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AND INTEREST VALUES OF ELEMENTARY EDU-
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GRADUATE COLLEGE

INTERPERSONAL VALUES, TEMPERAMENT TRAITS, AND INTEREST
VALUES OF ELEMENTARY EDUCATION STUDENTS AT
THE UNIVERSITY OF OKLAHOMA

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
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degree of
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BY
MARY MARLENE COE HUDSON
Norman, Oklahoma
1966

INTERPERSONAL VALUES, TEMPERAMENT TRAITS, AND INTEREST
VALUES OF ELEMENTARY EDUCATION STUDENTS AT
THE UNIVERSITY OF OKLAHOMA

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To

My dear friends

Ruby and Delwin

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CHAPTER I

THE PROBLEM

Background of the Study

Formerly, self awareness and social outlook were not emphasized as important aspects of professional behavior in teachers. More recently, however, these variables have been recognized as highly significant and necessary for success in teaching.¹ Undoubtedly, because of the complex living conditions of today, the scope of the teacher's potential personal influence has increased, and because of the importance of this influence, sociability is a factor frequently incorporated in the job description. Baxter recognized and effectively expressed the impact of sociability in teaching as follows:

¹William F. Bruce and A. John Holden, Jr., The Teacher's Personal Development, An Introduction to Self-Awareness and Interpersonal Relations (New York: Henry Holt and Company, 1957), pp. 4-6.

It is no longer enough that the teacher be the possessor of knowledge. Today's teacher must be a "social engineer" capable of setting up a provocative environment for children's learning, charting the course of each individual child through the ever-changing social relationships in which he is involved and assisting each pupil to grow in his understanding of himself and of others. American education prescribes further that the teacher be responsible for teaching children to respect the personalities of others and for teaching them to work and play co-operatively with others under restrictions and privileges established and maintained by majority will.¹

The teacher of today should be a person who through percept and through personal stimulus causes children to react in such a manner as to promote their personal well-being and their social usefulness. The teacher's job is to guide the growth of young people, and this necessarily involves her in various kinds of associations with other people. The effectiveness of these associations has a significant, often crucial, influence on her essential responsibility toward youth.

The importance of the teacher's personality as an important variable in the classroom is revealed in studies of teacher dismissals. A survey of Indiana schools by Stapley showed that the second greatest cause of failure was due to such things as personal maladjustment, poor personality, and poor personal appearance.² Bruce and

¹Bernice Baxter, Teacher-Pupil Relationships (New York: The Macmillan Company, 1945), p. 7.

²M. E. Stapley, "A Study of Teacher Effectiveness," Teacher's College Journal, XXX (December, 1958), 41-42.

Holden report similar findings.

Tactlessness with parents, a "non-cooperative attitude" toward the administration, and weak disciplinary control show up much more often as reasons for dismissal of teachers than does a lack of knowledge of subject matter.¹

A wide variety of materials and methods has been employed to obtain and study non-intellectual factors of teacher samples, but without consistent results. Practically the only agreement among researchers on teacher characteristics is that all of the traits of effective teachers are valued in our culture. Most of the studies of teachers' personalities have concentrated on the correlation of specific personality variables with an index of teacher effectiveness in order to determine what makes a good teacher, to better select teacher candidates for teacher training, to design teacher education programs, to provide a basis for teacher certification, to make possible better hiring and promotion policies, or to enlighten the supervisors of teachers in service.

The results of research on teacher characteristics are presented in diverse and extensive terminology. Barr commented that the list of terms is not only long but that researchers tend to use words in a non-technical sense rather than a manner characteristic of scientific study. Even if they were more adequately defined, he believed that there were too many terms employed to make meaningful

¹Bruce and Holden, op. cit., p. 5.

communication possible for the many individuals who need to communicate about teacher effectiveness and make the predictions essential to the development of pre-service programs of teacher education, supervision, administration, and improvement of the staff.

Need for the Study

The various instruments used to assess personality variables have expanded the vocabulary even farther. The nature and dimension of the variables measured are determined by the model and theory upon which the individual instruments were constructed.

Development of a framework for the utilization of test scores of teacher education students is sorely limited by conflicting evidence reported for teachers' non-intellectual characteristics for levels of experience, age, marital status, grade level preferred, those with and without children, for differing geographic locations, and for type of university attended by the student. Rupiper's analysis of a sample of male and female graduate students represents the only published research on personality variables of teacher education students at the University of Oklahoma.²

¹A. S. Barr (ed.), Wisconsin Studies of the Measurement and Prediction of Teacher Effectiveness, A Summary of Investigations (Madison: Dembar Publications, Inc., 1961), p. 135.

²Omer John Rupiper, "A Psychometric Evaluation of Experienced Teachers," The Journal of Educational Research, LV (May, 1962), 368-71.

There was no reported research relative to the same measures for undergraduate students enrolled in teacher education programs in Oklahoma.

Reported research provides very few guidelines for effective use of test score reports of female elementary education students by those charged with the responsibility of fostering their development of optimum potential. Therefore, this study was undertaken in an effort to describe the personal and social characteristics of prospective and experienced elementary school teachers.

Statement of the Problem

The problem of this study was to administer three selected standardized personality instruments to all female elementary education students enrolled at the University of Oklahoma during the summer session 1965 in an attempt to answer the following questions: (1) Are prospective teachers significantly different from experienced teachers as indicated by test performance? (2) Are there statistically significant differences between the mean scores of subgroups by levels of experience, age, marital status, grade level preferred, and those with and without children?

Limitations of the Study

Since the number of male students enrolled in elementary education was relatively small, this study was limited to female prospective and experienced elementary

teachers enrolled at the University of Oklahoma during the summer session 1965. The study was delimited in terms of the personality variables the selected instruments purported to assess.

Hypotheses

The Guilford-Zimmerman Temperament Survey, the Allport-Vernon-Lindzey Study of Values, and the SRA Survey of Interpersonal Values were assumed to have been sufficiently validated to demonstrate their use and precision to assess temperament traits, values, and interpersonal values, respectively. On the basis of published research cited in Chapter II, variations in levels of experience, teacher age, marital status, grade level preferred, and those with and without children should be reflected in the proportions of subjects exhibiting those personality variables measured by the three standardized instruments used. In view of previous research findings, the following null hypotheses were formulated:

Ho₁: There is no statistically significant difference between the obtained mean raw scores of experienced teachers and prospective teachers by test variable.

Ho₂: There is no statistically significant difference between the obtained mean raw scores of the eight subgroups representing levels of experience by test variable.

Ho₃: There is no statistically significant difference between the obtained mean raw scores of the five

sub-groups representing age levels by test variable.

Ho₄: There is no statistically significant difference between the obtained mean raw scores of the three groups representing preferred teaching grade level by test variable.

Ho₅: There is no statistically significant difference between the obtained mean raw scores of the three sub-groups representing marital status by test variable.

Ho₆: There is no statistically significant difference between the obtained mean raw scores of the sub-group of subjects with children and the sub-group of subjects with no children by test variable.

Instruments Used in the Study

The instruments used for this study were (1) a biographical questionnaire which is included in Appendix B, (2) the Guilford-Zimmerman Temperament Survey, (2) the SRA Survey of Interpersonal Values, and (4) the Allport-Vernon-Lindzey Study of Values.

The Guilford-Zimmerman Temperament Survey

The Guilford-Zimmerman Temperament Survey was chosen because it is the one test administered to teaching candidates at the University of Oklahoma that has been widely used in teacher characteristics studies. It is designed to measure ten traits of temperament and will produce internal validity or factorial validity of the

scores which is fairly well assured by the foundation of factor analysis studies plus the successive item analysis directed toward internal consistency and uniqueness. Each score is probably a fairly clear indicator of one unique trait. The manual contains normative data for meaningful interpretation of the scores.

The abbreviation G-Z refers to the Guilford-Zimmerman Temperament Survey. The following definitions of the ten traits were summarized from the Guilford-Zimmerman Temperament Survey, Manual of Instructions and Interpretations.

G-Z-G--General Activity. Rapid pace of activities, keeping in motion, liking for speed, quickness of action, energy (vitality), production (efficiency), enthusiasm (liveliness), hurrying.

G-Z-R--Restraint. Serious-mindedness, deliberate, persistent effort, self-control.

G-Z-A--Ascendancy. Self-defense, leadership habits, speaking with individuals, speaking in public, persuading others, being conspicuous, bluffing.

G-Z-S--Sociability. Having many friends and acquaintances, entering into conversations, liking social activities, seeking social contacts, seeking limelight.

G-Z-E--Emotional Stability. Evenness of moods, optimism (cheerfulness), composure, feeling in good health.

G-Z-O--Objectivity. Being "thickskinned" versus

hypersensitiveness, suspiciousness (fancying of hostility).

G-Z-F--Friendliness. Toleration of hostile action, acceptance of domination, respect for others versus hostility.

G-Z-T- Thoughtfulness. Reflectiveness (meditative-ness), observing of behavior in others, interested in thinking, philosophically inclined, observing of self, mental poise.

G-Z-P--Personal Relations. Tolerance of people, faith in social institutions.

G-Z-M--Masculinity. Interest in masculine activities and vocations, not easily disgusted, hardboiled, resistant to fear, inhibition of emotional expressions, little interest in clothes and styles.¹

The SRA Survey of Interpersonal Values

The Survey of Interpersonal Values is designed to measure a segment of the value domain involving the individual's relationships to other people and/or their relationships to him. It was selected because it is a new test accompanied by appropriate validity norms, test-retest reliability coefficients, and a table of inter-correlations between the scales. Recent research briefs indicate that it has been used in studies of "service" occupations and has not only given a reliable measure but, upon administration at a later date, yields a reliable index of personality

¹J. P. Guilford and Wayne S. Zimmerman, The Guilford-Zimmerman Temperament Survey, Manual of Instructions and Interpretations (Beverly Hills: Sheridan Supply Company, 1949), pp. 2-3.

change for nurses and medical students.¹ Such an instrument would be a valuable tool for use in teacher education programs if changes do occur during teacher training.

The abbreviation SIV refers to the SRA Survey of Interpersonal Values designed to measure the following six values, which are defined as described by Gordon in the SRA Manual for the Survey of Interpersonal Values.

SIV-S--Support: Being treated with understanding, receiving encouragement from other people, being treated with kindness and consideration.

SIV-C--Conformity: Doing what is socially correct, following regulations closely, doing what is accepted and proper, being a conformist.

SIV-R--Recognition: Being looked up to and admired, being considered important, attracting favorable notice, achieving recognition.

SIV-I--Independence: Having the right to do whatever one wants to do, being free to make one's own decisions, being able to do things in one's own way.

SIV-B--Benevolence: Doing things for other people, sharing with others, helping the unfortunate, being generous.

SIV-L--Leadership: Being in charge of other people, having authority over others, being in a position of leadership or power.²

Following are descriptions of trait tendencies found to be associated with each value.

Support	Non-reflective, lacking vigor, dependent, unreliable.
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¹Leonard V. Gordon, Research Briefs on Survey of Interpersonal Values, Revised, A Supplement to the Manual (Chicago: Science Research Associates, Inc., 1963), pp. 1-28.

²Leonard V. Gordon, SRA Manual for Survey of Interpersonal Values (Chicago: Science Research Associates, Inc., 1957), p. 3.

Conformity	Careful, responsible
Recognition	Anxious, sociable
Independence	Non-sociable
Benevolence	Tolerant and understanding
Leadership	An original thinker, energetic, self-assured and assertive. ¹

The Study of Values

The Study of Values was selected because it is standardized on a college population. It is accompanied by norms for several colleges, technically trained groups, and the sexes. The mean reliability coefficient for the values is given in the manual as .90. It has been widely used in teacher characteristics studies and has yielded significant correlations on three variables. The Survey of Interpersonal Values has been correlated with it, and the inter-correlation matrix is presented in the manual.

