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DISSERTATION

Presented in Partial Fulfillment of the Requirements for the
Degree Doctor of Philosophy in the Graduate School of
The Ohio State University

by

James Hugh Thompson, B.S., M.Ed.

The Ohio State University
1966

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CHAPTER I

INTRODUCTION

There has always been interest in the competency of teachers. However, in recent years such interest has become a major educational concern. It is indeed more imperative than ever before that every effort be made to make available to each individual the best educational program that can be provided.

In large part such an ambitious demand can be satisfied only if there is an adequate supply of highly competent teachers for the nation's classrooms. Ehlers and Lee have stated that "surely the most crucial educational issue of all has to do with the quality and adequacy of the teaching corps."¹

In the light of the above, educators have become increasingly concerned with the development of more effective teacher education programs. One of the major and continuing needs in the area of teacher preparation is the

development of testing instruments that are predictive of or have a relationship to teaching effectiveness and teaching success.

Indicative of this need is the following statement made by the National Commission on Teacher Education and Professional Standards task force on New Horizons in Teacher Education and Professional Standards:

The (teaching) profession must assume responsibility for identifying qualities that can be measured accurately enough to provide basis for evaluation. Instruments and procedures must be set up to ensure evaluation of each prospective teacher.\(^2\)

Remmers, reporting for the Committee on the Criteria of Teaching Effectiveness, stated:

When we measure teacher behavior, we must also aspire toward valid "objective" tests. This means that we need ways of recording and scoring teacher behaviors which will lead to practically unanimous agreement among qualified judges of the record.\(^3\)

Thus, it is essential that instruments and techniques be developed which will assist in the collection of information relative to teacher characteristics, perceptions, and behaviors. Such instruments can be applied diagnostically to potential teaching candidates to assess


their strengths and weaknesses and used as a basis for prescribing different educational experiences for different student needs. A further use of testing devices involves the measurement of changes in student behavior towards the achievement of course and program objectives. These instruments may also be used in the development of methods and curricula to be implemented in the creation of more effective teacher education programs than have been possible in the past. The results of these efforts would contribute significantly to the quality of teaching by assuring the selection, counseling, and education of competent and effective teachers.

Background of the Study

In their attempts to measure and/or predict teacher effectiveness educators have been continuously plagued by two major problems. First, there has been much research but little agreement as to the nature of teacher effectiveness. The difficulty of defining teacher effectiveness has been consistently reported in the literature dealing with studies of teacher effectiveness. Mitzel suggested that a half-century of research efforts has not yielded "standards which are commonly agreed upon as the criteria of teacher effectiveness." Biddle has stated that "the problem of

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teacher effectiveness is so complex that no one today knows what the competent teacher is." In a recent summary of studies of teacher competency Barr stated that "concepts of teaching efficiency nowhere is well defined." Ryans maintained that there is little agreement as to what constitutes a good or bad teacher.  

Morsh and Wilder examined more than 900 references to studies of teacher effectiveness and abstracted 360 of them for analysis. They found seven different criteria had been used for teacher evaluations: self-ratings, teacher appointment blanks, administrative ratings, peer ratings, student ratings, systematic observations and student gains.  

Morsh and Wilder further found that at least twenty different predictors had been used in an effort to identify antecedents or concomitants of teaching success: intelligence, education, scholarship, age, experience, knowledge of

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subject matter, professional information, extra-curricular activities, general culture, socioeconomic status, sex, marital status, teaching aptitude, interest in teaching, voice and speech characteristics, photographs, statistical analysis of instructor abilities, opinion studies of instructor personality, causes of teacher failure, and personality tests. On the basis of their findings these authors have criticized most studies of teacher competency as lacking empirical validation and including criteria which showed little significant relationship to teacher success.⁹

Secondly, it has become increasingly clear that the ultimate test of any criterion of teacher effectiveness must be the results that such effectiveness achieves in terms of changes in pupil behavior. Medley and Mitzel have reflected this view in the Handbook of Research on Teaching.¹⁰ In the same volume Bloom has stated the following in reference to teacher competency:

The writer takes the position that unless the criteria of effectiveness are related to changes in students, the researcher has avoided the primary criterion and has used only proximate criteria.¹¹

⁹Ibid.


The Committee on the Criterion of Teacher Effectiveness, also touched upon this issue in the following statement:

The more ultimate criterion of effectiveness is pupils' growth and achievement. We can accept measures of teacher behaviors only when the behaviors have been demonstrated to have relationships to pupils' growth and achievement. We shall seek to measure teacher effectiveness in relation to pupils in terms of the objectively measured achievement of pupils.\(^{12}\)

Although considerable research has been conducted dealing with the measurement of teacher effectiveness, relatively few studies have used increases in pupil achievement as a major criterion of success. Tomlinson reviewed research on teaching effectiveness from 1900 to 1954 and reported only one study in the period 1900-1930 that used pupil achievement as a major criterion of teacher effectiveness, and nine such studies from 1930-1954.\(^{13}\) In 1956 Mitzel and Gross reported twenty studies using pupil achievement as a criterion of teacher effectiveness.\(^{14}\)

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\(^{12}\) Remmers, op. cit., 258.


Ryans reviewed research on the assessment of teacher behavior and instruction and reported few studies during the period 1955-65 that involved pupil achievement as a criterion of teacher effectiveness. He noted a trend towards research that gives increased attention to the fundamental problem of the description of teacher behavior and the conditions with which various teacher behaviors may be correlated.\(^\text{15}\)

A majority of the reviews of research listed above included attempts to correlate changes in pupil behavior to ratings or judgements of teacher performance on the part of administrators, supervisors, other teachers, and students. None of these studies reported the use of changes in student achievement or student self-concepts as major criteria in the validation of a test instrument associated with the prediction of teaching potential or teaching success. These studies also reveal a lack of consistent research procedures and therefore represent divergent results.

In the light of past research concerning the measurement of teaching potential it is clear that--

1. Continued and vigorous research is needed in the vital area of the identification and measurement of

characteristics or behaviors that are predictive of teacher effectiveness.

2. Sooner or later a relationship must be established between test instruments used on the measurement of characteristics of teaching and the actual performance of teachers in the classroom.

3. To a considerable degree, the ultimate "acid test" of such a relationship must involve pupil achievement as a major criterion of teaching success.

The Teaching Situation Reaction Test

A recent attempt to devise a testing instrument related to the measurement of effective teaching has resulted in the development of the Teaching Situation Reaction Test (T.S.R.T.). The T.S.R.T. is designed to measure and predict aspects of teaching potential not associated with the subject-field competence of the teacher. As its name implies, the test is intended to measure reactions to teaching situations. These reactions have to do with such common aspects of teaching as planning, classroom management, and teacher-pupil relationships. In its present form the instrument consists of forty-eight items with four possible options for each item. The testee is asked to rank the four options for each item according to first, second, third, and fourth choices. The scoring of the test
is such the the lower the score the better the performance on the test; the higher the score on the test the poorer the performance.

To date, various exploratory studies with pre-service teachers have been conducted dealing with the construct validity, predictive validity, reliability, and statistical characteristics of the test. These studies have shown that the T.S.R.T. apparently measures openness to new experience, human relations ability, and the type of structure (direct or indirect) that the teacher uses in the classroom. These studies have also shown the T.S.R.T. to be a valid instrument with good reliability and high resistance to faking. Hough and Duncan have stated that the T.S.R.T. "would appear to hold promise as a tool useful in the study of certain aspects of pre-service education."16

In the consideration of any test instrument which relates to teaching potential or the prediction of teaching success, a question must be raised concerning the impact of teachers thus identified on groups of students in the classroom. Is high teacher performance on these test instruments related to increased learning on the part of their students? Do students taught by these teachers show greater achievement?

or more positive personality characteristics than do students taught by teachers not performing well on these test instruments?

It has been assumed in all of the studies above that pre-service teachers who achieve low scores on the T.S.R.T. possess characteristics that would enable them to be successful in teaching. However, no attempt thus far has been made to relate scores achieved on the T.S.R.T. by in-service teachers to the performance of students taught by these teachers.

Because the T.S.R.T. appears to be an instrument that may be predictive of teacher effectiveness, this writer has chosen to investigate the instrument in light of certain specific products of teacher competency—namely pupil achievement. This crucial step in the validation of the T.S.R.T. must be taken. Further development of the T.S.R.T. is dependent upon this type of validation of the test.

The external criteria to be employed in this study are based on the following rational.

Pupil achievement is a manifestation of the primary purpose for which schools exist—to help students learn. One dimension of the teacher's task involves the cognitive development of students. The teacher facilitates the assimilation of knowledge, facts, and understanding on the part of students. Thus, academic achievement as measured
by standardized achievement tests is a necessary criterion of teacher effectiveness. Biddle has suggested that "achievement tests are familiar to the American school child and the most used method of measuring classroom learning."\(^{17}\) Bloom has stated that

Research on teaching must, in most cases make use of cognitive achievement to determine whether the teaching method, instructional procedure, or the teacher does or does not produce changes in the learners.\(^{18}\)

Another criterion of academic achievement has traditionally been represented by grades assigned to students as an indication of pupil academic performance in the classroom. Class rank, based on grades received, is one of the most generally accepted criteria used by college admission officers and personnel officers as an indication of student achievement and scholastic ability. It would appear that grades received by students are also appropriate criteria associated with effective teaching.

Among personality theorists who stress the self-concept as a principal determiner of behavior are Lecky,\(^{19}\)

\(^{17}\)Biddle, op. cit., p. 24.

\(^{18}\)Bloom, op. cit., p. 379.

Rogers,20 and Snygg and Combs.21 In general these theorists consider that the need to accept, preserve, and enhance the self-concept is a basic human motivation.

When the self-concept is viewed as a determiner of behavior and as a picture that the individual maintains at considerable cost, but is under pressure to change when his behavior is contradictory to it, definite implications of this theory may be seen with reference to the school situation. Part of the picture that makes up the student's self-concept is concerned with the school.

Therefore, a second dimension of the teacher's task is the facilitation of the affective development of students toward the achievement of a realistic acceptance of self and acceptance of others. Such development is influenced by several factors: one's needs and values, the presence or absence of threat, and opportunities for experience with stimuli. While it may be argued that the concept of self and concept of others is a product of total environmental forces acting upon the student at least a portion of this development must take place in the classroom as a result of contact with the classroom teacher. If a teacher possesses qualities of openness to experience, flexibility of method


and approach to teaching, and abilities in classroom organization and management, it seems reasonable to assume that these qualities will facilitate the development of a more positive acceptance of self and acceptance of others on the part of students who are in contact with this teacher.

The Index of Adjustment and Values (I.A.V.), developed by Bills, has been designed to measure characteristics that are consistent with the perceptual or phenomenological theory of learning. This theory holds that behavior is a function of one's perception about the world in which he lives; one tends to behave in reaction to the world as he perceives it. The I.A.V. has been designed to measure these variables: self-concept, self-acceptance, concept of ideal self, and perceptions of how other people accept themselves. Thus, the I.A.V. appears to be an appropriate instrument to use in this research.

Statement of the Problem and Hypotheses

The purpose of this study is to validate further the Teaching Situation Reaction Test by determining the degree of relationship that exists between in-service teacher performance on the T.S.R.T. and the achievement of students taught by these teachers.

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In relation to the purpose stated above, the following questions will be investigated:

Is there a relationship between the performance of teachers on the T.S.R.T. and the amount of change in academic achievement of students taught by these teachers? Stated in hypothesis form this question becomes:

Hypothesis 1. Students taught by teachers who have low T.S.R.T. scores will achieve more during a school year, as measured by the Stanford Standardized Achievement Test, than will students taught by teachers who have high T.S.R.T. scores.

Is there a relationship between the performance of teachers on the T.S.R.T. and grades achieved by students taught by these teachers? This question may be tested by the following hypothesis:

Hypothesis 2. Students taught by teachers who have low T.S.R.T. scores will achieve higher grade-point averages than will students taught by teachers who have high T.S.R.T. scores.

Is there a relationship between the performance of teachers on the T.S.R.T. and the concept of self held by students taught by these teachers? Stated in hypothesis form this question becomes:

Hypothesis 3. Students taught by teachers who have low T.S.R.T. scores will show a more positive acceptance of
self, as measured by the Index of Adjustment and Values, than will students taught by teachers who have high T.S.R.T. scores.

