	06	-05	43	-25	10	-16	00	09	08	-26	01
Infrequency	-15	-02	-07	-01	12	00	00	-01	-10	01	00	06	06	01	08
Desirability	02	04	00	-05	-23	17	11	-14	32	-22	15	-01	06	-07	-17

(Circled items indicate correlations on common scales)

The scales included in the PRF were: Abasement (Ab), Achievement (Ac), Affiliation (Af), Aggression (Ag), Autonomy (Au), Change (Ch), Cognitive Structure (Cs), Defence (De), Dominance (Do), Endurance (En), Exhibition (Ex), Harmavoidance (Ha), Impulsivity (Im), Nurturance (Nu), Order (Or), Play (Pl), Sentience (Se), Social Recognition (Sr), Succorance (Su), and Understanding (Un). In addition, the PRF includes two stylistic scales: Infrequency (In) and Desirability (Dy).

Table 5 gives the rotated and denormalized factor loadings of the scales on the eleven factors. Table 6 was an abbreviated table which showed only those scales with absolute factor loadings of .40 or greater on each factor. With but two exceptions, PRF and EPPS scales designed to measure the same trait had relatively high loadings on a common factor. The two exceptions were the PRF and EPPS scales designed to measure Achievement and Abasement. An examination of Table 6 also showed that, except for Achievement and Abasement, PRF and EPPS scales designed to measure the same trait had similar patterns of factor loadings across the eleven factors.

Edwards (1972) concluded by stating:

The results of this study show that the PRF and the EPPS scales share considerable common variance, despite the fact that the EPPS items are in a forced-choice format and the PRF items are in a true-false format and that the EPPS scales are ipsative whereas the PRF are not. Either one of the two inventories would appear to provide reasonable measures of most of the 11 factors obtained in this study.

Anne Anastasi, Professor of Psychology and chairperson of the Department, Fordham University, New York, New York, states:

Table 5

Communalities and Rotated Denormalized Factor Loadings of the
EPPS, PRF, and Marker Scales on 11 Factors

Scales	Factors											h ²
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	
EPPS												
Achievement	01	-25	-24	21	28	07	48	-16	-05	05	-50	76
Deference	-39	01	16	-13	-01	06	07	08	71	00	-10	71
Order	-79	-21	-04	-11	03	15	-07	10	10	-14	-05	75
Exhibition	12	-14	-01	09	-16	09	-09	-82	-04	-04	-05	77
Autonomy	34	-60	-11	-05	-12	-06	00	-13	-35	05	14	67
Affiliation	20	45	38	-10	-14	08	-07	17	-01	33	-01	56
Intracception	-04	-02	07	-03	-09	-86	05	03	-05	-02	06	76
Succorance	03	55	-12	-10	-39	19	09	32	-09	-10	04	65
Dominance	-04	01	-02	86	12	04	07	-10	03	-10	01	78
Abasement	02	31	-01	-64	08	03	10	-16	25	-20	17	68
Nurturance	25	50	35	-14	-14	-16	-06	35	15	-01	11	67
Change	25	-15	19	-08	00	-04	-01	-03	-03	77	07	74
Endurance	-37	-31	01	-21	70	15	03	12	03	-04	-04	81
Heterosexuality	18	04	-07	08	-20	31	-50	04	-37	-14	-09	60
PRF												
Aggression	18	-29	-51	31	02	02	-07	-01	-09	-31	15	60
Abasement	27	20	29	-28	10	-03	01	11	58	-14	26	74
Achievement	02	-03	00	22	82	-12	07	07	04	03	04	76
Affiliation	07	67	29	17	04	-05	-36	-15	-05	00	-06	74
Aggression	00	-04	-76	25	01	07	-21	-04	-12	-05	02	71
Autonomy	30	-72	-08	-07	17	-13	08	10	-03	23	18	76
Change	40	-12	-07	15	13	-16	-07	03	05	62	13	74
Cognitive Structure	-85	13	-04	05	07	01	07	-05	-02	-09	-04	77
Defendence	-10	-06	-69	16	07	00	05	-10	-36	00	11	68
Dominance	-03	09	-10	83	27	-05	-08	-20	-08	-06	-02	83
Endurance	-03	-04	13	20	83	-13	06	03	-03	04	00	77
Exhibition	23	25	-21	44	09	05	-20	-51	-22	03	-03	72
Harmavoidance	-54	29	-11	-09	-31	18	30	12	09	-01	-03	63
Impulsivity	75	10	-13	-06	-08	02	-21	-11	-14	17	07	71
Nurturance	18	61	33	02	17	-29	-11	06	08	11	12	67
Order	-79	19	05	14	06	-10	-02	-07	-03	-04	09	71
Play	24	23	-01	00	-20	27	-64	-30	-16	17	00	77
Sentience	21	12	07	-09	32	-48	-24	02	-18	35	-14	63
Social Recognition	-27	52	-33	21	-10	12	-01	-41	13	08	-25	77
Succorance	-04	73	-17	-19	-23	09	-03	00	-07	-11	09	69
Understanding	14	-14	01	17	25	-69	11	10	11	08	-13	66
Infrequency	07	-10	-11	-05	05	06	05	03	-02	09	76	63
Desirability	-11	14	59	41	24	-18	-07	03	-13	-07	-22	71
% Total	10.56	10.31	9.03	7.92	7.31	5.15	4.51	4.38	4.20	4.11	3.48	
% Common	14.88	14.53	12.73	11.16	10.31	7.25	6.35	6.18	5.92	5.79	4.90	

Because of the rapid proliferation of personality inventories, any new inventory needs to be carefully scrutinized to decide whether such an addition is justified. In the case of the PRF, sufficient progress in test construction procedures is indicated to provide this justification. In part, the level of technical sophistication represented by the PRF reflects its author's extensive prior research on response styles, the factorial composition of personality inventories, and other related problems. Some of the procedures followed in item selection, moreover, would have been well-nigh impossible before computers had reached their present state of development. At the same time, it is noteworthy that sound judgment and knowledge of psychological theory were employed throughout the development of the PRF as a corrective to purely statistical procedures. In accordance with proper test construction practice, reliability and validity were built into the initial stages of item construction and selection. The manual is written with commendable restraint. The user is cautioned, for instance, to reassess the degree of desirability bias in the scores if the PRF is given in situations where motivation to dissemble is high and to recheck the norms if the test is used with groups that are very different from college populations. Technically the PRF appears to be exemplary; the extent to which it may prove useful in a variety of practical situations, such as selection and counseling, remains to be seen. As a research instrument, it has high promise (Burso, 1972:198).

E. Lowell Kelly, Professor of Psychology, the University of Michigan, Ann Arbor, Michigan, states:

In summary, the PRF represents a welcome contribution to the field of personality assessment. By spending years in its development and using appropriate statistical techniques for item analysis and scale development, the author has produced an extremely promising assessment device; it provides reliable and valid measures on a store of relatively independent personality traits and the yield of information is certainly great in proportion to the time required for administration and scoring. The test booklets are attractively printed and the answer sheets, scoring stencils and profile sheets are easy to use. Finally, the author had the modesty to publish his test--not as an all purpose device for personality assessment, but to title it simple: Personality Research Form (Buros, 1972:301).

SUMMARY

This study incorporated Survey Research procedures, selected demographic variables, and the Personality Research Form to assess and

construct the personality profiles of the American Industrial Arts Association teacher of the year recipients for the years 1972, 1974, 1975, and 1976. Comparative analyses were made using a randomly selected group of industrial arts teachers. The teachers were selected from state directories submitted by the various state directors, coordinators, and supervisors involved in this study.

Chapter 4

PRESENTATION AND ANALYSIS OF DATA

INTRODUCTION

The data were drawn from 319 individuals representing two national groups of industrial arts teachers. The questionnaires were mailed on January 4, 1977. At the end of two weeks, eighty total instruments had been returned, for a 25 percent response. The writer sought the cooperation of those teachers who did not respond to the original request by a follow-up personal letter. This decision was in line with reports by Oppenhiemer (1966:65-67), Goode and Hatt (1952:180), and Kerlinger (1973:414).

A total of 192 instruments were eventually received. Due to the existence of errors in directories provided by the State Departments of Education and some change of employment status, the following percents of group responses were calculated. The national group (A) of AIAA award recipients comprised 156 teachers of which eight instruments were returned due to forwarding addresses unknown and one person no longer being a teacher. Returns from this group totaled 112 for a 71.8 percent response. The national group (B) of randomly selected industrial arts teachers drawn from twenty states comprised 163 teachers of which four instruments were returned due to one forwarding address unknown, one person no longer being a teacher and two persons stating they were not

industrial arts teachers. Returns from this group totaled eighty for a 49.1 percent response. It was felt that a total return of 192 instruments, 112 for group "A" and eighty for group "B," both by percentage (60.2) and by a representation of all states involved in this study, established a sufficiently strong sample population. Reported in Table 7 are the percent of returns as categorized in three groups 1-8, 9-16, and 17-25 days representing the day which the return was received. The lack of a significant chi-square distribution would tend to indicate the existence of little or no response bias.

RESPONSE TO AND ANALYSIS OF THE DEMOGRAPHIC VARIABLES

The hypotheses that there were differences between the groups A and B on nine of the eleven demographic variables have been supported. Through application of the t-test of significance, the variables age, teaching experience, number of own children, and school enrollment were found to be significant at the .05 level of probability. Through application of the chi-square distribution the variables highest degree earned, marital status, type of laboratory, and job satisfaction were also found to be significant at the .05 level of probability.

The data suggest that the national group (A) of AIAA award recipients tended to be older, more experienced, more satisfied with industrial arts teaching as a profession and were teaching in generally larger schools than were the other national group (B) of randomly selected industrial arts teachers. The group (A) of AIAA aware recipients

Table 7

Table of the Day of Return

	AIAA Award Recipients	Industrial Arts Teachers
Day 1-8 (Follow-up letters mailed)	27%	35%
Day 9-18	38%	38%
Day 17-25	35%	27%
*Total Number of Responses	109	78

$$\chi^2 = 1.882, p = .3902$$

*Note: Data analyzed included only those responses as of March 1, 1977, the cut-off point

also appeared to have achieved higher degree levels and were more likely to be teaching in unit laboratories than were the group (B) of randomly selected industrial arts teachers, who tended to be teaching in general industrial arts laboratories.