The abbreviation AVL refers to the Allport-Vernon-Lindzey Study of Values designed to measure the relative prominence of six basic interests or motives in personality: the theoretical, economic, aesthetic, social, political, and religious. Definitions of these values were summarized from the manual as follows:

AVL-T--Theoretical. Interest in discovery of truth and characteristically looks for identities and differences. Seeks to observe and to reason.

AVL-E--Economic. Interest in the useful. Embraces the practical affairs of the business world.

¹Ibid., p. 7.

AVL-A--Aesthetic. Interest in artistic episodes of life. Highest value is placed in form and harmony.

AVL-S--Social. Interest in others. Sympathetic, kind and unselfish.

AVL-P--Political. Interest in direct expression of personal power, influence, and renown.

AVL-R--Religious. Interest in unity as a mystical relation with life. Mental structure directed to the creation of the highest and absolutely satisfying value experience.¹

The Sample

The sample surveyed in this study was comprised of all 246 female experienced and prospective elementary teachers who were enrolled at the University of Oklahoma during the summer session 1965. Enrollment accounting slips in the Office of the Dean of the College of Education provided the names of all students enrolled. Each prospective subject was contacted to enlist her voluntary participation. The students were guaranteed anonymity, since neither names nor other form of personal identification was placed on the set of materials. However, a number was placed on each set in order to identify a complete set of data for each person for purposes of statistical analysis. Table 1 in Chapter III presents the frequency distribution for each

¹Gordon W. Allport, Philip E. Vernon, and Gardner Lindzey, Manual - Study of Values, A Scale for Measuring the Dominant Interests in Personality (3d ed. rev.; Boston: Houghton-Mifflin Company, 1960), pp. 4-5.

sub-group of the sample.

Research Design

The descriptive-survey method of research was selected as most appropriate for solving this problem.

Good described the descriptive-survey method as follows:

Descriptive studies may include present facts or current conditions concerning the nature of a group of persons, a number of objects, or a class of events, and may involve the procedures of induction, analysis, classification, enumeration, or measurement. The terms survey and status suggest the gathering of evidence relating to current conditions.¹

A brief outline of procedures followed in the study is presented to provide an overview of the execution of the research design.

1. A comprehensive review was made of the related research to establish basic assumptions for the study.

2. Three standardized instruments designed to measure personality variables were selected.

3. A short questionnaire to obtain subject's age, marital status, number of children, college degrees or college classification, teaching grade level preferred, and a listing of teaching experience by grade level and number of years taught was constructed and reproduced.

4. All experienced and prospective female elementary teachers attending the University of Oklahoma during the

¹Carter V. Good, Introduction to Educational Research (New York: Appleton-Century-Crofts, Inc., 1959), p. 167.

summer session 1965 were identified. (All experienced teachers enrolled were also certified.)

5. Each student was contacted to secure her co-operation and agreement to participate in the study. All 246 enrolled consented to participate. Multiple sub-groupings of the sample were developed based upon levels of experience, age, marital status, size of family and teaching grade level preferred.

6. Tests were administered, hand-scored by the writer, and recorded together with the biographical data.

7. Appropriate statistical formulas were selected to analyze the test scores.

8. Arrangements were made for the statistical computations to be performed on an IBM 1410 data processing system, through the statistics laboratory in the College of Education at the University of Oklahoma.

9. Biographical data and test scores were recorded on IBM cards, and pertinent statistics were computed.

10. Interpretations of the results of statistical analysis were made.

Chapter III includes a detailed presentation of the steps in the procedure of the study.

Organization of the Report

Results of the study are presented through tables and discussion. Chapter I presents an overview of the problem and a description of the study. Chapter II

summarizes the related research literature. Chapter III presents the analysis of the data and Chapter IV contains a summary of the findings and conclusions drawn and recommendations resulting from the study. A bibliography is provided, and tables summarizing the data are presented in Chapter III and in Appendix A.

CHAPTER II.

REVIEW OF SELECTED RESEARCH STUDIES

Introduction

Non-cognitive characteristics of teachers and teacher trainees have been assessed as attitudes, values, interests, favored activities, adjustments, needs, and personality factors. Some studies using the same terminology differed so greatly in procedure that the terms did not convey identical meanings in all of the research reports.

Instruments employed to assess non-cognitive variables may be classified as objective or projective techniques. For purposes of this study, the review of research was limited to studies employing objective techniques designed to measure variables related to those assessed by the Guilford-Zimmerman Temperament Survey, the Allport-Vernon-Lindzey Study of Values, or the SRA Survey of Interpersonal Values.

Reviews of Research

Several writers have compiled reviews of the research on characteristics of teachers and teacher trainees.

The reader is referred to Tomlinson;¹ Leiderman, Hilton, and Levin;² Barr and Jones;³ Barr;⁴ Gage;⁵ and Biddle and Ellena⁶ for comprehensive coverage of the subject. Three extensive projects and other highly pertinent studies are reported here in detail.

The Teacher Characteristics Study

The American Council on Education sponsored an extensive study of teacher characteristics which was directed by David G. Ryans from 1948 to 1955. Ryans dichotomized specific teacher behaviors and specific pupil behaviors and observed interaction-integration within the framework of this dichotomy. Two assumptions were basic to his model. The first assumption was that teacher behaviors were a function of general or specific situational factors and of

¹Loren R. Tomlinson, "Recent Studies in the Evaluation of Teaching," Educational Research Bulletin, XXXIV (October, 1955), 172-86.

²Gloria F. Leiderman, Thomas L. Hilton, and Harry Levin, "Studies of Teachers' Behavior, A Summary Report," Journal of Teacher Education, VIII (December, 1957), 433-37.

³Arvil S. Barr and Robert E. Jones, "The Measurement and Prediction of Teacher Efficiency," Review of Educational Research, XXVIII (June, 1958), 256-64.

⁴Barr, op. cit., pp. 1-156.

⁵Nathaniel L. Gage (ed.), Handbook of Research on Teaching (Chicago: Rand-McNally and Company, 1963), pp. 44-583.

⁶Bruce J. Biddle and William J. Ellena (eds.), Contemporary Research on Teacher Effectiveness (New York: Holt, Rinehart, and Winston, 1964), pp. 1-352.

characteristics of the individual teachers and were characterized by a trend or consistency and by a limited number of probable responses rather than certain behaviors. The second assumption was that teacher behaviors were revealed through overt behavior and by symptoms or correlates of behavior and were classifiable qualitatively and quantitatively.¹

The staff of the study observed and analyzed overt behaviors, or acts of teachers in their classrooms, and determined that they seemed to fall into the following three clusters:

Pattern X_o: friendly, understanding, sympathetic; versus aloof, egocentric, restricted teacher behavior.

Pattern Y_o: responsible, systematic, businesslike; versus evading, unplanned, slipshod teacher behavior.

Pattern Z_o: stimulating, imaginative, enthusiastic, surgent; versus dull, routine teacher behavior.²

Positive relationships between teacher effectiveness and the positive aspects of the three patterns were reported. Ryans reported results for elementary and secondary teachers combined as one group.

There was a general tendency for high teachers to: be extremely generous in appraisals of the behavior and motives of other persons; possess strong interest in reading and literary affairs; be interested in music,

¹David G. Ryans, Characteristics of Teachers, Their Description, Comparison, and Appraisal (Washington, D. C.: American Council on Education, 1960), pp. 15-23.

²Ibid., p. 77.

painting, and the arts in general; participate in social groups; enjoy pupil relationships; prefer nondirective (permissive) classroom procedures; manifest superior verbal intelligence; and be superior with respect to emotional adjustment. On the other hand, low teachers tended generally to: be restrictive and critical in their appraisals of other persons; prefer activities which did not involve close personal contacts; express less verbal intelligence; show less satisfactory emotional adjustment; and represent older age groups.¹

Where significant F ratios were obtained, t tests of the differences between means of married and single elementary teachers were significant and favored the married group with respect to understanding and friendly classroom behavior, responsible businesslike classroom behavior, stimulating classroom behavior, favorable attitude toward pupils, and child-centered educational viewpoints.

There was a general tendency for teachers with extended experience to score lower than less experienced teachers on the scales. However, the more experienced teachers scored significantly higher than the less experienced on pattern Y, responsible businesslike behavior in the classroom. The trends were not substantially different when teachers were classified by age rather than by experience.

Elementary teachers who had attended large universities at the undergraduate level scored higher than graduates of small universities on the scales measuring stimulating classroom behavior and child-centered educational viewpoints, verbal understanding, emotional stability, and validity of response.

¹Ibid., pp. 398-97.

Elementary women teachers of grades 1-2 and grades 5-6 scored higher on understanding and friendly classroom behavior and on stimulating and imaginative classroom behavior than other elementary teachers. Women teachers of grades 1-2 scored lower on responsible, systematic, and businesslike classroom behavior than other elementary teachers.

The Harvard Teacher Education Project

The Harvard Teacher Education Project, begun in 1952 and completed in 1957, was supported by a grant from the Ford Foundation. This project encompassed eight related studies executed independently by members of the research committee. The results were reported by Levin, Hilton, and Leiderman.¹

Cogan analyzed the relation of the behaviors of teachers to the productive behaviors of their pupils and found that friendly teachers got more self-initiated and required work from pupils than did less friendly teachers. Seibel demonstrated that characteristics such as friendliness can be predicted for student teachers from attitudes, previous experiences, and other personality measures.

To study another aspect of the predictive value of attitude measures, Stuart devised a scale measure of

¹Harry Levin, Thomas L. Hilton, and Gloria Leiderman, "Studies of Teacher Behavior," Journal of Experimental Education, XXVI (September, 1957), pp. 81-91.

authoritarian beliefs and validated it against supervisors ratings of teacher behavior in the classroom. Ackerman assumed that teaching problem-solving with multiple solutions was less authoritarian than teaching problem-solving with only one solution. He studied the relative effectiveness of the two methods and concluded that the less authoritarian method was more effective.

Hilton assessed measures of ego-involvement and need as aspects of teachers' motivation to teach and determined relationships between their interests and permanency in teaching. Hilton also directed a survey of factors related to withdrawal from teaching. Seibel and Hilton studied student teachers in elementary and in secondary schools. Differences between the groups were reported, but the authors concluded that teacher behavior is a complex task and that many questions demand further investigation.

We have seen that at least one kind of teacher behavior, namely, warm and friendly behavior, is related to how much work students perform. But what of the many other teaching behaviors and the many different consequences such teacher behavior can have in terms of teaching outcomes. The research literature includes a modicum of work which is relevant to the problem but we venture to say that for the majority of the teacher behaviors which typically are regarded as "good" and desirable there is little evidence that they have significant effects on student performance.¹

¹Ibid., p. 90.

The Wisconsin Studies of the Measurement and
Prediction of Teacher Effectiveness

Between the years 1940 and 1960, Arvil S. Barr at the University of Wisconsin directed the research of more than seventy-five doctoral candidates exploring ways and means of validating an objective approach to teacher evaluation. One of these studies by Margaret Lois Jones is especially pertinent to this study. She attempted to determine whether or not personality tests would differentiate better teachers from good teachers at or above the .05 level of significance.

She obtained measures for twenty-three variables: three of teaching success, five of personality, eleven of temperament, and four of pre-service achievement. She compared those teachers who placed above the median and those who placed below the median on the three ratings of teaching success for all of the variables. She used scores from the Guilford-Zimmerman for general activity, restraint, ascendance, sociability, and emotional stability. She reported some, but insignificant, difference between halves of the sample for sociability and ascendance traits. The measure for the general activity trait was different at the .01 level of significance with the group above the median scoring higher. She concluded that good teachers were characterized by their preference for a rapid pace, by quickness of action,

and by production and efficiency.¹

Although the measures for personality variables yielded by the instruments used in the other Wisconsin studies are not directly comparable to those analyzed in this study, some of the findings provide pertinent implications. In each case, personality variables were correlated with an effectiveness criterion.