Is there a relationship between the performance of teachers on the T.S.R.T. and the concept of others held by students taught by these teachers? This question may be tested by the following hypothesis:

Hypothesis 4. Students taught by teachers who have low T.S.R.T. scores will show a more positive acceptance of others, as measured by the Index of Adjustment and Values, than will students taught by teachers who have high T.S.R.T. scores.

Definition of Terms

For the purpose of this study, the following definitions will be used:

1. **In-service teacher** refers to one engaged in the full-time direction of curricular experiences within a formal classroom setting of a public junior high school.

2. **Teacher effectiveness** and **teacher competence** are defined in terms of the growth in cognitive and affective achievement evidenced by students under the instructional guidance of these teachers.

3. **Gain in academic achievement** is defined as the amount of change in student subject matter achievement as measured by pre- and post-test administration of the Stanford Achievement Test.
4. Cognitive achievement refers to student assimilation of facts, knowledge, and understandings in the development of intellectual abilities and skills.

5. Affective achievement indicates student emotional development with reference to the acceptance of self and acceptance of others as measured by the Index of Adjustment and Values.

6. Grade-point average refers to the numerical representation of subject matter grades assigned to students. In this study the following scale was employed: A=4 points, B=3 points, C=2 points, D=1 point, F=0 points.

7. Acceptance of self is defined as the feelings one has with reference to the kind of person he sees himself as being.

8. Concept of self is defined as the way in which one sees or perceives himself in relation to his world.

9. Concept of others is defined as the way in which one perceives the concept that others have of themselves.

10. Acceptance of others is defined as the concept that one has in regard to the feelings others have with reference to their concept of self.

11. High scoring teachers refers to teachers whose T.S.R.T. scores placed them in approximately the upper 27 percent of scores received by all teachers included in this study.
12. **Low scoring teachers** refers to those teachers whose T.S.R.T. scores placed them in approximately the lower 27 percent of scores received by all teachers included in this study.

**Design of the Study**

The T.S.R.T. was administered to all seventh and eighth grade teachers of English, social studies, mathematics, and science in the five participating Hamilton County School Districts. In addition to T.S.R.T. scores, the following data was collected on each teacher: age, sex, number of years of teaching experience, degree(s) held, and semester hours of training in their teaching field.

Two distinct groups of teachers were established:

1. Those teachers whose T.S.R.T. scores fell in the lowest 27 percent of the total range of T.S.R.T. scores received by all teachers tested.

2. Those teachers whose T.S.R.T. scores fell in the highest 27 percent of the total range of T.S.R.T. scores received by all teachers tested.

Data was then collected relative to those students who had been instructed by each of the above groups of teachers. Such data included: age, sex, I.Q. scores, grades received, Stanford Standardized grade achievement scores on tests administered at the close of the 1963-64 school year, attendance records, and class size.
These students were also tested near the end of the 1964-65 school year on the **Stanford Standardized Achievement Test**. The **Index of Adjustment and Values** was administered to those students near the end of the 1964-65 school year. It should be noted here that this study was conceived after the beginning of the 1964-65 school year. Therefore, there was no opportunity to administer the I.A.V. to students at the beginning of the school year.

**Assumptions**

The following assumptions are inherent in this study:

1. Teacher performance is related to measurable student behavior in the classroom.

2. One school year is a sufficient time sequence during which teacher impact and influence upon students will be discernible and measurable.

3. The **Stanford Achievement Battery** provides a valid measure of academic achievement in the classes in this study.

4. Grades are indicative of student achievement.

5. The **Index of Adjustment and Values** provides a valid measurement of students' acceptance of self and acceptance of others.
Limitations of the Study

For the purposes of this study, the following limitations are listed:

1. This study included teachers who taught in junior high schools in a predominately suburban area within southwestern Ohio. This group does not represent a broad cross section of socioeconomic levels.

2. The teachers tested in this research represented four areas: English, social studies, mathematics and science.

3. Those teachers included in this study spent only a portion of the school day in classroom contact with the students used as subjects in this research.

4. The research was limited to teachers and students at two grade levels: seventh and eighth grades.

5. For the purpose of determining teacher effectiveness the study was limited to four major criteria:
   a) Change in the academic achievement of students
   b) Grade-point averages received by students
   c) The acceptance of self held by students
   d) The acceptance of others held by students

6. The Index of Adjustment and Values was administered only once to students, near the end of the 1964-65 school year.
CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this chapter is to present a review of major research efforts related to the present study. Three areas of investigation which have a direct relationship to the purposes and design of this research have been delineated:

1. Studies in which student achievement and/or student concepts of self and others have been used as criteria of teacher competency.

2. Studies concerning the development and use of the *Index of Adjustment and Values*.

3. Studies concerning the development and use of the *Teaching Situation Reaction Test*.

An attempt has been made to present studies in each of the three areas chronologically. This arrangement aids the reader in following developments, changes, and trends that may be apparent in the literature.
Studies Involving Student Achievement

The literature concerning studies of teaching competency is extremely voluminous. Numerous approaches, techniques, and methods have been used by researchers in an attempt to determine and/or measure teacher effectiveness. Ackerman indicated that studies of various types of evaluation for competence and effectiveness may be divided into these categories:

1. Studies based upon the consensus of expert opinion as to the characteristics and prerequisites of competency and efficiency necessary in teaching.

2. Studies based upon school grades, practice teaching grades, and ratings of student teaching as the criteria of teacher efficiency.

3. Studies based upon supervisory in-service ratings, self-ratings, and ratings of teaching colleagues as the criteria of teacher competence.

4. Studies based upon pupil opinion and reaction as the criteria of teacher effectiveness.

5. Studies based upon measured pupil change as the criterion of teacher competence.

However, it is beyond the scope of this chapter to present a review of studies in all of the above areas. For

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the purpose of the present investigation, a review of the literature related to studies of pupil achievement as a major criterion of teacher effectiveness appears to be the most fruitful and appropriate.

It should be noted here that in general the literature reveals the use of several terms which apparently refer to the same criterion. These terms are: pupil growth, pupil development, pupil change, academic change, pupil achievement, and gain in achievement. These terms refer to the amount of academic achievement made by students measured over a specific period of time by the use of specified teacher made or standardized achievement tests. Most often standardized achievement tests in a specific subject area have been used as measures of pupil academic growth.

Relatively few studies of teacher competency have utilized measured change in pupil behavior as a major criterion of success. Mitzel states that "considering the theoretical importance of product criteria in the assessment of teacher effectiveness it is surprising how few studies have used some measure of student growth as the operational definition of teacher competence."² Domas and Tiedeman compiled a bibliography of 1006 studies of teacher competence covering the first half of this century. Of this

number only 36 or 3.6 percent reported a discussion of or the use of objectively observed pupil achievement as a criterion of teacher effectiveness. In 1956 Mitzel and Gross reported twenty studies using pupil achievement as a criterion of teacher effectiveness.

A study by Crabbs in 1925 constitutes the first major attempt to relate pupil achievement to teaching proficiency. Supervisors' estimates of teacher ability were compared with changes in the achievement of students taught by the teachers. The correlation between composite objective efficiency and supervisory estimate of the ability to teach was .32 for rural teachers and -.26 for urban teachers. The achievement of pupils was measured at the beginning and close of the grading period and interpreted by the use of accomplishment quotients. The accomplishment quotient was defined as being equal to the final subject age divided by final mental age minus the initial subject age divided by initial mental age times 100.

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In 1929 Baird and Bates reported a study in which 571 Detroit teachers were rated by principals with respect to general merit and eight other characteristics of teacher competence. Pupil growth was determined by standard tests in reading, grades one, two, and three. A correlation of .14 was found between pupil achievement and principals' general merit ratings of teachers. Correlations between the general merit rating and ratings on the eight other traits all exceeded .50.6

Goy reported an early study (1930) in which the concept of the accomplishment quotient was also used. Four hundred pupils in the Shaker Heights, Ohio public schools were studies in the evaluation of 26 teachers. Statistically significant changes in the accomplishment quotient of pupils could be found with reference to two teachers; two other approached statistical significance.7

In 1932 Cortis conducted a study involving 586 sixth and seventh grade pupils. The efficiency of teachers was evaluated by a comparison of pupils' learning curves for incidental learning with those for direct instruction.


Results of the study appeared to be somewhat inconclusive.  

Two interesting studies of teacher competency were reported in the *Measurement of Teaching Efficiency* edited by Walker. One of these studies, conducted by Barr and his associates, represented a unique approach to criterion development. Teachers of 66 classes were studied to determine the validity of 19 variables as measures of teaching ability. The criteria of teacher ability employed were:

1. A composite of pupil gain in raw scores on the Stanford Achievement Test.
2. A composite of seven teacher rating scales.
3. A composite of nine measures of qualities commonly associated with teaching success.
4. A composite of six teaching ability tests chosen from composite three and five.
5. A composite of all 19 variables in which each variable was given equal weight.
6. A composite of conditions one, two, and three as listed above.

Correlations between ten selected measures of teaching ability and gain in pupil achievement were found

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to be uniformly low. Also the correlations between the 19 variables employed and the five composite criteria provided conflicting evidence. 10

Betts investigated the relationship between pupil achievement and what he termed the NS trait. The NS trait was defined as the difference between novice and superior teachers as measured by a battery of tests validated by data from a pair of contrasting criterion groups. With initial ability and age held constant, the correlation between pupil achievement and the NS trait in teachers was found to be almost six times its probable error. 11

In 1940 Matthews conducted an item analysis of the responses of 57 one-room rural school teachers obtained on eleven tests. The purpose of the study was to determine the relationship between these test responses and measurable changes produced in the social studies achievement of pupils taught by these teachers. Changes were measured by means of a number of tests chosen with reference to the objectives of the course. Only 4 percent of the 1675 items analyzed had a statistically significant (.05) level) relationship


with the pupil achievement criterion of teaching ability. Matthews concluded that the tests used were of questionable validity for measuring teaching ability when pupil change was used as the criterion.12

Several major studies were reported at the University of Wisconsin in 1945. These studies were directed by A. S. Barr and used pupil achievement as a criterion of teaching efficiency.

In the first study Rostker investigated the teaching ability of 28 seventh and eighth grade teachers in non-departmentalized schools in southern Wisconsin. Supervisors' opinions of the efficiency of the teachers and changes in pupils' scores on achievement tests were used as the criteria of teaching ability. Relationships between these criteria and tests of intelligence, achievement, attitude, adjustment, and professional information were investigated. Several major conclusions were reached:

1. Teacher intelligence appears to be the highest single factor conditioning teaching ability and remains so even where in combination with other teacher measures.

2. Social attitudes of teachers is an important factor in teaching ability.

3. Teacher attitudes towards teaching is significantly correlated with ability.

4. Subject-matter knowledge and ability to diagnose and correct mental adjustment are significantly associated with teaching ability.

5. Correlations between supervisory teacher ratings and gain in pupil achievement are not statistically significant.

6. Personality, as defined and measured in this investigation, showed no significant relationship to teaching ability.  

The second study in this series was conducted by Rolfe who used essentially the same experiment design, measuring instruments and procedures as were used by Rostker. However, these teachers were employed in one and two room rural schools and taught combined seventh and eighth grade classes. Thirty measures of teaching competency were obtained for 57 teachers and compared to measurable changes produced in pupil achievement. Correlations between these measures and teaching ability ranged from -.17 to .43. Multiple correlations of combinations of from 2- to 10 measures with the criterion ranged from 150 to 164. Rolfe concluded that there was considerable evidence that the

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teachers in the rural school contributed less to pupil success than did teachers in schools where there was a single grade to be taught.  

LaDuke conducted a third study which involved 34 social studies teachers and 200 seventh and eighth grade pupils in rural schools. The teachers were rated in terms of the gains which their pupils made on tests of social studies information. This criterion was correlated with the teacher's score on tests of intelligence, interest, attitude towards teaching, and social efficiency. Teaching efficiency correlated (1) .61 with American Council on Education Psychological Examination scores, and (2) .35 with scores on a test of knowledge of theory and practice of mental hygiene. Teaching efficiency based on the criterion of pupil change correlated .80 with a composite of four measures. In addition, LaDuke reported that ratings of teaching efficiency by supervisors did not agree with the criterion of pupil gain.

