

THE ASSOCIATION OF CERTAIN PERSONAL CHARACTERISTICS OF  
VOCATIONAL AGRICULTURE TEACHERS WITH THE EFFEC-  
TIVENESS OF THE EDUCATIONAL PROGRAM IN  
THEIR RESPECTIVE DEPARTMENTS

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## PREFACE

The challenging role of a vocational agriculture teacher demands an individual that possesses personal characteristics in such a combination that his efforts result in dignity and pride for the performance of his responsibilities. The selection of prospective teachers whose efforts would most likely contribute to the effectiveness of the program is a major concern of the teacher education department and supervisory staff. This investigation is an attempt to identify certain personal characteristics that are possessed by teachers who achieve a high level of performance. It is hoped that findings in this study will contribute to an understanding of a behavioral pattern exhibited by successful teachers so that knowledge acquired may possibly be utilized in selecting prospective teachers with a likelihood of success.

Appreciation is expressed to Dr. Robert R. Price, Chairman of my committee, Dr. Howard W. Heding, Dr. Richard P. Jungers, Dr. Roy W. Dugger, and Dr. James D. Tarver, under whose guidance this study was made, for their valuable advice and criticism.

Appreciation is expressed to Professors Clarence L. Angerer, Chris G. White, and Don M. Orr, teacher-educators in the Department of Agricultural Education, Oklahoma State

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## CHAPTER I

### INTRODUCTION

Residents of a given community seem to be largely in agreement that the personal characteristics of a vocational agriculture teacher are recognized as major factors influencing the effectiveness of an educational program of departments of vocational agriculture. Identification of these personal characteristics of vocational agriculture teachers which may influence the effectiveness of the educational program has been a challenge both to staff members of departments of teacher-education and to supervisory staffs. The major purpose of this study is to investigate the association of certain personal characteristics of vocational agriculture teachers with the effectiveness of the educational program in their respective departments.

The investigator is studying the existence or non-existence of an association between certain selected personal characteristics and individual achievements culminating in highly successful programs rather than attempting to study possible association between every characteristic the vocational agriculture teacher might be recognized as possessing. In planning the study, he

recognized as an accepted premise that the whole individual reacts to the sum total of events encountered.

Alberty expressed this view with regard to the "whole individual" when he says,

The physical, emotional, and intellectual aspects of behavior are a unity that cannot, except for purposes of discussion, be separated. They are present in every instance of behavior. Learning is a matter of both analysis and synthesis. The individual in interaction with his environment responds to situations as "Wholes." ... Every phase of personality is vitally dependent upon other phases, and all are acting and reacting at the same time.<sup>1</sup>

Alberty implies that the various personal characteristics can be separated for purposes of discussion. The suitability of separation of the personal characteristics for discussion likewise implies suitability of separation for purposes of study.

Studying the individual to determine the association of certain personal characteristics with the effectiveness of the educational program is based on the assumption that for maximum performance the personality of each individual must have opportunity for more or less complete expression. In general it can be recognized that vocational agriculture teachers in the State of Oklahoma do have adequate opportunity for freedom of expression to develop local programs in the public school which may result in maximum effectiveness

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<sup>1</sup>Harold Alberty, Reorganizing the High-School Curriculum (New York, 1953), p. 47.

of achievement. Teachers generally do recognize the importance of a consideration of broad goals and objectives. The goals and objectives are established, at least in part, by a consensus of the teachers involved.

A major objective, established through such consensus of vocational agriculture teachers, is that local programs of vocational agricultural education should endeavor to fulfill the agricultural education needs of the community. There is further agreement that the teacher fulfills this need by exercising personal initiative and creativity. Since personal characteristics are influential in developing local programs, any variation in the effectiveness of the programs may be more or less attributable to variations in personal characteristics of the teachers.

An acceptance of the major objective, that the local program of vocational agricultural education should be so planned and initiated as to fulfill the agricultural education needs of the community, is prevalent among Oklahoma teachers. Even in areas where the social and economic conditions are similar some vocational agricultural educational programs more effectively accomplish major objectives than do others. Many departments are recognized in the community, state, and nation as being very effective in their educational program. Other departments are not so highly recognized even though teachers do appear to exhibit enthusiasm for successful achievement.

From the early years of the development of the vocational movement, leaders in vocational agriculture recognized the importance of qualities which might be possessed by individual teachers as a major factor contributing to the effectiveness of the educational program.

The Federal Board for Vocational Education, in a publication of 1923, emphasized the importance of the teacher in the success of the educational program thus:

The success of any program of education, and particularly vocational education, will, in the last analysis, depend very largely upon the teachers.<sup>2</sup>

If the fact is accepted that personal characteristics of vocational agriculture teachers do influence the effectiveness of educational programs, the investigator felt it highly desirable to attempt an identification of those personal characteristics that might be closely associated.

#### Statement of the Problem

The study was undertaken to ascertain the association of certain personal characteristics of vocational agriculture teachers with the effectiveness of the educational program in their respective departments. The

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<sup>2</sup>Federal Board for Vocational Education, Bulletin No. 90, Agriculture Series, No. 18, "Agriculture Teacher Training," U.S. Government Printing Office (Washington, 1923).

principal problem of the research study was to ascertain whether significant differences do exist between two groups of teachers, rated according to the effectiveness of the educational program in their department, in regard to the nature, the extent, and the quality of certain selected personal characteristics which they might possess.

Many personal characteristics are involved in teaching, for the "whole" individual reacts to experiences, but only twenty-three personal characteristics were considered in this study.

#### Definition of Terms

The term certain personal characteristics is used in this research problem to refer to the following characteristics:

1. Preference for and interests in outdoor, mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, and clerical activities;
2. Temperament as expressed by such traits as general activity, seriousness, ascendance, social interest, emotional stability, objectivity, friendliness, thoughtfulness, personal relations, and masculinity;
3. Distinctiveness with regard to teacher attitude;
4. Distinctiveness with regard to mechanical comprehension;

5. Distinctiveness with regard to mental ability.

The term personal characteristic refers to the certain traits of attitude, interest, and temperament or expressed behavior usually indicative of a more or less specific pattern of thought and action peculiar to the individual.

The term department of vocational agriculture refers to the facilities and the teacher related to a particular local unit of an organized curriculum offered in a public high school.

The term educational program refers to all instructional activities provided by the local department of vocational agriculture.

The term effectiveness of the educational program refers to the particular pattern of accomplishment of a vocational agriculture department as measured objectively.

The term selected factors is used to designate characteristics that are considered as significant, proved measures of the effectiveness of the educational program of local departments of vocational agriculture.

The term area is used with reference to geographical subdivisions of the State of Oklahoma in which there are located from six to nineteen local departments of vocational agriculture. There are twenty such subdivisions in the state.

The term teachers, unless otherwise specifically designated, refers to local vocational agriculture teachers.

The term significant difference is used to distinguish



differences in which a mean percentile variation of five per cent or greater is observed.

The term Group I refers to those teachers employed in departments which rank in the upper fifteen per cent of departments in terms of the effectiveness of their respective educational programs.

The term Group II refers to those teachers employed in departments which rank in the lower fifteen per cent of departments in terms of effectiveness of their respective educational program.

The term association refers to relationships or occurrences that are concomitant.

The term percentile ranking refers to percentiles established as norms by the authors of the standardized tests used in this investigation.

The term approved high school vocational agriculture department refers to a local program which meets all requirements of teacher qualifications, facilities, and functioning programs as set forth by the State Board for Vocational Education.

### Basic Assumptions

This study is based upon the following assumptions:

1. The method of selecting the population by employing the selected factors rated the departments of vocational agriculture according to the effectiveness of their educational program.

2. Valid and reliable instruments can be used in obtaining test scores indicating the degree to which certain personal characteristics are possessed by vocational agriculture teachers.
3. Teachers who met the specified criteria are themselves a major factor in determining the effectiveness of the educational program.
4. Teachers of vocational agriculture in the State of Oklahoma are interested in their own performance to the extent that they will cooperate wholeheartedly in their response made during the testing procedure.
5. The social and economic factors which may influence the effectiveness of the local department's educational program are sufficiently similar to provide validity for comparison between departments within each subdivision of the state.
6. Those who choose the profession will choose more wisely if more is known about the personal characteristics and behavioral patterns of successful teachers of vocational agriculture.
7. The personal characteristics possessed and the behavioral pattern expressed by teachers in this investigation denote a relatively similar pattern that will be exhibited in prospective teachers of vocational agriculture.

## Need for the Study

A major objective of the study was to identify certain selected personal characteristics which might be associated with individuals achieving outstandingly successful programs of vocational agriculture. Staffs of departments of agricultural education, charged with the responsibility of providing meaningful experiences for prospective teachers, are greatly in need of criteria which might be used in the selection and the development of potential teachers of vocational agriculture. Such criteria are needed to assist in selecting candidates with potential for developing into highly competent and effective teachers of vocational agriculture. If the program of vocational agricultural education is to continue to function effectively in society, the selection of teachers possessing characteristics associated with an increased likelihood of success is of primary consideration. In addition, this information might be used to aid candidates to acquire a better understanding of their personal characteristics in relation to probable success in the profession. Not only should such criteria assist in selection of prospective teachers, but the criteria would also be of decided benefit for use as a frame of reference in developing and maintaining effective programs of participating experience for the prospective teacher of vocational agriculture.

Many educators have expressed concern because of a lack of ineffective techniques that might aid in predicting teacher success.

Barr's concern is expressed when he says,

... although many studies have been made there seems to be no conclusive evidence that any one factor or group of factors predict success in teaching. It seems that prediction techniques are still very much in the experimental stage.

Several studies have been made to ascertain factors associated with teacher success. Sledge,<sup>4</sup> working with teachers of vocational agriculture, found that the A.C.E. scores and reading comprehension were not significantly related to the performance of the teachers studied. He found that there was no significant relationship between membership in Future Farmers of America, years of high school agricultural education, grades in college, or student teaching grades and subsequent teaching performance. He recommended that measures of personality and social adaptability should be included when measuring what is desired in teachers of vocational agriculture.

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<sup>3</sup>Arvil S. Barr, "Measurement and Prediction of Teaching Efficiency," Review of Educational Research, XIV (June, 1945), 1-5.

<sup>4</sup>George W. Sledge, "Relationship Between Some Preteaching Characteristics and Subsequent Performance of Teachers of Vocational Agriculture," (unpub. Ed.D. dissertation, Michigan State College, 1954), p. 2.

Torrence studied the relationship between success attained by teachers of vocational agriculture and various competencies that they possessed. He arrived at the following conclusions:

1. There is a statistically significant relationship between a vocational agriculture teacher's knowledge of technical agriculture and his success as a teacher.
2. There is no statistically significant relationship between proficiency in performing agricultural manipulative skills and success as a teacher.
3. There is inconclusive evidence of the relationship that exists between a vocational agriculture teacher's knowledge of professional education information and his success as a teacher.<sup>5</sup>

Juergenson's study attempted to identify various personal characteristics associated with teaching success. He reported,

A negative correlation was discovered between the scores experienced teachers made on a mental ability test and the success rating given them by principals. The study did not show a significant relationship between the success of an experienced teacher of vocational agriculture and the scores he made on a mechanical problem solving test, a social situation test, and a test of logical reasoning.<sup>6</sup>

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<sup>5</sup>Andrew P. Torrence, "Prediction of Vocational Agriculture Teacher Success," The Agricultural Education Magazine, Vol. 27, No. 11, (Danville, May, 1955), p. 259.

<sup>6</sup>Elwood M. Juergenson, "The Relationship Between Success in Teaching Vocational Agriculture and Ability to Make Sound Judgments as Measured by Selected Instruments," (unpub. Ed.D. dissertation, Pennsylvania State University, 1958), p. 56.

Juergenson reported a low correlation between the capacity for mechanical problem solving and mental ability. This is further evidence that the possession of a certain personal characteristic by an individual does not assure the possession of other personal characteristics by the same individual.

Stevens studied certain selected success factors which he assumed to be related to effective teaching performance and found that the attitudes of teachers toward their profession was more desirable among supervising teachers than among non-supervising teachers. Their attitudes were measured by the Minnesota Teacher Attitude Inventory Test. He concluded from his study:

Nearly all of the factors involved depend upon the instructor, himself, as to whether or not the local program functions at a high level... The teacher of vocational agriculture makes the difference. It is possible for a superior teacher to more than compensate for certain less than ideal factors in school organization, facilities for instruction, level of farm income, or of other inconvenient forces.<sup>7</sup>

Wolf<sup>8</sup> asked young farmers to list factors

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<sup>7</sup>Glen Z. Stevens, "Factors Involved in the Selection of Supervising Teachers in Vocational Agriculture in Minnesota," (unpub. Ph.D. dissertation, University of Minnesota, 1952), p. 95.

<sup>8</sup>Willard H. Wolf, "How Teachers Assist Young Farmers to Increase Their Net Worth," (unpub. Master's Thesis, Ohio State University, 1942), pp. 119-120.

contributing to the success of a teacher in young farmer programs of instruction. They listed personal characteristics of the teacher as being an important factor influencing their success.

Kindell found in his study of factors associated with successful adult programs of instruction in vocational agricultural education that teacher's personal characteristics were important. He says,

The extent of adult farmer participation in an educational program depends primarily upon the initiative, interest, and confidence of the local teacher of vocational agriculture.<sup>9</sup>

Price studied certain factors which he hypothesized as being associated with the occurrence of adult farmer programs in vocational agriculture departments. He concluded that the teacher's personal characteristics influenced the program. He says,

... teachers of out-of-school farmer groups were found also to have exhibited more activity in extra-curricular and campus leadership events, the possession of a more extroverted personality, or initiative to engage in situations involving social interrelationships... This suggestion also carries implications for teacher educators concerning the selection of candidates for pre-service education programs.<sup>10</sup>

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<sup>9</sup>Clyde Raymond Kindell, "Factors Associated with the Participation of Adult Farmers in Organized Instruction in Vocational Agriculture," (unpub. Ed.D. dissertation, Oklahoma State University, 1959), p. 129.

<sup>10</sup>Robert Raymond Price, "Factors Associated with the Occurrence of Local Young Adult Farmer Instructional Programs in Vocational Agriculture in the States of Pennsylvania and Oklahoma," (unpub. Ed.D. dissertation, Pennsylvania State University, 1956), p. 248.

Studies made by Sledge<sup>11</sup> and Torrence<sup>12</sup> did not attempt to identify specifically any of the personal characteristics associated with teacher success that are under investigation in this study. The factors reported in each of the investigations as being associated with teacher success must be considered as rather limited in scope and somewhat insufficient for a teacher education department to use in selecting prospective teachers.