Lamke found that responses of good and poor teachers to the Cattell 16 PF Test did not fall into two well-defined patterns but that there was more than one pattern for each group.² Blum found that students preparing to teach did not differ significantly from those preparing for four other professions as measured by the Minnesota Multiphasic Personality Inventory but did differ in their vocational and non-vocational interests as measured by the Strong Vocational Interest Blank.³

Barr summarized the results of the research studies regarding personality:

The problem of measurement has not been solved. While a variety of devices were employed, such as tests, rating scales, self-reporting inventories, interviews,

¹Margaret Lois Jones, "Analysis of Certain Aspects of Teaching Ability," Journal of Experimental Education, XXV (December, 1956), 153-80.

²Tom A. Lamke, "Personality and Teaching Success," Journal of Experimental Education, XX (December, 1951), 217-60.

³L. P. Blum, "Comparative Study of Students Preparing for Five Selected Professions Including Teaching," Journal of Experimental Education, XVI (September, 1947), 31-65.

and direct observation of behavior, none except possibly the measurement of temperament and social competency, showed much validity. Most of the correlations were near zero, depending upon the criteria.... The most promising positive relationships were found for objective measures of emotional stability, social competency, certain scores on the Minnesota Multiphasic Personality Inventory and the tests of temperament.¹

Research Studies of Temperament, Interest Values,
and Interpersonal Values of Teachers

Leeds administered the Guilford-Zimmerman Temperament Survey and the Minnesota Teacher Attitude Inventory to 300 teachers in South Carolina and concluded that teachers who got along well with pupils tended to be cooperative, friendly, objective, and emotionally stable to a high degree and tended to a lesser degree to manifest sociability, social ascendancy, and masculinity in emotions and interests. Those who did not have high rapport with pupils tended to be critical and intolerant, hostile and belligerent, hypersensitive, depressed, and emotionally unstable and tended to a lesser degree toward submissiveness, shyness, seclusiveness, and femininity.²

To study the mental health of teachers, Clark administered the Guilford-Martin Inventory to 181 female elementary school teachers in a Midwestern city to determine whether their scores differed significantly from the norms which had

¹Barr, op. cit., pp. 105-06.

²Carroll H. Leeds, "Teacher Attitudes and Temperament as a Measurement of Teacher Pupil Rapport," Journal of Applied Psychology, XL (October, 1956), pp. 331-37.

been established for the test. Teachers were above average in objectivity, agreeableness, and co-operativeness. They were less introversive in their thinking, showed fewer signs of depression and cycloid disposition, and had lower scores on general activity and ascendance-submission than did the normative group. Considering only the surface meaning of the traits in question, the teacher group appeared to have "better mental health" than did the normative college students.¹

Cook compared Minnesota Teacher Attitude Inventory and Guilford Zimmerman trait correlations for a group of inexperienced or prospective teachers at Purdue to those reported by Leeds for 300 in-service teachers in a large South Carolina City and those reported by Ferguson for 117 student teachers at the University of Missouri. Cook proposed to determine if the MTAI-GZTS trait correlations would be in the same general direction and of the same relative size as in the two studies cited. Generally, the means and standard deviations for each of the GZTS traits for the three groups were quite similar. The correlations between the MTAI and each of the GZTS traits for the three groups involved in the study were quite similar in direction and magnitude to those obtained for student teachers, but the

¹E. J. Clark, "The Mental Health of Elementary School Teachers as Measured by the Guilford-Martin Personality Battery," cited by N. L. Gage, Handbook of Research on Teaching (Chicago: Rand-McNally and Company, 1963), pp. 547-49.

correlations for both of these groups were generally smaller than those for experienced teachers. Exceptions are noted in the general activity, restraint, and thoughtfulness scales where the correlations were quite similar. The only trait showing significant correlation differences for all three groups was friendliness. Guilford-Zimmerman point out in the manual that this temperament dimension reflects the ability to get along with others. When the correlations for the beginning and student teacher groups were corrected for restriction of range, the correlations still did not equal those obtained for the experienced teacher group. This tended to eliminate the factor of greater heterogeneity of MTAI scores as the cause of the differences in correlations and suggested that there may be real personality changes occurring with experience in teaching.¹

Rupiper employed standardized tests to measure scholastic aptitude, personality traits, and interests of 77 experienced male and female teachers enrolled in graduate education courses at the University of Oklahoma. No dominant pattern existed for the sample. The highest means suggested that the group showed greater ability in working with verbal material than with quantitative, more restraint, greater adeptness in personal relations, and greater

¹Desmond L. Cook, "A Note on the Relationship Between MTAI and GZTS Scores for Three Levels of Teacher Experience," Journal of Educational Research, LV (May, 1962), 363-67.

interests in social service and moral and ethical standards. Since none of the obtained mean scores exceeded plus or minus one standard deviation, the results indicated that scores for experienced teachers were not essentially different from test norms.¹

MacLean, Gowan, and Gowan analyzed the scores of 1700 teaching candidates at UCLA in 1955. Women students were lower on economic and religious values and higher on theoretical values than were women in general. The education students were not consistently above or below the population mean in any of the six value areas. For each value, the difference between subject matter groups was greater than the difference between the mean for the entire education student sample and the population norms.²

Bendig correlated the scores of sixteen college instructors with ratings by their students on the competence and empathy scales of the Purdue Rating Scale for Instruction. None of the correlations were significant.³

Gowan's analysis of the characteristics of twenty teachers who placed in the highest five per cent of the

¹Rupiper, op. cit.

²M. S. MacLean, May S. Gowan, and John C. Gowan, "A Teacher Selection and Counseling Service," Journal of Educational Research, XLVIII (May, 1955), 669-77.

³A. W. Bendig, "Ability and Personality Characteristics of Introductory Psychology Instructors Rated Competent and Empathetic by Their Students," Journal of Educational Research, XLVIII (May, 1955), 705-09.

Teacher Characteristics Study indicated that these highly selected elementary teachers were more emotionally stable, more friendly, more cooperative and agreeable, more restrained, and more objective than the average adult. Their scores on the California Psychological Inventory revealed that they were more tolerant and "more inclined to give a good impression" than the average adult.¹

Seagoe made a more direct examination of the power of the Study of Values to discriminate between successful and unsuccessful teachers in 1946. She correlated the scores of thirty-one students with ratings of student-teaching success made two years later. She also correlated the original value scores with principals' ratings of twenty-five of these students two years later. The correlations of the scores over a six year period were small, but interesting. Of the six values, economic and aesthetic scores yielded the highest correlations. Economic scores correlated negatively with student teaching success and aesthetic scores correlated positively with the principals' ratings. There was a tendency for most all the scores to relate to one criterion or the other, but not to both.²

¹John C. Gowan, "A Summary of the Intensive Study of Twenty Highly Selected Elementary Women Teachers," Journal of Experimental Education, XXVI (December, 1957), 115-24.

²May V. Seagoe, "Prediction of In-service Success in Teaching," Journal of Educational Research, XXXIX (May, 1946), 658-63.

Gowan used the UCLA norms in 1958 to determine correlation coefficients between the scores of 240 students on the Study of Values and their scores on two Teacher Prognostic Scales derived from the MMPI. Social scores and aesthetic scores showed significant positive correlations and economic scores showed a significant negative correlation with the Prognosis Scales.

In a factor analysis of a matrix including the Guilford-Zimmerman, the California Psychological Inventory, and the Teacher Prognosis Scales, Gowan found Guilford scores for ascendance, stability, friendliness, and personal relations tended to have high loadings on the first rotated factor. He labeled this factor general teaching adjustment.¹

Tanner reported results of studying two groups of education students composed of males and females who were elementary and secondary teachers. The number of subjects was not reported. One of the groups was labeled superior and the other inferior on the basis of faculty ratings and MTAI responses. The superior women teachers were significantly lower on economic and higher on social values than the inferior women teachers.²

There were no published reports of research using

¹John C. Gowan, "Inter-correlations and Factor Analysis of Tests Given to Teaching Candidates," Journal of Experimental Education, XXVII (September, 1958), 1-22.

²W. C. Tanner, Jr., "Personality Bases in Teacher Selection," Phi Delta Kappan, XXXV (March, 1954), 271-77.

the SIV with teacher groups. However, the research using the SIV with groups of medical students and student nurses, reported in the Research Briefs on Survey of Interpersonal Values provided with the manual for administering and interpreting the tests, was considered pertinent to this study.¹

Mensch administered the SIV to all first through fourth year medical students and to a sample of psychiatric residents who had just completed their internship at the University of California Medical School. He proposed to observe benevolence as an aspect of "idealism" and hypothesized a decrease in the scores with each level of preparation. He reported that a significant decrease in mean benevolence scores was found to occur each year throughout medical school training, and internship, and that these medical students increasingly valued independence and recognition and decreasingly valued conformity.²

Woodard proposed to observe the same dimension for freshmen student nurses and senior student nurses at the Texas Women's University. She tested a sample of freshmen education students and senior elementary education students for comparison purposes. The senior nurses were significantly lower on benevolence, conformity, and leadership, and were higher on security and independence than the freshmen

¹Gordon, Research Briefs on Survey of Interpersonal Values, Revised, A Supplement to the Manual, pp. 1-28.

²Ibid., pp. 8-9.

education students. The senior education students were significantly higher on independence and significantly lower on conformity than the education freshmen students.¹

Beaver tested applicants for nurses training, second and third year nursing students, and registered nurses. The student group was significantly lower on benevolence and higher on independence than the applicants. The registered nurses were significantly lower on benevolence and higher on leadership than the applicants.²

Blume administered the SIV to all student nurses in the first through the fourth year classes at the University of Texas School of Nursing. The scores for benevolence were significantly different for the four classes, but the decline was consistently lower each year. Significant differences were also observed for conformity and independence.³

Other Related Research

Warren A. Peterson conducted comprehensive interviews with fifty-six, white, female, high school teachers who were thirty to seventy years of age. He found that teachers in their thirties expressed concern about losing some kind of intimate, informal contact with students. In contrast,

¹Ibid., pp. 9-10.

²Ibid., p. 10.

³Ibid., p. 11.

middle-aged teachers seemed secure, relaxed and appeared to have accepted increased distance from students. Older teachers seemed frustrated and tended to complain about students. He posed a role change for the teacher with increasing age.

From a study of the ways that teachers adjust to age and generational differences and to one another, some important facts about effectiveness have emerged. The teacher's role changes as she grows older; morale, and perhaps teaching competence, may be affected by age and generational conflict; and most fundamentally, career teachers want recognition as they grow older-- recognition for having dedicated their lives to other's children.¹

Brookover found that pupils tend to rate high as instructors those teachers with whom they have a high degree of person-to-person interaction. However, student evaluations correlated near zero with administrative ratings.²

Della Piana and Gage found that student evaluations of teachers were positively related to the teacher's scores on the Minnesota Teacher Attitude Inventory when the classes were conducted in a democratic manner. Conversely, ratings by classes conducted in a less democratic manner did not correlate positively with the teachers' MTAI scores.³

¹Warren A. Peterson, "Age, Teacher's Role, and the Institutional Setting," in Bruce J. Biddle and William J. Ellena (eds.), Contemporary Research on Teacher Effectiveness (New York: Holt, Rinehart, and Winston, Inc., 1958), pp. 264-315.

²Wilbur B. Brookover, "The Relation of Social Factors to Teaching Ability," Journal of Experimental Education, XIII (June, 1945), 191-205.

³G. M. Della Piana and N. L. Gage, "Pupil's Values

Wellbank surveyed 300 beginning teachers in Illinois and reported that the majority attested that they received most help from personal experience. These teachers also believed that they learned through experience to make certain personal adjustments which were not related to the classroom.¹

Conclusions

The following concluding statements were developed from the review of related research.

1. There may be real differences between younger and older teachers as determined by personality tests.
2. The differences that occur for age levels may be a reflection of those occurring for experience.
3. The teaching occupation may tend to shape and mold teachers so that, as sub-groups, the range of personality traits is narrowed and they differ more from test norms than from each other.
4. Test score results on the Guilford-Zimmerman have been more consistent than those with other instruments.
5. Ryans reported significant test score differences for married and single teachers and for those married teachers with children and those without children.
6. Ryans reported that significant differences

and the Validity of the MTAI," Journal of Educational Psychology, XLVI (March, 1955), 167-78.