Jayne investigated the relationship between specific observable teacher acts in the classroom of the same 28 teachers in Hostker's study and changes produced in pupils.

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as measured by achievement tests. The classroom procedure of the teachers was recorded, typescripts were made and analyzed. Jayne also conducted a second investigation involving ten teachers and classes not in Rostker's study. Very few teaching acts were found to have a statistically significant (.05 level) correlation with the criterion of pupil achievement. Further, supervisory ratings of teaching seemed to lack reliability and validity.\textsuperscript{16}

In 1945 Von Eschen studied the effectiveness with which a supervisory program for in-service teachers produces measurable changes in pupils. The study was conducted in two phases. First, the achievement gain of 90 one- and two-room seventh grade pupils were compared to the achievement gains of 104 seventh grade students taught the following year by the same teachers. During the first year the teachers received no supervisory attention; during the second year the teachers received extensive supervision. In the second phase of the study the seventh grade achievement gains of the 90 pupils were compared with their achievement gains during the eighth grade. At the time these students were in the eighth grade their teachers had the benefit of supervision. In four of the eight areas tested, the 104 seventh grade pupils made a significantly larger average gain in achievement during the year when

their teachers were supervised than the 90 pupils had made as seventh graders when teachers were not supervised. In seven of eight areas tested, the 90 eighth grade pupils made larger gains than they had as seventh graders.\[17\]

Also in 1945 Brookover studied 66 male Indiana high school teachers of United States history in the investigation of social factors thought to be related to teaching efficiency. These factors were: teacher-pupil relations, age, marital status, role in community, role in school attitudes, social adjustment, employer's rating. Criteria of teaching competency were: pupil gain in information, administrative ratings, and pupil ratings. Data was gathered from the administration of the Indiana United States History Examination, pupil questionnaire, teacher questionnaire, trustee-administration questionnaire.

Brookover found that (1) teachers who were rated high with respect to teacher pupil interaction tended to teach their pupils less history; (2) several indexes of the teacher's role in the community such as church attendance, residence in the community, frequency of participation in other community activities, were not related to the teacher's effectiveness in producing pupil gain in information; (3) pupil gain in information increased with the age of teachers up to .

to 38 years of age, after which they decreased; (4) superintendent's ratings of teaching ability was not related to pupil gains in information; (5) pupil ratings of teaching ability had low and inconsistent relationships to pupil gains in information. 18

Three related studies of teaching competency were also conducted in 1946 at the University of Wisconsin. Using procedures established by Rostker, Lins studied 58 women teachers to determine variables which might serve as predictors of teaching efficiency. Three criteria of teaching efficiency were employed: (1) a composite of five ratings applied by observers who evaluated each teacher; (2) pupil evaluations of teachers; (3) residual gain in achievement by pupils made in the subject areas of English, biology, civics, social science and general science. Lins reported that the three criteria of teaching efficiency were not related to a degree greater than could be attributed to chance. 19

VonHaden, using the same 58 women teachers involved in the Lins study, investigated the relationship of eight


personal qualities to subsequent teaching success. The eight qualities included adaptability, considerateness, energy, initiative, professional judgement, social adequacy, system of values, and work habits. This data was gathered from a series of interviews and autobiographies written during the period of institutional training. A composite of five supervisors' ratings, pupils' evaluation, and residual pupil gains were used as criteria of teaching efficiency. VonHaden concluded that predictions of teaching success made upon the basis of the subjective data employed in this study appeared to significantly relate to supervisory ratings of teacher success. However, estimates of personal qualities and teaching success were not closely related to teacher effectiveness as measured by pupil evaluation of teachers or residual pupil gain as measured by tests.20

Jones studied the relationships between factors in the pre-service education of 65 teacher candidates and subsequent teaching success. Predictive data included test scores, course grades, student teaching grades, and high school rank. Two criteria of teaching success were used: (1) a single rating made by principals and (2) a measure of gain in student achievement. Jones found the correlation

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between the predictive factors and supervisors ratings to be 167; the correlation of these factors and pupil achievement gain 154. Rank in the high school class appeared to be the best single predictive measure of change in pupil achievement.21

A somewhat more recent study reported by McCall in 1952 represents the most extensive investigation found in which change in pupil achievement was used as a criterion of teaching ability. The study was authorized by the General Assembly of North Carolina to investigate the feasibility of merit rating for salary purposes. McCall was appointed research director of the project. Seventy-three sixth-grade white and negro teachers in rural and city schools and 1,164 pupils participated in the study. The criterion of merit for the study was the all-around growth each teacher produced in his or her class. A comprehensive battery of tests, many of which were either newly made or generally unfamiliar to the teachers, were employed in the investigation. Pre- and post-tests were administered covering these factors:

1. general mental ability.
2. comprehensive achievement of general information.
3. achievement in traditional subject matter.

4. health and citizenship practices inventory.
5. word knowledge.
6. social behavior.
7. creative composition.
8. handwriting.

A single growth score for all tests was computed for each class by weighing the scores on each trait through the use of expert opinion and statistical treatment of the variabilities of the separate scores. McCall found that (1) superintendents, principals, supervisors and colleagues tended to rate good teachers low and poor teachers high; (2) the persons found in school systems to be professionally competent to judge the worth of teachers were their sixth grade pupils and the teachers themselves; and (3) the research did not reveal any system of measuring teacher merit which McCall was willing to recommend for adoption as a basis for teacher salaries.\(^{22}\)

In 1955 Hoyt reported an investigation of the effects of teacher knowledge of pupil characteristics on pupil achievement and teacher-pupil relationships. The study involved 210 eighth grade students and six teachers. Student achievement was measured by pre- and post-testing over a six-month period using the Cooperative English Test.

Cooperative Mathematics Test, and the Cooperative Social Studies Test. Teacher knowledge of pupil characteristics was not found by itself to result in increased pupil achievement in mathematics, social studies or English. However, there was definite tendency for increases in teacher knowledge of pupil characteristics to improve pupil attitudes towards teachers.23

Within the past ten years the writer found relatively few references to studies using pupil achievement as a major criterion of teacher efficiency. Several of the studies in this period were conducted with elementary pupils and such studies are included here because of their contribution to the measurement of effective teaching.

A recent study reported by Heil and Washbourne is significant in that it relates pupil achievement to the interaction between teacher and pupil personalities. The problem investigated was that of identifying different types of children and finding ways of measuring their growth under different kinds of teachers. Fifty-five elementary classrooms of children were classified using intelligence, achievement, social acceptance and children's feelings tests. Tests were administered at the beginning of the school year and again seven months later. The

teachers were classified by profiles obtained from the Manifold Interest Schedule into Type A (turbulent, impulsive, variable), Type B (self-controlling, orderly, work oriented), and Type C (fearful). Among the preliminary tentative results are the following: (1) all categories of children made significantly more progress, as measured by the Stanford Achievement Test, under teachers of Type B than those under teachers of Type C, Type A falling between; (2) varying children's gains depend basically upon the teacher-child combination of personality; (3) beyond the minimum professional knowledge, differences in teacher knowledge and behavior seem to have little relationship, if any, to children's achievement, the one important factor being the teacher's own personality characteristics. The essential point, the authors conclude, is that there are identifiable types of teachers and that different types have different effects on the children who they teach; certain ones seemingly are much more generally effective than others.  

In 1962 Hall conducted a study to ascertain whether fully certified first-year teachers were more effective than provisionally certified first-year teachers in teaching skills in certain language arts and arithmetic as measured

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by achievement tests. Thirty-eight first-year elementary teachers were selected from grades three, four, and five. There were 21 provisionally certified teachers and 17 fully certified teachers, none of whom had teaching experience prior to 1959. Teacher effectiveness was evaluated through a measure of pupil growth from the six test areas provided by the Stanford Achievement Tests (SAT). The sample \( N = 785 \) was tested in the fall of 1959 and again in the fall of 1960. Multiple regression methods were used with the data in the pupil gain form to study the effect of several variables. The variables were pupil I.Q., teacher grade average in college, teacher grade average in education courses, teacher age, semester hours of professional education courses taken by the teacher, and teacher scores on the How I Teach test. Mean class gains, which were the average pupil gain for one teacher's class, were examined for direction and magnitude, and the differences were then tested for significance by analysis of variance. It was found that (1) the number of hours in professional education a teacher had taken was significantly related to pupil gain in paragraph meaning, work meaning, and spelling; (2) average gains for pupils taught by certified teachers were higher in every test area than for pupils taught by provisionally certified teachers; (3) pupil I.Q. and hours of professional teacher education had consistently positive
associations with pupil gain on selected achievement tests. It was concluded that completion of a teacher education program results in producing a more effective teacher. 25

In recent years (since the early 1950's) there has been a trend towards research based upon a broader approach to the matter of ascertaining the dimensions of teacher effectiveness. As early as 1948, Ryans reported the limitations of previous teacher competency studies and expressed the need for new approaches to the problem. 26

This trend was also evident in a report of the Committee on Criteria of Teacher Effectiveness:

...Teacher effectiveness must assume the possibility of different patterns of effectiveness for different kinds of teachers, pupils, educational programs, or situations and the possibility of a variety of patterns of teaching for any given teacher-pupil educational program combination. 27

In 1954 Watters compiled an annotated bibliography of 99 references concerning teaching competency during the period of 1950-54. 28 These references reflected a move

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away from single criterion studies and the need for new approaches in research design. Studies done by Soar\textsuperscript{29} and Schmidt\textsuperscript{30} dealing with multivariate views of teaching are recent examples of this type of research.

Other studies by Smith,\textsuperscript{31} Hughes,\textsuperscript{32} Belleck,\textsuperscript{33} Aschner,\textsuperscript{34} and Flanders,\textsuperscript{35} represent a series of attempts


to objectively categorize and analyze teacher and student behavior in classrooms. A major purpose of such studies has been to provide insights into teacher-pupil interaction and to analyze these insights in light of their implications for improved instructional techniques and procedures.

In 1962 Flanders completed a report of several studies involving the use of interaction analysis as a method of categorizing and analyzing teacher-pupil verbal interaction. The total report constitutes U. S. Office of Education, Cooperative Research Project. 397. A part of the report deals with certain relationships between teacher influence and pupil achievement. Although the study does not purport to deal specifically with the measurement of teacher effectiveness, the implications of these studies appear to be germane to a review of research in this area:

Flanders attempted to investigate three hypothesis:

1. Indirect teacher influence increases learning when a student's perception of the goal is confused and ambiguous.

2. Direct teacher influence increases learning when a student's perception of the goal is clear and acceptable.

3. Direct teacher influence decreases learning when a student's perception of the goal is ambiguous.36

36 Ibid., 66-110.
Learning was defined as the development of skills and achievement as measured by pre- and post-tests of pupil achievement. It should be noted that this phase of the study included sixteen mathematics and sixteen social studies teachers of eighth grade pupils who taught a two week unit of study. A major conclusion of the study indicated that in both content areas the students of the more indirect teachers scored higher on achievement tests than did students of the more direct teachers.37

In concluding this phase of the review of literature, two studies are included which have received much attention as major investigations in the attempt to ascertain teacher competency. Although neither of these studies used pupil achievement as a major criterion of teacher competency they are reported because of their importance and implications in the area of teacher effectiveness.

A major effort to develop an instrument for the prediction of teaching success was conducted by Cook at the University of Minnesota in the development of the Minnesota Teacher Attitude Inventory (MTAI).38 Validity coefficients between .50 and .63 were reported when MTAI scores were correlated with ratings of teachers by principals, experts, 

37 Ibid.

Other studies conducted with the MTAI have shown that high school teachers liked best by students scored more than twice as high on the MTAI as teachers liked least by students. At present the MTAI appears to be a popular instrument for the measurement of teacher attitudes. According to its authors, it is designed to measure those attitudes of a teacher which predict how well he will get along with pupils in interpersonal relationships, and indirectly how well satisfied he will be with teaching as a vocation. In reference to the MTAI, Barr and Jones stated that it appeared that it was well on the way toward being established as a useful instrument for the measurement and prediction of teaching efficiency.