The tables of demographic information comprising data for the following demographic variables are presented:

- a. age, Table 8
- b. highest degree earned, Table 9
- c. years of teaching experience, Table 10
- d. marital status, Table 11
- e. number of own children, Table 12
- f. major grade level, Table 13
- g. type of laboratory, Table 14
- h. major industrial arts area taught, Table 15 and 16
- i. size of school, Table 17
- j. size of community, Table 18
- k. job satisfaction, Table 19

These variables did appear to be interrelated. For example, when age and teaching experience were correlated, a Pearson r of .83 was found which would indicate that the older industrial arts teachers had also accumulated more teaching experience. Interrelationships also existed between general satisfaction and teaching experience. This, however, resulted in a Pearson r of $-.30$ which would indicate that the older, more experienced teachers were generally satisfied.

Table 8

Age of Teachers

	AIAA Award Recipients	Industrial Arts Teachers
Mean	43.697 years	38.871 years
Standard Deviation	9.582	10.240
Standard Error	.917	1.159
Total Number of Responses	109	78

t Value = 3.2993, p = .0012

Table 9

Highest Degree Earned

	AIAA Award Recipients	Industrial Arts Teachers
Bachelors	24.8%	55.1%
Masters	75.2%	44.9%
Total Number of Responses	109	78

$$\chi^2 = 17.890, p = .0001$$

Table 10

Total Years Teaching Experience

	AIAA Award Recipients	Industrial Arts Teachers
Mean	17.403 years	11.897 years
Standard Deviation	8.000	7.627
Standard Error	.766	.863
Total Number of Responses	109	78

t Value = 4.7314, p = .0001

Table 11

Marital Status

	AIAA Award Recipients	Industrial Arts Teachers
Single	2.7%	10.3%
Married	97.3%	89.7%
Total Number of Responses	109	78

$$\chi^2 = 4.624, p = .0315$$

Table 12

Number of Own Children

	AIAA Award Recipients	Industrial Arts Teachers
Mean	2.4678 children	1.8589 children
Standard Deviation	1.5430	1.4746
Standard Error	.1477	.1663
Total Number of Responses	109	78

t Value = 2.7102, p = .0074

Table 13

Major Grade Level Teaching

	AIAA Award Recipients	Industrial Arts Teachers
Elementary	0.9%	1.3%
Middle School	1.9%	5.1%
Junior High	27.5%	39.7%
Senior High	69.7%	53.9%
Total Number of Responses	109	78

$$\chi^2 = 5.492, p = .1391$$

Table 14

Type of Laboratory Facilities

	AIAA Award Recipients	Industrial Arts Teachers
Unit	49.5%	29.5%
General	36.7%	62.8%
Comprehensive	10.1%	7.7%
Other	3.7%	0.0%
Cooperative Work Study		
Classroom		
Total Number of Responses	109	78

$$\chi^2 = 14.110, p = .0028$$

Table 15

THE MAJOR INDUSTRIAL ARTS AREAS TAUGHT

GROUP A
N=108

GROUP B
N=78

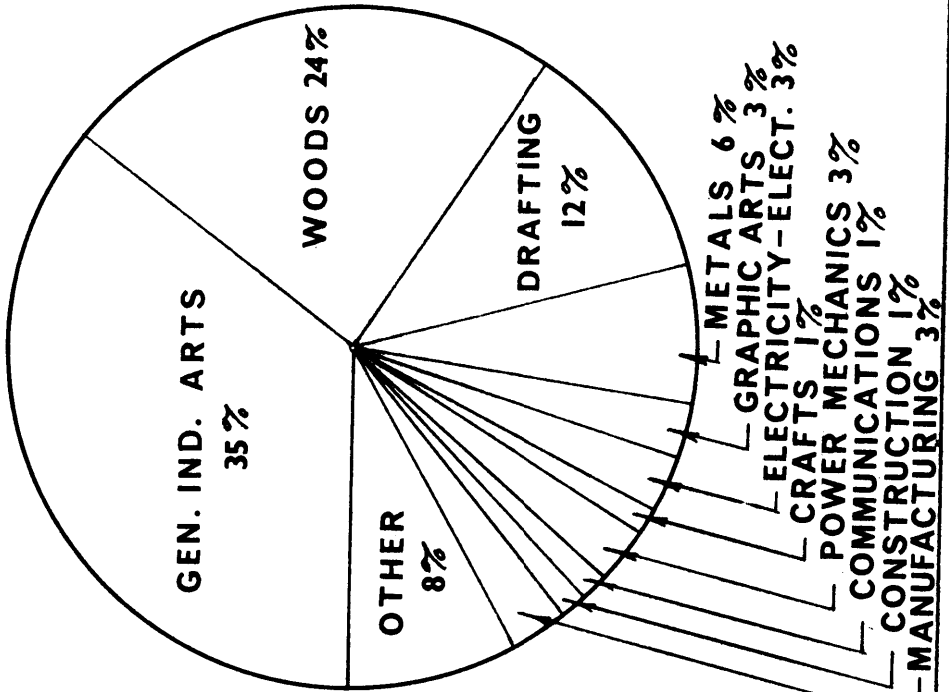
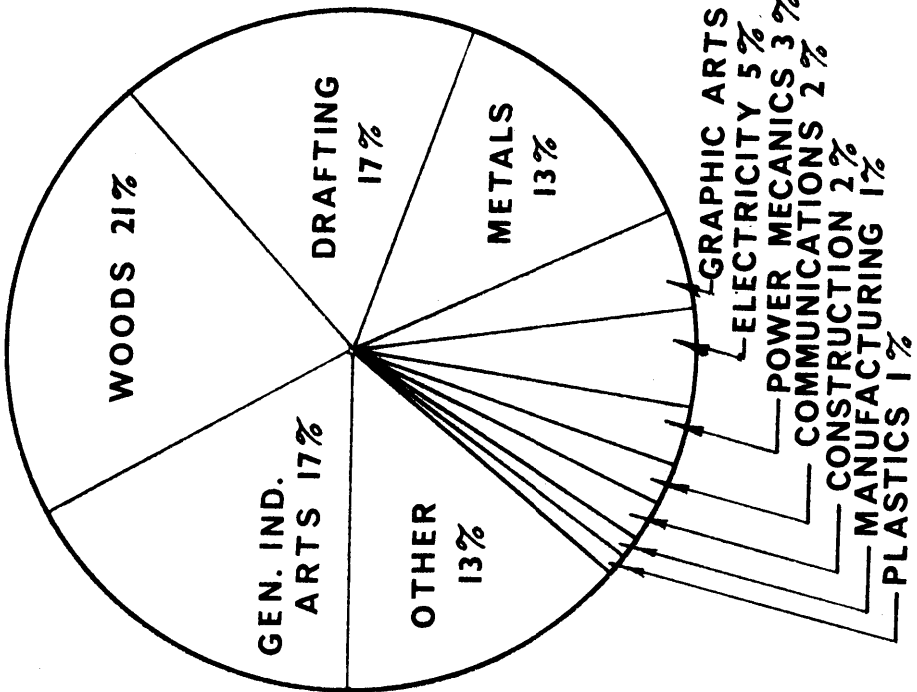


Table 16

"OTHER" Major Industrial Arts Areas Taught

Group A 13% AIAA Award Recipients	Group B 8% Industrial Arts Teachers
Cooperative Industrial Education Work Experience	Drafting and Woods
Photography	Metals and Woods
Career Explorations	Materials and Processes
Diversified Occupations	Metals, Woods and Plastics
Construction and Graphic Arts	Drafting and Graphic Arts
Construction and Metals	Air Conditioning and Refrigeration
Wood and Metals	Power, Wood, Metal and Electricity
Materials and Processes	Occupation Versatility
Jewelry	Aerospace
Construction and Manufacturing	
Occupation Versatility	
Welding	
Aerospace	

Table 17

School Enrollments

	AIAA Award Recipients	Industrial Arts Teachers
Mean	1,503.8333 students	1,006.9615 students
Standard Deviation	1,050.9263	753.5390
Standard Error	101.1254	85.3214
Total Number of Responses	108	78

t Value = 3.7553, p = .0002

Table 18

Community Population

	AIAA Award Recipients	Industrial Arts Teachers
Mean	142,915.88 citizens	141,824.32 citizens
Standard Deviation	245,840.87	352,657.90
Standard Error	23,766.33	40,995.64
Total Number of Responses	107	74

t Value = .0230, p = .9817

Table 19

General Satisfaction With Industrial
Arts Teaching As A Profession

	AIAA Award Recipients	Industrial Arts Teachers
Totally Satisfied	43.5%	20.5%
Generally Satisfied	53.7%	75.6%
Generally Unsatisfied	2.8%	2.6%
Totally Unsatisfied	0.0%	1.3%
Total Number of Responses	108	78

$$\chi^2 = 11.934, p = .0076$$

The younger, less experienced industrial arts teachers tended to be more dissatisfied. Few other interrelationships seem to exist at levels of any great significance, for example, number of own children was inversely correlated ($r=-.22$) with general satisfaction of industrial arts teaching. Also, age and number of children were correlated with an r of $.29$. These two Pearson correlations tended to indicate that younger, more totally satisfied industrial arts teachers had few if any children.

PERSONALITY PROFILES - GROUP "A" COMPARED WITH GROUP "B"

The data collected by administering the Personality Research Form (PRF) were analyzed by the application of various multivariate statistical methods as presented by Morrison (1976). The main effect was measured by Wilks' Criterion Lambda which is equivalent to Hotelling's T^2 when two groups comprise the classification variable.

The hypothesis that there were differences between the mean scores on the scales of the PRF for the national group (A) of AIAA teacher of the year recipients and the national group (B) of randomly selected industrial arts teachers has been supported. As shown in Table 20 a Wilks' Criterion Lambda of sufficient size was generated to produce a probability of less than $.05$ alpha level for the null hypothesis

$$H_0: \mu_1 = \mu_2$$

Table 20

Multiple Analysis of Variance Procedure

Wilks' Criterion Lambda	.79898057
Hotellings T^2	2.53496980

d.f. = 20; p = .0081

Note: Four observations were deleted due to an inflated infrequency score

Total N = Group "A", 107; Group "B", 78

where μ_1 represented for the AIAA teacher of the year recipients, a vector of twenty population means, one for each of the subscales of the PRF and μ_2 represented for the randomly selected industrial arts teachers, a similarly constructed vector of twenty population means, one for each of the subscales of the PRF.