Stevens<sup>13</sup> used a test which was also included in the battery of tests used in this study. By employing a technique used in this study he acquired information that is useful in selecting prospective trainees. He, however, limited his study to only one personal characteristic. Further study of other personal characteristics by employing this same technique of using standardized tests is warranted.

Wolf<sup>14</sup> and Kindell<sup>15</sup> did not specifically attempt to identify and isolate personal characteristics associated with effectiveness of the educational program. They,

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<sup>11</sup>Sledge, p. 2.

<sup>12</sup>Torrence, p. 259.

<sup>13</sup>Stevens, pp. 91-94.

<sup>14</sup>Wolf, pp. 119-120.

<sup>15</sup>Kindell, p. 129.



however, did establish the fact that young farmers consider personal characteristics possessed by the teacher as being definitely associated with their conception of teacher success.

Price<sup>16</sup> established that possession of the personal characteristic of an "extroverted personality" was associated with more effective educational programs provided for young adult farmers. Identification of this personal characteristic as being associated with a more effective educational program warrants including the characteristic in this study to further substantiate the evidence of association.

Therefore, the investigator summarizes the following points as reasons why the need for this study exists:

1. The many studies on this subject indicate the concern that this study warrants.
2. No study has attempted to associate all of the personal characteristics included in this study with the effectiveness of the educational program.
3. When selected personal characteristics, as included in this study, were investigated by others, positive association with effective educational programs was often reported either as conclusions or as implications. This study

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<sup>16</sup>Price, p. 248.

should provide further evidence of the existence or non-existence of each association.

### Hypotheses of the Study

The hypotheses of the study are:

1. Significant association exists between the achievement of vocational agriculture teachers in terms of effectiveness of educational programs in their departments and the possession by these teachers of certain personal characteristics as measured in terms of scores attained on the Kuder Preference Record for interest relative to each of the following:<sup>17</sup>
  - a) Outdoor,
  - b) Mechanical,
  - c) Computational,
  - d) Scientific,
  - e) Persuasive,
  - f) Artistic,
  - g) Literary,
  - h) Musical,
  - i) Social Service,
  - j) Clerical Activities.

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<sup>17</sup>Frederic Kuder, "Kuder Preference Record," Vocational Form CH, Science Research Associated, (Chicago, 1951).

2. Significant association exists between the achievement of vocational agriculture teachers in terms of effectiveness of educational programs in their departments and the possession by these teachers of certain personal characteristics as measured in terms of scores on the Guilford-Zimmerman Temperament Survey for temperament relative to each of the following:<sup>18</sup>

- a) General Activity or Energy,
- b) Restraint or Seriousness,
- c) Ascendance or Social Boldness,
- d) Social Interest or Sociability,
- e) Emotional Stability,
- f) Objectivity,
- g) Friendliness or Agreeableness,
- h) Thoughtfulness or Reflectiveness,
- i) Personal Relations or Cooperativeness,
- j) Masculinity.

3. Significant association exists between the achievement of vocational agriculture teachers in terms of effectiveness of educational programs in their departments and the possession by these teachers of certain personal

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<sup>18</sup>"Guilford-Zimmerman Temperament Survey," (Beverly Hills, 1955).

characteristics as measured in terms of scores on the Minnesota Teacher Attitude Inventory.<sup>19</sup>

4. Significant association exists between the achievement of vocational agriculture teachers in terms of effectiveness of educational programs in their departments and the possession by these teachers of certain personal characteristics as measured in terms of scores on the Owens-Bennett Mechanical Comprehension Test.<sup>20</sup>
5. Significant association exists between the achievement of vocational agriculture teachers in terms of effectiveness of educational programs in their departments and the possession by these teachers of the personal characteristic of mental ability as measured in terms of scores on the Otis Quick-Scoring Mental Ability Test.<sup>21</sup>

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<sup>19</sup>Walter W. Cook, Carroll H. Leeds, and Robert Callis, "Minnesota Teacher Attitude Inventory," Form A, The Psychological Corporation (New York, 1951).

<sup>20</sup>William A. Owens and George K. Bennett, "Mechanical Comprehension Test," Form CC, The Psychological Corporation (New York, 1949).

<sup>21</sup>Arthur S. Otis, "Otis Quick-Scoring Mental Ability Test," Gamma (New York and Chicago, 1952).

## CHAPTER II

### PROCEDURE OF THE INVESTIGATION

The purpose of this chapter is to restate the hypotheses of the investigation, to describe the population subjected to investigation, to represent factors relative to selection and design of instruments employed in securing pertinent data, and to describe in more detail the procedure used in obtaining and analyzing the data.

The study was undertaken to ascertain whether selected personal characteristics of vocational agriculture teachers, as measured by standardized tests and scales, were associated with the quality, the nature, and the extent of the programs achieved in the respective departments in which they were teaching. Achievements in terms of the nature, the extent, and the quality of programs peculiar to the operational and functional level of the departments were measured by use of criteria established and validated in a previous study.<sup>1</sup>

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<sup>1</sup>Earl Knebel, "An Analysis of Factors Contributing to Effective Program of Vocational Agriculture" (unpub. Ed.D. dissertation, Oklahoma State University, 1955).

Of the total programs subjected to scoring by use of these criteria, those scoring in the lower fifteen per cent were considered to be operating at a definitely lower level of effectiveness than were those departments scoring in the upper fifteen per cent.

The study was undertaken to ascertain the association of certain personal characteristics of vocational agriculture teachers with the effectiveness of the educational programs in their departments.

The specific hypotheses to be tested were:

1. Significant association exists between the achievement of teachers in terms of effectiveness of educational programs in their departments and the possession by these teachers of certain personal characteristics as measured in terms of scores made on the Kuder Preference Record<sup>2</sup> for interests relative to each of the following:
  - a) Outdoor,
  - b) Mechanical,
  - c) Computational,
  - d) Scientific,
  - e) Persuasive,
  - f) Artistic,

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<sup>2</sup>Frederic Kuder, "Kuder Preference Record," Vocational Form CH, Science Research Associates (Chicago, 1951).

- g) Literary,
- h) Musical,
- i) Social Service,
- j) Clerical.

2. Significant association exists between the achievement of teachers in terms of effective educational programs in their departments and the possession by these teachers of certain personal characteristics as measured in terms of scores made on the Guilford-Zimmerman Temperament Survey<sup>3</sup> for temperament relative to each of the following:

- a) General Activity or Energy,
- b) Restraint or Seriousness,
- c) Ascendance or Social Boldness,
- d) Social Interest or Sociability,
- e) Emotional Stability,
- f) Objectivity,
- g) Friendliness or Agreeableness,
- h) Thoughtfulness or Reflectiveness,
- i) Personal Relations or Cooperativeness,
- j) Masculinity.

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<sup>3</sup>"Guilford-Zimmerman Temperament Survey," (Beverly Hills, 1955).

3. Significant association exists between the achievement of vocational agriculture teachers in terms of effectiveness of educational programs in their departments and the possession by these teachers of certain personal characteristics as measured in terms of scores on the Minnesota Teacher Attitude Inventory.<sup>4</sup>
4. Significant association exists between the achievement of vocational agriculture teachers in terms of effectiveness of educational programs in their departments and the possession by these teachers of certain personal characteristics as measured in terms of scores on the Owens-Bennett Mechanical Comprehension Test.<sup>5</sup>
5. Significant association exists between the achievement of vocational agriculture teachers in terms of effectiveness of educational programs in their departments and the possession by these teachers of the personal characteristic of mental ability as measured in terms of scores on the

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<sup>4</sup>Walter W. Cook, Carroll H. Leeds, and Robert Callis, "Minnesota Teacher Attitude Inventory," Form A. The Psychological Corporation (New York, 1951).

<sup>5</sup>William A. Owens and George K. Bennett, "Mechanical Comprehension Test," Form CC, The Psychological Corporation (New York, 1949).



## Otis Quick-Scoring Mental Ability Test.<sup>6</sup>

### Selecting the Population

The investigator compiled the names of all approved high school vocational agriculture departments in the State of Oklahoma where the vocational agriculture teacher had been teaching in the present vocational agriculture department for three years or longer and where only one vocational agriculture teacher was teaching in that vocational agriculture department.

There were three hundred and sixty-five vocational agriculture departments in the State of Oklahoma. Two hundred and eight vocational agriculture departments, or fifty-seven per cent of the departments in Oklahoma, met criteria with respect to teacher tenure and operation as a one-teacher department. One hundred and fifty-seven departments or forty-three per cent of the currently operating departments, were excluded from the study because of failure to meet one or more of the specified criteria.

The purpose of imposing criteria relating to teacher tenure was to attempt to remove the influence of previous teachers on the effectiveness of the educational program ascertained for each department. The reason for selecting departments where there was only one teacher was the difficulty of identifying an objective basis for selecting

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<sup>6</sup>Arthur S. Otis, "Otis Quick-Scoring Mental Ability Test," Gamma (New York and Chicago, 1952).

the teacher, in a multiple-teacher department, whose influence had been the greatest on the educational program of that department.

From these two hundred and eight vocational agriculture departments that met the criteria specified, sixty-two departments, or thirty per cent were selected according to their educational effectiveness. These departments were divided into two groups consisting of fifteen per cent, or thirty-one departments, rated as the most effective in their educational programs and fifteen per cent, or thirty-one departments, rated as the least effective in their educational programs.

The departments were selected in each area by determining the effectiveness of their educational program in comparison with the other departments in that area. The process by which this was accomplished was the application of selected factors<sup>7</sup> to each department that met the specified criteria. Information concerning these factors was obtained from the State Department of Vocational Education.

The selected factors used in rating the departments were as follows:

- (1) Number of young farmer farm visits per department;

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<sup>7</sup>Earl Knebel, "An Analysis of Factors Contributing to Effective Programs of Vocational Agriculture" (unpub. Ed.D. dissertation, Oklahoma State University, 1955), pp. 130-131.

- (2) Number of production projects completed per department;
- (3) Average number of productive enterprise projects completed per pupil;
- (4) Number of supervised farm training visits per department;
- (5) Average number of supervised farm training visits per pupil;
- (6) Total number of supplementary jobs per pupil;
- (7) Average number of supplementary jobs per pupil;
- (8) Number of points earned in the interscholastic Future Farmers of America Contests as computed for the Farmer-Stockman Award per department.
- (9) Judging Contest cash winnings at the major shows in Oklahoma per department; the shows used were the 1957 Oklahoma State Fair in Oklahoma City, the 1957 Tulsa State Fair, 1958 Oklahoma City Spring Livestock Show, and the 1957 Muskogee State Fair;
- (10) Total winnings from crop and livestock exhibits at the major shows in Oklahoma per department;
- (11) Total value of supervised farm training programs per department;

- (12) Average value of supervised farm training program per pupil;
- (13) Net profit from supervised farm training program per department;
- (14) Total self labor from supervised farm training program per department;
- (15) Average pupil hours from supervised farm training program per department;
- (16) Total labor income from supervised farm training program per department;
- (17) Average labor income per pupil from supervised farm training program per pupil;
- (18) Labor income from beef production projects per department;
- (19) Investment in swine production projects per department;
- (20) Labor income from swine production projects per department;
- (21) Investment in dairy production projects per department;
- (22) Total number of Junior Master Farmer Degrees awarded department during the period covered by the study. The study covered the years of 1955, 1956, and 1957;
- (23) Number of American Farmer Degrees awarded the department during the period covered by this study. The study covered the

years of 1955, 1956, and 1957;

- (24) Departments that qualified for the 1957  
Interscholastic Judging Contest in Crops,  
Livestock, Meats, and Dairy.

Each of the above listed selected factors was rated for this investigation in such a manner as to provide for division into an upper twenty-five per cent, a second-ranking twenty-five per cent, a third-ranking twenty-five per cent, and the fourth-ranking twenty-five per cent when compared with other departments in the area. The rating value for each of the selected factors was three, two, one, or zero points respective to the upper twenty-five per cent, second twenty-five per cent, third twenty-five per cent, or fourth twenty-five per cent.

The teachers from these vocational agriculture departments rated in the upper and lower groups according to the effectiveness of the department's educational program were used as the population from which to obtain data used in this study.

The investigator does not wish to imply that teachers whose departments are rated in the lower fifteen per cent in effectiveness of their educational programs are not successful. Only successful teachers were included in this investigation for the study was structured to include only those who had teacher tenure of three or more years. Teacher tenure constitutes a measure of success and is employed in many studies as a major criterion.

## Selecting the Instruments and Relating These to the Role of a Successful Vocational Agriculture Teacher

The next major problem confronted was to select instruments that would adequately measure such selected personal characteristics as were to be included in the investigation.

A number of standardized tests and instruments were reviewed and evaluated in terms of their suitability for determining the degree at which the individuals making up the population possessed the selected personal characteristics. The following is a description of the instruments selected and the reasons for their selection.

The tests that were selected to be administered to the vocational agriculture teachers consisted of the following:

1. Kuder Preference Record,
2. Guilford-Zimmerman Temperament Survey,
3. Minnesota Teacher Attitude Inventory,
4. Otis Quick-Scoring Mental Ability Test,
5. Owens-Bennett Mechanical Comprehension Test.

### Kuder Preference Record

The Kuder Preference Record was included in the battery of tests because it is generally recognized that preferences influence the motivation and effectiveness of the individual in his vocation.

The Kuder Preference Record yields scores for preferences of interests related to outdoor, mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, and clerical activities.

The reliability of a test, which refers to the degree of consistency with which a test measures whatever it does measure, is very important. Thorndike discusses the reliability of the Kuder Preference Record. He says,

A number of reliability studies with the Kuder, based on analysis of a single testing, give values averaging about 0.90. The reliability of the scores extracted from the interest inventory compares favorably with the score on ability tests.<sup>8</sup>

The following is a description of each of the personal characteristics included in the Kuder Preference Record as they relate to the duties and responsibilities of a vocational agriculture teacher.

Outdoor Interest. The teacher's responsibilities and duties usually require him to spend considerable time outdoors. His work is of such a nature that he would possibly be limited in his effectiveness as a vocational agriculture teacher if he did not have such interest.

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<sup>8</sup>Robert L. Thorndike and Elizabeth Hagen, Measurement and Evaluation in Psychology and Education (New York, 1955), p. 380.

Mechanical Interest. The accelerated increase in mechanization of farms has resulted in increased demands that vocational agriculture teachers teach the fundamentals of farm mechanics if the program they offer in their departments is recognized as a balanced program.