¹H. L. Wellbank, "The Teacher and His Problems," Educational Administration and Supervision, XXXVIII (December, 1952), 491-94.

occurred between test scores for teachers of grades 1-2 and of grades 5-6 and the scores of the elementary teacher sample.

7. Scores on the SIV for benevolence tend to decrease each year for medical students and nursing trainees.

8. Rupiper reported that no significant differences were found between the obtained mean scores on selected standardized tests for sub-groups of a sample of certified teachers.

CHAPTER III

PRESENTATION OF DATA

Statistical Analysis

The data for this study consisted of twenty-two test scores obtained from the administration of three personality tests for each of the 246 subjects. Forty-four sub-groups were formed on the basis of the subjects' responses to five items on the biographical questionnaire with respect to age, level of experience, marital status, size of family, and teaching grade level preferred. The distribution and description of the sub-groups are presented in Table 1.

Statistical analysis of the raw score data was accomplished through the use of an IBM 1410 Data Processing System in the Computer Laboratory at the University of Oklahoma. Obtained mean raw scores and standard deviations for the twenty-two test variables were computed for the total sample and for each of the forty-four sub-groups. The obtained means and standard deviations of raw scores on the twenty-two test variables by total sample and sub-groups are presented in Appendix A, Tables 3, 4, and 5.

TABLE 1

IDENTIFICATION NUMBER, SIZE, AND DESCRIPTION
OF THE TOTAL SAMPLE AND SUB-GROUPS

I.D.	N	Description
1	246	All subjects
2	154	No children
3	92	Have children
4	99	Prospective, no children
5	31	Prospective, children
6	55	Experienced, no children
7	61	Experienced, children
8	97	Single
9	126	Married
10	23	Other marital status
11	74	Single, prospective
12	46	Married, prospective
13	10	Other marital status, prospective
14	23	Single, experienced
15	80	Married, experienced
16	13	Other marital status, experienced
17	130	All prospective teachers
18	24	1-yr. experience
19	19	2-yrs. experience
20	17	3-yrs. experience
21	11	4-yrs. experience
22	16	5-9 yrs. experience
23	15	10-14 yrs. experience
24	14	15+ years experience
25	68	21 years of age and under
26	71	22-24 yrs. of age
27	31	25-29 yrs. of age
28	29	30-34 yrs. of age
29	47	35+ yrs. of age
30	34	22-24 yrs., experience
31	37	22-24 yrs., prospective
32	10	25-29 yrs., prospective
33	21	25-29 yrs., experienced
34	11	30-34 yrs., prospective
35	18	30-34 yrs., experienced
36	98	K-3 preferred grade level
37	77	4-6 preferred grade level
38	71	K-6, special education preferred
39	55	K-3, prospective
40	43	K-3, experienced
41	32	4-6, prospective
42	45	4-6, experienced
43	43	K-6, prospective
44	28	K-6, experienced
45	116	All experienced teachers

The Student's t-test for independent data was used for testing the differences between obtained mean raw scores. The F ratio was employed to test for homogeneity of variance and was calculated according to the following formula:

$$F = \frac{S_1^2}{S_2^2}$$

Where S_1^2 = the larger of the two estimated population variances with degrees of freedom = $n_1 - 1$, and S_2^2 = the smaller of the two estimated variances with degrees of freedom = $n_2 - 1$.¹

Values of the F ratio significant at the .05 level were derived from Snedecor's Table of the F Distribution.² Values were determined by linear interpolation in the inverses of the degrees of freedom in the numerator and number of degrees of freedom in the denominator of the variance ratio defining the F variable. Laubacher's formulas were followed for the procedure.³ These values of F were punched on the IBM cards with the means, standard deviations, and number of subjects so the computer could be programmed

¹Wilfred J. Dixon and Frank J. Massey, Jr., Introduction to Statistical Analysis (2d ed.; New York: McGraw-Hill Book Co. Inc., 1957), p. 107.

²J. P. Guilford, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Co., 1956), p. 541, quoting G. W. Snedecor, Statistical Methods (Ames, Iowa: Collegiate, 1937), pp. 174-77.

³Nico Laubacher, "Interpolation in F-Tables," The American Statistician (February, 1965), pp. 28-43.

to proceed with the computation of t and degrees of freedom if the obtained F ratio was significant at the .05 level.

The formula from Dixon and Massey for Student's t for testing significance of a difference between uncorrelated means was employed to test the null hypotheses.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_p \sqrt{(1/N_1) + (1/N_2)}}$$

Where S_p^2 is the pooled mean square estimate of σ^2 given by:

$$S_p^2 = \frac{\sum X_{1i}^2 - \frac{(\sum X_{1i})^2}{N_1} + \sum X_{2i}^2 - \frac{(\sum X_{2i})^2}{N_2}}{N_1 + N_2 - 2}$$

$$= \frac{(N_1 - 1) S_1^2 + (N_2 - 1) S_2^2}{N_1 + N_2 - 2}$$

Where $\sum X_{1i}^2$ = sum of squares in first sample

$\sum X_{2i}^2$ = sum of squares in second sample

$\sum X_{1i}$ = sum of observations in first sample

$\sum X_{2i}$ = sum of observations in second sample

With $t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$

and $d.f. = \frac{\left[\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2} \right]^2}{\frac{\left[\frac{S_1^2}{N_1} \right]^2}{N_1 + 1} + \frac{\left[\frac{S_2^2}{N_2} \right]^2}{N_2 + 1}} - 2.0$

Where S_1^2 = variance of group 1

S_2^2 = variance of group 2

N_1 = number in group 1

N_2 = number in group 2¹

The computer calculated the F ratio, evaluated it for significance at the .05 level, and proceeded to compute appropriate t values and degrees of freedom. Only the t values significant at the .01 and .05 levels are presented in Table 2. However, all of the t values where the underlying assumptions were met and t statistics were computed are presented in Appendix A, Table 6, by selected sub-group comparisons on each test variable. The blank cells in Table 6 show those comparisons which were not computed.

Interpretation of Data

The null hypotheses tested were:

Hypothesis 1: There is no statistically significant difference between the obtained mean raw scores of experienced teachers and prospective teachers by test variable. Comparisons between mean raw scores of certified teachers and prospective teachers by test variable yielded two statistically significant t values. The differences occurred on the ascendance and sociability scales of the G-Z with t values of 2.749 and 2.96, respectively, both of which were significant at the .01 level. No statistically significant t values were obtained on the remaining test

¹Dixon and Massey, op. cit., pp. 121-22.

TABLE 2

SIGNIFICANT t VALUES OBTAINED BETWEEN THE SELECTED SUB-GROUPS BY TEST VARIABLE

T e s t	Single Prospec.	Prospec.	Prospec.	Prospec.	Prospec. (all)	K-3 lev. Prospec.	4-6 lev. Prospec.
	Married Prospec. (11-12)	1 yr. Exper. (17-18)	4 yrs. Exper. (17-21)	15+ yrs. Exper. (17-24)	Exper. (all) (17-45)	K-3 lev. Exper. (39-40)	4-6 lev. Exper. (41-42)
G R A S E O F T P M S C R I B L T E A S P R		2.745*		2.509*	2.749** 2.956**	2.065*	2.589*
	3.248**		2.542*				

**Significant at or beyond the .01 level of significance.

*Significant at or beyond the .05 level of significance.

variables, therefore, the null hypotheses were accepted. Since the mean raw scores were significantly larger for prospective teachers, this finding indicates that, in general, prospective teachers possess interpersonal values and traits similar to experienced teachers with the exception of leadership habits, speaking with others, persuading others, having many friends, seeking out and liking social contacts, and seeking limelight, which traits are more characteristic of prospective teachers.

Hypothesis 2: There is no statistically significant difference between the obtained mean raw scores of the eight sub-groups representing levels of experience by test variable. Twenty t values were not significant. Three significant t values occurred between sub-groups 17 and 18 on the G-Z-sociability scale ($t=2.745$), between sub-groups 17 and 21 on the SIV-support scale ($t=2.542$) and between sub-groups 17 and 24 on the G-Z-sociability scale ($t=2.509$). For these sub-groups and test variables the null hypotheses were rejected, whereas, the null hypotheses were tenable when comparisons were made between prospective and experienced teachers on all other test variables. The results suggest that prospective teachers possess greater qualities of sociability than teachers with one year of experience and 15 or more years of experience as measured by the G-Z. Although this difference did not exist between prospective teachers and those teachers with four years of teaching

experience, prospective teachers scored significantly higher on the SIV-support variable. This suggests that prospective teachers were more concerned with being treated with understanding and receiving encouragement from other people than were teachers with four years of teaching experience.

Hypothesis 3: There is no statistically significant difference between the obtained mean raw scores of the five sub-groups representing age levels by test variable. No statistically significant differences were found among the sub-groups by age; therefore, the null hypotheses were accepted. This suggests that age was not a significant variable in terms of test performance, since personality characteristics were similar for all age groups.

Hypothesis 4: There is no statistically significant difference between the obtained mean raw scores of the three groups for preferred teaching grade level by test variable. Two significant t values for G-Z-sociability were found between the k-3 preferred teaching level groups with and without experience ($t=2.065$) and between the 4-6 preferred teaching level groups with and without experience ($t=2.589$). The null hypotheses were rejected in these cases and were tenable for all other comparisons for the preferred teaching grade levels by test variables. This finding supports a previous hypothesis wherein the prospective teacher scored significantly higher on the sociability scale.

Hypothesis 5: There is no statistically significant difference between the obtained mean raw scores of the three sub-groups representing marital status by test variable. A t value of 3.247 for G-Z-thoughtfulness between the single and the married sub-group was significant at the .01 level of significance. The null hypothesis was rejected for this sub-group on the G-Z-thoughtfulness variable. For all other comparisons the null hypotheses were tenable. It was concluded that the single group of prospective teachers was more reflective and interested in thinking, more observant, possessed greater mental poise, and was more philosophically inclined than the married prospective teachers as measured by the G-Z.

Hypothesis 6: There is no statistically significant difference between the obtained mean raw scores of the sub-groups with children and with no children by test variable. Since no statistically significant differences were found, the null hypotheses were accepted. This indicates that both groups with and without children show similar characteristics with respect to their interpersonal values, interest values, and temperament traits.

The obtained mean raw scores presented in Appendix A, Tables 3, 4, and 5 revealed a significant aspect of this study. The observed differences were few and relatively small.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The problem of this study was the assessment and comparison of test scores for personality variables of 246 prospective and experienced elementary teachers enrolled at the University of Oklahoma during the summer session of 1965. More specifically, the problem was the determination of differences between each of thirty-three pairings of the forty-four sub-groups of the sample in terms of the variables assessed by the Guilford-Zimmerman Temperament Survey, the SRA Survey of Interpersonal Values, and the Allport-Vernon-Lindzey Study of Values.

The raw scores for the twenty-two test variables were used for the computations which were done using an IBM 1410 Data Processing System. Obtained mean raw scores and standard deviations for each variable were computed for the total sample and for each of the forty-four sub-groups. The F ratio was employed to test the obtained mean raw scores for homogeneity of variance between each of the thirty-three pairs of sub-groups. For all variables where F ratios were

significant at the .05 level, the Student's t test for independent data (two-tailed) was used to test the differences between obtained mean raw scores.

Findings

Scores for all the twenty-two variables assessed by the three tests did not discriminate between sub-groups at or above the .05 level of significance. The scores for sociability, ascendance, and thoughtfulness on the Guilford-Zimmerman Temperament Survey and scores for support on the SRA Survey of Interpersonal Values were the only measures of variables indicating significant differences. Even for these variables, significant differences were observed for only some specific sub-groups. None of the scores for the sub-groups representing age levels and none for the sub-groups with and without children were significantly different. All significant differences are listed.

1. Prospective teachers scored significantly higher on the G-Z scale for sociability than did experienced teachers.

3. Prospective teachers scored significantly higher on the G-Z scale for sociability than did the group of teachers with one year of experience.