The final study reviewed in this section was conducted by Ryans and constitutes one of the most comprehensive studies of teachers to date. Three major objectives


guided the study:

1. The identification and analysis of some patterns of classroom behavior, attitudes, viewpoints, and intellectual and emotional qualities which might characterize teachers.

2. The development of paper-and-pencil instruments suitable for the estimation of certain patterns of classroom behavior and personal qualities of teachers.

3. The comparison of various groups of teachers.\(^{43}\)

The study involved more than 6000 teachers in 1700 schools and approximately 450 school systems. Three basic patterns of teacher behavior were identified:

**Pattern X**—warm, understanding, friendly versus aloof, egocentric, restricted teacher classroom behavior.

**Pattern Y**—responsible, businesslike, systematic versus evading, unplanned, slipshod teacher classroom behavior.

**Pattern Z**—stimulating, imaginative versus dull, routine teacher classroom behavior.\(^{44}\)

Although the study was not directed specifically at measuring teacher effectiveness, certain areas of investigation did deal with this problem. One aspect of the research by Ryans and his associates involved the relating


\(^{44}\)Ibid., p. 382.
of observed teacher behavior to measured pupil change in achievement. Unfortunately this phase of the study could not be completed because of unexpected difficulties.

Major findings of the study are quite extensive. However, in relation to the above identified teacher behavior patterns, it was found that

1. In the elementary school, teacher behavior was highly correlated with pupil behavior,

2. In the secondary school, pupil behavior seemed to be almost unrelated to teacher behavior.\(^45\)

**Measurement of Student Self-Concept and Concept of Others**

With the articulation and development of the theoretical constructs underlaying the field of "phenomenological" psychology has come the problem of adequately measuring the concept of self, concept of others, the degree of acceptance of self, and the degree of acceptance of others as held by an individual. A part of this problem stems from the inadequacy with which certain phases of general phenomenological theories have been developed. Wylie states that "the problems and limitations of phenomenological theorizing have not been faced squarely by proponents of self-concept theories."\(^46\) For example, there

\(^45\) Ibid., 391.

is not clear agreement among writers and researchers in the field as to the degree that an individual's behavior reflects awareness of his phenomenal field. In like manner there is not agreement as to the kinds of research designs which might be most appropriate for testing phenomenological personality theories.

In many instances, researchers in this field have been content to initiate studies which circumvent these issues. In a most comprehensive review of empirical studies attempting to test aspects of the self-concept, Wylie concluded that "measurement in the field was chaotic."47

Research concerning the development of student self-concept, acceptance of self, concept of others, and acceptance of others as criteria of teacher effectiveness is almost non-existent. In a view of the literature, only two studies were found that relate to the above criteria. These studies are briefly summarized below.

Sears included relationship between teacher behavior and six educational outcomes on the part of students. These six target areas were: student liking for other children; task oriented behavior; achievement test scores; attitudes toward school activities; and creativity test scores. The study involved seven fifth and sixth grade teachers and 195 pupils. Sears found that (a) boys of superior mental ability showed good agreement between self-concept of mental

47Ibid., 39.
ability and test scores; (b) boys of average mental ability showed no agreement between test scores and self-concepts; (c) for children of superior mental ability good self-concepts accompany favorable attitudes toward school, and ability to think in original, creative ways; (d) children who receive high scores on creativity tended to have teachers who rewarded children individually with personal interest and praise. These teachers avoided rewarding pupils by evaluation of their performance. Achievement test scores of superior boys were predicted by such teacher behaviors as rewarding by emphasis, punishing by reasoning, and asking for explanations.48

Spaulding studied teacher-child verbal interactions gathered by the use of a neck microphone, a radio transmitter and a tape recorder in twenty-one fourth and sixth grade classrooms. Teacher behavior was categorized as follows: approval, disapproval, instruction (managing, structuring), listening, observation, personal activity, communication with adults, and temporary absence from the classroom. Spaulding tested the relationships of these teacher variables to the same pupil target variables used by Sears. He found that (a) the twenty-one classrooms were significantly different on all pupil target variables;

(b) the level of self-esteem (acceptance of self) showed a positive relationship to teacher behavior that was calm, generally acceptant with private individualized instruction and concern for divergency; (c) involved the use of task-appropriate procedures and resources; (d) attention to task, conformity to rules of procedure and business-like lecture methods were found to be significantly correlated with pupil achievement gains in reading and mathematics.49

Studies of the Index of Adjustment and Values

There have been many attempts to create specific instruments that measure phenomenal self-regard or self-concept. A number of these instruments fall into the category of rating scales, questionnaires and adjective check lists. These types of instruments appear to be the most frequently used for inferring over-all or general self-regard.50 This review is included to facilitate a better understanding of the concepts underlying the Index of Adjustment and Values as used in this research to measure pupil acceptance of self and acceptance of others.


50 Wylie, op. cit., 42.
With reference to the Index of Adjustment and Values, Bills defines the concept of self in terms of the traits and values which the individual has accepted as definitions of himself. He suggests that the philosophy of life, the value system of the individual, and the concept of the ideal self are synonymous.51

On this basis Bills and his associates selected 124 trait names from Allport and Odbert's list of 17,953 traits as representative items which occur in client-centered interviews. In the original form of the test, forty-nine items showing greatest test-retest stability were retained in the final structure of the instrument. In an early report of the test Bills reported that "the Index of Adjustment and Values appears to measure the values of a person, his acceptance of self, and the discrepancy which exists between his concept of self and his concept of the ideal self."52

Validation and reliability studies of the Index of Adjustment and Values

Reliability.--Correlations among the scores obtained on the Index of Adjustment and Values (I.A.V.) have been listed by Bills in the IAV Manual. Correlations between


52 Ibid., 261.
self concept and self acceptance scores are reported as .90. It appears that these two indices measure essentially the same construct. Strong (1962) has reached a similar conclusion in a comparative study of the IAV, the Butler and Haigh SI0 Q-Sort and the Worcel SAI. He stated that "Bills perceived self and Bills acceptance of self have much in common. They are undoubtedly measuring approximately the same thing."53

Omwake (1951+) found that acceptance of self as measured by the Bills IAV correlated .49 with acceptance of self as measured by the Berger omnibus questionnaire purporting to measure self-acceptance and acceptance of others.54

Bills reported a study involving thirteen subjects in which two judges independently scored 30 minute open ended interviews for self-acceptance. A comparison of the judges scores with IAV self-acceptance scores produced a correlation of .84.55


Validity.—A number of studies have been conducted concerning the construct validity of the IAV. In these studies acceptance of self has been related to a series of variables. High acceptance of self has been found to be significantly related to

1. attitude toward performance estimates of performance and recall of performance in five level-of-aspiration tasks;\(^5^6\)

2. emotionality;\(^5^7\)

3. differentiation of Rorschach personality types;\(^5^8\)

4. lower incidence of five out of six depression signs on the Rorschach;\(^5^9\)

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5. more optimism with respect to future college success;  

6. greater satisfaction with present period of life.  

Index of Adjustment and Values as a research tool

A series of studies have been reported using the Index of Adjustment and Values as a measure of the self concept, concept of others, acceptance of self and acceptance of others. Following is a brief review of major studies as found in the literature.

Cowen, Heilizer, and Axelrod reported a study of the relationship of self-concept conflict indicators and learning. They hypothesized that adjectives on which subjects reported large self-minus ideal self discrepancies would arouse conflicts in these same subjects when they were presented to them in a learning experiment. It was further hypothesized that such conflicts would disrupt learning. Nonsense syllables were paired with those adjectives on the Bills IAV which had been identified for each subject as having a large and small self-ideal discrepancy. It was found that subjects had significantly greater difficulty in


61 Ibid.
learning the nonsense syllable responses which were paired with the conflictual adjective stimuli.\textsuperscript{62}

In 1957, Daane and Schmidt conducted a study dealing with the empathetic ability possessed by counselors. Counselors were asked to predict the responses of their clients on the IAV. It was found that empathetic counselors were able to predict the IAV responses of clients to a significantly greater degree than did counselors judged to be less empathetic.\textsuperscript{63}

Roth investigated the relationship between self concept and achievement of a group of fifty-four college students enrolled in a reading improvement class. Achievement was related to reading improvement as measured by a Sentence Completion Technique. Measurement of the self concept was accomplished by the use of a Q-sort of 80 self reference items and by scores on the Index of Adjustment and Values. It was hypothesized that there would be significant differences in the self-perceptions of those who improved, those who did not improve and those who dropped out of the class. The data tended to support the hypothesis.


Apparently a direct relationship existed between defensiveness in the self concept as a reader and relative performance in the reading improvement situation.64

A study was reported by Cummins involving the relationship between the acceptance attitudes of teachers and students' acceptance attitudes. The study involved four principals, 92 teachers and 119 twelfth grade students in two schools. Teachers were matched as to age and experience factors. The Index of Adjustment and Values was administered to the teachers and their students. It was concluded that

1. a significant relationship existed between teacher acceptance of self and others and student acceptance of self and others;

2. a significant relationship existed between a teacher's acceptance of self and others and her perception of her role as a teacher.65

In 1961 Engle investigated the relevance of the openness of teachers and administrators to the extent of change which occurred during a workshop sponsored by the


Cooperative Program for Instructional Improvement at Auburn University. It was hypothesized that participants who are "more open" to their experience would change more in educationally significantly ways than would participants who were "less open" to their experience. The hypothesis was examined by determining the participants' extent of change toward--

1. More positive attitudes toward self and others.
2. More positive connotative meanings of selected educational concepts.
3. More variable perceptions of the ideal role of the teacher in a democratic society.

Instruments employed to measure these various factors were:

1. Index of Adjustment and Values as a measure of acceptance of self and acceptance of others
2. Sementric Differential Test as a measure of connotative meanings
3. Teacher Role Concept Q-Sort to measure description of "ideal" teaching role
4. Teacher Problems Q-Sort to measure degree of openness.

It was found that:

1. More open subjects were apparently superior in their ability to make positive change during the workshop
2. More open subjects evidenced a more positive and accepting attitude of themselves and others.

3. Subjects more open to their experience were more amenable to change.

On the basis of these findings, Engle suggested that the development of openness in teachers is essential if education is to be responsible for developing openness in students.\textsuperscript{67}

A study to ascertain whether sensitivity to individual student problems can be fostered within the teacher education curriculum was conducted by Davis and Bowers in 1961. A group of fifth year students in professional education for the first time were encouraged to participate in group activity. The initial number of 23 students was later subdivided into smaller groups. Lectures to the students were concerned with "Maintenance and Cohesiveness of Groups," "Problem Solving in Small Groups," etc. At the end of a two-week period, a questionnaire containing four items was administered. In addition to this general questionnaire, another, "With Whom Would You Choose," a sociometric questionnaire, was given. The Bills Index Adjustment and Values (IAV) was also administered both before and after the two-week period. It was found that on ten of the sociometric questions and the IAV there was no significant change. However, at the end of the period there was a

\textsuperscript{67}Ibid., 1-200.
significant change when students were asked to list best friends on the sociometric instrument. 68

In another study Shaw and Alves investigated the hypothesis that bright underachieving male high school students had a more negative self-concept than equally bright achieving students. The subjects were 1600 eleventh and twelfth grade students who had attained an IQ of 110 or above on the California Test of Mental Maturity. An achiever was defined as one who had achieved a grade point of 3.0 or above. An underachiever was defined as one who achieved a grade point of 2.5 or below. The Index of Adjustment and Values was used to measure students' self concepts. The results of the study confirmed the hypothesis bright male underachievers had a significantly more negative concept of self than did equally bright male achievers. In addition male underachievers reported themselves as being less self-accepting than achievers. The underachievers also attributed a similar lack of self acceptance to their peers.69

In 1964 Borg conducted an extensive research of ability grouping under Cooperative Research Project Number


One phase of the program dealt with pupils' self concept as they are related to ability grouping. The study involved pupils in the fifth, sixth and seventh grades in two schools. In one school pupils were grouped according to academic ability. In the other school pupils were grouped into classroom situations on a random basis. The Index of Adjustment and Values, elementary school forms and junior high school forms were used to test null hypothesis that no significant changes in self-perception would occur between superior, average, and below average pupils when compared on an ability grouped and random grouped basis. Results of the study indicated that—

1. There was no evidence that the assignment of a pupil to a lower ability level brings about a lowering self concept.

2. Pupils in random grouped classrooms tend to obtain more favorable concept of self scores than comparable pupils in ability grouped classrooms at all ability levels.