Computational Interest. Teachers of vocational agriculture are relatively limited in responsibilities in computation since they are not in a position where computational interest is demanded. Solving of managerial problems in farming operations, however, is an integral part of the pattern of agricultural knowledge. These demand consideration from the teacher.

Scientific Interest. The vocational agriculture teacher is considered a scientist, and it is generally assumed that he is teaching a scientific subject. The practical use of scientific knowledge is recognized as part of his responsibility in developing an effective program. Some authors, however, suggest that, if an individual is devoted to research and a quest for ultimate truth, he becomes ineffective as a teacher. Most would agree that the teacher must be interested in scientific truths and new developments in order to keep abreast of our challenging time; otherwise the facts presented would probably be outdated and ineffective.



Persuasive Interest. Teachers are educators and not salesmen per se. Authorities agree that one of the major responsibilities of educators is to develop the individual so that his attitude and value system will facilitate a concerned interest in solving the problems of life. Educator's responsibility is not to develop a conforming individual, but they should present various sides of the issue and help the individual develop his own cognitive system. Teachers, however, must possess the ability to communicate ideas forcefully and effectively. Respect from the students must be maintained if an effective educational program is developed and maintained.

Artistic Interest. The vocational agriculture teacher's responsibilities and opportunities for artistic endeavors are somewhat limited. Displays at various events, however, are more efficient in communication when artistic talents are employed.

Literary Interest. An individual must be widely read if he keeps apace with advancements of our modern times. The responsibility of the vocational agriculture teacher to assist in establishing harmony between rural and urban people so that both groups can work for their mutual benefit demands that he understand many conflicting problems and pressures. The challenge to help others understand and work out their problems in life demands that the teacher maintains a broad outlook. Literary interest will promote

his reading in many fields related, and also those not directly related, to his profession. Understanding the many pressures that have caused man to be what he is and do what he does helps the teacher to be more mellow and tolerant of the weaknesses of others but strong and enthusiastic in attacking problems as he has deeper insights into the orderly operation of the universe.

Musical Interest. Vocational agriculture teachers' musical opportunities and responsibilities are somewhat limited.

Social Service Interest. Teachers are social workers in a true sense. A strong desire to help one's fellow man meet life's problems successfully is generally considered very desirable for the profession and the individuals involved.

Clerical Interest. The vocational agriculture teacher's responsibilities are somewhat limited in clerical activities; however, consistent records are usually an aid in developing an effective educational program.

Therefore, the Kuder Preference Record was considered desirable to add to the battery of tests in the attempt to ascertain the association of certain personal characteristics of vocational agriculture teachers with the effectiveness of the educational program in their departments.

## Guilford-Zimmerman Temperament Survey

The Guilford-Zimmerman Temperament Survey examines ten personal characteristics related to temperament. They are: general activity or energy, restraint or seriousness, ascendance or social boldness, social interest, emotional stability, objectivity, friendliness, thoughtfulness, cooperativeness, and masculinity.

The temperament of the teacher has an influence on the effectiveness of the educational program. This test was selected because it tested for temperaments that several authors feel are worthy of consideration in the study of traits of teachers.

The following is a description and discussion of each temperament found in the survey. The information influenced selection of the test.

General Activity or Energy. A high score on general activity indicates rapid pace of activities, energy, vitality, keeping in motion, production, efficiency, liking for speed, hurrying, quickness of action, enthusiasm, and liveliness. A low score indicates a tendency to inertness and a disinclination for motor activity.

Most authors who have discussed personal characteristics in their relation to success have listed general activity or energy as being very important. Weber discussed energy as related to educational leadership by

saying:

Men and women who assume roles of leadership should be mentally and physically vigorous. It requires stamina and energy to face conflicting pressures day after day without flinching.<sup>9</sup>

The drive for accomplishments must be coupled with energy to be most effective. The vocational agriculture teacher's responsibilities are so many and varied that he must possess an abundance of energy if his program is to be highly effective.

Restraint or Seriousness. The teacher must give considerable thought to his decisions as he is in a position of leadership and will influence the thinking and the actions of the patrons in his community. According to several authors an individual possessing the characteristic of restraint would usually weigh his decisions more thoroughly.

Thorndike's<sup>10</sup> list of educational leadership characteristics include seriousness as a factor. A high score indicates serious-mindedness, deliberativeness, persistent effort, self-control, not being happy-go-lucky or carefree.

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<sup>9</sup>C.A. Weber and Mary E. Weber, Fundamentals of Educational Leadership (New York, Toronto, London, 1955), p. 215.

<sup>10</sup>Robert L. Thorndike and Elizabeth Hagen, Measurement and Evaluation in Psychology and Education (New York, 1955), p. 384.

Ascendance or Social Boldness. A high score on the personal characteristic of ascendance indicates habits of leadership, a tendency to take the initiative in speaking with others, liking to speak in public, liking for persuading others, and liking for conspicuousness.

Thorndike says the characteristic of ascendance indicates a "tendency to bluff or tendency to be self-defensive."<sup>11</sup>

Ferguson maintains that "a high score indicates social leadership and a low score social passiveness."<sup>12</sup>

Social Interest or Sociability. Several authors that discuss personal characteristics of educational leadership agree that social interest is a desirable trait or characteristic.

Thorndike's view is,

A high score indicates one who has many friends and acquaintances; who seeks social contact; who likes social activity; who likes the limelight; who enters into conversation; who is not shy.<sup>13</sup>

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<sup>11</sup>Ibid.

<sup>12</sup>Leonard W. Ferguson, Personality Measurement (New York, Toronto, London, 1952), p. 198.

<sup>13</sup>Thorndike, p. 384.

Ferguson says,

A high score indicates a tendency to seek social contacts and to enjoy the company of others. A low score indicates shyness, a tendency to withdraw from social situations and to be seclusive. A high score is desirable for mental health.<sup>14</sup>

Emotional Stability. Emotional stability is listed by several authors as desirable for educational leadership. Weber advocates the importance of emotional stability in the following statement,

Educational leadership should be characterized by emotional control. Those who have studied mental health have concluded that in a very large sense mental and physical health are highly correlated. These two aspects of health are so interdependent that they cannot be separated.<sup>15</sup>

Thorndike's view of the test score meaning relative to emotional stability is,

A person with a high score shows evenness of moods, interest, etc.; optimism, cheerfulness; composure; feeling of being in good health; freedom from feeling of guilt, worry or loneliness; freedom from day dreaming, freedom from preservation of ideas and moods.<sup>16</sup>

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<sup>14</sup>Ferguson, p. 199.

<sup>15</sup>Weber, p. 220.

<sup>16</sup>Thorndike, p. 384.

Objectivity. The personal characteristic of objectivity usually refers to the tendency to view one's self and surroundings objectively and dispassionately. A person low in objectivity usually tends to take everything personally and subjectively.

Thorndike's view of the test scores relative to objectivity is,

The high scorer is defined as free from the following: egoism, self-centeredness, suspiciousness, fancying hostility, a tendency to get into trouble, a tendency to be thin-skinned.<sup>17</sup>

Friendliness or Agreeableness. A friendly teacher would usually influence his students to acquire this personal characteristic. Weber expresses his view by saying, "Educational leadership should be characterized by friendliness."<sup>18</sup>

A belligerent or hostile teacher would possibly destroy a feeling of permissiveness in the educational climate. The students would search for conformity so as to escape the wrath of a teacher with a belligerent nature. Creativeness would usually be destroyed in the presence of a belligerent teacher and the problem solving aspects of education would be non-existent.

Ferguson's view of the scores on the temperament of friendliness is,

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<sup>17</sup>Ibid.

<sup>18</sup>Weber, p. 221.

A high score indicates an agreeable lack of quarrelsomeness and a lack of domineering qualities. A low score indicates a belligerent, domineering attitude and an overreadiness to fight over trifles.<sup>19</sup>

Thorndike's ideas of this trait is expressed by the following:

High scores signify respect for others, acceptance of domination; toleration of hostile action; freedom from hostility, resentment, or a desire to dominate.<sup>20</sup>

Thoughtfulness or Reflectiveness. Thorough consideration of a course of action relative to a problem is desirable. Weber discusses the characteristics of reflectiveness when he says,

Reflective thinking is largely independent of mood; reflective thinking is focal, intentional, on purpose; reflective thinking is toilsome; it is work in that the goal is something beyond the act itself. Reflective thinking can be volitionally controlled; it can be scheduled, rationalized, and mechanized.<sup>21</sup>

The teacher who reflects on his problems and searches for a desirable solution has a trait needed in educational leadership.

Thorndike's view of the scores on this temperament is,

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<sup>19</sup>Ferguson, p. 199.

<sup>20</sup>Thorndike, p. 385.

<sup>21</sup>Weber, p. 32.



The high scoring person is characterized as reflective, meditative; observing of his own behavior and that of others; interested in thinking; philosophically inclined; mentally poised.<sup>22</sup>

Personal Relations or Cooperativeness. Many authors and modern psychologists advocate the value of tolerance in educational leadership. Pigors' expressed opinion is,

Leadership is a process of mutual stimulation which, by successful interplay of relevant differences, controls human energy in the pursuit of a common cause--any person may be called a leader during the time when, and insofar as his will, feeling, and insights direct and control others in the pursuit of a cause which he represents.<sup>23</sup>

Thorndike's view of the scores on this temperament is,

High scores signify tolerance of people; faith in social institutions; freedom from self-pity or suspicions of others.<sup>24</sup>

Masculinity. Thorndike's view of the scores on this personal characteristic is,

The high scoring person is interested in masculine activities; not easily disgusted; hardboiled; inhibited in emotional expression; resistant to fear; unconcerned about vermin; little interested in clothes, style, or romance.<sup>25</sup>

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<sup>22</sup>Thorndike, p. 385.

<sup>23</sup>P. J. W. Pigors, Leadership or Domination (Boston, 1935), p. 16.

<sup>24</sup>Thorndike, p. 385.

<sup>25</sup>Ibid.

The traits listed in the Guilford-Zimmerman Temperament Survey were considered desirable to study as many authors expressed concern for their association with a successful leader in education. Therefore, the Guilford-Zimmerman Temperament Survey was included in this study.

#### Minnesota Teacher Attitude Inventory

Many authors agree that the attitude of teachers toward their vocation will determine, to a large extent, the success of their program. Desirable attitudes toward the students and the profession will aid in gaining respect and cooperation from their colleagues, students, and participants in the community. Therefore, the Minnesota Teacher Attitude Inventory has been employed to identify the personal characteristics of attitude toward the teaching profession.

Authors of the manual state that the inventory:

... is designed to measure those attitudes of a teacher which predict how well he will get along with pupil interpersonal relationships, and indirectly how well satisfied he will be with teaching as a vocation. The most direct use to which the M.T.A.I. can be put is in the selection of students for teacher preparation and the selection of teachers for teaching positions.<sup>26</sup>

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<sup>26</sup>Walter W. Cook, Carroll H. Leeds, and Robert Callis, "Minnesota Teacher Attitude Inventory Manual," The Psychological Corporation (New York, 1951).

The authors define the extremes of the attitude scales between the types of teacher-pupil relationship that are maintained in the classroom. Generally their idea is that a teacher ranking at the high end of the scale should be able to maintain a state of harmonious relations with his pupils, a relationship characterized by mutual affection and sympathetic understanding. Disciplinary action should rarely occur. A social atmosphere of cooperative endeavor, of intense interest in the lesson, and a feeling of security growing from a permissive atmosphere of freedom to think, to act, and to speak one's opinions with mutual respect for the feelings, rights, and abilities of others is desirable. Weaknesses of both the teacher and the pupil should be admitted frankly as a challenge to solve the problem if possible, but they should never be ridiculed or frowned upon. Strong points should be utilized for the advancement of the group, and recognition should be given when appropriate. Humor should prevail so that weak areas will not bear a stigma. Honesty and justice should be recognized as essential. Group-orientated goals, consensus, and cooperative spirit should characterize the class.

The general viewpoint expressed by the authors of the test is that the other extreme of the scale is characterized by the teacher who attempts to dominate the classroom. He may be successful by demanding complete conformity to his set pattern of action or become frustrated when this control is not maintained. In either

case a hostility and a distrustful atmosphere reigns over the class and destroys creative endeavors and cooperative actions. Ridicule, sarcasm, and quick tempers develop within the teacher and the pupils; a defensive attitude is developed by both and demands conformity and prevents creative thinking. The teacher begins to think in terms of status and correctness of the position he takes on various issues. The subject matter and not the pupil is the major consideration, and it is held as something that the student needs, feels, knows, and can do.

#### Otis Quick-Scoring Mental Ability Test

Mental ability is a characteristic associated with success in most fields of endeavor.

The Otis Quick-Scoring Mental Ability Test was the instrument selected to study this characteristic so as to ascertain whether mental ability of the teacher is associated with the effectiveness of the educational program in a department of vocational agriculture.

Mental ability cannot be measured directly. It is possible to measure only the effect that mental ability has had in enabling an individual to acquire certain knowledge and mental skill.

The coefficient of correlation between this test and a higher examination test is .86. This would tend to establish the validity of the test.

The reliability of the test was investigated by correlating the odd-numbered and even-numbered items of the test papers of two hundred and fifty-seven pupils in grades ten, eleven, and twelve. The reliability coefficient of the three grades was .90, .91, and .85, respectively.

Previous studies that attempted to ascertain the association between mental ability and success have yielded conflicting evidence. Juergenson found that mental ability has a negative correlation with certain teacher success criterion. He suggests that teachers with high mental ability may be less likely to succeed than those who have average scores. He reported,

Those individuals on the extreme ends of the range of a Mental Ability Test may have more difficulty being a successful teacher than those with average mental ability. It may be that administrators do not desire certain qualities in individuals and these do not appear in those individuals with low scores, but emerge in those with high scores in mental ability.<sup>27</sup>

Gouldner<sup>28</sup> reports that studies of intelligence as a trait essential to successful educational leadership indicate that lower than average intelligence inhibits leadership but that higher than average intelligence is no

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<sup>27</sup>Elwood M. Juergenson, "The Relationship Between Success in Teaching Vocational Agriculture and Ability to Make Sound Judgments as Measured by Selected Instruments" (unpub. Ed.D. dissertation, Pennsylvania State University, 1958), p. 41.

<sup>28</sup>Alvin W. Gouldner, Studies in Leadership (New York, 1950), p. 33.

guarantee of leadership and that, in fact, superiority of intelligence may actually interfere with leadership in many situations.