The statistic for testing the null hypothesis was Lambda which is equivalent to Hotellings T^2 as presented in the following formula

$$T^2 = \frac{N_1 N_2}{N_1 + N_2} (\bar{X}_1 - \bar{X}_2)' S^{-1} (\bar{X}_1 - \bar{X}_2)$$

where $N_1 N_2$ represents the product formed by the total number of observations in each group, $N_1 + N_2$ represents the sum of these observations, $\bar{X}_1 - \bar{X}_2$ represents the mean differences of the subscales for PRF, and S^{-1} represents the inverse of the within group covariance matrix.

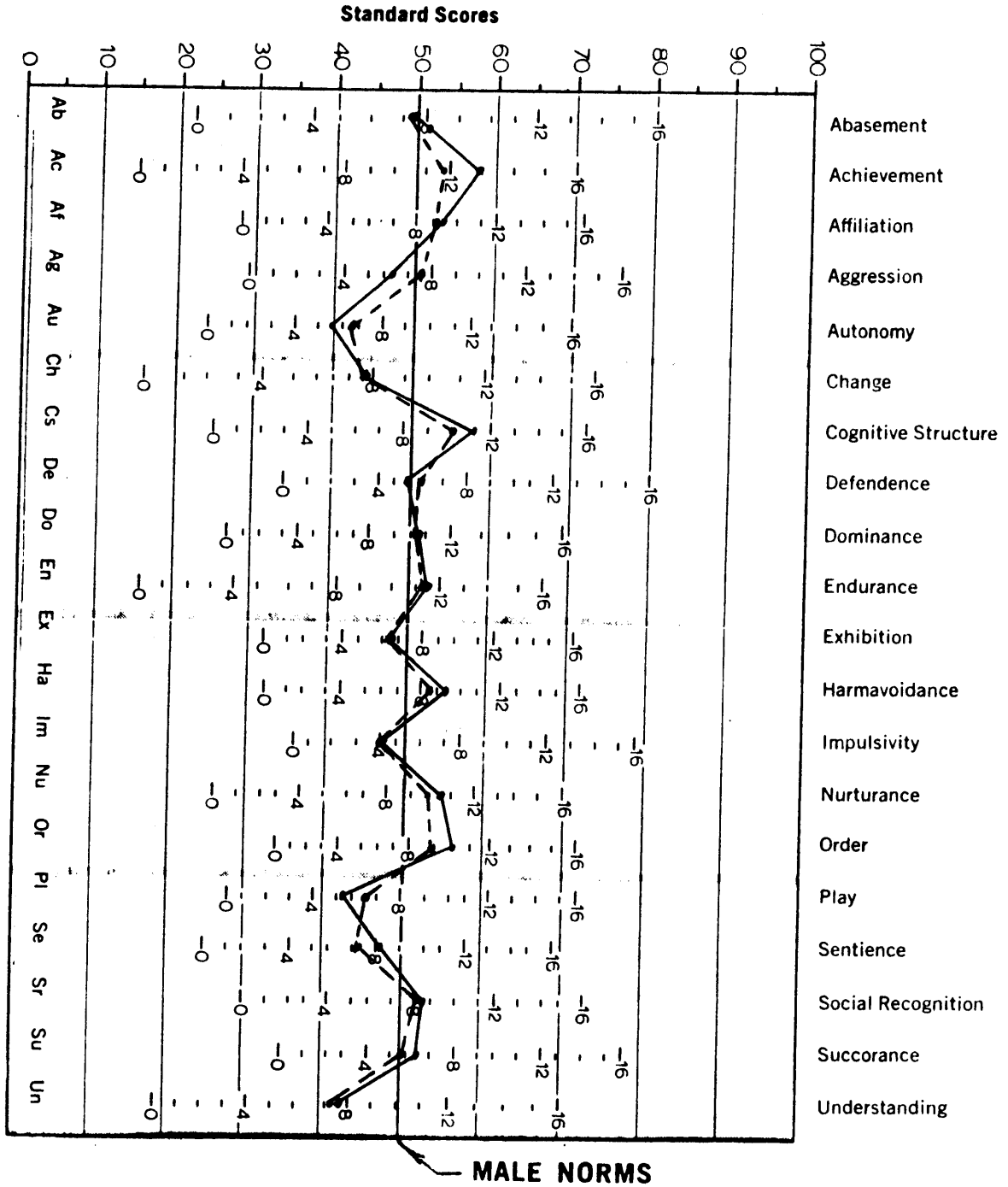
A graphic illustration of both groups (A and B) mean scores on the twenty personality subscales of the PRF is presented in Table 21. These mean scores were further analyzed to determine which of the twenty mean scores may have contributed to the significant T^2 or for which it might be reasonable to conclude that their population means were equal. The following simultaneous confidence interval formula was used to test these individual differences (Morrison, 1967:138):

Table 21

PERSONALITY RESEARCH FORM

Group "A" AIAA Award Recipients

Group "B" Industrial Arts Teachers



$$(X_1 - \bar{X}_2) \pm S \frac{N_1 + N_2}{N_1 N_2} T_{\alpha; p, N_1 + N_2 - p - 1}$$

where S represents the within-group error variance, and T represents the square root of Hotelling's T^2 .

It was determined that none of the mean differences were significantly different from zero at the 5 percent significance level. The significant statistic (T^2) was most likely contributable to the linear function of the response means and not any single variable. By observation of Table 21, it was possible to see this linear function in that variables such as Achievement, Aggression, Autonomy, Cognitive Structure, Nurturance, Order, and Play were obviously contributing the most to this linear relationship. The AIAA award recipients tended to possess a somewhat higher need for the variables Achievement, Cognitive Structure, Nurturance, and Order while the randomly selected industrial arts teachers tended to possess a somewhat higher need for the variables Aggression, Autonomy, and Play. These differences should be viewed as contributing jointly to the group differences on the twenty PRF subscales, since no single simultaneous difference was found significantly different from zero.

Univariate t-tests on the twenty subscales showed five, considered one at a time, which could be considered to differ between the two groups. These five were Achievement, Aggression, Autonomy, Cognitive Structure, and Play. To determine if the five subscales together were different, another multivariate Hotelling's T^2 was computed. As shown in Table 22, a Hotelling's T^2 of sufficient

Table 22

Multiple Analysis of Variance Procedure

Dependent Variables AC, AG, AU, CS, PL	
Wilks' Criterion Lambda	.87009002
Hotellings T^2	3.40660800

d.f. = 5, 177; p = .0002

size was generated to produce a probability of less than .05. The T^2 of 3.41 was considerably larger than the previous value. However, when the simultaneous confidence intervals were again computed, it was determined that none of the mean differences were significantly different from zero at the 5 percent significance level. The increased F value would give credence to the statement that these five variables did contribute to the significant main effect. The significant statistic in both cases was most likely due to the linear function of the response means and not any single variable.

This difference, as described in the PRF manual, suggests that the AIAA award recipients tended to possess a more powerful need for Achievement and Cognitive Structure than did those teachers of the randomly selected group. On the other hand, the group (B) of randomly selected industrial arts teachers were more likely to possess a higher need for Aggression, Autonomy, and Play. But these differences exist only when we consider all five simultaneously; that is, we hesitate to say AIAA award recipients have higher needs for achievement, but we would posit that AIAA award recipients were more industrious and precise, while they were at the same time less aggressive, and less autonomous, and less playful.

PERSONALITY PROFILES A, B/PRF NORM

Through a similar but somewhat different technique, the hypothesis that there were differences between the personality

variables of industrial arts teachers as shown by the mean scores on the Personality Research Form (PRF) and the mean scores on the PRF normative group has been supported. As shown in Table 23 for the "A" group and Table 24 for the "B" group, a Hotelling's T^2 of sufficient size was generated to produce a probability of less than .05 level of probability for the null-hypothesis

$$H_0: \mu_1 = \mu_0$$

where μ_1 represents for the industrial arts teacher groups a vector of twenty population means, one for each of the subscales of the PRF and μ_0 represents for the PRF normative group of college men a fixed vector of twenty subscale population means.

The statistic for testing the null hypothesis of equal response effects was T^2 as presented in the following formula (Morrison, 1967:145)

$$T^2 = N (Y' S^{-1} Y)$$

where Y is a vector of mean differences between the observed subgroup mean and the norm; N is the number of observations; S is the matrix of sample variances and covariances; and T^2 was as previously described.

Table 23

Group "A" Comparison With Fixed
Vector Matrix of the PRF Norm

$Y'S^{-1}Y$	5.31268
Hotellings T^2	568.45676
Total Number	107

d.f. = 20, 87; p = .0000

Table 24

Group "B" Comparison With Fixed
Vector Matrix of the PRF Norm

$Y'S^{-1}Y$	2.854
Hotellings T^2	175.7728
Total Number	76

d.f. = 20, 56; p = .0000

These mean scores were further analyzed to determine which of the twenty mean scores may have contributed to the significant T^2 or for which it might be reasonable to conclude that their population means were equal to the normative means. The following simultaneous confidence interval formula was used to test these individual differences (Morrison, 1967:147)

$$\bar{X} \pm \sqrt{\frac{1}{N} S_x} T_{\alpha; p, N-p}$$

where \bar{X} represented the mean subscale score for each of the twenty subscales for groups A and B, the standard deviation (S_x) and T the square root of T^2 .

A graphic illustration of the groups mean scores on the twenty personality subscales of the PRF in comparison to the PRF normative group are shown on Tables 25 and 26.

The national group (A) of AIAA teacher of the year recipients were found to have significantly higher mean scores in comparison to the PRF norm on the variables Achievement, Cognitive Structure, Harmavoidance, Nurturance, Order, and Social Recognition. The "A" group also had significantly lower mean scores in comparison to the PRF norms on the variables Autonomy, Change, Impulsivity, Play, Sentience, and Understanding.