4. Prospective teachers scored significantly higher on the G-Z scale for sociability than did the group of teachers with fifteen or more years of experience.

5. Prospective teachers preferring K-3 teaching

grade level scored significantly higher on the G-Z scale for sociability than did the experienced teachers preferring K-3 teaching grade level.

6. Prospective teachers preferring 4-6 teaching grade level scored significantly higher on the G-Z scale for sociability than did the experienced teachers preferring 4-6 teaching grade level.

7. Prospective teachers scored significantly higher on the SIV scale for support than did the experienced teachers with four years of experience.

8. Single prospective teachers scored significantly higher on the G-Z scale for thoughtfulness (thinking introversion) than did the married prospective teachers.

Conclusions and Discussion

The major conclusions that may be drawn from this study are those based upon the eight significant differences reported above for seven of the thirty-three pairings. The fact that no significant differences were found for fifteen of the variables implies that the groups were very similar in temperament traits and values. A survey of the differences in obtained mean scores for other variables at a lower level of confidence revealed similarities between variable scores which provided bases for other tentative conclusions.

The test score results suggested that prospective teachers of this sample were more concerned with leadership habits, speaking to the public and to individuals, being

conspicuous, having many friends and acquaintances, entering into conversations, liking social activities, seeking social contacts, and seeking limelight than were the teachers with one year of experience, the teachers with fifteen or more years of experience, or the experienced teachers as a group. This difference might be related to environmental motivation, in that the prospective teachers were challenged not only to make friends, but to expand their acquaintances in the process of adjusting to living in the new environment of university housing at the undergraduate level. It is reasonable to postulate that such behavior would be reflected in their temperament. The teachers with one year of experience also scored lower (but not significantly) on objectivity and ascendance; this fact might indicate that they were a little more suspicious, self-centered, sensitive, submissive, hesitant to speak, and inclined to follow than were the prospective teachers. The teachers with one year of experience may have just finished a year of what may be considered probationary teaching, during which they behaved very cautiously being more intent upon observing people and themselves than on interaction with the social environment.

The lower score of the teachers with fifteen or more years of experience might be a reflection of an established circle of friends in their environment, causing them to be less concerned with the initiation and extension of social contacts. Other scores of this experienced group

indicated that they might be a little more "thickskinned," less egotistical, resistant to fear, and less inclined to emotional expressions than the prospective group; this fact could also account for less emphasis on social expression.

Other scores of the experienced teachers as a group indicated that they were a little more inclined to be submissive, hesitant in speaking, and to follow than the prospective group. It is then understandable that they would tend to refrain from conversations, avoid the limelight, and avoid more social contacts than the prospective teachers who were significantly higher on leadership habits, persuading others, and speaking in public.

The significantly higher scores of the prospective teachers preferring K-3 and 4-6 teaching levels over the experienced teachers preferring the K-3 and 4-6 teaching levels, respectively, re-emphasized the difference for experience. The ascendancy scores were again lower for the experienced groups and might add validity to the sociability score.

Prospective teachers were more concerned with being treated with understanding, receiving encouragement from other people, and being treated with kindness than were teachers with four years of experience. It may be that the experiences during four years teaching precipitated an increase in the self-confidence of the experienced teachers which influenced them to be less dependent than the prospective teachers. Since no significant differences occurred for

age level groups, it is reasonable to assume that the differences occurring for experience levels did not exist for age levels.

The single prospective teachers' scores indicated that they were more interested in thinking, more observant, possessed greater mental poise, and were more philosophically inclined than the married prospective teachers. Other scores of the married group indicated that they were a little more inclined to be submissive, hesitant to speak, and to refrain from extending social contacts than the single students. It might be reasonable to assume that they were more concerned with participating in co-operative endeavors as an aspect of marriage than with the more individual activities of meditative and reflective thought.

Recommendations

The following recommendations are made on the basis of the findings of this study and inferences of the related research.

1. That parallel studies be made of different teacher samples.

2. That studies of teachers' concepts of the teaching role be made on the assumptions that concepts of the teaching role structure teacher behavior and that groups of teachers and prospective teachers differ significantly more on variables of role concept than on variables of personality and values.

BIBLIOGRAPHY

BIBLIOGRAPHY

Books

- Barr, Arvil S. (ed.). Wisconsin Studies of the Measurement and Prediction of Teacher Effectiveness, A Summary of Investigations. Madison: Dembar Publications, Inc., 1961.
- Baxter, Bernice. Teacher-Pupil Relationships. New York: The MacMillan Company, 1945.
- Biddle, Bruce J., and Ellena, William J. (eds.). Contemporary Research on Teacher Effectiveness. New York: Holt, Rinehart and Winston, 1964.
- Bruce, William F., and Holden, A. John, Jr. The Teacher's Personal Development, An Introduction to Self-Awareness and Interpersonal Relations. New York: Henry Holt and Company, 1957.
- Dixon, Wilfred J. and Massey, Frank J., Jr. Introduction to Statistical Analysis. 2d. ed. New York: McGraw-Hill Book Co. Inc., 1957.
- Gage, Nathaniel L. (ed.). Handbook of Research on Teaching, A Project of the American Educational Research Association. Chicago: Rand-McNally and Company, 1963.
- Good, Carter V. Introduction to Educational Research. New York: Appleton-Century-Crofts, Inc., 1959.
- Guilford, J. P. Fundamental Statistics in Psychology and Education. New York: McGraw-Hill Book Co., 1956.
- Ryans, David G. Characteristics of Teachers, Their Description, Comparison, and Appraisal. Washington, D. C.: American Council on Education, 1960.

Articles and Periodicals

- Barr, Arvil S. "The Assessment of the Teacher's Personality," School Review, LXVIII (Winter, 1960), 400-08.
- Barr, Arvil S., and Jones, Robert E. "The Measurement and Prediction of Teacher Efficiency," Review of Educational Research, XXVIII (June, 1958), 256-64.
- Bendig, A. W. "Ability and Personality Characteristics of Introductory Psychology Instructors Rated Competent and Empathetic by Their Students," Journal of Educational Research, XLVIII (May, 1955), 705-09.
- Blum, L. P. "Comparative Study of Students Preparing for Five Professions Including Teaching," Journal of Experimental Education, XVI (September, 1947), 31-65.
- Borg, W. R. "Personality and Interest Measures as Related to Criteria of Instructor Effectiveness," Journal of Educational Research, L (May, 1957), 701-09.
- Brookover, Wilbur B. "The Relation of Social Factors to Teaching Ability," Journal of Experimental Education, XIII (June, 1945), 191-205.
- Callabria, F. M. "Characteristics of Effective Teachers," Educational Research Bulletin, XXXIX (April, 1960), 92-100.
- Cole, David L. "The Prediction of Teaching Performance," Journal of Educational Research, LIV (May, 1961), 345-48.
- Cook, Desmond L. "A Note on the Relationship Between MTAI and GZTS Scores for Three Levels of Teacher Experience," Journal of Educational Research, LV (May, 1962), 363-67.
- Cook, Desmond L. "Further Investigation of Personal Values of Students Entering Teacher Education Programs," Journal of Teacher Education, XII (June, 1961), 172-78.
- Cook, Walter W. (et al.) "Significant Factors in Teacher's Classroom Attitudes," Journal of Teacher Education, VII (September, 1956), 274-79.
- Della Piana, G. M., and Gage, N. L. "Pupil's Values and the Validity of the MTAI," Journal of Educational Psychology, XLVI (March, 1955), 167-78.

- Dodge, G. W., and Clifton, D. O. "Teacher-Pupil Rapport and Student-Teacher Characteristics," Journal of Educational Psychology, XLVII (October, 1956), 364-71.
- Fulkerson, Glen. "A Resume of Current Teacher Personnel Research," Journal of Educational Research, XLVII (May, 1954), 669-81.
- Gilbert, Claudia. "The Guilford-Zimmerman Temperament Survey and Certain Related Personality Tests," Journal of Applied Psychology, XXXIV (December, 1960), 394-96.
- Goodenough, Eva E. "The Forced Choice Technique as a Method for Discovering Effective Teacher Personality," Journal of Educational Research, LI (September, 1957), 25-31.
- Gowan, John C. "A Summary of the Intensive Study of Twenty Highly Selected Elementary Women Teachers," Journal of Experimental Education, XXVI, 2 (December, 1957), 115-24.
- Gowan, John C. "Intercorrelations and Factor Analysis of Tests Given to Teaching Candidates," The Journal of Experimental Education, XXVII, I (September, 1958), 1-22.
- Gowan, John C., Conner, Carita, and Kennedy, Phyllis. "A Follow-Up Study of Teaching Candidates," Journal of Educational Research, LIV, 9 (May, 1961), 353-55.
- Gowan, John C., and Gowan, May S. "Teacher Prognosis Scale for the MMPI," Journal of Educational Research, XLIX (September, 1955), 1-12.
- Guba, E. G., and Getzels, J. W. "Personality and Teacher Effectiveness: A Problem in Theoretical Research," Journal of Educational Psychology, XLVI (October, 1955), 330-44.
- Jones, Margaret Lois. "Analysis of Certain Aspects of Teaching Ability," Journal of Experimental Education, XXV (December, 1956), 153-80.
- Lamke, Tom A. "Personality and Teaching Success," Journal of Experimental Education, XX (December, 1951), 217-60.
- Laubacher, Nico. "Interpolation in F-Tables," The American Statistician, XIX (February, 1965), 28-43.

- Leeds, Carroll H. "Teacher Attitudes and Temperament as a Measurement of Teacher-Pupil Rapport," Journal of Applied Psychology, XL (October, 1956), 331-37.
- Leiderman, Gloria F., Hilton, Thomas L., and Levin, Harry. "Studies of Teachers' Behavior, A Summary Report," Journal of Teacher Education, VIII (December, 1957), 433-37.
- Levin, Harry, Hilton, Thomas L., and Leiderman, Gloria F. "Studies of Teacher Behavior," Journal of Experimental Education, XXVI (September, 1957), 81-91.
- MacLean, M. S., Gowan, May S., and Gowan, John C. "A Teacher Selection and Counseling Service," Journal of Educational Research, XLVIII (May, 1955), 669-77.
- Medley, D. M., and Mitzel, H. E. "Some Behavioral Correlates of Teacher Effectiveness," Journal of Educational Psychology, L (October, 1959), 239-46.
- Peck, R. F. "Personality Patterns of Prospective Teachers," Journal of Experimental Education, XXIX (December, 1960), 169-75.
- Popham, W. J., and Trimble, R. R. "The Minnesota Teacher Attitude Inventory as an Index of General Teaching Competence," Educational and Psychological Measurement, XX (Winter, 1960), 509-12.
- Rupiper, Omer John. "A Psychometric Evaluation of Experienced Teachers," The Journal of Educational Research, LV (May, 1962), 368-71.
- Seagoe, May V. "Prediction of In-service Success in Teaching," Journal of Educational Research, XXXIX (May, 1946), 658-63.
- Stapley, M. E. "A Study of Teacher Effectiveness," Teacher's College Journal, XXX (December, 1958), 41-42.
- Symonds, Percival M. "Characteristics of the Effective Teacher Based on Pupil Evaluations," Journal of Experimental Education, XXIII (June, 1955), 289-310.
- Tanner, W. C., Jr. "Personality Bases in Teacher Selection," Phi Delta Kappan, XXXV (March, 1954), 271-77.
- Terrien, F. W. "The Occupational Roles of Teachers," Journal of Educational Sociology, XXIX (September, 1955), 14-20.

- Tiedeman, Stuart C. "A Study of Pupil-Teacher Relationship," Journal of Educational Research, XXXV (May, 1942), 657-64.
- Tomlinson, Loren B. "Recent Studies in the Evaluation of Teaching," Educational Research Bulletin, XXXIV (October, 1955), 172-86.
- Wellbank, H. L. "The Teacher and His Problems," Educational Administration and Supervision, XXXVIII (December, 1952), 491-94.
- Witty, P. "An Analysis of the Personality Traits of the Effective Teacher," Journal of Educational Research, XL (May, 1947), 662-71.