Weber is critical of the belief held by many successful leaders. When they were asked to give characteristics that led to their success, they nearly always listed intelligence. He says they gave this characteristic as necessary, "because by so doing they cause others to assume that they are brilliant of mind."<sup>29</sup>

Therefore, since many authors have given conflicting reports relative to the value of mental ability in the success of an individual's endeavors, the characteristic has been included in this study to ascertain whether there is an association between the teacher's mental ability and the effectiveness of the educational program in his department.

#### Owens-Bennett Mechanical Comprehension Test

Agriculture is being highly mechanized. Labor-saving devices and many types of new equipment challenge the farmer to become more efficient in the production of commodities. The vocational agriculture teacher is in a position to be of considerable help to the farmer in meeting this challenge. If the teacher is to be effective in regard to this part of his program, he should possess the

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<sup>29</sup>Weber, p. 37.

comprehension to understand the mechanical advancement.

Therefore, the Owens-Bennett Mechanical Comprehension Test was included in the battery of tests to ascertain the association of the ability of the teachers to comprehend mechanically with the effectiveness of the department's educational program.

Dugger reported in his study that teachers are responsible to the community to teach certain mechanical competencies. He reported,

Vocational agriculture teachers are responsible for giving instruction in those competencies required by farm operators. Since farming operations are rapidly becoming mechanized the competencies required of farm operators include mechanical skills, abilities, and understanding relating to proficiency in farming.<sup>30</sup>

Interest was expressed by many authors relative to the personal characteristics described in this chapter.

Therefore, the five tests employed to collect data were: Kuder Preference Record, Guilford-Zimmerman Temperament Survey, Minnesota Teacher Attitude Inventory, Otis Quick-Scoring Mental Ability Test, and Owens-Bennett Mechanical Comprehension Test. The data collected in administering these tests were used in testing the hypotheses of the investigation.

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<sup>30</sup>Roy W. Dugger, "Agricultural Mechanization Competencies Needed by Teachers of Vocational Agriculture in Oklahoma" (unpub. Ed.D. dissertation, Oklahoma State University, 1955), p. 107.

### Administering the Tests

The tests included in the battery of tests which was used to collect the data to test the hypotheses, were administered to the vocational agriculture teachers. The tests were administered personally to each teacher so that higher reliability would be encouraged.

The teachers reacted to their participation in the study with the very wholesome attitude of engaging in a process of self-evaluation, from which inevitably would come self-improvement.

### Analyzing the Data

All tests were scored by using appropriate keys, and the results were entered on a single card for each group; so all information on any one individual or on either group was available in a convenient form.

The total population of vocational agriculture teachers from both groups was used in securing data for this study.

A mean percentile difference of five per cent was established by the investigator as being necessary before a significant difference between the two groups of teachers would be recognized. The mean percentile was secured by comparing the mean raw score of each group with norms established by authors of the test. The percentile norms for the Kuder Preference Record, Otis Quick-Scoring Mental Ability Test, and the Guilford-Zimmerman Temperament Survey



were secured from a random sample of our national population. Percentile norms were established for the Minnesota Teacher Attitude Inventory from seventeen hundred and fourteen secondary public school teachers in the State of Minnesota. Percentile norms for the Owens-Bennett Mechanical Comprehension Test were established from the freshmen students in Agricultural Engineering at Iowa State.

## CHAPTER III

### PRESENTATION AND ANALYSIS OF FINDINGS

Data presented in this chapter were obtained by administering a battery of five standardized tests to sixty-two teachers of vocational agriculture in the State of Oklahoma. Teachers selected were those who had been teaching in their present position for three years and were serving in departments in which only one teacher of vocational agriculture was employed. Departments meeting these criteria were further limited to an upper and a lower fifteen per cent according to the effectiveness of the educational program. This rating was assigned after comparison with other departments in the area.

After data were compiled, presentation was made in tabular form, and an attempt was made to analyze and relate the findings to the objectives of the research. Tables were developed, and data concerning each characteristic was analyzed. The hypotheses with which the study was concerned were with regard to twenty-three selected personal characteristic differences did exist between groups of vocational agriculture teachers who ranked in the upper fifteen per cent in terms of effectiveness of programs achieved and those who ranked in the lower fifteen per cent in such achievements.

Analysis of Findings Regarding Certain Teacher  
Preferences and Interests

The Kuder Preference Record was the instrument used to identify personal characteristics in regard to interests of vocational agriculture teachers. The Kuder Preference Record yielded scores that are used in testing for the following personal characteristics in relation to interest:

- (1) Outdoor,
- (2) Mechanical,
- (3) Computational,
- (4) Scientific,
- (5) Persuasive,
- (6) Artistic,
- (7) Literary,
- (8) Musical,
- (9) Social Service,
- (10) Clerical.

Data in the ten tables present a summary of findings relative to the vocational agriculture teacher's interests and preferences.

TABLE I

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING OUTDOOR INTEREST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
82-84	100.0	0	0.0	1	3.2
79-81	100.0	0	0.0	0	0.0
76-78	99.3	0	0.0	2	6.4
73-75	98.5	2	6.4	0	0.0
70-72	97.0	3	9.7	3	9.7
67-69	95.0	9	29.1	4	12.9
64-66	91.0	4	12.9	4	12.9
61-63	87.0	2	6.4	3	9.7
58-60	82.0	0	0.0	5	16.2
55-57	78.0	6	19.4	2	6.4
52-54	72.5	2	6.4	3	9.7
49-51	65.0	1	3.2	1	3.2
46-48	59.0	2	6.5	1	3.2
43-45	52.0	0	0.0	0	0.0
40-42	49.0	0	0.0	0	0.0
37-39	35.5	0	0.0	2	6.5
Totals - - - - -		31	100.0	31	100.0

TABLE I (Continued)

Class Interval, Raw Scores	Percentiles	Number of Teachers	
		Group I <u>Number</u> <u>Percent</u>	Group II <u>Number</u> <u>Percent</u>
Mean Scores		62.74	61.35
Difference in Mean Scores			1.39
Mean Percentiles		89.0	86.0
Difference in Mean Percentiles			3.0
Standard Deviations		7.9	10.0

Vocational Agriculture Teachers' Preference for and Interest in Outdoor Activities. The findings as presented in Table I indicate that a decidedly large proportion of vocational agriculture teachers have an unusually high interest in outdoor activities. This might be expected when one considers the teachers' responsibility for assisting both high school pupils and adult farmers with problems involving both plants and animals.

The difference in mean scores made by both groups was 1.39, which was a minor difference, with Group I having the slightly higher score.

When scores were examined in terms of percentiles, the mean difference was only 3.0. In view of the fact that the investigator had established a difference of 5.0 as being sufficient to distinguish significance, it was concluded that, although a high degree of interest in outdoor activities is prevalent among teachers, evidence presented by this investigation failed to establish association with the nature, the extent, and the quality of educational programs achieved.

TABLE II

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING MECHANICAL INTEREST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
60-62	93.0	2	6.4	4	12.9
57-59	87.0	0	0.0	4	12.9
54-56	80.0	3	9.7	3	9.7
51-53	70.0	2	6.4	1	3.2
48-50	60.0	5	16.1	6	19.4
45-47	51.0	4	12.9	4	12.9
42-44	42.0	5	16.2	1	3.2
39-41	35.0	0	0.0	3	9.7
36-38	29.0	6	19.4	2	6.4
33-35	23.0	3	9.7	0	0.0
30-32	17.0	0	0.0	2	6.5
27-29	13.0	0	0.0	1	3.2
24-26	10.0	1	3.2	0	0.0
Totals - - - - -		31	100.0	31	100.0
Mean Scores		44.71		48.39	
Difference in Mean Scores				3.68	
Mean Percentiles		47.0		58.0	
Difference in Mean Percentiles				11.0	
Standard Deviations		7.9		9.7	

Vocational Agriculture Teachers' Preference for and Interest in Mechanical Activities. The findings as presented in Table II indicate that the vocational agriculture teacher's interest in mechanical activities is near the fifty percentile rank established as a norm by the authors of the test. It was expected that this interest would be higher because of the demands and expectations that the local community has toward the teacher in seeking his aid to assist them in modernizing their farming operations.

The difference in mean scores made by both groups was 3.68, which is interpreted as an important difference. Examination of the standard deviations reveals they are 7.9 and 9.7 respective to Group I and Group II.

When the pattern of scores was examined in terms of percentiles, a mean difference of 11.0 reveals significant difference to distinguish between the two groups of teachers. It was concluded that available evidence presented in this research establishes an association of comparably higher mechanical interest with teachers whose departments of vocational agriculture have educational programs that are rated in the lower fifteen per cent in terms of total effectiveness.



TABLE III

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING COMPUTATIONAL INTEREST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
40-42	92.0	0	0.0	2	6.4
37-39	86.0	0	0.0	0	0.0
34-36	78.0	1	3.2	1	3.2
31-33	67.0	1	3.2	4	12.9
28-30	54.0	3	9.7	3	9.7
25-27	40.0	6	19.4	4	12.9
22-24	27.0	8	25.8	4	12.9
19-21	17.0	6	19.4	10	32.3
16-18	9.0	2	6.4	2	6.5
13-15	5.0	2	6.4	1	3.2
10-12	1.3	2	6.5	0	0.0
Totals - - - - -		31	100.0	31	100.0
Mean Scores			22.61		25.16
Difference in Mean Scores					2.55
Mean Percentiles			25.0		37.0
Difference in Mean Percentiles					12.0
Standard Deviations			5.8		6.6

Vocational Agriculture Teachers' Preference for and Interest in Computational Activities. The findings as presented in Table III indicate that vocational agriculture teachers are generally uninterested in computational activities.

The difference in mean scores made by both groups was 2.55, which is an important difference for the standard deviations of 5.8 and 6.6 respective to Group I and Group II are relatively small.

When scores were examined in terms of percentiles, the mean difference of 12.0 between the two groups of teachers for interest in computational activities was significant. It was concluded from available evidence presented in this study that association exists between interest in computational activities and teachers whose departments of vocational agriculture have been rated in the lower fifteen per cent in effectiveness of their educational program.

TABLE IV

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING SCIENTIFIC INTEREST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
63-65	99.8	0	0.0	1	3.2
60-62	99.1	0	0.0	2	6.4
57-59	96.7	1	3.2	2	6.5
54-56	92.5	1	3.2	1	3.2
51-53	85.0	1	3.2	4	12.9
48-50	77.0	7	22.6	4	12.9
45-47	69.0	6	19.4	7	22.6
42-44	60.0	5	16.2	3	9.7
39-41	49.0	3	9.7	1	3.2
36-38	40.0	2	6.4	3	9.7
33-35	30.0	2	6.4	2	6.5
30-32	21.0	2	6.5	1	3.2
27-29	14.0	1	3.2	0	0.0
Totals - - - - -		31	100.0	31	100.0
Mean Scores		43.46		46.90	
Difference in Mean Scores				3.44	
Mean Percentiles		62.0		72.0	
Difference in Mean Percentiles				10.0	
Standard Deviations		6.7		8.2	

Vocational Agriculture Teachers' Preference for and Interest in Scientific Activities. The findings as presented in Table IV indicate that vocational agriculture teachers are generally interested in scientific activities. This might be expected when one considers the responsibilities which teachers have in orientating and developing all day pupils and adult farmers toward a concern for and an appreciation of scientific processes and achievements.

The difference in mean scores made by the groups was 3.44, which is an important difference, for the standard deviations of 6.7 and 8.2 respective to Group I and Group II are relatively small.

When scores were examined in terms of percentiles, the mean difference of 10.0 between the two groups of teachers for interest in scientific activities was significant. It was concluded from available evidence presented in this research that association does exist between the possession of relatively high interest in scientific activities and the attainment of a program of vocational agriculture not rating as a relatively highly effective educational program.

Association of scientific interest with teachers whose programs are not so highly effective in their educational endeavors is an unexpected relationship. Because, however, the high percentile ranking achieved by a high proportion of teachers in both groups is very much in

evidence, the conclusion may be reached that, individuals who possess the relatively higher interest in scientific activities may be more desirably satisfied vocationally in research effort rather than in the teaching profession where social service is recognized as a prominent factor.

TABLE V

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING PERSUASIVE INTEREST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
69-71	95.5	0	0.0	1	3.2
66-68	93.7	0	0.0	1	3.2
63-65	91.3	0	0.0	0	0.0
60-62	88.0	0	0.0	1	3.2
57-59	85.5	1	3.2	1	3.2
54-56	82.5	3	9.7	0	0.0
51-53	77.0	1	3.2	0	0.0
48-50	72.0	1	3.2	0	0.0
45-47	66.0	2	6.4	1	3.2
42-44	59.0	3	9.7	1	3.2
39-41	51.0	3	9.7	4	12.9
36-38	42.0	6	19.4	5	16.2
33-35	36.0	3	9.7	5	16.2
30-32	26.0	2	6.4	3	9.7
27-29	18.0	1	3.2	5	16.2
24-26	12.0	2	6.5	1	3.2
21-23	8.0	1	3.2	2	6.4
18-20	4.5	2	6.5	0	0.0
Totals - - - - -		31	100.0	31	100.0

TABLE V (Continued)

Class Interval, Raw Scores	Percentiles	Number of Teachers	
		<u>Group I</u> Number Percent	<u>Group II</u> Number Percent
Mean Scores		38.19	37.42
Difference in Mean Scores			0.77
Mean Percentiles		49.0	43.0
Difference in Mean Percentiles			6.0
Standard Deviations		10.2	11.6

Vocational Agriculture Teachers' Preference for and Interest in Persuasive Activities. The findings as presented in Table V indicate that vocational agriculture teachers are generally near average in their interest in persuasive activities. This is as expected, for most educators recognize that education is not a matter of selling a product but rather the presentation of problems and guidance of the individual through alternatives in solving the problem so that meaningful insights are acquired and maturity is enhanced.

The difference in mean scores made by both groups was 0.77, which appears to be a minor difference, but when scores were examined in terms of percentiles, the mean difference of 6.0 reveals a significant difference. It was concluded that association exists between teachers' interest in persuasive activities and the effectiveness of their department's educational program.