The national group (B) of randomly selected industrial arts teachers were found to have significantly higher mean scores on the

Table 25

PERSONALITY RESEARCH FORM

Group "A" AIAA Award Recipients

*Significant at 0.05 Level

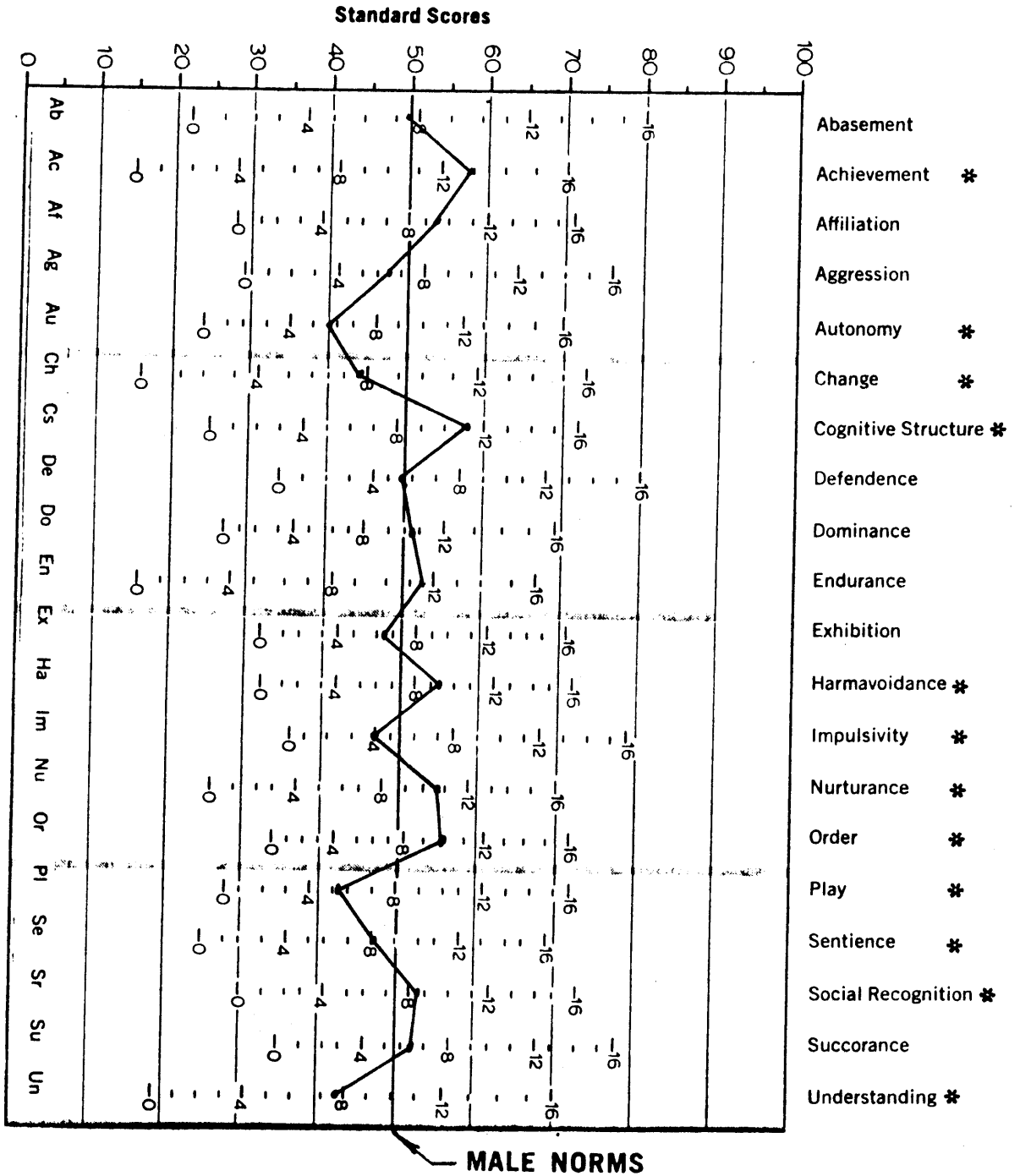
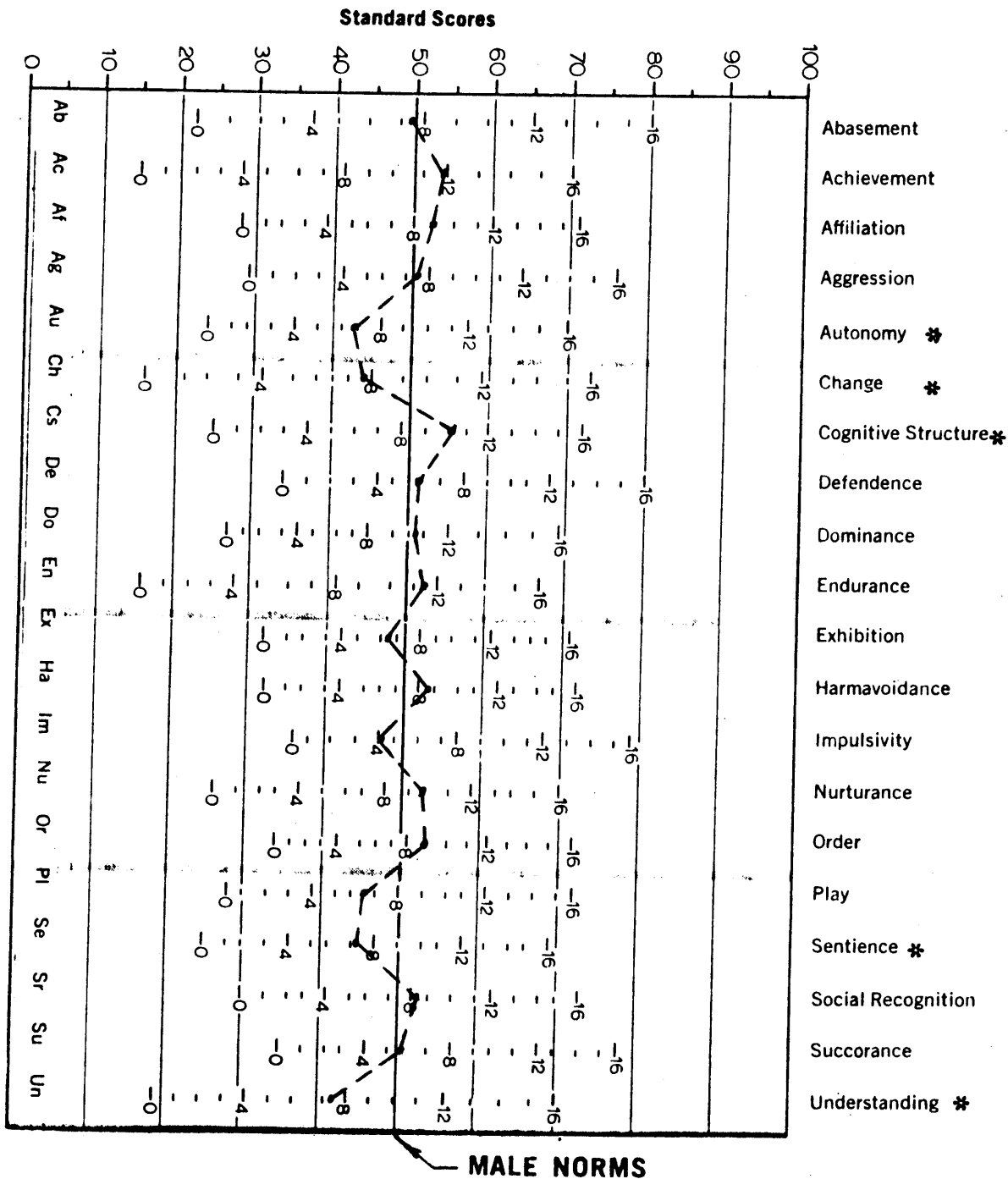


Table 26

PERSONALITY RESEARCH FORM

Group "B" Randomly Selected Industrial Arts Teachers ----

*Significant at 0.05 Level



variable Cognitive Structure and lower mean scores in comparison to the PRF norm on the variables Autonomy, Change, Sentience, and Understanding.

In the preceding comparisons, twelve of the twenty variables seem to have differentiated between the group (A) of AIAA award recipients and the normative group of college men, and five of the twenty variables seem to have differentiated between the group (B) of randomly selected industrial arts teachers and the normative group of college men.

There possibly could have been some problem in having made comparisons between groups which may appear to be different in respect to age (i.e., industrial arts teachers and the PRF normative group of college men). As Kerlinger (1973) and Kish (1965) point out, "representative sampling" means that the sample has approximately the characteristics of the population relevant to the research in question. However, Jackson (1974), Edwards (1959), Cattell (1972) and Gough (1956) report that over long periods of time the variable scores as measured by personality inventories do remain rather constant. Comparisons made with more saturated populations such as the EPPS adult norms could raise more serious questions than would comparison with college and university students. Personality does fortunately appear to crystallize over time (Mischel, 1968); therefore, age differences may not be a serious problem. As Kish (1965:597) stated:

In practice, we generally cannot solve simultaneously all of the problems of measurement, representation, and control; rather, we must choose and compromise.

The similarities found to exist in both group's (A and B) profiles, when comparisons were made with a heterogeneous group (PRF normative group of college men), lends support to the notion that the profiles developed were truly representative of the industrial arts teacher. Both groups of industrial arts teachers were found to have a significantly higher mean score on the variable Cognitive Structure in comparison to the PRF norm, and significantly lower mean scores in comparison to the PRF normative group of college men on the variables Autonomy, Change, Sentience, and Understanding.

Based on the descriptions of the PRF scales found in the PRF manual (Jackson, 1974), it seems that the following characterizations were in order:

Achievement: The AIAA award recipients had a higher mean score than the normative group of college men on this variable. This suggests that the AIAA award recipients were likely to aspire to accomplish difficult tasks, maintain high standards and were willing to work toward distant goals. They also tended to respond positively to competition and were willing to put forth effort to attain excellence.

Autonomy: Both the AIAA award recipients and the randomly selected group of industrial arts teachers had lower mean scores than the normative group of college men on this variable. This tendency indicated that industrial arts teachers did not need as much freedom from conformity, obligations, responsibility, and decisions of others as did those in the normative group.

Change: Both the AIAA award recipients and the randomly selected group of industrial arts teachers had lower mean scores than the normative group of college men on this variable. This suggested that the industrial arts teachers had less need for new and different things, to experience novelty and change in daily routine, to experiment and try new things, to try new and different places, and to participate in new fads and fashions as did the college men of the normative group.

Cognitive Structure: Both the AIAA award recipients and the randomly selected group of industrial arts teachers had higher mean scores than the normative group of college men on this variable. This indicated that industrial arts teachers were apt to not like ambiguity or uncertainty in information, they want all questions answered completely, they preferred to make decisions based upon definite knowledge, rather than upon guesses or probabilities at least more than did those in the normative group.