Manuals

- Allport, Gordon W., Vernon, Philip E., and Lindzey, Gardner. Manual - Study of Values, A Scale for Measuring the Dominant Interests in Personality. 3d ed. rev. Boston: Houghton-Mifflin Company, 1960.
- Gordon, Leonard V. SRA Manual for Survey of Interpersonal Values. Chicago: Science Research Associates, Inc., 1957.
- Gordon, Leonard V. Research Briefs on Survey of Interpersonal Values, Revised, A Supplement to the Manual. Chicago: Science Research Associates, Inc., 1963.
- Guilford, J. P., and Zimmerman, Wayne S. The Guilford-Zimmerman Temperament Survey, Manual of Instructions and Interpretations. Beverly Hills: Sheridan Supply Co., 1949.

APPENDIX A

TABLES OF DATA OBTAINED FOR STUDENTS

TABLE 3

OBTAINED MEANS AND STANDARD DEVIATIONS OF RAW SCORES FOR THE TEN GUILFORD-ZIMMERMAN
TEMPERAMENT SURVEY VARIABLES BY TOTAL SAMPLE AND SUB-GROUPS

Group	n	Mean and s.d.	G	R	A	S	E	O	F	T	P	M
1	246	$\bar{X}$ s.d.	15.74 5.44	18.00 4.85	13.71 5.40	19.64 6.13	17.89 5.61	18.25 5.01	17.46 5.12	19.44 4.55	18.54 5.19	11.42 4.18
2	154	$\bar{X}$ s.d.	16.00 5.24	16.92 4.71	14.40 5.21	20.58 5.96	18.01 5.60	17.94 4.80	16.55 4.75	19.84 4.01	18.03 5.17	11.45 3.90
3	92	$\bar{X}$ s.d.	15.37 5.83	19.59 4.67	12.54 5.50	18.04 6.13	17.63 5.68	18.88 5.25	19.00 5.38	18.67 5.25	19.55 5.09	11.25 4.52
4	99	$\bar{X}$ s.d.	15.72 5.13	16.70 4.74	14.77 5.06	20.97 5.39	18.05 5.66	18.27 5.04	16.66 4.55	20.21 3.92	18.38 5.31	11.52 4.05
5	31	$\bar{X}$ s.d.	16.81 4.99	19.52 4.82	14.06 4.08	19.97 4.04	17.26 5.70	18.00 5.79	17.74 5.47	18.79 5.32	18.16 5.29	11.13 3.59
6	55	$\bar{X}$ s.d.	16.40 5.36	17.69 4.65	13.75 5.56	19.91 6.86	18.04 5.47	17.15 4.41	16.33 5.11	19.35 4.17	17.15 4.87	11.53 3.88
7	61	$\bar{X}$ s.d.	14.64 6.13	19.62 4.63	11.77 5.97	17.07 6.78	17.82 5.71	19.33 4.95	19.64 5.26	18.62 5.26	20.26 4.87	11.31 4.95
8	97	$\bar{X}$ s.d.	16.33 5.06	16.53 4.97	14.69 5.70	20.68 6.36	17.63 5.79	17.68 4.95	15.80 4.88	20.31 4.04	17.71 5.53	11.45 3.91

TABLE 3--Continued

Group	n	Mean and s.d.	G	R	A	S	E	O	F	T	P	M
9	126	$\bar{X}$ s.d.	15.45 5.65	18.90 4.31	12.90 5.25	18.94 5.89	17.94 5.55	18.67 5.00	18.56 4.92	18.69 4.58	19.09 4.84	11.19 4.13
10	23	$\bar{X}$ s.d.	14.83 5.81	19.26 5.73	14.00 4.42	19.04 6.11	18.70 5.27	18.35 5.32	18.39 5.51	19.91 5.73	19.08 5.33	12.52 5.44
11	74	$\bar{X}$ s.d.	16.18 5.14	16.66 5.03	15.35 5.21	21.26 5.70	17.51 5.71	17.84 5.14	15.86 4.56	20.85 3.70	18.42 5.57	11.35 4.19
12	46	$\bar{X}$ s.d.	15.70 5.21	18.15 4.34	13.52 4.22	20.11 4.17	18.11 5.81	18.85 5.22	18.41 4.65	18.22 4.66	18.43 4.65	11.59 3.49
13	10	$\bar{X}$ s.d.	15.80 4.66	19.00 5.74	14.00 3.97	19.70 4.17	19.30 4.67	18.00 5.89	17.80 5.43	20.20 4.96	17.20 6.25	11.20 4.34
14	23	$\bar{X}$ s.d.	16.83 4.88	16.09 4.82	12.57 6.73	18.83 8.00	18.00 6.15	17.17 4.32	15.61 5.88	18.57 4.65	15.43 4.86	11.78 2.88
15	80	$\bar{X}$ s.d.	15.31 5.92	19.34 4.25	12.54 5.75	18.28 6.61	17.85 5.44	18.56 4.91	18.65 5.10	18.96 4.54	19.46 4.93	10.96 4.46
16	13	$\bar{X}$ s.d.	14.08 6.65	19.46 5.95	14.00 4.90	18.54 7.40	18.23 5.83	18.62 5.08	18.85 5.74	19.69 6.45	20.54 4.20	13.54 6.13
17	130	$\bar{X}$ s.d.	15.98 5.10	17.37 4.89	14.60 4.84	20.73 5.10	17.86 5.66	18.21 5.20	16.92 4.78	19.87 4.32	18.33 5.28	11.42 3.94

TABLE 3--Continued

Group	n	Mean and s.d.	G	R	A	S	E	O	F	T	P	M
18	24	$\bar{X}$ s.d.	15.21 5.27	18.17 5.33	13.42 6.45	16.67 6.91	17.67 5.25	16.46 3.75	15.04 4.78	20.00 4.90	16.83 5.10	11.00 4.18
19	19	$\bar{X}$ s.d.	16.84 5.65	17.79 4.70	11.58 5.76	19.00 6.04	17.58 4.49	18.21 4.55	18.68 5.53	17.16 4.56	17.47 5.37	10.53 3.50
20	17	$\bar{X}$ s.d.	15.71 6.22	18.88 4.23	12.76 4.68	20.29 5.72	16.53 7.05	18.06 5.99	19.94 6.70	19.35 4.55	19.29 4.88	11.65 5.09
21	11	$\bar{X}$ s.d.	17.73 5.62	17.18 4.69	14.55 6.36	21.36 7.17	20.18 4.96	20.36 5.07	18.09 5.22	19.55 3.53	19.64 5.71	11.55 3.75
22	16	$\bar{X}$ s.d.	15.25 6.41	20.88 4.05	12.31 4.51	18.25 6.81	18.00 6.04	18.38 6.58	18.94 5.25	20.44 3.29	19.75 5.21	10.63 4.24
23	15	$\bar{X}$ s.d.	14.33 5.89	20.67 4.61	12.33 7.06	19.00 8.25	19.60 5.11	19.47 3.64	19.53 4.34	17.67 5.98	21.40 4.82	11.53 4.85
24	14	$\bar{X}$ s.d.	13.50 6.04	17.29 4.43	12.36 6.38	15.57 7.51	16.86 6.04	18.86 3.28	17.57 4.88	18.43 5.60	18.71 3.65	13.71 5.55
25	68	$\bar{X}$ s.d.	16.34 5.02	16.32 4.50	15.43 5.19	21.56 5.41	17.32 5.65	17.72 4.66	15.88 4.63	20.47 4.05	17.57 5.33	11.21 3.87
26	71	$\bar{X}$ s.d.	15.39 5.14	17.32 5.07	13.34 5.03	19.80 5.82	17.51 5.47	17.49 4.89	16.46 4.95	19.30 4.17	17.13 4.55	11.10 4.23

TABLE 3--Continued

Group	n	Mean and s.d.	G	R	A	S	E	O	F	T	P	M
27	31	$\bar{X}$ s.d.	16.35 6.05	19.00 5.12	12.68 4.27	18.55 6.52	18.23 6.30	17.03 5.67	17.84 4.43	19.61 3.59	19.16 5.34	10.03 4.44
28	29	$\bar{X}$ s.d.	15.24 5.84	20.55 4.02	13.07 5.98	18.45 6.38	18.14 5.52	18.34 4.95	18.86 5.61	20.17 5.18	19.28 5.98	12.55 3.72
29	47	$\bar{X}$ s.d.	15.30 5.92	19.21 4.30	12.85 6.17	18.06 6.64	18.91 5.40	20.89 4.52	20.13 5.02	17.62 5.44	21.23 4.20	12.43 4.41
30	34	$\bar{X}$ s.d.	16.71 5.13	16.71 4.44	12.91 5.73	19.21 6.70	16.94 5.65	16.79 4.20	15.38 5.21	18.35 4.55	16.32 4.04	10.53 3.79
31	37	$\bar{X}$ s.d.	14.19 4.92	17.89 5.59	13.73 4.34	20.35 4.91	18.03 5.33	18.14 5.43	17.46 4.54	20.16 3.63	17.86 4.92	11.62 4.59
32	10	$\bar{X}$ s.d.	16.60 5.76	21.10 3.84	12.80 4.29	20.90 3.51	21.50 4.88	18.70 6.08	18.50 2.99	18.70 4.03	19.90 5.49	11.20 4.89
33	21	$\bar{X}$ s.d.	15.95 6.09	18.95 5.14	12.67 4.72	17.48 7.33	16.95 6.26	15.76 5.54	17.43 5.00	20.48 3.37	18.14 5.49	9.95 4.93
34	11	$\bar{X}$ s.d.	17.36 4.80	19.64 3.72	13.82 5.49	17.73 4.17	16.18 6.18	18.00 6.07	18.46 6.42	19.27 6.47	19.91 5.34	12.73 2.69
35	18	$\bar{X}$ s.d.	13.94 6.15	21.11 4.20	12.61 6.37	18.89 7.50	19.33 4.88	18.56 4.31	19.11 5.23	20.73 4.34	18.89 6.45	12.44 4.30
36	98	$\bar{X}$ s.d.	15.00 5.41	17.40 5.47	14.09 5.84	19.85 6.15	17.12 5.79	17.90 4.76	17.10 4.95	19.56 4.13	18.48 5.35	11.25 4.07

TABLE 3--Continued

Group	n	Mean and s.d.	G	R	A	S	E	O	F	T	P	M
37	77	$\bar{X}$ s.d.	16.25 5.88	18.39 4.99	13.49 5.17	19.27 6.65	18.38 5.23	18.40 5.61	17.44 5.60	19.05 4.94	18.55 5.29	11.65 4.56
38	71	$\bar{X}$ s.d.	16.21 4.94	18.41 5.17	13.41 5.07	19.75 5.57	18.42 5.70	18.56 4.70	17.97 4.82	19.70 4.69	18.63 4.92	11.41 3.95
39	55	$\bar{X}$ s.d.	15.80 5.15	17.13 4.51	15.04 5.29	21.00 5.25	17.15 5.94	17.95 5.22	16.95 4.70	20.00 3.77	19.00 5.90	11.31 4.18
40	43	$\bar{X}$ s.d.	13.98 5.61	17.74 4.45	12.88 6.34	18.37 6.93	17.09 5.65	17.84 4.16	17.30 5.31	19.00 4.53	17.81 4.53	11.16 3.98
41	32	$\bar{X}$ s.d.	16.53 5.91	17.31 4.94	15.03 4.70	21.38 4.78	17.97 4.92	18.31 5.47	16.69 5.02	19.66 4.62	17.84 5.59	11.53 3.92
42	45	$\bar{X}$ s.d.	16.04 5.92	19.16 4.94	12.40 5.25	17.78 7.39	18.67 5.49	18.47 5.77	17.98 5.97	18.62 5.16	19.04 5.06	11.73 5.00
43	43	$\bar{X}$ s.d.	15.79 4.43	17.72 5.39	13.72 4.31	19.91 5.14	18.70 5.80	18.47 5.10	17.05 4.82	19.86 4.80	17.84 4.11	11.49 3.72
44	28	$\bar{X}$ s.d.	16.86 5.65	19.46 4.70	12.93 6.12	19.00 6.24	18.00 5.64	18.71 4.09	19.39 4.55	19.46 4.57	19.86 5.84	11.29 4.34
45	116	$\bar{X}$ s.d.	15.47 5.82	18.71 4.72	12.71 5.84	18.41 6.93	12.92 5.58	18.29 4.81	18.07 5.43	18.97 4.77	18.78 5.09	11.41 4.46