TABLE VI

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING ARTISTIC INTEREST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
45-47	98.5	0	0.0	1	3.2
42-44	96.6	0	0.0	1	3.2
39-41	94.2	1	3.2	0	0.0
36-38	91.7	1	3.2	0	0.0
33-35	88.5	1	3.2	0	0.0
30-32	82.5	0	0.0	0	0.0
27-29	73.0	2	6.4	4	12.9
24-26	63.0	0	0.0	2	6.4
21-23	51.0	3	9.7	3	9.7
18-20	38.0	4	12.9	6	19.4
15-17	24.0	5	16.2	6	19.4
12-14	12.5	6	19.4	3	9.7
9-11	4.8	5	16.2	2	6.4
6-8	1.2	3	9.6	3	9.7
Totals - - - - -		31	100.0	31	100.0
Mean Scores		17.26		19.52	
Difference in Mean Scores		2.26			
Mean Percentiles		30.0		40.0	
Difference in Mean Percentiles		10.0			
Standard Deviations		8.4		8.8	

Vocational Agriculture Teachers' Preference for and Interest in Artistic Activities. The findings as presented in Table VI indicate that vocational agriculture teachers generally are not overly concerned with artistic activities. This is as expected, for vocational agriculture teachers' responsibilities are generally more utilitarian than artistic.

The difference in the mean score made by both groups was 2.26, which is further strengthened as an important difference when consideration is given to the relatively small standard deviations of 8.4 and 8.8 for Group I and Group II.

When scores are examined in terms of percentiles, the mean difference of 10.0 between the two groups of teachers for interest in artistic activities was significant enough to establish an association between the possession of a high interest in artistic activities and a distinctively lower level of achievement in vocational agriculture.

TABLE VII

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING LITERARY INTEREST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
31-33	92.0	2	6.5	0	0.0
28-30	85.2	1	3.2	1	3.2
25-27	76.5	4	12.9	0	0.0
22-24	66.2	6	19.4	4	12.9
19-21	54.0	5	16.1	3	9.7
16-18	40.0	7	22.6	3	9.7
13-15	27.0	0	0.0	10	32.3
10-12	16.0	5	16.1	6	19.4
7-9	6.5	1	3.2	2	6.5
4-6	1.8	0	0.0	1	3.2
1-3	0.1	0	0.0	1	3.2
Totals - - - - -		31	100.0	31	100.0
-----					
Mean Scores		19.93		14.87	
Difference in Mean Scores				5.06	
Mean Percentiles		54.0		32.0	
Difference in Mean Percentiles				22.0	
Standard Deviations		6.5		5.8	

Vocational Agriculture Teachers' Preference for and Interest in Literary Activities. The most striking difference between the two groups of teachers was the difference indicated in their interest in literary activities. Group I, comprising teachers operating at a distinctively high level of effectiveness, made a mean score of 19.93; Group II made a mean score of 14.87. When this difference in mean scores of 5.06 is expressed in terms of mean percentiles, the striking difference of 22.0 is revealed.

The investigator has concluded that such a difference between groups establishes a definite association between the quality, the nature, and the extent of the program achieved and a high interest of the local teacher for literary activities. Those teachers whose work in their respective department had resulted in the achievement of an effective program to the extent of ranking in the upper fifteen per cent of the schools studied were also found to be the teachers who ranked slightly above the fiftieth percentile in literary interest as contrasted to teachers comprising Group II, who fell far below, with a mean percentile ranking of 32.0 on test scores.

TABLE VIII

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING MUSICAL INTEREST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
25-27	95.6	1	3.2	0	0.0
22-24	92.5	0	0.0	0	0.0
19-21	86.0	0	0.0	0	0.0
16-18	77.0	1	3.2	2	6.4
13-15	65.0	1	3.2	2	6.4
10-12	48.0	3	9.7	6	19.4
7-9	28.0	6	19.4	2	6.5
4-6	12.5	11	35.5	8	25.8
1-3	2.5	7	22.6	10	32.3
0	0.0	1	3.2	1	3.2
Totals - - - - -		31	100.0	31	100.0
-----					
Mean Scores		6.48		6.58	
Difference in Mean Scores				0.10	
Mean Percentiles		17.0		18.0	
Difference in Mean Percentiles				1.0	
Standard Deviations		5.0		4.6	

Vocational Agriculture Teachers' Preference for and Interest in Musical Activities. In striking contrast to the relatively high mean scores made by a high proportion of teachers in regard to interest in outdoor activities, a similarly high proportion of all teachers investigated ranked extremely low in terms of scores made on the Kuder Preference Record regarding musical interest. Data as presented in Table VIII show a minor difference in mean scores between groups of only 0.10. In terms of percentiles this difference was only 1.0. Deviations for both groups were quite similar, with a 5.0 standard deviation determined for Group I compared to 4.6 for Group II. Since the difference was so slight and did not even approach the difference in mean percentile of 5.0 as established for the investigator before significant difference exist, the conclusion is readily apparent that no significant association can be substantiated between achievement by local teachers of vocational agriculture and a personal characteristic identified as a degree of interest in musical activities.

TABLE IX

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING SOCIAL SERVICE INTEREST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
73-75	99.3	1	3.2	0	0.0
70-72	99.0	0	0.0	0	0.0
67-69	98.2	1	3.2	0	0.0
64-66	95.5	1	3.2	2	6.4
61-63	94.5	3	9.7	0	0.0
58-60	90.5	1	3.2	2	6.4
55-57	85.5	5	16.1	4	12.9
52-54	80.0	6	19.4	6	19.4
49-51	73.0	5	16.2	5	16.1
46-48	65.0	2	6.5	4	12.9
43-45	55.0	3	9.7	3	9.7
40-42	46.0	0	0.0	1	3.2
37-39	38.0	1	3.2	0	0.0
34-36	30.0	1	3.2	1	3.2
31-33	23.0	0	0.0	2	6.5
28-30	15.5	1	3.2	0	0.0
25-27	10.5	0	0.0	0	0.0
22-24	7.5	0	0.0	0	0.0
19-21	4.5	0	0.0	1	3.2
Totals - - - - -		31	100.0	31	100.0

TABLE IX (Continued)

Class Interval, Raw Scores	Percentiles	Number of Teachers	
		Group I <u>Number</u> <u>Percent</u>	Group II <u>Number</u> <u>Percent</u>
Mean Scores		52.77	48.84
Difference in Mean Scores			3.93
Mean Percentiles		79.0	70.0
Difference in Mean Percentiles			9.0
Standard Deviations		8.9	9.7



Vocational Agriculture Teachers' Preference for and Interest in Social Service. An analysis of data presented in Table IX substantiates the conclusion that a high proportion of teachers of vocational agriculture do have a predominating sense of their obligations with regard to facilitating a more abundant life for students and patrons of the community where they are employed. The mean score for Group I fell at the seventy-ninth percentile when measured by norms established by authors of the test. The mean score for Group II fell at the seventieth percentile; the standard deviations of the raw scores made by teachers were for Group I and II 8.9 and 9.7, respectively. Because of a difference of 9.0 in percentile rankings between the groups the conclusion was drawn that a positive association does exist between achievement of vocational agriculture teachers in terms of effectiveness of the local program and their interest in social service as indicated by scores made on this portion of the Kuder Preference Record.

Teachers showing a measurably higher social service interest are also more likely to be teachers who achieve more effective programs of vocational agriculture.

TABLE X

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING CLERICAL INTEREST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
57-59	81.0	1	3.2	0	0.0
54-56	76.0	1	3.2	0	0.0
51-53	69.0	2	6.4	2	6.4
48-50	62.5	1	3.2	1	3.2
45-47	54.0	3	9.7	5	16.2
42-44	46.0	2	6.4	2	6.4
39-41	35.0	2	6.4	2	6.5
36-38	24.5	3	9.7	6	19.4
33-35	16.5	4	12.9	6	19.4
30-32	10.5	3	9.7	5	16.1
27-29	6.0	5	16.1	0	0.0
24-26	3.5	2	6.4	1	3.2
21-23	1.5	2	6.5	1	3.2
18-20	0.5	0	0.0	0	0.0
Totals - - - - -		31	100.0	31	100.0
Mean Scores			37.16		37.90
Difference in Mean Scores					0.74
Mean Percentiles			25.0		27.0
Difference in Mean Percentiles					2.0
Standard Deviations			10.6		7.2

Vocational Agriculture Teachers' Preference for and Interest in Clerical Activities. An analysis of data presented in Table X appears to bear out the fact that a large proportion of vocational agriculture teachers do not possess a great deal of interest in clerical activities. Of the sixty-two individuals comprising the total of Groups I and II only sixteen individuals made scores on the Kuder Preference Record above the fiftieth percentile when compared with norms established by the authors of the test. Mean scores of 37.16 for Group I and 37.90 for Group II earned percentile rankings of 25.0 and 27.0, respectively. This difference in mean percentile ranking of only 2.0 failed to present substantial evidence of the existence of the association between the nature, the extent, and the quality of programs achieved by vocational agriculture teachers and their clerical interest as measured by the Kuder Preference Record.

Data and Analysis of Findings Regarding Certain  
Temperaments of Vocational  
Agriculture Teachers

The Guilford-Zimmerman Temperament Survey was the instrument used to identify certain personal characteristics of vocational agriculture teachers in regard to their temperaments. The test yielded scores that could be used in analyzing the following personal characteristics:

- (1) General Activity or Energy,
- (2) Restraint or Seriousness,
- (3) Ascendance or Social Boldness,
- (4) Social Interest,
- (5) Emotional Stability,
- (6) Objectivity,
- (7) Friendliness or Agreeableness,
- (8) Thoughtfulness or Reflectiveness,
- (9) Personal Relations or Cooperativeness,
- (10) Masculinity.

The following ten tables present findings in such a manner as to aid in an analysis and interpretation of data secured.

TABLE XI

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON KUDER  
PREFERENCE RECORD REGARDING GENERAL ACTIVITY OR ENERGY

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
28-30	99.5	1	3.2	1	3.2
25-27	96.0	8	25.8	0	0.0
22-24	85.0	7	22.6	5	16.1
19-21	54.0	8	25.8	4	12.9
16-18	45.0	2	6.5	11	35.5
13-15	25.0	1	3.2	6	19.4
10-12	15.0	2	6.5	2	6.5
7-9	5.0	2	6.4	2	6.4
Totals - - - - -		31	100.0	31	100.0
- - - - -					
Mean Scores			20.77		17.41
Difference in Mean Scores				3.36	
Mean Percentiles			72.0		46.0
Difference in Mean Percentiles				26.0	
Standard Deviations			5.55		4.44

Vocational Agriculture Teachers' Temperament in Regard to General Activity or Energy. As is evident from consideration of data presented in Table XI, a strong association does exist between the achievement of an effective program of vocational agriculture and the teachers' possession of a temperament marked by a higher degree of general activity or energy as measured by scores on the Guilford-Zimmerman Temperament Survey.

Mean raw scores of 20.77 for Group I and 17.41 for Group II show a difference of 3.36. When, however, the difference between the two groups was expressed in terms of a mean percentile ranking, more striking discrepancy seems apparent when interpreted in terms of percentile rank as compared to norms established by the authors of the test.

The group of vocational agriculture teachers who had effective programs, which placed them in the upper fifteen per cent of the teachers studied, had a mean percentile rank which occupied a position of twenty-six percentiles above the point achieved by the teachers comprising Group II. This was the greatest difference between the two groups when consideration was given to all personal characteristics studied.

There is, then apparently ample evidence to sustain the hypothesis that the possession of individual temperament indicated by a high state of general activity or energy is associated with teacher achievement of more effective programs of vocational education in agriculture.

TABLE XII

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
 MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON GUILFORD-  
 ZIMMERMAN TEMPERAMENT SURVEY REGARDING  
 RESTRAINT OR SERIOUSNESS

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
27-29	99.1	1	3.2	0	0.0
24-26	94.0	2	6.4	5	16.1
21-23	85.0	14	45.2	7	22.6
18-20	70.0	7	22.6	11	35.5
15-17	50.0	4	12.9	5	16.1
12-14	30.0	3	9.7	2	6.5
9-11	15.0	0	0.0	1	3.2
Totals - - - - -		31	100.0	31	100.0
- - - - -					
Mean Scores			20.0		19.77
Difference in Mean Scores				0.23	
Mean Percentiles			74.0		73.0
Difference in Mean Percentiles				1.0	
Standard Deviations			3.7		3.56

Vocational Agriculture Teachers' Temperament in Regard to Restraint or Seriousness. The data presented in Table XII reveal a decidedly high percentile ranking for the mean score of both groups of teachers relative to the temperament of seriousness. Only six of the sixty-two teachers that cooperated in this study made scores that fell below the fiftieth percentile norm established by the authors of the test. The extreme high mean scores made by such a relatively high proportion of both groups of teachers may well be recognized as a factor limiting any significant difference between the groups. The difference in mean percentile ranking is only 1.0. Evidence presented in this investigation fails to establish association between the achievement of the department's educational program and the teachers' temperament relative to restraint or seriousness.



TABLE XIII

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON GUILFORD-  
ZIMMERMAN TEMPERAMENT SURVEY REGARDING  
ASCENDANCE OR SOCIAL BOLDNESS

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
27-29	89.0	1	3.2	1	3.2
24-26	94.0	4	12.9	0	0.0
21-23	81.0	4	12.9	3	9.7
18-20	70.0	5	16.1	7	22.6
15-17	50.0	4	12.9	5	16.1
12-14	30.0	8	25.8	9	29.1
9-11	15.0	3	9.7	5	16.1
6-8	5.0	2	6.0	1	3.2
Totals - - - - -		31	100.0	31	100.0
-----					
Mean Scores		16.96		15.87	
Difference in Mean Scores				1.09	
Mean Percentiles		57.0		49.0	
Difference in Mean Percentiles				8.0	
Standard Deviations		5.1		4.5	

Vocational Agriculture Teachers' Temperament in Regard to Ascendance or Social Boldness. The findings presented in Table XIII reveal that a large proportion of vocational agriculture teachers exhibit a temperament with regard to ascendance or social boldness at a slightly higher average level than do individuals in many other occupations. When scores made by teachers comprising Group I were compared with those made by teachers comprising Group II, a difference in mean raw scores of only 1.09 was evidenced. When, however, the achievements of the two groups were identified in terms of mean percentiles, a ranking difference of 8.0 was found. Since this investigation was based upon the premise that a difference of 5.0 percentile ranking between groups is to be considered significant, the difference was sufficient cause for recognition that a positive association does exist between a relatively higher achievement of vocational agriculture teachers in test scores measuring ascendance or social boldness and the achievements of these teachers in terms of educational programs of vocational agriculture recognized as being highly effective.