Harmavoidance: The AIAA award recipients had a higher mean score than the normative group of college men on this variable. This suggested that the AIAA award recipients were likely to have less need to enjoy exciting activities, especially if danger is involved, as they tended to avoid risk of bodily harm more than did those of the normative group of college men.

Nurturance: The AIAA award recipients had a higher mean score than the normative group of college men on this variable. This suggested that the AIAA award recipients possessed a higher need to give sympathy and comfort, assist others, care for children, the disabled, or

the infirmed, offer a "helping hand" to those in need, and were more likely to perform favors for others than were those of the normative group of college men.

Order: The AIAA award recipients had a higher mean score than the normative group on this variable. Systematic operation of activities, operating according to plan, concern with keeping personal effects and surroundings neat and organized seemed to be needs of more importance to those of the AIAA award recipient group than to the college men of the normative group.

Play: The AIAA award recipients had a lower mean score than the normative group on this variable. This suggested that the AIAA recipients were more inclined to do few things "just for fun," tended to spend little time participating in games, sports, social activities, or other amusements, and tended not to enjoy jokes, funny stories or maintain a light-hearted, easy going attitude toward life as did those of the normative group of college men.

Sentience: Both the AIAA award recipients and the national group (B) of industrial arts teachers had a lower mean score on this variable. That is to say, the industrial arts teachers of this study were likely to notice smells, sounds, sights, tastes, and the way things feel less than did those of the normative group. Industrial arts teachers were less likely to maintain an aesthetic view of life than the college men of the normative group.

Social Recognition: The AIAA award recipients had a higher mean score than the normative group on this variable. This suggested that

the AIAA award recipients were more likely to desire to be held in high esteem by acquaintances, concerned about reputation and what other people think of them, and more often worked for approval and recognition of others than did those of the normative group of college men.

Understanding: Both the AIAA award recipients and the "B" group of industrial arts teachers had a lower mean score on this variable. This tended to show a lower need to understand many areas of knowledge, value synthesis of ideas, verifiable generalization, or logical thought, particularly when directed at satisfying intellectual curiosity, than did those of the normative group.

The AIAA award recipients had significantly higher mean scores on the variables Achievement, Cognitive Structure, Harmavoidance, Nurturance, Order, and Social Recognition, than the normative group of college men who had significantly higher mean scores on the variables Autonomy, Change, Impulsivity, Play, Sentience, and Understanding. The "B" group of randomly selected industrial arts teachers had a significantly higher mean score on the variable Cognitive Structure while the normative group of college men had significantly higher mean scores on the variables Autonomy, Change, Sentience, and Understanding.

In comparisons made with the results of this study and those of Morgan (1961), Monroe (1960), and Crist (1961) the following conclusions were made: The AIAA award recipients tended to show the same high need for the variable Order as did Morgan's (1961) and Monroe's

(1960) industrial arts teachers and Crist's (1961) industrial arts majors. The industrial arts teachers as represented by the two groups "A" and "B" of this study tended to show the same low need for the variable Autonomy as did Morgan's (1961) and Monroe's (1960) industrial arts teachers and Crist's (1961) industrial arts majors. Both the AIAA award recipients and the randomly selected industrial arts teachers tended to show the same low need for the variable Change as did Morgan's (1961) industrial arts teachers. The AIAA award recipients tended to show the same high need for the variable Achievement as did Crist's (1961) industrial arts majors, and Monroe's (1960) and Morgan's (1961) most successful industrial arts teachers.

The AIAA award recipient group and the randomly selected group of industrial arts teachers generated a higher mean score than the normative group of college men on the Desirability scale. The group (A) of AIAA award recipients mean Desirability score was 13.05 and the group (B) of randomly selected industrial arts teachers mean Desirability score was 12.08 as compared to 10.78 for the normative group of college men. This tended to indicate that those industrial arts teachers responding to the items on the PRF were inclined to describe themselves in terms judged as desirable; whether consciously or unconsciously, accurately or inaccurately, they tended to present a more favorable picture of themselves in responses to personality statements than did those of the normative group of college men.

SUMMARY

Through the collection and analysis of data involving the use of selected demographic questions, Jackson's (1974) Personality Research Form and two groups of industrial arts teachers the following was determined.

The national group of AIAA teacher of the year recipients were likely to be older, more experienced, have earned higher degree levels, and were generally more satisfied with industrial arts teaching than were those of the national group of randomly selected industrial arts teachers. The group of randomly selected industrial arts teachers, on the other hand, were more likely to be teaching in similar schools, in approximately the same size community populations, had fewer children of their own, and were more likely to be teaching general industrial arts than the national group of AIAA award recipients.

There did exist a statistically significant difference as measured by the Personality Research Form between the two groups of industrial arts teachers. This difference, however, could not be attributable to any single variable but was more likely a function of the combined linear effect of the twenty subscales of the PRF. Five variables, Achievement, Aggression, Autonomy, Cognitive Structure, and Play, did as a group tend to significantly contribute to this relationship but were not found to be individually significant to this relationship.

The AIAA award recipients and the group of randomly selected industrial arts teachers were found to be different from the normative

group of college men as measured by the PRF on twelve and five variables respectively. The AIAA award recipients had a greater need than the normative group of college men for the following: to aspire to accomplish difficult tasks; to make decisions based upon definite knowledge rather than upon guesses or probabilities; to avoid risk of bodily harm or to maximize personal safety; to give sympathy and comfort to others; to be concerned with keeping things and surroundings neat and organized and to be held in high esteem by acquaintances. The normative group on the other hand had a greater need than the AIAA award recipients for the following: to break away from restraints, confinement or restrictions, to like new and different experiences, to act on the "spur of the moment," to do many things "just for fun," to notice smells, sounds, sights, tastes, and the way things feel, and to understand many areas of knowledge.

The group of randomly selected industrial arts teachers tended to not like ambiguity or uncertainty in information and were likely to be more precise, exacting, definite, accurate, and structured than were the normative group of college men. The normative group had a greater need than the randomly selected industrial arts teachers for the following: to be rebellious when faced with restraints, confinement, or restrictions; to change opinions or values in different circumstances; to need new and different experiences; to be sensitive to many forms of experience such as smells, sounds, sights, tastes, and the way things feel; and to value synthesis of ideas, verifiable generalizations, and logical thought, particularly when directed at satisfying intellectual curiosity.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

PURPOSE AND DESIGN OF THE STUDY

The purpose of this study was to investigate the relationship of selected demographic variables and personality variables to industrial arts teaching. Specifically, the two groups under investigation were: the national group (A) of American Industrial Arts Association teacher of the year recipients and the national group (B) of randomly selected industrial arts teachers representing twenty states as provided by the various state directories of industrial arts teachers.

The primary need for this study was the paucity of current research dealing with the general personality profiles of practicing industrial arts teachers. Furthermore, no information existed involving the personality characteristics of the American Industrial Arts Association teacher of the year recipients. It was also felt that potential existed for the use of the results of such a study in the advisement and counseling of prospective industrial arts personnel.

This study was concerned with: (1) the development of a current personality profile for the industrial arts teacher, (2) the assessment of relationships between certain personality variables of the national group (A) of AIAA award recipients and the national group (B) of randomly

selected industrial arts teachers, and (3) the comparison of these groups with various demographic variables.

This study attempted to answer the questions:

1. Did the industrial arts teachers who formed the population of this study have mean scores on personality variables which differentiated them from the general population?

2. Was there a difference in personality profiles between the AIAA award recipients and the general population of industrial arts teachers?

3. Was there a difference between the industrial arts teacher groups on the following:

- a. age
- b. highest degree earned
- c. years of teaching experience
- d. marital status
- e. number of own children
- f. major grade level
- g. type of laboratory
- h. major industrial arts area taught
- i. size of school
- j. size of community
- k. job satisfaction

The population for this study consisted of two groups of industrial arts teachers. The group (A) of American Industrial Arts Association teacher of the year recipients consisted of all the recipients for the years 1972, 1974, 1975, and 1976 who were living in the United States

and Puerto Rico. Group B consisted of 163 industrial arts teachers randomly selected from twenty state directories of industrial arts teachers as provided by their respective state directors or supervisors of industrial arts.

The personality variables were those variables as measured by Jackson's (1974) Personality Research Form which consisted of the following scales:

Abasement

Achievement

Affiliation

Aggression

Autonomy

Change

Cognitive Structure

Defendence

Dominance

Endurance

Exhibition

Harmavoidance

Impulsivity

Nurturance

Order

Play

Sentience

Social Recognition

Succorance

Understanding

Infrequency

Desirability

RESULTS OF THE STUDY

Analysis of the relationships between the population groups as measured by the PRF and as reported on the demographic questions were conducted using the facilities of the Virginia Polytechnic Institute and State University's Computer Services. Statistical procedures included multiple analysis of variance procedures combined with t-tests and chi-square tests of significance. Simultaneous confidence intervals were calculated for the personality variables for both groups "A" and "B" following Morrison's (1976) Multivariate Statistical Methods.

Tables were presented in Chapter 4 which gave the relationships of the two groups on the demographic variables. Tables were also presented in Chapter 4 which gave a graphic illustration of the personality profiles of the two groups and of the two groups in relation to the PRF normative group of college men.

Using the previously identified procedures, tables and graphic illustrations, it was determined that the two nationally identified groups of industrial arts teachers were different in respect to certain demographic variables and the personality profiles as measured by instruments used in this study.

The group (A) of AIAA award recipients were older, more experienced, more satisfied with industrial arts teaching as a profession and were teaching in generally larger schools than were the national group (B) of randomly selected industrial arts teachers. The group (A) of AIAA award recipients also tended to have achieved higher degree levels and were more likely to be teaching in unit laboratories than were the group (B) of randomly selected industrial arts teachers, who tended to be teaching in general industrial arts laboratories.

The two groups A and B were found to be different on the personality profiles as measured by the PRF from Jackson's Personality Research Form normative group of college men. This difference does seem to be attributable to a number of variables as measured by the PRF.

The group (A) of AIAA award recipients possessed higher needs on the Achievement, Cognitive Structure, Harmavoidance, Nurturance, Order and Social Recognition scales and lower needs on the Autonomy, Change, Impulsivity, Play, Sentience and Understanding scales than did those of the normative group of college men.