TABLE 4

OBTAINED MEANS AND STANDARD DEVIATIONS OF RAW SCORES FOR THE SIX SRA SURVEY OF
INTERPERSONAL VALUES VARIABLES BY TOTAL SAMPLE AND SUB-GROUPS

Group	n	Mean and s.d.	S	C	R	I	B	L
1	246	$\bar{X}$ s.d.	17.91 3.94	14.22 5.75	11.10 4.06	16.05 5.88	20.59 5.23	10.13 5.20
2	154	$\bar{X}$ s.d.	17.71 3.93	13.49 5.48	11.44 3.94	16.61 5.60	20.21 5.35	10.55 5.38
3	92	$\bar{X}$ s.d.	18.11 4.07	15.47 5.98	10.63 4.18	14.95 5.96	21.37 4.92	9.47 4.92
4	99	$\bar{X}$ s.d.	18.18 3.96	12.97 5.67	11.31 3.82	16.38 5.41	20.92 4.84	10.23 4.70
5	31	$\bar{X}$ s.d.	17.58 3.73	15.03 6.65	11.48 4.65	15.19 6.78	20.74 4.49	9.94 5.23
6	55	$\bar{X}$ s.d.	17.07 3.62	14.40 5.08	11.49 4.26	17.35 5.94	18.69 5.98	11.05 6.33
7	61	$\bar{X}$ s.d.	18.38 4.24	15.69 5.66	10.20 3.89	14.82 5.55	21.69 5.13	9.23 4.77
8	97	$\bar{X}$ s.d.	17.81 4.00	13.56 5.30	11.33 3.82	16.44 5.81	20.57 5.35	10.29 5.55

TABLE 4--Continued

Group	n	Mean and s.d.	S	C	R	I	B	L
9	126	$\bar{X}$ s.d.	17.83 4.08	15.13 5.92	10.85 4.20	15.52 5.74	20.56 5.26	10.10 4.98
10	23	$\bar{X}$ s.d.	18.74 2.82	12.09 5.94	11.48 4.34	17.26 6.02	20.83 4.70	9.61 4.98
11	74	$\bar{X}$ s.d.	18.30 4.00	13.15 5.21	11.31 3.73	16.00 5.58	21.45 4.71	9.80 4.51
12	46	$\bar{X}$ s.d.	17.50 4.00	14.22 6.66	11.35 4.45	16.07 5.84	20.02 4.92	10.83 5.31
13	10	$\bar{X}$ s.d.	18.60 2.41	12.30 7.85	11.70 4.35	17.00 7.23	20.60 3.86	9.80 4.66
14	23	$\bar{X}$ s.d.	16.26 3.65	14.87 5.49	11.39 4.20	17.87 6.43	17.74 6.36	11.87 7.96
15	80	$\bar{X}$ s.d.	18.01 4.13	15.65 5.42	10.56 4.04	15.21 5.69	20.88 5.45	9.69 4.76
16	13	$\bar{X}$ s.d.	18.85 3.18	11.92 4.29	11.31 4.50	17.46 5.21	21.00 5.40	9.46 5.40
17	130	$\bar{X}$ s.d.	18.04 3.90	13.46 5.96	11.35 4.01	16.10 5.76	20.88 4.74	10.16 4.81

TABLE 4--Continued

Group	n	Mean and s.d.	S	C	R	I	B	L
18	24	$\bar{X}$ s.d.	17.50 4.54	13.46 3.15	12.13 3.81	17.29 5.80	19.21 5.32	10.42 6.10
19	19	$\bar{X}$ s.d.	18.95 4.10	14.42 6.45	10.53 4.05	16.58 4.64	20.21 5.14	9.32 5.05
20	17	$\bar{X}$ s.d.	18.59 4.02	15.29 6.29	9.29 4.27	16.06 5.03	20.65 5.74	10.12 3.60
21	11	$\bar{X}$ s.d.	16.27 2.00	14.09 4.89	12.00 4.22	12.18 7.26	22.36 6.42	13.09 7.56
22	16	$\bar{X}$ s.d.	17.25 4.45	16.56 5.05	10.69 4.56	16.38 6.05	18.56 4.80	10.56 5.69
23	15	$\bar{X}$ s.d.	18.47 4.09	15.67 5.37	11.20 4.16	16.60 6.06	20.13 7.39	7.93 4.65
24	14	$\bar{X}$ s.d.	16.57 3.20	16.93 6.55	9.57 3.55	14.79 6.57	22.14 5.67	10.00 6.54
25	68	$\bar{X}$ s.d.	18.35 4.03	13.03 5.30	11.19 3.42	15.76 5.04	21.84 4.80	9.82 4.67
26	71	$\bar{X}$ s.d.	18.17 3.80	13.11 6.11	11.55 4.20	17.20 5.84	18.90 4.65	11.07 4.93

TABLE 4--Continued

Group	n	Mean and s.d.	S	C	R	I	B	L
27	31	$\bar{X}$ s.d.	17.10 4.03	15.26 5.18	12.23 4.52	15.84 5.92	19.23 5.89	10.35 6.47
28	29	$\bar{X}$ s.d.	17.03 4.12	15.66 5.87	10.79 3.92	16.10 6.67	20.24 5.85	10.14 5.30
29	47	$\bar{X}$ s.d.	17.94 3.86	16.06 5.52	9.72 4.24	14.83 6.05	22.45 4.90	9.00 5.28
30	34	$\bar{X}$ s.d.	17.76 4.14	14.47 5.59	11.21 3.98	17.18 4.97	19.00 5.23	10.38 5.35
31	37	$\bar{X}$ s.d.	18.54 3.48	11.86 6.37	11.87 4.42	17.22 6.60	18.81 4.10	11.70 4.49
32	10	$\bar{X}$ s.d.	16.30 3.30	16.90 6.81	12.00 4.55	15.20 6.75	20.80 5.22	8.80 5.43
33	21	$\bar{X}$ s.d.	18.05 3.88	14.43 4.32	11.91 4.87	16.86 5.81	17.86 6.03	10.91 6.61
34	11	$\bar{X}$ s.d.	17.46 3.93	16.73 5.53	10.27 5.29	15.55 6.74	20.73 5.61	9.18 4.26
35	18	$\bar{X}$ s.d.	16.78 4.32	15.00 6.13	11.11 2.93	16.44 6.79	19.94 6.14	10.72 5.89
36	98	$\bar{X}$ s.d.	18.31 4.22	14.05 5.46	11.37 3.91	15.07 4.81	21.01 4.75	10.19 5.52

TABLE 4--Continued

Group	n	Mean and s.d.	S	C	R	I	B	L
37	77	$\bar{X}$ s.d.	17.51 3.95	14.97 5.79	10.14 4.02	16.65 6.47	20.28 5.30	9.90 5.21
38	71	$\bar{X}$ s.d.	17.79 3.52	13.65 6.09	11.76 4.16	16.75 6.15	19.75 5.73	10.30 4.76
39	55	$\bar{X}$ s.d.	18.47 4.35	13.82 5.76	11.53 3.43	15.26 4.30	20.82 4.03	10.11 5.04
40	43	$\bar{X}$ s.d.	18.09 4.09	14.35 5.11	11.16 4.49	14.84 5.45	21.26 5.57	10.30 6.15
41	32	$\bar{X}$ s.d.	16.75 3.42	13.47 5.51	10.44 4.35	17.47 6.71	21.59 5.08	10.28 4.93
42	45	$\bar{X}$ s.d.	18.04 4.24	16.04 5.80	9.93 3.80	16.07 6.31	20.29 5.45	9.62 5.43
43	43	$\bar{X}$ s.d.	18.44 3.49	13.00 6.60	11.81 4.42	16.16 6.53	20.42 5.34	10.14 4.53
44	28	$\bar{X}$ s.d.	16.79 3.38	14.64 5.16	11.68 3.81	17.64 5.51	18.71 6.24	10.54 5.17
45	116	$\bar{X}$ s.d.	17.76 4.00	15.08 5.41	10.81 4.11	15.99 5.86	20.27 5.73	10.10 5.61

TABLE 4--Continued

Group	n	Mean and s.d.	S	C	R	I	B	L
37	77	$\bar{X}$ s.d.	17.51 3.95	14.97 5.79	10.14 4.02	16.65 6.47	20.28 5.30	9.90 5.21
38	71	$\bar{X}$ s.d.	17.79 3.52	13.65 6.09	11.76 4.16	16.75 6.15	19.75 5.73	10.30 4.76
39	55	$\bar{X}$ s.d.	18.47 4.35	13.82 5.76	11.53 3.43	15.26 4.30	20.82 4.03	10.11 5.04
40	43	$\bar{X}$ s.d.	18.09 4.09	14.35 5.11	11.16 4.49	14.84 5.45	21.26 5.57	10.30 6.15
41	32	$\bar{X}$ s.d.	16.75 3.42	13.47 5.51	10.44 4.35	17.47 6.71	21.59 5.08	10.28 4.93
42	45	$\bar{X}$ s.d.	18.04 4.24	16.04 5.80	9.93 3.80	16.07 6.31	20.29 5.45	9.62 5.43
43	43	$\bar{X}$ s.d.	18.44 3.49	13.00 6.60	11.81 4.42	16.16 6.53	20.42 5.34	10.14 4.53
44	28	$\bar{X}$ s.d.	16.79 3.38	14.64 5.16	11.68 3.81	17.64 5.51	18.71 6.24	10.54 5.17
45	116	$\bar{X}$ s.d.	17.76 4.00	15.08 5.41	10.81 4.11	15.99 5.86	20.27 5.73	10.10 5.61

TABLE 5

OBTAINED MEANS AND STANDARD DEVIATIONS OF RAW SCORES FOR THE SIX ALLPORT-VERNON-
LINDZEY STUDY OF VALUES VARIABLES BY TOTAL SAMPLE AND SUB-GROUPS

Group	n	Mean and s.d.	T	E	A	S	P	R
1	246	$\bar{X}$ s.d.	37.76 6.10	37.74 6.51	40.87 6.86	39.88 6.79	37.54 5.98	45.96 8.44
2	154	$\bar{X}$ s.d.	37.37 5.92	38.01 6.29	41.44 6.61	39.64 6.68	38.32 5.90	44.97 7.76
3	92	$\bar{X}$ s.d.	38.26 6.44	37.28 6.91	39.97 7.14	40.35 6.94	36.30 5.95	47.95 8.36
4	99	$\bar{X}$ s.d.	37.13 5.99	37.63 6.54	41.83 6.47	40.52 6.82	37.83 5.70	44.87 8.12
5	31	$\bar{X}$ s.d.	39.00 7.16	37.35 7.24	38.68 6.76	42.16 6.45	35.35 4.74	47.42 9.06
6	55	$\bar{X}$ s.d.	38.05 5.71	38.71 5.76	40.64 6.96	37.96 6.21	39.09 6.19	45.16 7.11
7	61	$\bar{X}$ s.d.	37.89 6.07	37.25 6.80	40.62 7.29	39.43 7.05	36.79 6.46	48.21 8.05
8	97	$\bar{X}$ s.d.	36.99 6.11	37.74 6.57	41.31 6.53	39.85 6.52	38.62 6.22	45.19 7.96