3. Pupils in randomly grouped classrooms tend to have a more positive acceptance of self than comparable pupils in ability classrooms. 71


71 Ibid.
Bills investigated the effect of the openness of teachers on the development of attitudes towards self and towards others of elementary school children. The study involved teachers and pupils in grades three through six. A problems Q-sort Technique was used to measure the degree of openness held by teachers. Pupils attitudes towards self and others were measured by the Index of Adjustment and Values. Results of the study indicated that pupils taught by teachers with higher openness scores had more positive attitudes toward themselves and other pupils than those taught by teachers with lower openness scores.  

Studies Involving the Teaching Situation Reaction Test

Development of the T.S.R.T.

The Teaching Situation Reaction Test (T.S.R.T.) was originally developed through the efforts of Duncan and Frymier while at Temple University. The first T.S.R.T. was designed as an instrument to gauge pre-service and in-service elementary teacher attitudes and reactions to a teaching situation. A major purpose of the test was its use as an

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aid in the study of the effectiveness of pre-service education courses. 73

The test contained a description of a classroom situation, certain information about the students in the class and the structure of the working situation in which the teacher would operate. The testee was asked to respond to thirty-six forced-choice items concerning the classroom situation by ranking a set of four possible responses to each test item. The responses were to be ranked from one, the most appropriate response, to four, the least appropriate response.

In the original effort of creating the test, factors of objectivity, empathy, control, confidence, and creativity were considered to be the theoretical construct of the instrument. An attempt was made to develop items in such a way that a balance of these factors would be represented in the test. 74

In a discussion of the original thirty-six item T.S.R.T., Hough and Amidon suggested that the instrument was useful in reflecting attitudes towards student teaching.


74 Ibid., 3.
exhibited by student teachers. They further stated that the construct of the T.S.R.T. included these dimensions:

1. The type of control a teacher could use in the classroom, i.e. direct or indirect,

2. The relationship the teacher would have with students in the classroom, i.e. empathetic or self-oriented,

3. The approach a teacher would take to classroom problems of instruction and control, i.e. objective or subjective,

4. The approach the teacher would have to classroom methodology, i.e. experimental or conservative.\(^{75}\)

Hough and Amidon described the method by which the original thirty-six item test was keyed:

The ranking of responses on the test was originally done by members of the faculty of the College of Education at Temple University. In this process of keying the test, each item was discussed until there was agreement as to rank order of responses for each question. On those items where agreement could not be reached, each faculty member scored the item as he thought it should be scored and the key for that item was developed from the mean of the rankings of their responses.\(^{76}\)

In summary, the test was designed to measure reactions to teaching situations. The situations created in the test were intentionally constructed to be subject

\(^{75}\)John B. Hough and Edmund J. Amidon, Behavioral Change in Pre-Service Teacher Preparation: An Experimental Study (Published Monograph; Philadelphia, Pa.: College of Education, Temple University), 25-26.

\(^{76}\)Ibid., 26-27.
matter neutral. Reactions elicited from the testee were related to such common aspects of teaching as planning, classroom management, and teacher-pupil relationships.

Further development of the original thirty-six item T.S.R.T. resulted in a forty-eight item instrument designed for use at the secondary-school level. This form incorporated added insights into the theoretical constructs of the instrument realized from research studies (reviewed below) in which it had been used. 77

A third revision of the T.S.R.T. was completed in April, 1965 through the efforts of Dr. John Hough, The Ohio State University, and Dr. James K. Duncan, Keen State College. The revised instrument retained a content of 48 items. However, thirteen items were rewritten to strengthen the discrimination of the test. 78 It should be noted that the most recently revised T.S.R.T., the April, 1965 revision, was used in the present research reported by this writer.

77 Hough and Duncan, op. cit., 4.
Research involving the thirty-six item T.S.R.T.

Hough and Duncan have indicated that at present the T.S.R.T. is in its early developmental stages. Previous and present research involving the instrument should be considered as exploratory and developmental. Following is a brief review of research studies involving the development of the T.S.R.T.

At Temple University Hough and Amidon studied the relationship of the 36 item T.S.R.T. to student teaching performance as measured by two student teaching observational rating scales. One of the scales (T.S.R.T. Observation Rating Scale) was built to reflect the construct of the T.S.R.T. The second scale (General Observation Rating Scale) was a general observational scale typically used in the supervision of student teaching at Temple University. A significant difference was found between high and low scoring pre-test groups on the General Observational Rating Scale. A comparison of student teaching supervisors' ratings of high and low scoring student-teachers on the T.S.R.T., indicated that high scoring students were judged as less effective in student teaching by their supervisors while low scoring students were judged as being more effective in student teaching.

79Hough and Duncan, op. cit., 3.

80Hough and Amidon, op. cit., 38-41.
Hough and Amidon also reported that high and low
dogmatic students differed significantly in their responses
to the T.S.R.T. High Dogmatism Scale students responded to
the T.S.R.T. with significantly less positive reactions than
did students who had low Dogmatism Scale scores.\textsuperscript{81}

Hough and Amidon conducted an item analysis of the
thirty-six items of the T.S.R.T. Twenty-four of the items
were found to discriminate at or beyond the .10 level.
Twelve of the items failed to discriminate at an acceptable
level of probability.\textsuperscript{82}

\textbf{Research involving the forty-eight item T.S.R.T.}

In a study of potential for predicting effective
teaching a comparison was made between T.S.R.T. scores and
student teaching grades of seventy-three science student
teachers at The Ohio State University. It was hypothesized
that there would be no difference between student teaching
grades and T.S.R.T. scores. The hypothesis was rejected.
Results were significant beyond the .01 level.\textsuperscript{83}

In another study, ten Keen State College student
teachers were ranked by two supervisors as being the best
of a group of forty-eight secondary student teachers and
eleven were ranked as the poorest of the group. The T.S.R.T.

\textsuperscript{81Ibid.} \hspace{1cm} \textsuperscript{82Ibid., 34-35.}
\textsuperscript{83Hough and Duncan, op. cit., 4.}
scores of these two groups of students revealed a difference of the means of 7.1, significant at somewhat better than the .05 level.  

Hall conducted a study of T.S.R.T. scores of experienced teachers. Two administrators agreed on the selection of the nineteen best and nineteen poorest teachers in a school system of seventy teachers. A difference of 8.89 was found between the mean scores of the two groups. Results were significant beyond the .01 level.

A study exploring factors measured by individual T.S.R.T. items was conducted at The Ohio State University involving one hundred and eighty-four teacher education students. Their T.S.R.T. scores were compared to their human relations ability as measured by the G. T. Barrett-Lennard Relationship Inventory. This instrument is designed to measure five aspects of human relations skill: positive level of regard, empathy, congruence, unconditionality of regard, and willingness to be known.

There were indications that fourteen items of the T.S.R.T. measured human relations ability as defined by the Relationship Inventory. Using the same student population

84Ibid. 85Ibid., 5.

as above, comparisons were also made between T.S.R.T. scores and scores on the Dogmatism Scale developed by Rokeach. Results indicated that twelve items on the T.S.R.T. appear to measure the relative openness or closedness of one's belief-disbelief system. 87

A third study exploring factors measured by specific items on the T.S.R.T. was also conducted at The Ohio State University. This study involved the relationship between performance on the T.S.R.T. and high and low structure teachers as defined below:

**High Structure Teacher**

This is a teacher who employs a great deal of structure in the classroom. He does most of the talking and giving of information (excepting when students are giving formal reports, etc.) and when he asks questions they are usually questions which are designed to call forth specific and highly predictable responses. Students do not offer or initiate ideas of their own in his class and the teacher does little to encourage student initiated ideas. When students respond with correct or appropriate comments he sometimes indicates their correctness by telling them that they are right or that the response was good, etc. Incorrect responses are usually corrected by the teacher telling the student that he was wrong and/or why but seldom does this teacher encourage students to talk through an incorrect response in an attempt to discover for himself why he was wrong. This teacher seldom involves students in planning. He runs a highly organized class. The classroom climate is formal.

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87Hough and Duncan, op. cit., 7.
Low Structure Teacher

This teacher related well with students. He tends to be accepting and outgoing. He makes a real attempt to listen to what students are saying and to understand what students really mean and how they feel about things. He respects his students as people though he does not always agree with their ideas or behavior. He may be firm but is usually consistent in his relationships with his students. His regard for his students does not depend on their doing or saying things that he personally likes or agrees with. He feels free to tell students in a nice way that he does not agree with them. His students feel free to talk with him and to disagree. He is not adverse to saying things about himself and how he feels when it is appropriate to do so. His students like and respect him as a person and a teacher.88

Fifty-two science student teachers were rated as either high or low structure teachers by members of the University faculty who had observed the teaching of the students. These two groups of high and low structure student teachers were then compared on each of the forty-eight items of the T.S.R.T. Ten items discriminated at or beyond the .20 level of confidence. It was concluded that there is some indication that items on the T.S.R.T. measure factors related to the type of structure that teachers use in the classroom.89

Other studies, reported by Hough and Duncan, have dealt with the test-retest reliability and the fake resistance of the original forty-eight item T.S.R.T. On the basis of the performance of eighty-four pre-service teachers who took the test twice with an interval of eight days interviewing, the product moment correlation of the two sets

88Ibid., 9-10.  89Ibid.
of scores was .84. The standard error of measurement was reported as 4.15. These values indicated a good degree of reliability.\textsuperscript{90}

Two studies were conducted on the T.S.R.T. to determine its fake resistance with pre-service teachers. Both studies indicated that the T.S.R.T. appears to be highly resistant to faking by undergraduate students.\textsuperscript{91}

The most recent research concerning the predictive validity of the T.S.R.T. was conducted with the April, 1965 revision of the forty-eight item instrument. Subjects in this research consisted of 50 Ohio State University science students who had completed their student teaching during the Spring Quarter, 1965. A comparison was made between the student teaching grades achieved by these students and their performance of the T.S.R.T. The twenty-seven students who received the highest student teaching grades scored lowest on the T.S.R.T. Those who received low student teaching grades scored highest on the T.S.R.T. A test of the data yielded results significant beyond the .02 level. It appears that the revised instrument has potential for predicting student teaching success.\textsuperscript{92}

Thirteen items contained in the original 48 item T.S.R.T. were either rewritten or replaced to increase the

\textsuperscript{90}\textit{Ibid.}, 11. \quad \textsuperscript{91}\textit{Ibid.}

\textsuperscript{92}Hough, Duncan, and Thompson, \textit{op. cit.}, 7.
discrimination of the test between high and low scoring testees. The revised test was administered to a total pre-service and in-service population of 377. An item discrimination study was conducted involving the highest 27 percent and lowest 27 percent of the 377 testees. Twenty-five items discriminated at the .001 level, ten items at the .01 level and seven items at the .05 level. Six items did not discriminate at significant levels. It appears that the revised 48 item T.S.R.T. has more power to discriminate among high and low scoring testees than did the original 48 item test. 93

A study was also conducted concerning the test-retest reliability of the April, 1965 revision of the T.S.R.T. using a population of pre-service teachers (N=86). The test-retest reliability computed by product-moment correlation was found to be .84. The standard error of measurement was 4.74. 94

Use of the T.S.R.T.--The Teaching Situation Reaction Test has been used as a research tool in several studies involving pre-service teacher education programs. The following is a brief review of these studies.