The group (B) of randomly selected industrial arts teachers had a higher need on the Cognitive Structure scale and lower needs on the Autonomy, Change, Sentience and Understanding scales than did those of the normative group of college men. Both groups A and B appear to have essentially the same need scores in relation to the normative group on the Autonomy, Change, Cognitive Structure, Sentience, Understanding and Desirability scales. The tendency for both groups to report higher than the normative group on the Desirability scale would imply that they

described themselves in terms judged more desirable, whether consciously or unconsciously, accurately or inaccurately, and they tended to present a more favorable picture of themselves in responses to personality statements than did those of the normative group of college men.

CONCLUSIONS

Based upon the statistical analysis and comparison of the personality profiles of the industrial arts groups and the normative group, and using Jackson's (1967) defining trait adjectives, the following conclusions were drawn from the results of the study.

1. The differences found to exist in demographic variables, return rate, and personality profiles suggest reasons why those of the AIAA award recipients were identified and therefore received the awards. Having been older, more experienced and more satisfied with industrial arts as a profession, in and of itself would not necessarily have contributed to the AIAA award recipients being recognized in this way as compared to the general population of industrial arts teachers. But when these characteristics are combined with the knowledge that the "A" group was primarily teaching in larger schools, with more diversified programs and in unit laboratories where they could specialize and perfect specific skills, as well as having earned higher degree levels (Bachelors vs. Masters), one begins to see how these individuals, for their positions, background, and experiences, tend to be more easily recognized by their contemporaries.

Certainly many of the differences relate directly with age. However, it is this writer's conviction that the linear effect found to exist in the relationship of the two groups' personality profiles supports these differences. Since the AIAA recipients tended to possess a somewhat higher need for Achievement and Cognitive Structure combined with a somewhat lower need for Aggression, Autonomy, and Play than did the group (B) of randomly selected industrial arts teachers, it was concluded that these persons were more striving, accomplished, capable, purposeful and attaining. Also they tended to be more precise, exacting, definite, and more meticulous than other industrial arts teachers which further supports their receiving the award. These persons would also appear to be less aggressive, quarrelsome and less irritable. They appear more generally manageable, dependent and conforming, and also are less carefree and less pleasure seeking than the group of randomly selected industrial arts teachers.

The return rate of 71.8 percent for the AIAA recipients as compared to only 49.1 percent for the randomly selected industrial arts teachers would suggest a stronger interest in professional activities or at least a stronger need to be involved. This return rate, when contrasted with the personality differences of the two groups, further reinforces the notion that the AIAA award recipients were more conscientious, and generally attempted to accomplish tasks they were assigned.

The conclusions here also were found to be closely related to Morgan's (1961) "most successful" teachers who also showed a high need for achievement.

2. The two national groups of industrial arts teachers were found to be quite different in comparison to the Personality Research Form normative group of college men. It was concluded that these differences suggested the underlying profile of the industrial arts teacher. Both groups of industrial arts teachers possessed personality profiles which, when characterized, indicate persons who were more manageable, dependent, less rebellious, more governable, conforming, predictable, constant, less likely to change, more precise, exacting, definite, meticulous, accurate and structured than were those of the normative group of college men.

The industrial arts teachers, it was concluded, were also less aesthetic, observant, sensitive and generally less inquiring, analytical, investigative, and theoretical than were those of the normative group.

The writer further contended that through a casual observation of Table 21, page 77, which presented both groups' ("A" and "B") profiles, it was obvious that measurement was being made of two very similar groups. This table illustrated profiles that were either very close or paralleled each other. This further supports the previous characterization which, it was concluded from this study, depicts the underlying characteristics of a typical industrial arts teacher. These findings would seem to have indicated that the Personality Research Form did tend to differentiate between the AIAA award recipients and the normative group and between the national group of randomly selected industrial arts teachers and the PRF normative group of college men.

Therefore, it appears, on the basis of the findings in this study, that it is permissible to use the Personality Research Form as an instrument in differentiating between the PRF normative group of college men and industrial arts teachers.

These conclusions would also seem to support the results of the studies by Morgan (1961) and Monroe (1960) with the exception of a relatively normative score on the scale for dominance. Some difficulty was found in drawing conclusions based upon earlier studies due to the differences in scales and scale descriptions. Generally, however, the industrial arts teachers in this study tended to show the same conservative, orderly, low need for independent life styles, as were shown in earlier studies. The writer felt, nevertheless, that this study, due to the nature of its design, analysis and findings, gave a much clearer picture of the profile characteristics of the industrial arts teacher.

3. A further characterization of the AIAA recipients beyond that presented for both groups was drawn from the test results as presented in Chapter 4. These statements continue to lend insight and support for their having received the award. The AIAA recipients, it was concluded, were more reflective of persons who tend to be striving, accomplished, capable, industrious, aspiring, careful, cautious, sympathetic, protective, assisting, neat, systematic, orderly, and more disciplined than those of the normative group of college men. The AIAA recipients were sensitive, and generally more desirous of credit than

the normative group. The industrial arts teachers of the group (A) of AIAA award recipients tended to be less rash, reckless, impatient, impulsive and less pleasure-seeking, laughter-loving, and carefree than the college men of the normative group.

4. The implications for this study were found to be quite limited. The reader is cautioned to take great care in making any general application of these results toward selection or evaluative purposes. It would be very difficult without further extensive observation of subjects involved in this study, and validation of the results through replication procedures, to project potential happiness and success of an individual in the occupation of industrial arts teaching. The Personality Research Form may very well be an object of potential use for guidance and counseling purposes. However, definitive statements based upon the profiles of an individual at this point appear inappropriate.

RECOMMENDATIONS FOR FUTURE STUDY

1. It appears, on the basis of the findings in this study, that the need exists to differentiate between the normative groups and industrial arts teachers at various grade levels; i.e. elementary, middle, and secondary.

2. This writer perceives the need to develop a more representative normative population for further research with industrial arts teachers using the Personality Research Form. This normative

group could consist of representative teachers from various academic and vocational fields.

3. Cross validation of the results of this study with those of a similar or a parallel study would greatly increase the potential for application of these results and expand the implications which this research possessed.

4. Based upon the findings and conclusions of this study, further research needs to explore the relationship of demographic variables, such as age, to the personality profiles of industrial arts teachers. This would possibly answer the question of how much of these differences were contributable to demographics and how much due to personality differences.

5. It appears, on the basis of the findings in this study and the experiences of the writer in carrying out this research, that the need exists for educators to identify individuals or groups of teachers who are by various ways performing as "successful teachers." When this can be done, we will be able to replicate studies such as this one to determine the stimulus conditions acting upon these individuals or groups which cause them to be perceived by others as "successful." Or more precisely, the desires or wishes of these unique individuals which drive them to become "successful" or "effective" in what they do in life.

6. Further studies in this direction need to take the form of longitudinal comparative analysis. Such studies should involve identification and profile development of high school graduating

seniors who plan to pursue degree level programs in industrial arts education. This should then be followed by correlational analysis with academic success, later with teaching effectiveness, personality profile follow up and comparative analysis with earlier assessments.

SUMMARY

This was a study of comparative analysis of personality variables and characteristics of industrial arts teachers. While many differences were found to exist between the groups under study it was recommended that further research be conducted in this area to expand and validate the personality profiles for industrial arts teachers. The underlying interrelationship existing with age differences and personality profiles may be reflective of persons who have learned, over time, to achieve success within a climate of conservatism and have therefore molded their thinking to conform with this environment. It may be that personality differences of successful teachers have been identified, regardless of academic area, or even successful people regardless of occupation. This analysis could not address these questions, but the writer has been sensitive to the possibility that people who are successful in organizations, regardless of their nature have learned to cope with the perceived requirements for success. Through research of this type hopefully educators will gain a truer perspective of the influencing factors effecting the personality characteristics of teachers.

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APPENDICES

APPENDIX A

CORRESPONDENCE WITH OFFICIALS OF THE AMERICAN
INDUSTRIAL ARTS ASSOCIATION



August 18, 1976

Mr. George R. Herbert
 Ind. Arts Education, 107 Seitz
 Virginia Polytechnic Institute &
 State University
 Blacksburg, Virginia 24061

Dear Mr. Herbert:

In response to your letter of July 1, 1976, and your request via the national office of the AIAA, I am enclosing the addresses you requested. I would have sent them two weeks earlier, but I had to have my secretary type and research the data due to various responsibilities tied to my office with the AIAA. I did check each address, and to the best of my knowledge they are correct in relation to the information available in the files that I have.

As you know my office changes hands each two years, therefore I was unable to find any info for the association year of 1973. I have no explanation for this void. In most cases I listed the 1976 recipient on the back side of each sheet, and then gave as recent as possible info on the reverse side. I hope this info will suffice.

My secretary turned in six hours for the gathering of data and typing. I pay her at the rate of \$2.50 per hour. If this rate is acceptable to you, please remit a check to me made payable to Elaine Boembeke for the amount of \$15.00. Upon receipt of this check, I will see that she gets it as soon as possible.

I wish you much success in the development and completion of your dissertation.

Hoping to hear from you in the near future, I remain

Sincerely,

Frank J. Cackowski, Vice President
 for Classroom Teachers, and Chairman,
 Teacher Recognition Committee

May 10, 1976

Mr. Donald L. Rathburn
American Industrial Arts Association
1201 Sixteenth Street, N.W.
Washington, D.C. 20036

Dear Mr. Rathburn:

Dr. William E. Dugger, who is my advisor and Industrial Arts Program Area Leader here at Virginia Tech, has suggested that I write you concerning the graduate study which I have proposed.

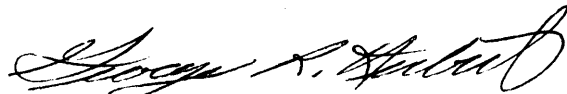
I am a doctoral student in my final year of study at Virginia Tech and am presently involved with identifying a dissertation topic. Having been a recipient of the AIAA Outstanding Teacher Award for 1975 from the state of Kentucky, I am very interested in investigating what characteristics might play a part in making one person successful as compared to another.

It is for this question that I am writing you. I would like to survey the AIAA teacher awardess in order to develop a profile of sorts from which we might gain insight as to the nature of becoming a successful industrial arts teacher.

In order to do this, I will need a mailing list and phone numbers if possible for the past five years' AIAA Outstanding Teacher Awardees. If needed, I would be willing to pay for any clerical cost involved in gathering this data.

I would appreciate your time and consideration in this matter and am looking forward to hearing from you.

Sincerely,



George R. Herbert
Instructor
Industrial Arts Education
VPI&SU
Room 107 Seitz Hall
Phone: (703) 951-6818 - Office
(703) 951-7936 - Home

GRH:ck

May 28, 1976

Frank J. Cackowski
317 W. 12th Street
Mishawaka, IN 46544

Dear Frank:

Kindly review the attached letter from George R. Herbert. In the files do you have the information that he requests?