TABLE XIV

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON GUILFORD-  
ZIMMERMAN TEMPERAMENT SURVEY REGARDING  
SOCIAL INTEREST OR SOCIABILITY

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
27-29	94.0	2	6.4	1	3.2
24-26	79.0	12	38.8	9	29.1
21-23	62.0	6	19.4	11	35.5
18-20	43.0	5	16.1	6	19.4
15-17	28.0	4	12.9	1	3.2
12-14	18.0	2	6.4	1	3.2
9-11	10.0	0	0.0	1	3.2
6-8	5.0	0	0.0	1	3.2
Totals - - - - -		31	100.0	31	100.0
- - - - -					
Mean Scores		21.68		21.0	
Difference in Mean Scores				0.68	
Mean Percentiles		62.0		55.0	
Difference in Mean Percentiles				7.0	
Standard Deviations		4.4		4.7	

Vocational Agriculture Teachers' Temperament in Regard to Social Interest or Sociability. The temperament of individuals expressed in terms of social interest as measured by the Guilford-Zimmerman Temperament Survey and social service interest as measured by the Kuder Preference Record are measuring relatively the same personal characteristic. It is interesting to note that, when the mean percentiles made by teachers of both groups for both tests are compared, there is only a difference of 2.0 percentiles between the mean percentile differences occurring between groups for each of the two tests. Both tests also showed mean scores for both groups of teachers far above the average percentile established as norms. This finding lends both validity and reliability to this research.

The difference in mean percentile rank, established as norms by the authors of the test, between the two groups of teachers relative to the temperament of social interest is 7.0. The conclusion is therefore that temperament as expressed in terms of a relatively high degree of social interest is associated with attainment of a more highly effective level of program operation in vocational agriculture.

TABLE XV

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON GUILFORD-  
ZIMMERMAN TEMPERAMENT SURVEY REGARDING  
EMOTIONAL STABILITY

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
27-29	97.5	2	6.4	1	3.2
24-26	91.0	12	38.8	7	22.6
21-23	73.0	5	16.1	7	22.6
18-20	57.0	4	12.9	7	22.6
15-17	37.0	6	19.4	4	12.9
12-14	25.0	2	6.4	2	6.4
9-11	15.0	0	0.0	2	6.5
6-8	7.0	0	0.0	1	3.2
Totals - - - - -		31	100.0	31	100.0
-----					
Mean Scores		21.45		19.65	
Difference in Mean Scores				1.80	
Mean Percentiles		73.0		61.0	
Difference in Mean Percentiles				12.0	
Standard Deviations		4.59		4.89	

Vocational Agriculture Teachers' Temperament in Regard to Emotional Stability. The data presented in Table XV substantiate the conclusion that a high proportion of vocational agriculture teachers possess a temperament marked by attainment of emotional stability to a rather high degree.

Over fifty per cent of the sixty-two teachers in this study made scores above the seventieth percentile norm, as established by the authors of the test.

The high mean percentile rank of 73.0 and 61.0 respectively for teachers comprising Groups I and II provide a difference in the mean percentile rank of 12.0. This finding establishes the conclusion that association does exist between the teacher possessed of a temperament characterized by a high level of emotional stability and the quality, the nature, and the extent of the educational programs maintained in the departments of vocational agriculture where they are working.

TABLE XVI

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON GUILFORD-  
ZIMMERMAN TEMPERAMENT SURVEY REGARDING  
OBJECTIVITY

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
26-28	96.0	4	12.9	3	9.7
23-25	84.0	5	16.1	6	19.4
20-22	70.0	7	22.6	5	16.1
17-19	50.0	10	32.3	6	19.4
14-16	30.0	3	9.7	5	16.1
11-13	18.0	2	6.4	5	16.1
8-10	10.0	0	0.0	1	3.2
Totals - - - - -		31	100.0	31	100.0
- - - - -					
Mean Scores			20.19		18.68
Difference in Mean Scores				1.51	
Mean Percentiles			66.0		56.0
Difference in Mean Percentiles				10.0	
Standard Deviations			4.23		5.1

Vocational Agriculture Teachers' Temperament in Regard to Objectivity. The authors of the Guilford-Zimmerman Temperament Survey attempted to develop a test that would normally yield scores with low correlation between various parts of the test as designed to determine the extent of distinct temperament characteristics. Those utilizing the test, however, have often reported finding a moderate degree of correlation between scores measuring temperaments of objectivity and emotional stability. The data in Table XV and Table XVI reveal that this investigation also brought out a moderate degree of positive correlation between these two temperaments.

Administration of the test to the two groups of teachers showed mean scores for both groups which placed them in the 66.0 and 56.0 mean percentile rankings as established as norms by the authors of the test. This difference in mean percentile rank of 10.0 establishes that association does exist between teachers' possession of a temperament characterized by a relatively high degree of objectivity and the development and maintenance of an educational program of vocational agriculture recognized as operating at a highly successful level.



TABLE XVII

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON GUILFORD-  
ZIMMERMAN TEMPERAMENT SURVEY REGARDING  
FRIENDLINESS OR AGREEABLENESS

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
28-30	99.7	1	3.2	1	3.2
25-27	99.0	3	9.7	4	12.9
22-24	95.0	6	19.4	5	16.1
19-21	85.0	5	16.1	6	19.4
16-18	70.0	4	12.9	5	16.1
13-15	50.0	8	25.8	4	12.9
10-12	30.0	4	12.9	6	19.4
Totals - - - - -		31	100.0	31	100.0
- - - - -					
Mean Scores			18.25		18.45
Difference in Mean Scores					0.20
Mean Percentiles			74.0		76.0
Difference in Mean Percentiles					2.0
Standard Deviations			4.98		5.3

Vocational Agriculture Teachers' Temperament in Regard to Friendliness or Agreeableness. It should prove gratifying to all individuals associated with programs of vocational agriculture to observe the mean percentile rankings of the sixty-two vocational agriculture teachers with regard to scores made on the Guilford-Zimmerman Temperament Survey regarding the personal characteristic of friendliness. As shown by the data presented in Table XVII only ten of the sixty-two teachers included in this survey made scores below the fiftieth percentile; the mean percentile rank of Group I was 74.0 as compared to 76.0 for Group II. Since, however, the difference in mean percentile ranking was only 2.0, the conclusion must be reached that, although a high proportion of all vocational agriculture teachers possessed a temperament characterized by a high degree of friendliness, the findings in this investigation did not substantiate the fact that an association exists between friendliness as a personal characteristic of a vocational agriculture teacher and the achieving of a high standard of perfection culminating in a program of vocational agriculture recognized as outstanding.

TABLE XVIII

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON GUILFORD-  
ZIMMERMAN TEMPERAMENT SURVEY REGARDING  
THOUGHTFULNESS OR REFLECTIVENESS

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
25-27	96.0	0	0.0	4	12.9
22-24	85.0	7	22.6	6	19.4
19-21	65.0	8	25.8	9	29.1
16-18	43.0	11	35.5	5	16.1
13-15	25.0	1	3.2	3	9.7
10-12	13.0	4	12.9	2	6.4
7-9	5.0	0	0.0	2	6.4
Totals - - - - -		31	100.0	31	100.0
-----					
Mean Scores		18.39		18.97	
Difference in Mean Scores				0.58	
Mean Percentiles		52.0		56.0	
Difference in Mean Percentiles				4.0	
Standard Deviations		3.6		4.9	

Vocational Agriculture Teachers' Temperament in Regard to Thoughtfulness or Reflectiveness. The data in Table XVIII reveal that vocational agriculture teachers in both groups are only slightly higher than the average percentile norm, established by the authors of the test, on their test scores regarding the temperament of thoughtfulness.

The mean percentile norms were 52.0 and 56.0 for Group I and Group II, respectively. The difference in mean percentiles of only 4.0 failed to establish that association exists between the temperament of thoughtfulness possessed by vocational agriculture teachers and the quality of achievement of the educational program in their departments.

TABLE XIX

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
 MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON GUILFORD-  
 ZIMMERMAN TEMPERAMENT SURVEY REGARDING  
 PERSONAL RELATIONS OR COOPERATIVENESS

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
28-30	99.0	3	9.7	6	19.4
25-27	94.0	10	32.3	4	12.9
22-24	79.0	6	19.4	5	16.1
19-21	63.0	6	19.3	10	32.3
16-18	43.0	4	12.9	2	6.4
13-15	25.0	2	6.4	4	12.9
Totals - - - - -		31	100.0	31	100.0
-----					
Mean Scores		22.52		22.19	
Difference in Mean Scores				0.33	
Mean Percentiles		76.0		74.0	
Difference in Mean Percentiles				2.0	
Standard Deviations		4.1		4.7	

Vocational Agriculture Teachers' Temperament in Regard to Personal Relations or Cooperativeness. The data presented in Table XIX reveal that a large proportion of vocational agriculture teachers possess the temperament of personal relations or cooperativeness to a considerable degree. Fifty of the sixty-two teachers that cooperated in this study made scores that yielded a percentile ranking above sixty, as established by the authors of the test. The mean percentile ranking for Groups I and II are 76.0 and 74.0, respectively. The difference in mean percentile ranking was only 2.0. Therefore, evidence provided by this study does not establish association between the temperament of personal relations or cooperativeness of teachers and the nature, the extent, and the quality of the educational program in their departments.

TABLE XX

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON GUILFORD-  
ZIMMERMAN TEMPERAMENT SURVEY REGARDING  
MASCULINITY

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
29-31	100.0	1	3.2	0	0.0
26-28	96.0	2	6.4	3	9.7
23-25	81.0	11	35.5	7	22.5
20-22	55.0	8	25.8	13	42.0
17-19	27.0	9	29.1	5	16.1
14-16	15.0	0	0.0	3	9.7
Totals - - - - -		31	100.0	31	100.0
Mean Scores			21.74		21.35
Difference in Mean Scores					0.39
Mean Percentiles			62.0		58.0
Difference in Mean Percentiles					4.0
Standard Deviations			3.1		3.2

Vocational Agriculture Teachers' Temperament in Regard to Masculinity. The data in Table XX reveal that over seventy per cent of the vocational agriculture teachers in this study made scores above the fiftieth percentile norms relative to the temperament of masculinity. The mean percentile rank, established as norms by the authors of the test, are 62.0 and 58.0 for Groups I and II, respectively. The difference in mean percentile ranking was 4.0.

The scores made by teachers on the Guilford-Zimmerman Temperament Survey relative to masculinity failed to establish association with effectiveness of the educational programs in departments of vocational agriculture.



Analysis of Findings Relative to Teacher Attitude  
of Vocational Agriculture Teachers

The Minnesota Teacher Attitude Inventory was the instrument used to identify the personal characteristic of vocational agriculture teachers in regard to their teacher attitude.

The following table presents the data and analysis of findings relative to teacher attitude of vocational agriculture teachers.

TABLE XXI

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON  
MINNESOTA TEACHER ATTITUDE INVENTORY

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
51-60	84.0	0	0.0	3	9.7
41-50	79.0	0	0.0	1	3.2
31-40	71.0	6	19.4	2	6.4
21-30	63.0	5	16.1	3	9.7
11-20	55.0	5	16.2	1	3.2
0-10	44.0	2	6.5	3	9.7
-10--1	35.0	4	12.9	7	22.6
-20--11	28.0	5	16.1	3	9.7
-30--21	22.0	1	3.2	4	12.9
-40--31	17.0	1	3.2	1	3.2
-50--41	11.0	1	3.2	3	9.7
-60--51	8.0	0	0.0	0	0.0
-70--61	4.0	1	3.2	0	0.0
Totals - - - - -		31	100.0	31	100.0
Mean Scores			4.71		-.16
Difference in Mean Scores					4.87
Mean Percentiles			43.4		38.5
Difference in Mean Percentiles					4.9
Standard Deviations			26.6		29.6

Attitude of Vocational Agriculture Teachers Relative to Teacher Attitude. The findings as reported in Table XXI reveal that a large proportion of the teachers who cooperated in this study are below the mean percentile ranking relative to their teacher attitude. The mean percentile rankings were 43.4 and 38.5 for Groups I and II, respectively. The difference in mean percentile ranking between the two groups of teachers was 4.9. Therefore, evidence presented in this study does not establish that association exists between the personal characteristic of teacher attitude and effectiveness of their department's educational program.

Analysis of Findings Relative to Mechanical Comprehension  
of Vocational Agriculture Teachers

The Owens-Bennett Mechanical Comprehension Test was the instrument used to identify the personal characteristic of vocational agriculture teachers in regard to their mechanical comprehension.

The following table presents the data and analysis of findings relative to mechanical comprehension of vocational agriculture teachers.

TABLE XXII

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON  
OWENS-BENNETT MECHANICAL COMPREHENSION TEST

Class Interval, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
54-56	100.0	1	3.2	1	3.2
51-53	98.0	1	3.2	1	3.2
48-50	96.0	3	9.7	2	6.4
45-47	90.0	2	6.4	2	6.4
42-44	75.0	2	6.4	6	19.4
39-41	63.0	4	12.9	2	6.5
36-38	50.0	4	12.9	4	12.9
33-35	37.0	4	12.9	4	12.9
30-32	32.0	2	6.5	5	16.1
27-29	17.0	3	9.7	2	6.5
24-26	8.0	2	6.5	1	3.2
21-23	4.0	2	6.5	1	3.3
18-20	2.0	1	3.2	0	0.0
Totals - - - - -		31	100.0	31	100.0
-----					
Mean Scores			36.61		33.77
Difference in Mean Scores				2.84	
Mean Percentiles			48.0		36.0
Difference in Mean Percentiles				12.0	
Standard Deviations			9.6		7.7

Comprehension of Vocational Agriculture Teachers

Relative to Mechanical Comprehension. The findings as reported in Table **XXII** indicate that the vocational agriculture teachers who cooperated in this study, are below the average in percentile ranking as compared with the norms established by the authors of the test.

The mean percentile ranking of 48.0 and 36.0 for Groups I and II respectively, however, show a difference of 12.0. This significant difference in favor of Group I establishes association between the possession of the personal characteristic of mechanical comprehension and the development and maintenance of a more effective educational program in vocational agriculture.

Analysis of Findings Relative to Mental Ability of  
Vocational Agriculture Teachers

The Otis Quick-Scoring Mental Ability Test was the instrument used to identify the personal characteristic of vocational agriculture teachers in regard to their mental ability.

The following table presents the data and analysis of findings relative to the mental ability of vocational agriculture teachers.