Hough and Amidon employed the T.S.R.T. as a measure of potential for effective teaching in a study of pre-service education courses at Temple University. The T.S.R.T. 93

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93 Ibid., 5-6. 94 Ibid., 6.
was used in a pre-post-test situation to test hypothesis regarding changes in student reactions to simulated teaching situations. In general, the T.S.R.T. appeared to be consistent in measuring change in student attitudes towards more positive reactions in regard to simulated teaching situations.95

In another study conducted at Temple University, Furst studied the effects of training in interaction analysis (a method of categorizing teacher and student verbal behavior) on the behavior of student teachers. The T.S.R.T. was used as a measure of teaching attitudes held by student teachers. It was found that student teachers who had been taught interaction analysis achieved lower scores on the T.S.R.T. than student teachers not receiving interaction analysis training.96

Kirk studied the effects of interaction analysis training on student teachers in intermediate elementary grades. The T.S.R.T. was again employed as a measure of student teacher attitudes toward teaching. Student teachers instructed in the use of interaction analysis were found to resist to a greater degree the tendency to become more

95Hough and Amidon, op. cit.

direct with experience, to talk less, to give fewer directions, and to ask more questions than student teachers not instructed in the use of interaction analysis.  

Zahn conducted a study concerning the effects of interactional analysis training and attitudes of cooperating teachers on student teachers' attitudes. It was hypothesized that student teachers experiencing instruction in interaction analysis would have more positive attitudes towards teaching at the end of the student teaching experience regardless of the attitude toward teaching held by cooperative teachers. Attitude change was measured by pre- and post-administration of the T.S.R.T. The results of this study seemed to indicate that instruction and supervision in interaction analysis was related to positive change in teaching attitudes.

Hough has recently reported a study concerning the effects of five experimental treatments on the development of human relations skills and verbal teaching behaviors of pre-service teachers. The T.S.R.T. was used in this study.

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research to measure characteristics associated with teaching effectiveness, i.e., human relations ability, openness to experience, and comfort in using a direct teaching style.\footnote{John B. Hough, "A Study of the Effect of Five Experimental Treatments on the Development of Human Relations Skills and Verbal Teaching Behaviors of Pre-Service Teachers" (School of Education, The Ohio State University, November, 1965), 10. (Mimeoographed).}

Since its first inception the Teaching Situation Reaction Test has undergone several revisions. Research concerning each revision indicates that the test now has increased reliability and predictive validity. The construct of the test also appears more clearly than before to be related to such factors as openness to experience, skill in human relations ability and comfort in using an indirect teaching style.

Summary

The purpose of this chapter was to present a review of related research which would provide background information for and give direction to the present study. The three areas reviewed were:

1. Studies of past efforts to employ pupil achievement as a major criterion of teacher effectiveness.

2. Studies involving the development and use of the Index of Adjustment and Values.

3. Studies involving the development and use of the Teaching Situation Reaction Test.
The studies reviewed above seem to indicate that there have been considerable variations in the application of pupil achievement as a major criterion of teacher effectiveness. In most of the studies reviewed, teachers were categorized as "good" or "poor," effective or not effective through the ratings of supervisors, principals, and school administrators. Various relationships were reported among supervisory ratings, general teacher intelligence, knowledge of methodology, personality characteristics, participation in community affairs, and teacher effectiveness. For the most part, such factors appear not to be significantly related to teacher effectiveness. No consistent evidence was reported that indicated administrative or supervisory ratings are valid indicators of teacher effectiveness.

On the other hand carefully controlled studies, such as those by McCall, Rolfe, LaDuke, and Rostker, indicate that pupil achievement data can be significantly related to teacher performance. All of the studies reported prior to 1950 were conducted over not more than one school year. Many of the studies were of shorter duration.

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100 McCall, op. cit.
101 Rolfe, op. cit.
102 LaDuke, op. cit.
103 Rostker, op. cit.
It appears that in the area of measuring teacher effectiveness, as in many other areas of educational research, there have been too few replications of significant studies under varying conditions. However, recent trends such as the Flanders study\textsuperscript{104} and the Teacher Characteristics Study\textsuperscript{105} appear to be aimed at long range collection and analysis of many concomitant factors associated with effective teaching.

In the area of the self concept and concept of others, very little research has been reported in which these factors were employed as criteria of effective teaching. It would seem that this area needs further exploration in relation to the identification and measurement of characteristics or behaviors predictive of teacher competency.

This review indicates that the Teaching Situation Reaction Test has been used as a measure of human relations ability, openness to experience, and comfort in using an indirect teaching style. Findings have been reported above which relate these factors to teaching success. There are indicators that the T.S.R.T. appears to assess the same factors in teacher candidates and, therefore, is an instrument that may be predictive of teaching potential. The T.S.R.T. has also been used as a research tool in several

\textsuperscript{104}Flanders, op. cit. \hspace{1cm} \textsuperscript{105}Ryans, op. cit.
research studies as indicated above. These applications of the T.S.R.T. have dealt largely with pre-service teacher education candidates and pre-service teacher attitudes.

It is with the previous development of the T.S.R.T. in mind that the present research has been undertaken. The concern here is to further investigate the predictive validity of the T.S.R.T. with reference to relationships between in-service teacher performance on the T.S.R.T. and the achievement of students taught by these teachers.

In the present study an attempt has been made to employ not only pupil academic achievement but also achievement in the realm of the self-concept and concept of others held by pupils as major criteria of teaching effectiveness.
CHAPTER III

THE PROCEDURES

The major purpose of this study was to examine the relationship between in-service teacher performance on the T.S.R.T. and the achievement of students taught by these teachers. In this chapter the author will describe the procedures utilized in gathering data to carry out the purposes of the study and to provide a means of testing the hypothesis developed in Chapter I.

Since the T.S.R.T. presents a secondary school situation dealing with junior high aged youth it was felt that the junior high level would be an appropriate one at which to conduct this study. Although the T.S.R.T. was designed to be subject-matter neutral, it was decided to administer the T.S.R.T. to teachers in the four academic areas usually found at the junior high school level -- English, mathematics, science, and social studies. To assure a relatively large sample of teachers in the study, it was projected that the T.S.R.T. should be administered to over one hundred teachers.
Teacher and Student Populations

All teachers and students included in this study were associated with the Hamilton County School System, Hamilton County, Ohio. This system consists of seven county school districts surrounding the city of Cincinnati, Ohio. These school districts are situated in and serve suburban communities in the metropolitan city area. A total enrollment of 29,692 pupils was reported by these districts during the 1964-65 school year. Eight schools located in five of the above districts participated in this study. The size and enrollment of the Hamilton County School System provided a broad cross-section of teacher and pupil population and afforded assurance of a large enough sample of teachers and pupils at the seventh and eighth grade level to fulfill the needs of this study. The system also had a well established testing program organized county wide which included yearly administration of Stanford Achievement Tests at the grade levels included in this study. Hence, for each pupil included in this study, achievement data were readily available for both the 1963-1964 and 1964-1965 school years.

A meeting of junior high school principals was held April 1, 1965. At this time a formal proposal concerning administration of the T.S.R.T. to Hamilton County junior high teachers and the administration of the Index of Adjustment and Values to pupils taught by these teachers was
presented to the principals. After due consideration and discussion, the principals granted permission to conduct the study in their schools. It was agreed that both teachers and students should be advised that they were being asked to participate in a research study involving teacher education. Individual teachers and students who did not wish to do so were not required to participate in the research program. Teachers were assured that the data gathered from their participation in the research project were to be used in a highly professional manner and that no information would in any way be communicated to the Hamilton County Administrative Offices or Board of Education.

Testing Instruments Used

Three testing instruments were employed in this study. One instrument, the T.S.R.T., was administered to all teachers participating in this research. Teacher performance on this test provided a measure of the independent variable to be investigated. Two other tests, the Stanford Standardized Achievement Test and the Index of Adjustment and Values, were used to measure dependent variables concerning student achievement. Following is a brief description of each of these tests.
Teaching Situation Reaction Test

The Teaching Situation Reaction Test was used to measure teacher characteristics associated with success in teaching-human relations abilities, openness to experience, and comfort in using an indirect teaching style. The April, 1965 revision of this test was employed in this study. A test-retest reliability of .84 and a standard error of measurement of 4.74 have been reported for this test. A review of the development of this test may be found in Chapter II of this study. A copy of the T.S.R.T. may be found in Appendix A.

Stanford Achievement Tests

The Stanford Achievement Test was administered to all students participating in this study. The intermediate and advanced batteries of the Stanford Achievement Tests, Form L, 1952 edition, were used as a measurement of student achievement levels at the beginning of the time period (One year) during which this study was conducted. Split-half reliability coefficients, corrected by the Spearman Brown formula, have been reported ranging from .84 to .90 in the various subject area tests contained in the battery.

Standard error of measurements reported for these same areas range from 2.5 to 7.0.\(^2\)

Student performance on the Advanced Battery of the *Stanford Achievement Tests Form W*, 1964 edition, was used as a measure of student achievement at the end of the time period (one school year) during which this study was conducted. Split-half reliability coefficients, corrected by the Spearman-Brown Formula, have been reported as ranging from .77 to .94 in the various subject area tests included in the battery. Standard error of measurements reported for these same areas range from 5.0 to 12.5.\(^3\)

**Index of Adjustment and Values**

The Junior High School Form of the *Index of Adjustment and Values* was used in this study as a measure of student acceptance of self and acceptance of others. This instrument consists of two index scales consisting of thirty-five alphabetized trait words (the same words appear on both scales) related to self concept. One scale is labeled "Self;" the second form is labeled "Others." The testee is asked to complete the self form first. This form requires the testee to respond to three questions concerning


each trait word. He rates himself with respect to the
trait word, indicates how he feels about being this sort of
person, and indicates how he would like to be with respect
to each trait. After completing the "Self" form the testee
proceeds to the "Others" form. Here, the testee follows
the same procedure by answering three questions relative to
what he thinks other people are like. He is instructed to
respond to each trait word as the average person would rate
himself. The testee rates others with respect to the trait
word, indicates how he thinks others feel about being such
a person and indicates the degree to which others like
being as they are.

Reliability coefficients reported for the junior
high school form of the I.A.V. are relatively high. Split-
half reliabilities of the "Self" form range from .74 to
.94. Test-retest reliabilities over a period of six weeks
of the "Self" form range from .61 to .89. The standard
deviation of the "Self" form is reported as 13.03. The
standard deviation for the "Others" form is 13.74.

This instrument was chosen for several reasons. It
provides an acceptance of self score and acceptance of
others score for each testee. The relationship between
these two factors may be directly ascertained by a

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Robert E. Bills, "Manual For Index of Adjustment
and Values," (College of Education, University of Alabama,
1963), 12-24.
comparison of the two scores. The test is relatively easy to administer and appears to be readily understood by testees. The I.A.V. has been reported by Wylie as a well known and thoroughly established instrument. In a comprehensive review of the test instruments designed to measure the self concept Wylie stated:

Much more information is available on the norms, reliability and validity of this instrument than on any other measure of the self-concept included in this survey.

A review of the development and use of the I.A.V. may be found in chapter two of this study. Copies of the Junior High Forms of the I.A.V. may be found in Appendix B.

Collection and treatment of data

The Teaching Situation Reaction Test was administered to all seventh and eighth grade teachers of English, social studies, science, and mathematics in the eight participating Hamilton County Schools during the months of April and May, 1965. This writer personally visited each school and administered the T.S.R.T. to the participating teachers. In each case teachers were tested at the close of the school day in a group setting. No time limit was set on the length of time needed to complete the T.S.R.T. Every effort was made to assure that each teacher understood

6Ibid., 24.
the directions necessary for the proper completion of the test instrument.

At the time the T.S.R.T. was administered, each teacher was asked to fill out the T.S.R.T. cover sheet which requested the following information: name; age; sex; number of years of teaching experience; semester hours of training in the subject field they were currently teaching, and degree(s) held. A copy of this cover sheet may be found in Appendix A.

It should be emphasized that the teachers participating in this study were asked to place their names on the T.S.R.T. cover sheet. This request was made for two reasons. First, the application of the test normally requires that the testee be identified. It was therefore necessary that the conditions of administering the T.S.R.T. in this research, including the identification of the testee, should be the same as those encountered in the use of the test. Secondly, it is possible that testees may respond differently to a test instrument when their identity is known than when their anonymity is preserved. To avoid this problem, all teachers were asked to place their names on the cover sheet attached to the test answer sheet.