TABLE 5--Continued

Group	n	Mean and s.d.	T	E	A	S	P	R
9	126	$\bar{X}$ s.d.	38.07 6.05	37.97 6.12	40.65 6.72	39.81 6.65	36.95 5.53	46.55 8.19
10	23	$\bar{X}$ s.d.	39.30 6.15	36.48 8.35	40.17 8.92	40.43 8.71	36.22 6.83	47.35 8.17
11	74	$\bar{X}$ s.d.	36.76 6.15	37.27 6.61	41.89 6.69	40.78 6.64	38.00 5.72	45.16 8.24
12	46	$\bar{X}$ s.d.	38.26 6.17	38.83 5.88	39.89 6.07	40.70 6.82	36.20 5.34	45.89 8.41
13	10	$\bar{X}$ s.d.	40.50 7.52	33.90 9.46	40.50 8.55	42.80 7.64	36.40 5.10	45.90 10.12
14	23	$\bar{X}$ s.d.	37.74 6.05	39.26 6.35	39.43 5.73	36.83 5.17	40.61 7.40	42.26 7.12
15	80	$\bar{X}$ s.d.	37.96 6.02	37.48 6.23	41.09 7.06	39.30 6.55	37.39 5.62	46.93 8.69
16	13	$\bar{X}$ s.d.	38.38 4.99	38.46 7.14	39.92 9.54	38.62 9.33	36.08 8.12	48.46 6.51
17	130	$\bar{X}$ s.d.	37.58 6.31	37.56 6.68	41.08 6.65	40.91 6.75	37.24 5.57	45.48 8.39

TABLE 5--Continued

Group	n	Mean and s.d.	T	E	A	S	P	R
18	24	$\bar{X}$ s.d.	36.08 5.19	38.08 6.39	41.17 5.81	38.46 5.38	39.25 6.00	47.38 6.14
19	19	$\bar{X}$ s.d.	38.68 6.17	36.95 4.36	41.00 6.60	39.58 6.23	37.26 5.83	46.00 7.90
20	17	$\bar{X}$ s.d.	39.88 6.63	38.47 6.55	42.24 8.72	37.00 7.86	36.12 4.17	46.29 8.05
21	11	$\bar{X}$ s.d.	35.91 4.51	37.18 8.20	40.00 10.09	41.43 6.90	39.09 12.21	46.09 8.86
22	16	$\bar{X}$ s.d.	36.88 3.84	37.50 6.55	40.38 7.11	38.19 5.26	39.44 5.61	47.63 10.48
23	15	$\bar{X}$ s.d.	39.33 5.62	37.20 6.94	40.87 4.90	40.00 6.88	35.80 5.53	46.13 7.65
24	14	$\bar{X}$ s.d.	39.29 7.95	40.29 6.50	37.79 7.57	37.07 8.72	38.00 5.49	47.57 6.50
25	68	$\bar{X}$ s.d.	37.00 6.65	37.19 6.55	42.43 6.09	41.01 7.07	37.60 5.64	44.60 8.71
26	71	$\bar{X}$ s.d.	37.92 5.66	37.97 6.00	41.01 6.50	39.30 5.65	38.25 5.58	45.41 7.14

TABLE 5--Continued

Group	n	Mean and s.d.	T	E	A	S	P	R
27	31	$\bar{X}$ s.d.	36.65 5.18	38.48 6.04	40.87 7.81	39.03 6.01	39.35 7.15	45.32 8.62
28	29	$\bar{X}$ s.d.	39.10 6.95	36.59 7.76	41.07 8.94	40.00 7.14	35.10 7.01	36.76 9.20
29	47	$\bar{X}$ s.d.	38.53 5.92	38.40 6.81	38.26 5.76	39.00 8.07	36.68 5.10	49.34 6.77
30	34	$\bar{X}$ s.d.	37.74 5.78	37.94 5.37	41.62 5.79	38.27 5.78	38.26 5.99	45.88 5.58
31	37	$\bar{X}$ s.d.	38.08 5.62	38.00 6.60	40.46 7.12	40.24 5.43	38.24 5.25	44.97 8.38
32	10	$\bar{X}$ s.d.	38.60 5.38	37.70 5.91	38.50 5.74	39.80 8.88	36.80 4.42	48.50 8.07
33	21	$\bar{X}$ s.d.	36.38 4.91	38.90 6.08	41.76 8.73	38.38 4.42	40.29 7.98	43.86 8.61
34	11	$\bar{X}$ s.d.	39.82 6.95	36.91 9.07	39.09 8.38	43.73 6.51	32.46 4.50	48.00 6.51
35	18	$\bar{X}$ s.d.	38.67 7.10	36.39 7.11	42.28 9.28	39.33 7.16	36.72 7.87	43.00 13.63
36	98	$\bar{X}$ s.d.	37.93 6.41	38.65 6.24	40.46 6.79	39.76 5.83	38.15 5.75	45.15 7.30

TABLE 5--Continued

Group	n	Mean and s.d.	T	E	A	S	P	R
37	77	$\bar{X}$ s.d.	38.34 6.33	38.07 6.68	40.84 7.11	38.43 7.47	37.26 5.89	46.55 8.94
38	71	$\bar{X}$ s.d.	36.90 5.36	36.13 6.50	41.45 6.72	41.63 6.93	37.00 6.39	46.87 8.18
39	55	$\bar{X}$ s.d.	37.58 5.87	39.38 6.26	39.95 5.97	40.62 5.80	37.69 5.00	44.78 9.79
40	43	$\bar{X}$ s.d.	38.37 7.09	37.72 6.15	41.12 7.73	38.65 5.75	38.74 6.59	45.63 6.42
41	32	$\bar{X}$ s.d.	38.28 7.48	37.50 6.71	42.06 6.90	38.69 7.86	37.59 6.11	45.25 7.08
42	45	$\bar{X}$ s.d.	38.38 5.45	38.47 6.70	39.98 7.21	38.24 7.26	37.02 5.78	47.47 8.83
43	43	$\bar{X}$ s.d.	37.05 6.01	35.28 6.62	46.79 7.20	42.93 6.54	36.40 5.88	46.54 8.50
44	28	$\bar{X}$ s.d.	36.68 4.27	37.43 6.21	40.93 6.01	39.64 7.16	37.93 7.11	47.39 7.78
45	116	$\bar{X}$ s.d.	37.97 5.88	37.94 6.34	40.63 7.10	38.73 6.68	37.88 6.41	46.77 7.74

TABLE 6

STUDENT'S *t* VALUES FOR DIFFERENCE BETWEEN MEANS OF THE
SELECTED SUB-GROUPS BY TEST VARIABLE

Group	n	Group	n	G	R	A	S	E
17	130	18	24			.85501	2.74516*	
17	130	19	19					
17	130	20	17					
17	130	21	11				-.28654	
17	130	22	16				1.40987	
17	130	23	15			1.21143	.79550	
17	130	24	14				2.50854*	
17	130	45	116			2.74890**	2.95550**	
2	154	3	92					
4	99	5	31				1.10714	
6	51	7	61					
8	97	9	126					
11	74	12	46				1.27034	
14	23	15	80					
30	34	31	37				-.81592	
32	10	33	21				1.75815	
34	11	35	18				-.53541	
39	55	40	43				2.06526*	
41	32	42	45				2.58912*	
43	43	44	28			.59609		
36	98	37	77					
36	98	38	71					
37	77	38	71					
26	71	28	29					
27	31	29	47					
27	31	26	71					
27	31	28	29					

TABLE 6--Continued

Group	n	Group	n	G	R	A	S	E
26	71	29	47					
28	29	29	47					
25	68	29	47					
25	68	28	29					
25	68	27	31					
25	68	26	71					
Group	n	Group	n	O	F	T	P	M
17	130	18	24	1.96175				
17	130	19	19					
17	130	20	17		-1.80212			
17	130	21	11					
17	130	22	16					
17	130	23	15			1.38465		
17	130	24	14	-.65739			-1.50364	
17	130	45	116					
2	154	3	92			1.84145		
4	99	5	31		1.39266			
6	51	7	61			.82386		
8	97	9	126					
11	74	12	46			3.24772**		
14	23	15	80					1.05169
30	34	31	37					
32	10	33	21					
34	11	35	18					
39	55	40	43				1.12560	
41	32	42	45					
43	43	44	28				-1.59286	
36	98	37	77					

TABLE 6--Continued

Group	n	Group	n	O	F	T	P	M
36	98	38	77					
37	77	38	71					
26	71	28	29					
27	31	29	47			-.38238		
27	31	26	71					
27	31	28	29					
26	71	29	47					
28	29	29	47					
25	68	29	47			1.16177	-.86073	
25	68	28	29					
25	68	27	31					
25	68	26	71					

Group	n	Group	n	S	C	R	I	B	L
17	130	18	24		.00386				
17	130	19	19						
17	130	20	17						
17	130	21	11	2.54214*					-1.26432
17	130	22	16						
17	130	23	15					.38097	
17	130	24	14					.08983	
17	130	45	116					.90353	.09946
2	154	3	92						
4	99	5	31						
6	51	7	61	.26272					1.73932
8	97	9	126						
11	74	12	46		-.92660				
14	23	15	80						1.25165
30	34	31	37						

TABLE 6--Continued

Group	n	Group	n	S	C	R	I	B	L
32	10	33	21		1.05184				
34	11	35	18			-.48215			
39	55	40	43		-.53316	.40247		-.44098	
41	32	42	45						
43	43	44	28						
36	98	37	77						
36	98	38	71						
37	77	38	71						
26	71	28	29						
27	31	29	47	-1.30375					
27	31	26	71			-.19143			
27	31	28	29						
26	71	29	47						-.18605
28	29	29	47						
25	68	29	47						
25	68	28	29						
25	68	27	31						
25	68	26	71						
Group	n	Group	n	T	E	A	S	P	R
17	130	18	24						-1.30572
17	130	19	19		.52930				
17	130	20	17			-.52793			
17	130	21	11			.34767		-.49879	
17	130	22	16	.63275					
17	130	23	15						
17	130	24	14						
17	130	45	116						
2	154	3	92						

TABLE 6--Continued

Group	n	Group	n	T	E	A	S	P	R
4	99	5	31						
6	51	7	61						
8	97	9	126						
11	74	12	46						
14	23	15	80					1.93282	
30	34	31	37						.54252
32	10	33	21				.47794	-1.56118	
34	11	35	18					-1.85733	1.32773
39	55	40	43			-.82002		-.86982	-.51476
41	32	42	45	-.06218					
43	43	44	28	.30139					
36	98	37	77				.17373		.88800
36	98	38	71				.73491		.55308
37	77	38	71						
26	71	28	29						
27	31	29	47		.70484	.36207	-.29596		
27	31	26	71						
27	31	28	29						
26	71	29	47						
28	29	29	47			-.11836			
25	68	29	47						-1.00286
25	68	28	29						
25	68	27	31						
25	68	26	71						

**Significant at or beyond the .01 level of significance.

*Significant at or beyond the .05 level of significance.

APPENDIX B

BIOGRAPHICAL QUESTIONNAIRE

EXPERIENCE INFORMATION

Please fill the blanks, using a check mark for yes when possible.

1. Summer School Status:
 - (1) Working toward B.S.____; M.S.____; Other degree____.
 - (2) Working toward initial elem. certificate____; renewal of certificate____.
 - (3) Working toward a certificate in another state____, (give state)_____.
 - (4) Other reason for attending summer school_____.
2. Degrees held: B.S. or B.A.____, Major____; M.S. or M.A.____, Major____. None____; Other_____.
3. Certificates held; list type(s) of certificate(s) and issuing state(s). (now in effect)
4. Marital status____. Age____. Number of children_____.
5. What grade or grade level do you plan or prefer to teach?_____.

Please list each teaching assignment in the order it occurred by grade or level. Number each school system as 1,2,3. Use a new line for each school system, even if you taught the same grade. If you stopped teaching for a while, write NO for the grade, and give the number of years you did teach. Use the back of the sheet if necessary.

No. for system	Years Held	Grade(s) or Level(s)	DESCRIPTION*

*Indicate self-contained; departmentalized (name subjects taught); ungraded school; levels program; team teaching; etc. Full or part-time teaching; administrative assignments, etc.