TABLE XXIII

DISTRIBUTION OF VOCATIONAL AGRICULTURE TEACHERS, PERCENTILES,  
MEANS, AND DEVIATIONS IN TERMS OF SCORES MADE ON  
OTIS QUICK-SCORING MENTAL ABILITY TEST

Class Intervals, Raw Scores	Percentiles	Number of Teachers			
		Group I		Group II	
		Number	Percent	Number	Percent
67-69	63.0	1	3.2	0	0.0
64-66	61.5	2	6.4	0	0.0
61-63	60.0	0	0.0	1	3.2
58-60	58.5	0	0.0	1	3.2
55-57	57.0	4	12.9	3	9.7
52-54	55.5	1	3.2	1	3.2
49-51	54.0	6	19.4	3	9.7
46-48	52.5	1	3.2	9	29.1
43-45	51.0	6	19.4	5	16.1
40-42	49.5	2	6.4	3	9.7
37-39	48.0	4	12.9	4	12.9
34-36	46.5	2	6.5	1	3.2
31-33	45.0	2	6.5	0	0.0
Totals - - - - -		31	100.0	31	100.0
Mean Scores			47.1		46.5
Difference in Mean Scores				0.6	
Mean Percentiles			52.6		52.3
Difference in Mean Percentiles				0.3	
Standard Deviations			9.3		6.4



Ability of Vocational Agriculture Teachers Relative to Mental Ability. The data in Table XXIII reveal that a large proportion of the vocational agriculture teachers who cooperated in this investigation possess mental ability in excess of the fiftieth percentile established as norms by authors of the test. The mean percentiles of 52.6 and 52.3 for Group I and Group II, respectively, however, have a minor difference of only 0.3 percentile. From the findings reported in this investigation it is concluded that available evidence fails to establish association of teachers' mental ability and quality of the educational program.

TABLE XXIV

PERSONAL CHARACTERISTICS OF VOCATIONAL AGRICULTURE TEACHERS  
ASSOCIATED WITH EFFECTIVENESS OF EDUCATIONAL PROGRAMS  
IN TERMS OF MEAN SCORES AND MEAN PERCENTILES

<u>Personal Characteristics</u>	<u>Mean Scores</u>		<u>Mean Percentiles</u>	
	<u>Group I</u>	<u>Group II</u>	<u>Group I</u>	<u>Group II</u>
Mechanical Interest	44.71	48.39	47	58
Computational Int.	22.61	25.16	25	37
Scientific Interest	43.46	46.90	62	72
Persuasive Interest	38.19	37.42	49	43
Artistic Interest	17.26	19.52	30	40
Literary Interest	19.93	14.87	54	32
Social Service Int.	52.77	48.84	79	70
General Activity	20.77	17.41	72	46
Ascendance	16.96	15.87	57	49
Social Interest	21.68	21.00	62	55
Emotional Stability	21.45	19.65	73	61
Objectivity	20.19	18.68	66	56
Mechanical Comp.	36.61	33.77	48	36

Personal Characteristics of Vocational Agriculture Teachers Associated with Effectiveness of Educational Programs. The data in Table XXIV reveal that thirteen of the twenty-three personal characteristics of vocational agriculture teachers studied in this investigation are associated with effectiveness of the educational programs. Evidence presented by this investigation indicates behavioral pattern exhibited by teachers with more effective programs consist of the following personal characteristics: persuasive interest, literary interest, social service interest, general activity, ascendance, social interest, emotional stability, objectivity, and mechanical comprehension.

The behavioral pattern exhibited by teachers with a less effective program consist of the following personal characteristics: mechanical interest, computational interest, scientific interest, and artistic interest.

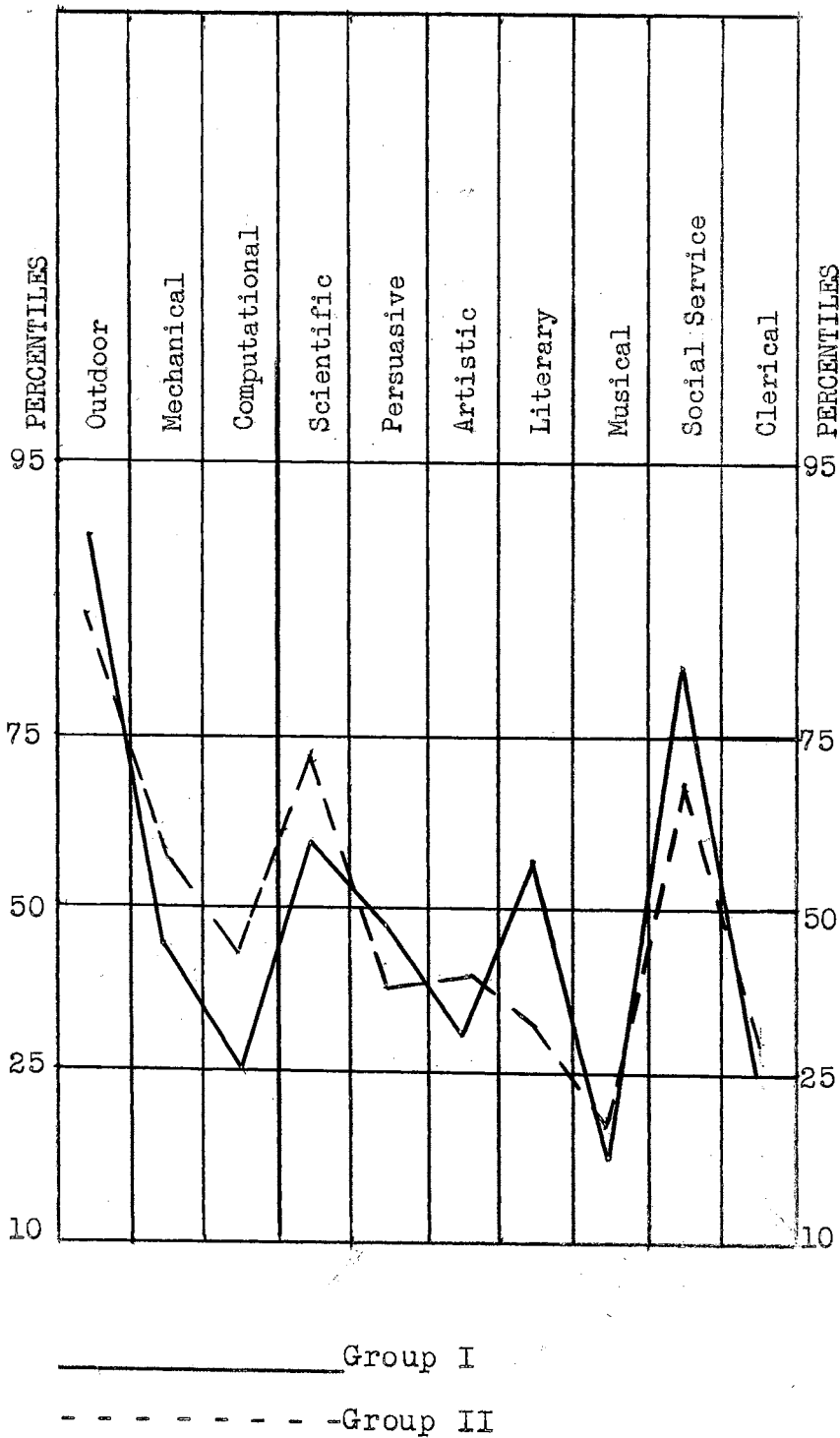
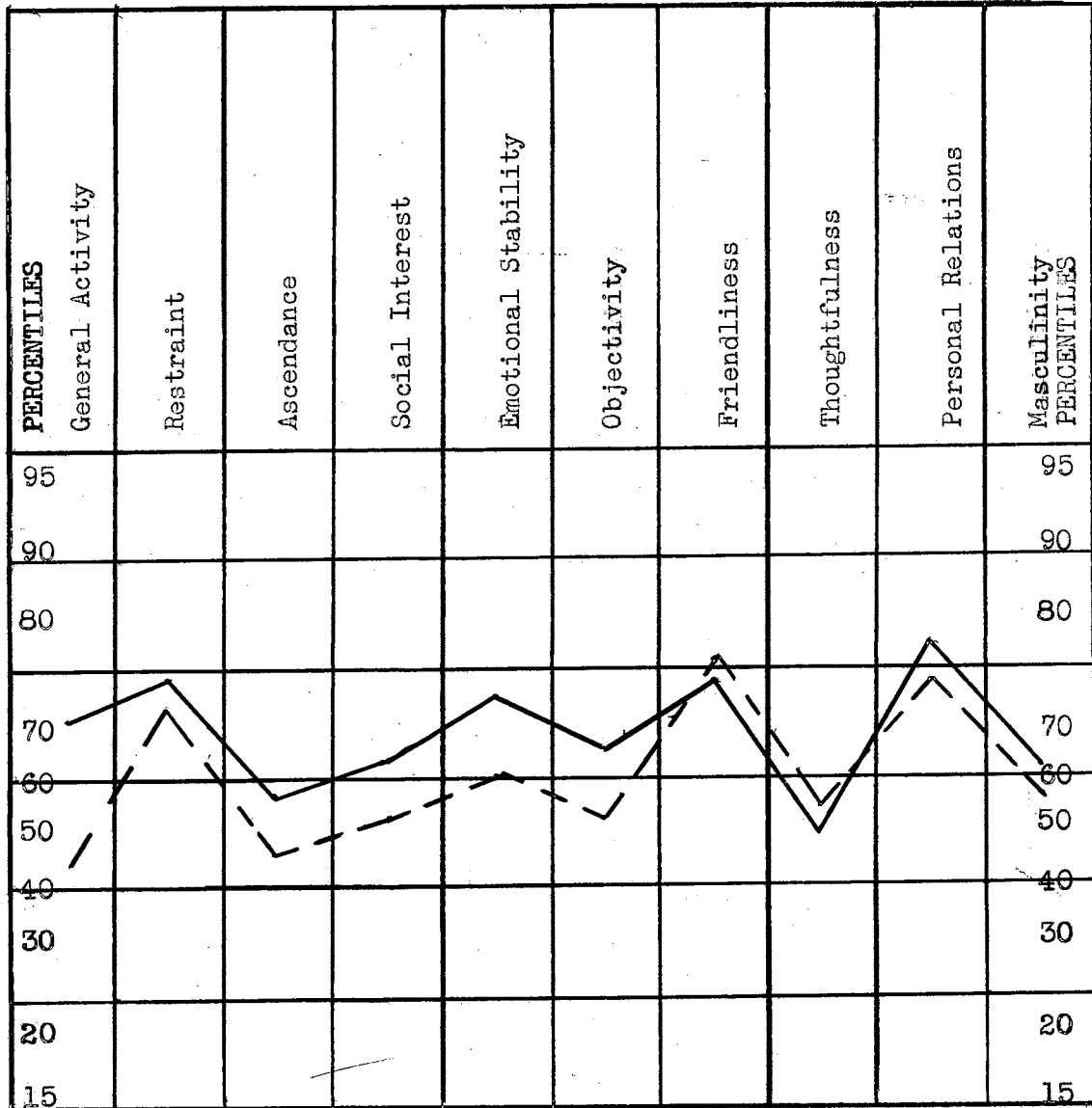


Figure I. Profiles of the mean percentiles on the areas of the Kuder Preference Record for comparison of Group I and Group II.



\_\_\_\_\_ Group I  
 - - - - - Group II

Figure II. Profiles of the mean percentiles on the areas of the Guilford-Zimmerman Temperament Survey for comparison of Group I and Group II.

### Summary of the Chapter

In summary evidence presented establishes the following:

1. Association exists between teachers whose departments of vocational agriculture have been rated in the upper fifteen per cent in effectiveness of their educational program and the personal characteristics of the vocational agriculture teachers in regard to:

Interest related to:

- (1) Persuasive,
- (2) Literary,
- (3) Social Service;

Temperament related to:

- (1) General Activity,
- (2) Ascendance,
- (3) Social Interest,
- (4) Emotional Stability,
- (5) Objectivity;

Comprehension related to:

- (1) Mechanical Comprehension.

2. Association exists between teachers whose departments of vocational agriculture have been rated in the lower fifteen per cent in effectiveness of their educational program and

the personal characteristics of the vocational  
agriculture teachers in regard to:

Interest related to:

- (1) Mechanical,
- (2) Computational,
- (3) Scientific,
- (4) Artistic Activities.

## CHAPTER IV

### SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The aim of this chapter is to restate the purposes and review the methods of the investigation, to summarize the findings regarding hypotheses tested, to summarize conclusions reached, and to suggest implications evidenced by the findings.

#### Problems and Purposes of the Study

The central problem of the investigation was to determine whether association does exist between certain selected personal characteristics or traits of interest, temperament, attitude, comprehension, and mental ability exhibited by teachers of vocational agriculture and achievement as measured by the level of quality and extent of the local program of vocational agriculture.

#### Methods of Procedure of the Study

The study was structured to test a number of formulated hypotheses pertaining to the existence of significant difference in certain selected personal traits and characteristics between two groups of vocational



agriculture teachers who were operating programs at two distinctively different levels of effectiveness.

Data were collected by the investigator through administration of a battery of five standardized tests to sixty-two vocational agriculture teachers in the State of Oklahoma. The sixty-two teachers consisted of thirty-one in the upper group and thirty-one in the lower group rated according to the effectiveness of the educational programs in their departments.

The total population from which the teachers were selected was comprised of two hundred and eight vocational agriculture teachers in the State of Oklahoma who had been teaching in their present position for three years or longer. A proportional number was selected from each of twenty areas in Oklahoma so as to provide for differences that might exist as a result of differences in social and economic conditions. Only departments with one teacher were selected because of possible difficulties in assigning credit for achievement in multiple-teacher departments.

The criteria used in measuring the effectiveness of the educational program occurring in departments were proved valid by means of previous investigations of programs of vocational agriculture in the State of Oklahoma. The factors that had been identified as being highly significant in determining the effectiveness of the educational program of a department of vocational agriculture and which were

used in this study were:<sup>1</sup>

- (1) Number of young farmer farm visits per department;
- (2) Number of production projects completed per department;
- (3) Average number of productive enterprise projects completed per pupil;
- (4) Number of supervised farm training visits per department;
- (5) Average number of supervised farm training visits per pupil;
- (6) Total number of supplementary jobs per pupil;
- (7) Average number of supplementary jobs per pupil;
- (8) Number of points earned in the Interscholastic Future Farmers of America contests as computed for the Farmer-Stockman Award per department;
- (9) Judging contest cash winnings at the major shows in Oklahoma per department; the shows used were the 1957 Oklahoma State Fair in Oklahoma City, the 1957 Tulsa State Fair, 1958 Oklahoma Spring Livestock Show, and the 1957 Muskogee State Fair;
- (10) Total winnings from crop and livestock exhibits at the major shows in Oklahoma per department;

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<sup>1</sup>Earl Knebel. "An Analysis of Factors Contributing to Effective Program of Vocational Agriculture" (unpub. Ed.D. dissertation, Oklahoma State University, 1955), pp. 130-131.