A total of 127 seventh and eighth grade teachers completed the T.S.R.T. Of this number, nineteen were eliminated because they either did not identify themselves
by name or failed to supply complete data on the T.S.R.T. cover sheet. Two teachers were eliminated from the study because they had student teachers during the 1964-1965 school year. Thus the initial population for which complete data was available consisted of 106 teachers. This number included 32 English teachers, 25 social studies teachers, 26 science teachers and 23 mathematics teachers. A summary of data collected concerning the total population of 106 teachers may be found in Appendix C.

**Treatment of teacher data**

A first condition necessary for the testing of the hypotheses involved in this study was the identification of teachers with high and low T.S.R.T. scores. It should be remembered that in relation to the scoring procedure utilized with the T.S.R.T., low scores indicated the most desirable performance, high scores indicate a less desirable performance.

From the initial population of teachers, the seven highest and seven lowest scoring teachers, as measured by their T.S.R.T. performance, were selected in each of the four subject areas represented. This procedure ensured that two conditions would be met: (1) two distinct groups of teachers were established -- those with high T.S.R.T. scores and those with low T.S.R.T. scores, and (2) the two groups did not differ with respect to the subject matter
area representation. Both the high and low group contained twenty-eight teachers. This number represented approximately the upper 27 percent and lower 27 percent of the initial teacher population in each group.

Table 1 contains a comparison of mean T.S.R.T. scores for the two groups of teachers.

**TABLE 1**

**COMPARISON OF MEAN T.S.R.T. SCORES FOR HIGH AND LOW SCORING TEACHERS**

<table>
<thead>
<tr>
<th>T.S.R.T. Scores</th>
<th>High Scoring Teachers N=28</th>
<th>Low Scoring Teachers N=28</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX</td>
<td>2,966</td>
<td>2,205</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>105.93</td>
<td>78.75</td>
<td>12.53</td>
<td>.001</td>
</tr>
<tr>
<td>s²</td>
<td>60.74</td>
<td>65.94</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 indicates that the mean T.S.R.T. score of the twenty-eight high scoring teachers was 105.93. The mean T.S.R.T. score of the twenty-eight low scoring teachers was 78.75. The difference of the means for these two groups is 27.18 and the t value for the difference is 12.53. The t value for the .001 level of confidence of a two-tailed test with 54 degrees of freedom is 3.49. The differences in mean T.S.R.T. scores for the two groups of teachers is significant beyond the .001 level. These two groups of
teachers were clearly significantly different in terms of performance on the T.S.R.T.

Table 2 shows a comparison of the mean age, mean years of experience, and mean hours of training in the subject area taught for the twenty-eight high and twenty-eight low scoring teachers included in this study.

**TABLE 2**

**COMPARISON OF AGE, YEARS OF EXPERIENCE, AND HOURS OF TRAINING FOR HIGH AND LOW SCORING TEACHERS**

<table>
<thead>
<tr>
<th>Variable</th>
<th>High Scoring Teachers N=28</th>
<th>Low Scoring Teachers N=28</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>EX 956</td>
<td>914</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( \bar{x} ) 34.14</td>
<td>32.64</td>
<td>.62</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>( s^2 ) 89.10</td>
<td>70.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of Experience</td>
<td>EX 215</td>
<td>224</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( \bar{x} ) 7.68</td>
<td>8.00</td>
<td>.19</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>( s^2 ) 36.90</td>
<td>35.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours of Training</td>
<td>EX 1180</td>
<td>1250</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( \bar{x} ) 42.14</td>
<td>44.64</td>
<td>.55</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>( s^2 ) 252.36</td>
<td>314.95</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2 indicates that the mean age for the high scoring teachers was 34.14 and the mean age of the low scoring teachers was 32.64 with respective variances of 89.10 and 70.55. The difference of these means is 1.50 and the t value for this difference is .62. This t value, with 54 degrees of freedom, indicates no significant differences between the two groups of teachers with respect to age.

With reference to years of experience, Table 2 indicates that the mean years of experience for high scoring teachers was 7.68. The mean years of experience for low scoring teachers was 8.00. A t test of the difference of means (.32) yielded a t value of .19 which is not significant. The groups did not differ significantly with regard to years of experience.

A comparison of mean hours of training in the subject field taught by the two groups of teachers is found in Table 2. The mean hours of training for high scoring teachers was 42.14. The mean hours of training for low scoring teachers was 44.64. The difference in the means is 2.50 and the t value for this difference is .55. A t value of .546 is not significant. The high and low scoring teachers did not differ significantly with regard to hours of training in their subject areas.

Table 3 shows a comparison of the number of male and female teachers contained in the high and low scoring groups.
TABLE 3

COMPARISON OF THE NUMBER OF MALE AND FEMALE TEACHERS IN HIGH AND LOW SCORING GROUPS

<table>
<thead>
<tr>
<th>High Scoring Teachers</th>
<th>Low Scoring Teachers</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

The chi square was derived from a 2x2 table with 1 degree of freedom.

The high scoring group of teachers contain twenty males and eight females. The low scoring group contained nineteen males and nine females. A chi square derived from a 2x2 table with one degree of freedom yielded a value of .08 which is not significant. The two groups of teachers did not differ significantly with reference to the number of males and females represented in each group.

Table 4 presents a comparison of data concerning the degree(s) held by high and low scoring teachers participating in this study.

The high scoring group contained twenty-one teachers who held a bachelor's degree only. Seven teachers in this group held both a bachelor's and master's degree. The low scoring teachers group contained eighteen teachers who held a bachelor's degree only, and ten teachers who
held both a bachelor's and master's degree. A chi square derived from a $2 \times 2$ table with one degree of freedom yielded a value of .34 which is not significant. With regard to the degrees held, the high and low scoring teachers did not differ significantly.

**TABLE 4**

**COMPARISON OF THE BACHELOR AND MASTERS DEGREES HELD BY TEACHERS IN HIGH AND LOW SCORING GROUPS**

<table>
<thead>
<tr>
<th>High Scoring Teachers</th>
<th>Low Scoring Teachers</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=28</td>
<td>N=28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor Master Degree</td>
<td>Bachelor Master Degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only</td>
<td>Bachelor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>7</td>
<td>18</td>
<td>10</td>
</tr>
</tbody>
</table>

*The chi square was derived from a $2 \times 2$ table with 1 degree of freedom.

**Collection of student data**

Through the cooperation of the central administrative offices of the Hamilton County School District, the following data concerning all seventh and eighth grade students in the eight participating schools were available for use in this study:

a. class lists of students enrolled in subject areas included in this study (English, social studies, science and mathematics)
b. class size
c. attendance data for each student
d. student ages
e. sex
f. most recent I.Q. scores
g. student grade scores on Stanford Achievement Test Batteries administered to students in April, 1964.
h. student grade scores on Stanford Achievement Test Batteries administered to students in April, 1965.
i. final grades received by students in English, social studies, science and mathematics for the 1964-1965 school year.

During April and May of the 1964-1965 school years, the Index of Adjustment and Values was administered to all seventh and eighth grade pupils in the eight Hamilton County Schools participating in this study. In each case the test was administered by school personnel several days after teachers had completed the T.S.R.T. To facilitate understanding of the proper method of administering the I.A.V. and to secure as much standardization as possible from school to school, the author briefed personnel in each school on procedures necessary in giving the I.A.V. to students. Written instructions were also provided in addition to those appearing on the test instrument. None of the schools reported any difficulty in administering the I.A.V. to students.
Treatment of student data

Two groups of students were established in this study. One group consisted of students taught by the twenty-eight teachers identified above as receiving high T.S.R.T. scores. The other group consisted of students taught by the twenty-eight teachers identified as receiving low T.S.R.T. scores. A series of statistical tests were conducted to establish whether or not the two groups of students represented the same population with reference to these variables: class size; sex; age; school attendance; I.Q. scores, and academic achievement levels as measured by Stanford Achievement Tests administered in April, 1964.

Following is a summary of the above data.

Table 5 contains a comparison of the mean enrollment of classes taught by high and low scoring teachers.

### Table 5
**Comparison of the Mean Enrollment of Classes Taught by High and Low Scoring Teachers**

<table>
<thead>
<tr>
<th>Classes Taught by High Scoring Teachers N=85</th>
<th>Classes Taught by Low Scoring Teachers N=91</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex 2732</td>
<td>EX 2,876</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\text{Ex}^2$ 90,070</td>
<td>$\text{EX}^2$ 93,702</td>
<td>.82</td>
<td>n.s.</td>
</tr>
<tr>
<td>$\bar{x}$ 32.14</td>
<td>$\bar{x}$ 31.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$s^2$ 26.99</td>
<td>$x^2$ 31.47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Students taught by high scoring teachers were enrolled in 85 classes. The mean class size for these students was 32.14. Students taught by low scoring teachers were enrolled in 91 classes. The mean class size for these students was 31.60. The difference of means is .54. The t value for this difference is .82 which is not significant. The size of classes in which the two groups of students were enrolled did not differ significantly.

Table 6 presents a comparison of the number of males and females in the student groups taught by high and low scoring teachers.

<p>| TABLE 6 |
| COMPARISON OF NUMBER OF BOYS AND GIRLS TAUGHT BY HIGH AND LOW SCORING TEACHERS |</p>
<table>
<thead>
<tr>
<th>Students Taught by High Scoring Teachers</th>
<th>Students Taught by Low Scoring Teachers</th>
<th>$X^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>974</td>
<td>954</td>
<td>1028</td>
<td>1026</td>
</tr>
</tbody>
</table>

*The chi square was derived from a 2x2 table with 1 degree of freedom

The number of students enrolled in classes taught by high scoring teachers included 974 boys and 954 girls. The number of students enrolled in classes taught by low scoring teachers included 1028 boys and 1026 girls. A chi
square derived from a 2x2 table yielded a value of .02 which is not significant. The two groups of students did not differ significantly with regard to numbers of males and females included in each group.

Table 7 shows a comparison of the mean ages of students taught by high and low scoring teachers.

**TABLE 7**

**COMPARISON OF THE MEAN AGE OF STUDENTS TAUGHT BY HIGH AND LOW SCORING TEACHERS**

<table>
<thead>
<tr>
<th></th>
<th>Students Taught by High Scoring Teachers</th>
<th>Students Taught by Low Scoring Teachers</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=1928</td>
<td>N=2054</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX</td>
<td>25,902</td>
<td>27,548</td>
<td></td>
<td>n.s.</td>
</tr>
<tr>
<td>EX^2</td>
<td>349,651</td>
<td>370,992</td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>13.43</td>
<td>13.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>s^2</td>
<td>.99</td>
<td>.79</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The information in Table 7 indicates that the mean age of students taught by high-scoring teachers was 13.43 years and the mean age of students taught by low-scoring teachers was 13.41 years. The difference of these means is .02 and the t values for this difference is .67. This value is not significant at the .05 level. The two groups of students did not differ significantly with respect to mean age.
Table 8 contains a comparison of the mean days of attendance of students taught by high and low scoring teachers.

**TABLE 8**

**COMPARISON OF THE MEAN DAYS OF ATTENDANCE OF STUDENTS TAUGHT BY HIGH AND LOW SCORING TEACHERS**

<table>
<thead>
<tr>
<th>Students Taught by High Scoring Teachers</th>
<th>Students Taught by Low Scoring Teachers</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=1928</td>
<td>N=2054</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX</td>
<td>332,580</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX²</td>
<td>55,615,880</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>173.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S²</td>
<td>78.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>353,288</td>
<td>1.72</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>60,936,018</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>172.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>83.44</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8 indicates that the mean days of attendance of students taught by high-scoring teachers was 173.5. The mean days of attendance for students taught by low-scoring teachers was 172.0. The difference between these means is 1.50 and the t value for this difference is 1.72. This value of t fails to reach the .05 level of confidence (t 1.96). The difference between the two groups of students with reference to mean days of attendance was not significant.
Table 9 contains a comparison of the mean I.Q.'s of students taught by high and low scoring teachers. The I.Q. data used in this comparison were obtained from the latest administration of the California Test of Mental Maturity, Short Form, 1957 edition. This administration took place at the time the participating students were enrolled in the sixth grade.