Please advise. Thank you.

Sincerely,

Donald L. Rathburn
Executive Director

cc: George Herbert

Enclosure

July 1, 1976

Mr. Frank J. Cackowski
317 W. 12 Street
Mishawaka, IN 46544

Dear Mr. Cackowski:

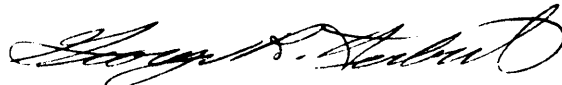
As you are aware, I am a doctoral student and instructor at Virginia Polytechnic Institute and State University and am presently involved with the development of a dissertation which will deal with developing a profile of the industrial arts teacher, so as to gain insight into the nature of becoming a successful industrial arts teacher. This study will necessitate the input from a group of identified successful teachers. I am hoping to use the AIAA teacher awardees in this endeavor.

In order to do this, I will need a mailing list and phone numbers if possible for the past three (3) years' AIAA Outstanding Teacher Awardees.

If needed, I would be willing to pay for any clerical cost involved in gathering this data.

I would appreciate your time and consideration in this matter and am looking forward to hearing from you.

Sincerely,



George R. Herbert
Instructor
Industrial Arts Education, 107 Seitz
Virginia Polytechnic Institute and
State University
Blacksburg, VA 24061
(703) 951-6818 (Office)
(703) 951-7936 (Home)

GRH:ssm

August 23, 1976

Mr. Frank J. Cackowski
317 West 12th Street
Mishawaka, Indiana 46544

Dear Mr. Cackowski:

Thank you for the mailing list which your secretary compiled. Enclosed is a check for \$15.00 made payable to Elaine Boenbeke, as you requested.

Again, thank you very much for your assistance in this matter.

Sincerely,

A handwritten signature in cursive script, appearing to read "George R. Herbert".

George R. Herbert
Instructor
Industrial Arts Education

GRH:ck

Enclosure

APPENDIX B

SAMPLE LETTER TO STATE INDUSTRIAL ARTS SUPERVISORS OR
CONSULTANTS USED TO OBTAIN NAMES AND ADDRESSES
FOR THE (GROUP B) INDUSTRIAL ARTS TEACHERS



VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

COLLEGE OF EDUCATION

Blacksburg, Virginia 24061

DIVISION OF VOCATIONAL & TECHNICAL EDUCATION

October 14, 1976

Mr. Thomas A. Hughes, Supervisor
Industrial Arts
State Department of Education
Richmond, Virginia 23216

Dear Mr. Hughes:

Dr. William E. Dugger, Jr. who is my advisor and Industrial Arts Program Area Leader, has suggested that I write you concerning the graduate study which I have proposed.

I am a doctoral student and instructor at Virginia Polytechnic Institute and State University and am presently involved with a dissertation which will deal with developing a profile of the industrial arts teacher. This study will necessitate the input from a group of identified industrial arts teachers. I am hoping to use some of the teachers from your state in this endeavor.

In order to do this, I will need a mailing list and phone numbers if possible for the industrial arts teachers in your state.

Would you please forward to me this information if available. If you have a directory of industrial arts teachers, it might suffice.

I would appreciate your time and consideration in this matter and am looking forward to hearing from you.

Sincerely,

George R. Herbert
Instructor - Industrial Arts Education
107 Seitz Hall
V.P.I. & S.U.
Blacksburg, Va. 24061
(703) 951-6818 (Office)
(703) 951-7936 (Home)

GRH:ssm

APPENDIX C

SAMPLE OF THE DEMOGRAPHIC QUESTIONNAIRE

NAME _____

The following are demographic variables which will be used to characterize the industrial arts teacher groups used in this study.

Please respond to the following by providing the information needed:

- A. Your date of birth is: _____
- B. Your highest degree earned is: _____
- C. Your total years of teaching experience is: _____
- D. Your marital status is:
1. single
 2. married
- E. The number of your own children is: _____
- F. The major grade level you teach is: _____
- G. The type of laboratory facilities in which you teach is:
1. unit
 2. general
 3. comprehensive
 4. other _____
- H. The major Industrial Arts area you teach in is: _____
- I. The approximate enrollment of the school you teach in is: _____
- J. The approximate size of the community (population) this school is located in is: _____
- K. Your general satisfaction with industrial arts teaching as a profession is:
1. totally satisfied
 2. generally satisfied
 3. generally unsatisfied
 4. totally unsatisfied
- L. Indicate if you desire a copy of the results of this study:
1. Yes
 2. No

APPENDIX D

COVER LETTER USED TO OBTAIN DATA FROM
POTENTIAL RESPONDENTS



COLLEGE OF EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DIVISION OF VOCATIONAL & TECHNICAL EDUCATION

Dear Industrial Arts Teacher:

Having been an AIAA Teacher of the Year recipient I have often wondered how this group differed from the general population of industrial arts teachers. You have been selected to represent your state in a national study to identify the prevailing characteristics of the practicing Industrial Arts teacher and Teacher of the Year recipients.

In order to do this, we are asking you to give of your time in responding to the enclosed questionnaire and instrument. There are no right or wrong answers. The questions only seek your personal, frank and honest answers. All your answers will be kept strictly confidential and only the total group response will be made use of in this study.

I am also a teacher and doctoral student; so I am well aware of the demands made on your time. However, the number of teachers that we are contacting is limited, so your cooperation is extremely important and is also greatly appreciated. Enclosed, you will find a packet of coffee for you to enjoy while filling out the forms.

Please return by January 15, 1977 and be sure to enclose the (PRF) instrument booklet in the enclosed envelope when you return your answer sheet, as these are expensive and will be used with other industrial arts teachers.

If you desire a copy of the results, please indicate so and they will be sent to you.

Thank you for your assistance and cooperation in this matter.

Sincerely,

George R. Herbert
Instructor, VPI&SU
107 Seitz Hall
Blacksburg, Va. 24061
(703) 951-6818-office
(703) 951-7936-home

I will appreciate your assistance, too.

William E. Dugger
Program Area Leader
Industrial Arts Education



COLLEGE OF EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DIVISION OF VOCATIONAL & TECHNICAL EDUCATION

Dear Industrial Arts Teacher:

You have been selected to represent your state in a national study to identify the prevailing characteristics of the practicing Industrial Arts teacher. Teachers grouped together in a given occupation have been found to have patterns of interest and profile variables peculiar to the group.

In order to do this, we are asking you to give of your time in responding to the enclosed questionnaire and instrument. There are no right or wrong answers. The questions only seek your personal, frank and honest answers. All your answers will be kept strictly confidential and only the total group response will be made use of in this study.

I am also a teacher and doctoral student; so I am well aware of the demands made on your time. However, the number of teachers that we are contacting is limited, so your cooperation is extremely important and is also greatly appreciated. Enclosed, you will find a packet of coffee for you to enjoy while filling out the forms.

Please return the material by January 15, 1977 and be sure to enclose the (PRF) instrument booklet in the enclosed envelope when you return your answer sheet, as these are expensive and will be used with other industrial arts teachers.

If you desire a copy of the results, please indicate so and they will be sent to you.

Thank you for your assistance and cooperation in this matter.

Sincerely,

A handwritten signature in cursive script, appearing to read "George R. Herbert".

George R. Herbert
 Instructor, VPI&SU
 107 Seitz Hall
 Blacksburg, Va. 24061
 (703) 951-6818 -office
 (703) 951-7936 -home

I will appreciate your assistance, too.

William E. Dugger
 William E. Dugger
 Program Area Leader
 Industrial Arts Education

Again thanks for helping by filling out these forms. Hope you enjoy the coffee.



COLLEGE OF EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DIVISION OF VOCATIONAL-TECHNICAL EDUCATION

To be brief and to the point, I need your help. Two weeks ago, I sent you a questionnaire, and a letter relating to a study of industrial arts teachers. Up to now, I have not received your response in providing the information necessary to complete this study. Perhaps your schedule was busy at that time and this request didn't come to your attention, or, for various personal reasons, you choose not to complete the questionnaire.

If you are concerned about the confidentiality of this study; again, may I stress only the total group response will be made use of. Of major importance to the study are the responses to the questions. Names can be withheld by you on both the questionnaire and PRF answer sheet.

Since the study attempts to answer the question of what are the profile characteristics of practicing Industrial Arts Teachers, it's implications could have great impact on program planning and recruitment of teachers in industrial arts programs.

The number of educators involved in this study is limited, so each of you play a significant role in making this study valuable.

If you have responded to this request and returned your questionnaire, please accept my sincerest thanks for your cooperation and time in this matter.

Sincerely,

A handwritten signature in cursive script, appearing to read "George R. Herbert".

George R. Herbert
 Instructor, VPI&SU
 107 Seitz Hall
 Blacksburg, Va. 24061
 (703) 951-6818-office
 (703) 951-7936-home

APPENDIX E
TABLES 27-31

Table 27

Group Response by States or Territories

	AIAA Award Recipients	Industrial Arts Teachers
Alabama	3/4 = 75%	
Alaska	1/2 = 50%	
Arizona	3/4 = 75%	5/6 = 83%
California	3/3 = 100%	
Colorado	3/3 = 100%	
Connecticut	3/4 = 75%	
Delaware	2/3 = 66%	
Florida	1/3 = 33%	3/9 = 33%
Georgia	2/3 = 66%	3/5 = 60%
Hawaii	2/3 = 66%	
Idaho	2/3 = 66%	2/3 = 66%
Illinois	2/3 = 66%	
Indiana	4/4 = 100%	5/7 = 71%
Iowa	4/4 = 100%	
Kansas	4/4 = 100%	
Kentucky	3/3 = 100%	3/5 = 60%
Louisiana	2/4 = 50%	3/5 = 60%
Maryland	3/3 = 100%	
Massachusetts	2/3 = 66%	
Michigan	1/3 = 33%	
Minnesota	3/3 = 100%	8/13 = 61.5%
Mississippi	1/3 = 33%	0/3 = 0%
Missouri	2/3 = 66%	5/12 = 41.6%
Montana	1/3 = 33%	
Nebraska	2/3 = 66%	

Table 27 (continued)

	AIAA Award Recipients	Industrial Arts Teachers
Nevada	3/3 = 100%	
New Jersey	3/3 = 100%	
New Hampshire	2/2 = 100%	
New Mexico	3/3 = 100%	1/3 = 33%
New York	2/3 = 66%	22/44 = 53%
North Carolina	1/3 = 33%	4/5 = 80%
North Dakota	2/3 = 66%	3/5 = 60%
Ohio	4/4 = 100%	
Oklahoma	1/3 = 33%	2/5 = 60%
Oregon	2/3 = 66%	
Pennsylvania	3/3 = 100%	
Puerto Rico	1/1 = 100%	
Rhode Island	3/3 = 100%	
South Carolina	1/2 = 50%	
South Dakota	1/3 = 33%	
Tennessee	3/3 = 100%	2/5 = 40%
Texas	2/3 = 66%	8/16 = 50%
Utah	3/3 = 100%	4/4 = 100%
Vermont	2/3 = 66%	2/2 = 100%
Virginia	4/4 = 100%	4/10 = 40%
Washington	2/4 = 50%	
West Virginia	4/4 = 100%	
Wisconsin	3/4 = 75%	
Wyoming	3/4 = 75%	
Total number	112/148	80/159
Percent	75.7%	50%

Table 28

Table of Response Rate

	AIAA Award Recipients	Industrial Arts Teachers
Number Returned	112	80
Total Number	156	163
Response Rate	71.8%	49.1%
Combined Response Rate	60.2%	

*Note: Those total numbers returned represent all respondents. Data analyzed included only those as of March 1, 1977, the cut-off point.