- (11) Total value of supervised farm training program per department;
- (12) Average value of supervised farm training program per pupil;
- (13) Net profit from supervised farm training program per department;
- (14) Total self labor from supervised farm training programs per department;
- (15) Average pupil hours from supervised farm training program per department;
- (16) Total labor income from supervised farm training program per department;
- (17) Average labor income per pupil from supervised farm training;
- (18) Labor income from beef production projects per department;
- (19) Investment in swine production projects per department;
- (20) Labor income from swine production projects per department;
- (21) Investment in dairy production projects per department;
- (22) Total number of Junior Master Farmer Degrees awarded department during the period covered by the study; study covered the years of 1955, 1956, and 1957;
- (23) Number of American Farmer Degrees awarded the

department during the period covered by this study; study covered the years of 1955, 1956, and 1957;

- (24) Departments that qualified for the 1957 Inter-scholastic Judging Contest in Crops, Livestock, Meats, and Dairy.

#### Summary of Findings in Regard to Hypotheses Tested

Hypotheses regarding interest as measured by the Kuder Preference Record. Seven of the ten hypotheses regarding personal characteristics of interests exhibited by teachers as measured by the Kuder Preference Record were accepted.

It was ascertained that between the level of effectiveness of the educational program in vocational agriculture departments and the personal characteristics of the teachers in these departments a significant difference does exist in regard to interests relative to:

- (1) Mechanical,
- (2) Computational,
- (3) Scientific,
- (4) Persuasive,
- (5) Artistic,
- (6) Literary,
- (7) Social Service Activities.

Pertaining to the hypotheses rejected, it was determined that between the level of effectiveness of the educational program of vocational agriculture departments

and the personal characteristics of the teachers in these departments a significant difference does not exist in regard to interest relative to:

- (1) Outdoor,
- (2) Musical,
- (3) Clerical activities.

This investigation establishes that association exists between the levels of effectiveness of the educational programs of vocational agriculture departments and the personal characteristics of vocational agriculture teachers of these departments in regard to interest relative to:

- (1) Mechanical,
- (2) Computational,
- (3) Scientific,
- (4) Persuasive,
- (5) Artistic,
- (6) Literary,
- (7) Social Service Activities.

Hypotheses regarding temperament as measured by the Guilford-Zimmerman Temperament Survey. Of the ten hypotheses tested regarding temperament of teachers, as measured by the Guilford-Zimmerman Temperament Survey, five were considered acceptable. It was ascertained that between the level of effectiveness of the educational program in vocational agriculture departments and the personal characteristics of the teachers in these departments a significant difference does exist in regard to temperament

relative to:

- (1) General Activity or Energy,
- (2) Ascendance or Social Boldness,
- (3) Social Interest or Sociability,
- (4) Emotional Stability,
- (5) Objectivity.

Pertaining to the hypotheses rejected, it was determined that between the level of effectiveness of the educational programs of vocational agriculture departments and the personal characteristics of the teachers in these departments a significant difference does exist in regard to temperament relative to:

- (1) Restraint or Seriousness,
- (2) Friendliness or Agreeableness,
- (3) Thoughtfulness or Reflectiveness,
- (4) Personal Relations or Cooperativeness,
- (5) Masculinity.

This investigation establishes that association does exist between the level of effectiveness of the educational program in vocational agriculture departments and the personal characteristics of the teachers in these departments in regard to temperament relative to:

- (1) General Activity or Energy,
- (2) Ascendance or Social Boldness,
- (3) Social Interest or Sociability,
- (4) Emotional Stability,
- (5) Objectivity.

TABLE XXV

THE ACCEPTANCE AND REJECTION OF HYPOTHESES REGARDING  
ASSOCIATION BETWEEN CERTAIN PERSONAL CHARACTER-  
ISTICS AND THE LEVEL OF PERFORMANCE OF  
VOCATIONAL AGRICULTURE TEACHERS

Personal Characteristic	Disposition	Higher Level of Performance
<b>Kuder Preference Record in Regard to Interest</b>		
1. Outdoor	Rejected	
2. Mechanical	Accepted	II
3. Computational	Accepted	II
4. Scientific	Accepted	II
5. Persuasive	Accepted	I
6. Artistic	Accepted	II
7. Literary	Accepted	I
8. Musical	Rejected	
9. Social Service	Accepted	I
10. Clerical	Rejected	
<b>Guilford-Zimmerman Temperament Survey in Regard to Temperament</b>		
11. General Activity	Accepted	I
12. Restraint or Seriousness	Rejected	
13. Ascendance	Accepted	I
14. Social Interest	Accepted	I
15. Emotional Stability	Accepted	I
16. Objectivity	Accepted	I

TABLE XXV (Continued)

Personal Characteristic	Disposition	Higher Level of Performance
Guilford-Zimmerman Temperament Survey in Regard to Temperament		Group
17. Friendliness	Rejected	
18. Thoughtfulness	Rejected	
19. Personal Relations	Rejected	
20. Masculinity	Rejected	
Minnesota Teacher Attitude Inventory in Regard to		
21. Teacher Attitude	Rejected	
Owens-Bennett Mechanical Comprehension Test		
22. Mechanical Comprehension	Accepted	I
Otis Quick-Scoring Mental Ability Test		
23. Mental Ability Test	Rejected	



Hypothesis regarding teacher attitude as measured by the Minnesota Teacher Attitude Inventory. The hypothesis tested regarding teacher attitude of teachers, as measured by the Minnesota Teacher Attitude Inventory, was considered unacceptable. It was ascertained that between the level of effectiveness of the educational program in vocational agriculture departments and the personal characteristic of the teachers in these departments a significant difference does not exist in regard to teacher attitude.

Hypothesis regarding mechanical comprehension as measured by the Owens-Bennett Mechanical Comprehension Test. The hypothesis tested regarding mechanical comprehension of teachers was considered acceptable. It was ascertained that between the level of effectiveness of the educational programs in vocational agriculture departments and the personal characteristic of the teachers in these departments a significant difference does exist in regard to mechanical comprehension.

The investigation establishes that association does exist between the personal characteristic of teachers regarding mechanical comprehension and the level of achievement of local programs of vocational agriculture.

Hypothesis regarding mental ability as measured by the Otis Quick-Scoring Mental Ability Test. The hypothesis tested regarding mental ability of teachers was considered unacceptable. It was ascertained that between the level of effectiveness of the educational program in vocational

agriculture departments and the personal characteristic of the teachers in these departments a significant difference does not exist in regard to mental ability.

#### Conclusions Reached in Regard to Hypotheses Tested

Since seven of the ten hypotheses tested regarding interest were accepted, the conclusion can be reached that teachers' possession of the personal characteristics of interest in mechanical, computational, scientific, persuasive, artistic, literary, and social service activities is associated with the level of achievement of local departments of vocational agriculture. The interest in mechanical, computational, scientific, and artistic activities exhibited by these teachers is associated with programs that were not rated as exhibiting a high level of accomplishments in the local departments. The interest in persuasive, literary, and social service activities exhibited by these teachers is associated with programs of a high level of achievement in the local departments.

Five of the ten hypotheses tested in regard to temperament were accepted. The conclusion can be reached that teachers' possession of the personal characteristics of temperament for general activities, ascendance, social interest, emotional stability, and objectivity is associated with programs of a high level of achievement exhibited by local departments of vocational agriculture.

The hypothesis regarding mechanical comprehension of

teachers was accepted; so the conclusion is reached that a teachers' possession of the personal characteristic of higher level of mechanical comprehension is also associated with a high level of achievement of local programs of vocational agriculture.

#### Implications of the Study

This investigation was not undertaken to establish a cause and effect relationship in regard to teachers' possession of certain personal characteristics with the level of effectiveness of the educational programs of these teachers departments; but from the findings particular inferences may be drawn which would strongly indicate that teachers' possession of certain personal characteristics is more conducive than others for the occurrence of a particular level of achievement of programs in these teachers' departments of vocational agriculture.

Inference drawn from the results of this investigation indicate that teachers' possession of certain personal characteristics, namely, interest in various activities, variations in temperaments, and mechanical comprehension is associated with the level of achievements of programs in these teachers' departments. Literary interest exhibited by teachers revealed a strong positive association with effectiveness of the program. An inference drawn by the investigator from this finding is that a decided preference for literary activities gives the individual a vast source from

which to draw in helping to solve the everyday problems of life. Experiences gained vicariously are effective if utilizable. They are more meaningful and thus more effective if experienced in a desirable environment. Preference for literary activities should provide a situation conducive to maximum interpretation of environment and consequently provide for more effective solving of problems for both self and others.

A greater understanding of the many facets that have an influence on the individual's frame of reference is acquired through wide reading experiences and acquaintances with literature. This ability to understand other people and their problems commands respect and admiration from all concerned. The teacher of vocational agriculture who possesses this personal characteristic will both consciously and unconsciously utilize this quality for achieving a more effective program in his department.

More flexibility in adapting to the changing times and adjusting to meet the situation is acquired when the insights and experiences of others are employed. Insights are more meaningful when the whole problem is understood. This provides for transfer of learning to occur at a maximum level, and retention of learning is enhanced.

This study fortifies this concept and provides valid reason for utilizing the Kuder Preference Record as an instrument that will yield data to be of merit in selecting prospective teachers. Students aspiring to enter the

profession of teaching vocational agriculture could profit by evaluating their own preference for literary interest in the light of the evidence found in this investigation. Teachers could use this information as a self-evaluation guide for self-improvement. If their scores are low relative to this personal characteristic, effort could be made to change their perspective so that adjustment would fortify for this weakness. If the scores are high considerable effort should be expended to capitalize on this quality and utilize its value for subsequent planning and development of a more effective educational program.

A further implication, which may be readily recognized, is that those who have responsibility for the planning and direction of programs of teacher education may consider placing added emphasis on experiences in general education as contrasted to a more exclusive concentration on learning activities that are of a strictly technical or professional nature.

Further study of this personal characteristic is recommended as change in time will probably demand an even more self-integrated, balanced, and flexible individual if success in teaching is to be assured.

There are strong implications for teacher-educators in the finding that teachers who have a strong preference for social service interest are more likely to be associated with the highly effective programs of vocational agriculture.

Both teacher-educators and supervisors of vocational

agriculture should be challenged by these findings to emphasize the important role of the teacher in helping to bring about more abundant living for the rural people with whom he works.

This investigation reveals that preference for outdoor interest is extremely high among vocational agriculture teachers. Perhaps any prospective teacher should examine his interest closely. If his score is high on this preference, he can evaluate himself favorably on this trait. If, however, his score is low, he should examine his interest closely, for other vocations may yield more pleasurable and profitable experiences.

A relatively high interest in scientific, computational, mechanical, and artistic areas has been established as being associated with teachers whose programs are not very highly effective in achievement. Care must be given to any inference drawn, for scientific interest exhibited by both groups of teachers was very high; the implication is that in general teachers of vocational agriculture possess this interest to a decided degree. An extremely high scientific interest, however, may be associated with individuals whose vocational ambitions may possibly be more desirably satisfied in scientific research than in the teaching profession, where preference for social service is generally considered highly desirable.

In regard to temperament of teachers, the investigation reveals that general activity or energy is regarded as a necessary personal characteristic for a successful teacher.

This study fortifies this concept and provides valid reason for utilizing the Guilford-Zimmerman Temperament Survey as an instrument that will yield data of merit for use in selecting prospective vocational agriculture teachers. Students aspiring to enter the profession of teaching vocational agriculture could profit by evaluating their own general activity or energy in the light of the evidence found in this study. Teachers could possibly use this information as a self-evaluation guide for attempting self-improvement. If their score yields a relatively low value in regard to this personal characteristic, they might be encouraged to put forth every effort to utilize this personal characteristic to the fullest extent.

Teachers' possession of the trait of seriousness was revealed by the high score of both groups. The implication is that teachers have a seriousness about them that should challenge prospective teachers to evaluate their temperament relative to this personal characteristic.

The small difference in the mean scores may imply that restraint or seriousness is not important relative to the effectiveness of the educational program. This can be challenged, for those who choose the profession of teaching are subjected to a natural selection process which was in existence several years before their initial employment. The general public is constantly developing a picture of desired traits possessed by teachers. The teacher-education department provides for further selection by discouraging

those individuals who exhibit a decided lack of interest in the profession. After employment those individuals who are not challenged by the profession search for employment elsewhere. This leaves a highly select group who are teaching in their present position for the third year or longer. This personal characteristic is an important trait that needs to be considered by all prospective teachers.

The investigation studied social interest as an interest and as a temperament. The established association of ample possession of this trait with effective programs revealed by both instruments employed fortifies the importance of this characteristic. In regard to emotional stability and objectivity the investigation implies that these are characteristics that are most desirable for teachers to possess. A low score should be considered as a seriously limiting factor, for teachers are placed in many varied circumstances in any community. The nature of these circumstances is such as to make many demands on the individual. The possession of strong emotional stability encourages development of an objective basis for decision-making.

The investigation revealed that friendliness was a trait possessed to a high degree by teachers of both groups. The implication is that this characteristic is important to the teaching profession. A prospective teacher making a low score on this area of the test should be encouraged to develop the characteristic of friendliness at every



opportunity.

In regard to teacher attitude possessed by teachers the mean scores of both groups were below average as compared with norms established by the authors of the test. The scores cause considerable concern for the philosophy of Oklahoma teachers. Questions such as the following can be asked: (1) Are Oklahoma teachers outdated in their philosophy of education? (2) Are methods and techniques employed by the teachers developing such a degree of conformity among students that initiative and creativeness are stifled? (3) If the answer to the first two questions is affirmative, what steps can we employ to correct the situation? This study raises many questions in this regard. Recommendations are: (1) Study the teacher's attitudes so that further evidence will validate or invalidate findings of this investigation. (2) If further study validates the data in this study, then we should seek ways and means to develop a more democratic philosophy among the teachers.

The investigation revealed that mechanical comprehension is associated with programs of high achievement. Findings in regard to mechanical interest, however, were associated with programs exhibiting a low level of achievement. This study implies that interest and comprehension are not necessarily the same trait but does suggest the importance of mechanical comprehension with regard to program accomplishments.

The recommendation is made that all of the personal

characteristics studied in this investigation be subjected to further research. More concise information relative to the behavioral pattern of successful teachers would aid in developing more effective vocational agriculture programs.

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## VITA

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Doctor of Education

Thesis: THE ASSOCIATION OF CERTAIN PERSONAL CHARACTERISTICS OF VOCATIONAL AGRICULTURE TEACHERS WITH THE EFFECTIVENESS OF THE EDUCATIONAL PROGRAM IN THEIR RESPECTIVE DEPARTMENTS

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