Table 29

Group Mean Scores and Mean Differences (PRF)

PRF Scales	AIAA Award Recipients	Industrial Arts Teachers	$\bar{X}_A - \bar{X}_B$
	\bar{X}_A	\bar{X}_B	
AB	7.6448598	7.43421053	.2106493
AC	12.9252336	11.92105263	1.004181
AF	9.3738318	9.25	.1238318
AG	6.3831776	7.57894737	-1.1966697
AU	5.7009346	6.82884737	-1.1280127
CH	7.8504673	7.88157895	- .0311116
CS	11.1121495	10.15789474	.954255
DE	5.5784593	6.15789474	- .5784554
DO	10.8476636	10.61842105	- .129242
EN	11.6448598	11.52631579	.118544
EX	6.5046729	6.53947368	- .0348007
HA	9.3644860	8.81578947	.5486966
IM	4.0747664	4.17105263	- .0962862
NU	10.7009346	9.93421053	.766724
OR	8.9719626	9.101315789	.9588048
PL	5.3271028	6.69736842	-1.3702656
SE	8.0373832	7.27631578	.7610675
SR	8.6728972	8.21578947	.3571078
SU	6.4205607	5.93421053	.4863502
UN	7.8598131	7.43421053	.4256026
Total Number	107	76	

*Statistically significant at the .05 alpha level

Table 30

Group "A" Mean Scores and Mean Differences From
the PRF Normative Group of College Men

PRF Scales	AIAA Award Recipients	PRF Norm	$\bar{X}_A - \mu = Y_A$
	\bar{X}_A	μ	Y_A
AB	7.6448598	7.78	- .1351
AC	12.9252336	10.98	1.8452*
AF	9.3738318	8.33	1.0438
AG	6.3831776	7.35	- .8668
AU	5.7009346	9.54	-3.8380*
CH	7.8504673	9.49	-1.6385*
CS	11.1121495	8.64	2.4725*
DE	5.5794393	5.75	- .1706
DO	10.7476636	10.18	.5577
EN	11.6448598	10.92	.7249
EX	6.5046729	7.52	-1.0153
HA	9.3644860	7.41	1.9545*
IM	4.0747664	5.46	-1.3852*
NU	10.7009346	8.90	1.8009*
OR	9.9719626	7.82	2.1520*
PL	5.3211028	8.18	-2.8529*
SE	8.0373832	9.27	-1.2326*
SR	8.6728972	7.52	1.1529*
SU	6.4205607	5.64	.7806
UN	7.8598131	10.25	-2.3902*

**Total Number 107 1,029

*Statistically significant at the .05 alpha level

**Note: Two observations were deleted due to an inflated
infrequency score.

Table 31

Group "B" Mean Scores and Mean Differences From
the PRF Normative Group of College Men

PRF Scales	Industrial Arts Teachers	PRF Norm	$\bar{X}_B - \mu = Y_B$
	\bar{X}_B	μ	Y_B
AB	7.4342	7.78	-.3458
AC	11.9211	10.98	.9411
AF	9.2500	8.33	.92
AG	7.5788	7.35	.2288
AU	6.8289	9.54	-2.7111*
CH	7.8816	9.49	-1.6084*
CS	10.1579	8.64	1.5179*
DE	6.1579	5.75	.4079
DO	10.6184	10.19	.4284
EN	11.5263	10.92	.6063
EX	6.5395	7.52	-.9805
HA	8.9158	7.41	1.4058
NU	9.9343	8.90	1.0343
OR	9.0132	7.82	1.1932
PL	6.6974	8.18	-1.4826
SE	7.2763	9.27	-1.8937*
SR	8.3158	7.52	.7958
SU	5.9342	5.64	.2942
UN	7.4342	10.25	-2.8158
**Total Number	76	1,029	

*Statistically significant at the .05 alpha level

**Note: Two observations were deleted due to an inflated infrequency score.

VITA

Name:

George R. Herbert

Birthplace:

Louisville, Kentucky

Date of Birth:

January 17, 1944

Parents:

George H. and Mary A. Herbert

Marital Status:

Married Judy C. Cook, August 26, 1967

Education:

Ed.D. Virginia Polytechnic Institute and State University 1977

M.A. Western Kentucky University 1969

B.S. Western Kentucky University 1968

Experience:

Teaching: Instructor - Manufacturing and Production Lab, Virginia Polytechnic Institute & State University, 1975 - Present (employment while completing doctorate)

Instructor - General Drafting and Architectural Drawing, Fairdale High School, Louisville, Kentucky, 1970 - 1975 (Fulltime public school)

Instructor - Blue Print Reading, Louisville Technical Institute, Louisville, Kentucky, 1974 - 1975 (Part-time night school)

Instructor - General Shop, Industrial Education Department, Western Kentucky University, 1969 - 1970 (while completing masters program)

Instructor of Drafting in the Industrial Education Department of Western Kentucky University, Summer Term, 1968, and terms of 1968 - 1969 and 1969 - 1970 (while completing masters program)

Professional Publications:

Articles: Herbert, George R. "Career Education: Programs and Activities," Man/Society/Technology Journal of the American Industrial Arts Association, April, 1977, Vo. 36, #7, pg. 198-202.

Instructional

Materials: "Metric Measurement and You," Booklet for use by the Industrial Arts Program Area, Virginia Polytechnic Institute and State University, 1976

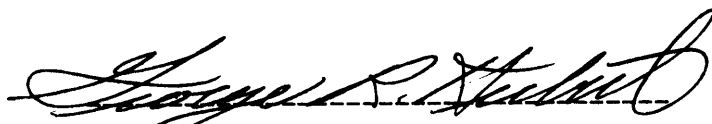
Curriculum Writer for the Industrial Arts Elective Quarter Plan Curriculum, Jefferson County Public Schools, Louisville, Kentucky, 1971 - 1975

Curriculum Guides:

1. Electricity - Electronics
2. Graphic Arts
3. Drafting
4. Woods
5. Metals
6. Industrial Arts Safety Supplement
7. Industrial Arts Metric Supplement

Media

Presentation: "Industrial Arts Education at Virginia Polytechnic Institute and State University," A slide-tape presentation, 1975



George R. Herbert

A COMPARATIVE ANALYSIS OF PERSONALITY CHARACTERISTICS OF
INDUSTRIAL ARTS TEACHERS IN THE UNITED STATES

by

George Robert Herbert

(ABSTRACT)

The purpose of this study was to investigate the relationship of selected demographic variables and personality variables to industrial arts teaching. The groups under investigation were: the national group (A) of 156 American Industrial Arts Association teacher of the year recipients and the national group (B) of 163 randomly selected industrial arts teachers. The personality variables were those variables as measured by Jackson's (1974) Personality Research Form (PRF).

Data collected from the population groups, as measured by the PRF and as reported on the demographic questions, were analyzed using the statistical procedures of multiple analysis of variance combined with t-tests and chi-square tests of significance. Simultaneous confidence intervals were calculated for the personality variables for both groups "A" and "B" following Morrison's (1976) Multivariate Statistical Methods.

The two nationally identified groups of industrial arts teachers were found to be different in respect to both the demographic variables and personality profiles.

The AIAA award recipients tended to be older, more experienced, and had earned generally higher degree levels than did those industrial

arts teachers of the randomly selected group (B). The AIAA award recipients were generally teaching in larger schools, unit laboratories, and were more satisfied with industrial arts as a profession than those of the "B" group. The group (B) of randomly selected industrial arts teachers were more often found to be teaching in smaller schools, yet similar size communities, and in general industrial arts laboratories, as well as being somewhat less satisfied with industrial arts teaching as a profession than were those of the "A" group.

The AIAA award recipients tended to possess a somewhat higher need for achievement and cognitive structure combined with a somewhat lower need for aggression, autonomy, and play than did those of the "B" group. These tendencies would suggest persons who would appear to be striving, accomplishing, purposeful, more precise, definite, and more meticulous than other industrial arts teachers. These persons would also appear to be less aggressive and less quarrelsome. They appear to be more generally manageable, dependent, less carefree, and less pleasure seeking than the group of randomly selected industrial arts teachers. The return rate of 71.8 percent for the AIAA award recipients as compared to only 49.1 percent for the randomly selected industrial arts teachers would suggest a stronger interest in professional activities or at least a stronger need to be involved.

The two national groups of industrial arts teachers were found to be quite different in comparison to the PRF normative group of college men. Both groups of industrial arts teachers were found to possess personality profiles which tended to suggest persons who were less rebellious,

less likely to change, more manageable, conforming, precise, meticulous, and needed structure more than those of the normative group.

Furthermore, the AIAA award recipients were more reflective of persons who tended to be accomplishing, industrious, careful, sympathetic, protective, neat, systematic, and more disciplined than those of the normative group of college men. The AIAA recipients tended to be more approval seeking, socially sensitive, and generally more desirous of credit than the normative group. The industrial arts teachers of the "A" group also tended to be less reckless, impatient, impulsive, and less carefree than the college men of the normative group.