**TABLE 9**

**COMPARISON OF THE MEAN I.Q.'S OF STUDENTS TAUGHT BY HIGH AND LOW SCORING TEACHERS**

<table>
<thead>
<tr>
<th>Students Taught by High Scoring Teachers</th>
<th>Students Taught by Low Scoring Teachers</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=1928</td>
<td>N=2054</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX</td>
<td>200,078</td>
<td>214,332</td>
<td></td>
</tr>
<tr>
<td>EX^2</td>
<td>21,289,138</td>
<td>22,927,398</td>
<td>1.12 n.s.</td>
</tr>
<tr>
<td>X</td>
<td>103.77</td>
<td>104.35</td>
<td></td>
</tr>
<tr>
<td>s^2</td>
<td>273.87</td>
<td>273.40</td>
<td></td>
</tr>
</tbody>
</table>

Table 9 indicates that the mean I.Q. for students taught by high-scoring teachers was 103.77. The mean I.Q. for students taught by low scoring teachers was 104.35. The difference between the means is .58 and the t value for this difference is 1.12. This t value is not significant at the .05 level. The two groups of students did not differ significantly with reference to mean I.Q. scores.
Summary of data treatment

The statistical treatment of data relative to the two groups of teachers participating in this study revealed that no significant differences existed between the two groups with reference to these variables: age, sex, years of experience, hours of training in their subject fields, and degree(s) held. Statistical treatment of student data revealed that there were no significant differences between students taught by high and low scoring teachers with reference to these variables: class size, school attendance, age, sex, and I.Q. scores.

Control of pre-achievement data

Hypothesis one, as stated in chapter one, concerns the amount of student change (growth) in academic achievement as measured by standardized achievement tests over one school year. Two considerations were made with regard to the manner in which this hypothesis was to be tested.

First, it was necessary to establish whether or not there were significant differences between the two groups of students with regard to their academic achievement levels at the beginning of the 1964-65 school year. Secondly, it was assumed that both groups of students would evidence achievement gains during the school year. Therefore, a proper test of the hypothesis required a comparison of the net gain in academic achievement as evidenced by the
two student groups. Such a comparison would indicate whether one group of students had shown greater academic growth during the school year than had the other group of students.

Guilford has described procedures which are particularly appropriate for the situation referred to above. He suggests that a common way of matching groups is to ignore individuals as such and to treat data as a total group product. Guilford further suggests that in relation to the significance of differences between changes achieved by two groups with reference to a variable, the simplest approach is to group individual changes together and to treat the grouped data as if it were single measurements. These methods, as outlined by Guilford, were applied in this study to facilitate the comparison of net changes in academic achievement occurring in students taught by high and low scoring teachers.

As was indicated above, the Stanford Achievement Test Battery, Form L, 1953 edition was administered to all students participating in this study during April of 1964. Student grade scores on four sub-tests of the battery—language test (English), arithmetic reasoning and computation test (mathematics), social studies test and science test—were used as measurements of the academic achievement

---

levels in the four subject areas held by students at the beginning of the 1964-65 school year.

To facilitate the analysis of the differences in achievement gain made by students taught by high and low scoring teachers, achievement test data was treated as group data rather than individual data. A mean standardized achievement grade score was computed for each class of students taught by each of the high and low scoring teachers included in the study. From this data a final mean grade achievement score was computed for classes of students taught by the seven high and seven low scoring teachers in the subject areas of English, social studies, science and mathematics. For the purposes of this study, these mean grade achievement scores were designated as pre-achievement levels. The t-test was applied to a comparison of mean pre-achievement scores in each subject area to determine whether significant differences existed between classes taught by high and low scoring teachers.

Table 10 presents a comparison of pre-achievement data for classes of students taught by high and low scoring teachers. Nineteen classes of students were taught by the seven high scoring English teachers and nineteen classes of students were taught by the seven low scoring English teachers. The mean grade score achieved on the language subtest of the Stanford Achievement Test Battery by classes taught by high scoring English teachers was 73.13. The
<table>
<thead>
<tr>
<th>Classes taught by high scoring teachers</th>
<th>English N=19</th>
<th>Social Studies N=21</th>
<th>Science N=22</th>
<th>Mathematics N=21</th>
<th>All Classes N=85</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX</td>
<td>1,389.41</td>
<td>1,522.20</td>
<td>1,820.26</td>
<td>1,539.56</td>
<td>6,271.43</td>
</tr>
<tr>
<td>EX^2</td>
<td>107,513</td>
<td>116,623</td>
<td>143,826</td>
<td>115,945</td>
<td>483,907</td>
</tr>
<tr>
<td>X</td>
<td>73.13</td>
<td>72.49</td>
<td>75.84</td>
<td>73.31</td>
<td>73.78</td>
</tr>
<tr>
<td>EX^2</td>
<td>5,911</td>
<td>6,286</td>
<td>5,770</td>
<td>3,076</td>
<td>21,193</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classes taught by low scoring teachers</th>
<th>English N=19</th>
<th>Social Studies N=22</th>
<th>Science N=27</th>
<th>Mathematics N=23</th>
<th>All Classes N=91</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX</td>
<td>1,329.34</td>
<td>1,659.62</td>
<td>2,136.86</td>
<td>1,667.44</td>
<td>6,793.26</td>
</tr>
<tr>
<td>EX^2</td>
<td>98,955</td>
<td>128,186</td>
<td>174,127</td>
<td>122,799</td>
<td>524,367</td>
</tr>
<tr>
<td>X</td>
<td>69.97</td>
<td>75.44</td>
<td>79.14</td>
<td>72.50</td>
<td>74.65</td>
</tr>
<tr>
<td>EX^2</td>
<td>5,947</td>
<td>2,989</td>
<td>5,310</td>
<td>1,914</td>
<td>17,240</td>
</tr>
<tr>
<td>t</td>
<td>.54</td>
<td>.64</td>
<td>.78</td>
<td>.25</td>
<td>.39</td>
</tr>
<tr>
<td>p</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
</tbody>
</table>
mean grade scored achieved by classes taught by low scoring English teachers was 69.97. The difference of these means is 3.16. The t value for this difference is .54 which is not significant. No significant differences in the level of language achievement were found between classes taught by high and low scoring English teachers at the beginning of the 1964-65 school year.

Table 10 indicates that twenty-one classes of students were taught by high scoring social studies teachers and twenty-two classes of students were taught by low scoring social studies teachers. The mean grade score achieved on the social studies sub-test of the Stanford Achievement Test Battery by classes taught by high scoring social studies teachers was 72.49. The mean grade score achieved by classes taught by low scoring social studies teachers was 75.44. The difference of these means if 2.95. The t value for this difference is .64 which is not significant. No significant differences in the level of social studies achievement were found between classes taught by high and low scoring social studies teachers at the beginning of the 1964-65 school year.

Table 10 indicates that twenty-four classes of students were taught by high scoring science teachers and twenty-seven classes of students were taught by low scoring science teachers. The mean grade score achieved on the science sub-test of the Stanford Achievement Test Battery
by classes taught by high scoring science teachers was 75.84. The mean grade score achieved by classes taught by low scoring science teachers was 79.14. The difference of these means is 3.30. The t value for this difference is .78 which is not significant. No significant differences in the level of science achievement were found between classes taught by high and low scoring science teachers at the beginning of the 1964-65 school year.

The data in Table 10 shows that twenty-one classes of students were taught by high scoring mathematics teachers and twenty-three classes of students were taught by low scoring mathematics teachers. The mean grade score achieved on the mathematics sub-test of the Stanford Achievement Test Battery by classes taught by high scoring mathematics teachers was 73.31. The mean grade score achieved by classes taught by low scoring mathematics teachers was 72.50. The difference of these means is .81. The t value for this difference is .25 which is not significant. No significant differences in the level of mathematics achievement were found between classes taught by high and low scoring mathematics teachers at the beginning of the 1964-65 school year.

Data contained in the final column of Table 10 indicates that eighty-five classes of students were taught by all high scoring teachers and ninety-one classes of students were taught by all low scoring teachers. The mean
grade score achieved by all classes taught by low scoring teachers was 74.65. The difference of these means is .87. The t value for this difference is .39 which is not significant. No significant differences in the level of achievement were found between all classes taught by high scoring teachers and all classes taught by low scoring teachers at the beginning of the 1964-65 school year.

The Stanford Achievement Test, Form W, 1964 edition, was administered to all students participating in this study during April of 1965. Student grade scores on four sub-tests—language test (English), arithmetic reasoning and computation test (mathematics), social studies test, and science test—were used as measurements of academic achievement levels in the four subject areas achieved by students at the end of the 1964-65 school year.

Since this administration of the Stanford Achievement Test involved the latest (1964) edition of the instrument, all grade scores achieved by students on these tests were converted to comparable grade scores on the 1953 edition of the test. This conversion was accomplished by the use of "Tables of Equivalence"8 published in a supplementary technical report available from the Elementary Achievement Test Division Test Department, Harcourt, Brace

and World, Inc. The conversion of the 1964 edition test grade scores to comparable 1953 edition grade scores made possible the direct comparison of achievement data compiled for all students participating in this study.

To facilitate the analysis of the differences in achievement gain made by students taught by high and low scoring teachers, achievement data collected at the end of the 1964-65 school year was also treated as group data rather than individual data. A mean standardized achievement grade score was computed for each class of students taught by each of the high and low scoring teachers included in this study. From this data a final mean grade achievement score was computed for classes of students taught by all high and all low scoring teachers. For the purposes of this study, mean grade achievement scores achieved by students at the end of the 1964-65 school year were designated as post-achievement levels.

Pre- and post-achievement data was then compared for each class of students taught by high and low scoring teachers. A mean gain or loss in achievement was determined for each class by computing the difference in pre- and post-achievement levels. In this manner it was possible to ascertain the mean gain in achievement accomplished by both groups of students.
Statistical Procedures

As has been indicated above, it was necessary in this study to determine whether significant differences existed between high and low scoring teachers with reference to these variables: T.S.R.T. scores, age, sex, years of experience, degree(s) held, and hours of training in the subject field.

The sum of scores, sum of scores squared, mean and variance were determined for both groups of teachers with reference to T.S.R.T. scores, age, years of experiences, and hours of training. The following formula, as described by Bernstein, was used in computing the variance for each variable:

\[
s^2 = \left(\frac{EX^2}{n} - \left(\frac{EX}{n}\right)^2\right) \left(\frac{n}{N-1}\right)\]

The t test was then applied to determine whether the two groups of teachers differed significantly with regard to each variable. The following formula was used to determine the value of t when the variance was known:

\[
t = \frac{X_1 - X_2}{\sqrt{\left(\frac{s^2_1}{n_1-1}\right) + \left(\frac{s^2_2}{N_2-1}\right)}}\]


10Ibid.
The chi square was applied to test whether significant differences existed between the two groups of teachers with regard to the variables of sex and degree(s) held. Data for each variable were entered into a 2 x 2 contingency table and the following formula was then applied:

\[ x^2 = \frac{N(AF - BC)^2}{(A+B)(C+D)(A+D)(B+D)} \]

It was necessary to determine whether significant differences existed between the two student groups identified in this study with references to these variables: class size, attendance, age, sex, I.Q., and standardized test scores administered during the 1963-64 school year.

The sum of scores, sum of scores squared, mean, and variance were determined for both groups of students with reference to class size, attendance, age, and I.Q. The formula referred to above for the computation of the variance was also applied to student data.

The t test referred to above was used to determine whether the two groups of students differed significantly with regard to each variable. The chi square was applied to determine whether significant differences existed between the two student groups with regard to the variables of sex. Student data was also entered in a 2x2 contingency table and the above chi square formula applied.

---

Data concerning student standardized achievement test grade scores was treated in a somewhat different manner. As has been indicated above, a mean pre-achievement and post-achievement score was determined for each class of students taught by high and low scoring teachers. Fisher's $t$ test for the difference between means was applied to the pre-achievement levels attained by each group of students. The following formula as described by Guilford was used in these computations:

$$
t = \frac{M_1 - M_2}{\sqrt{\frac{Ex_1^2 + Ex_2^2}{N_1+N_2-2} \cdot \frac{N_1+N_2}{N_1N_2}}}^{12}
$$

Hypothesis one was tested by the application of the $t$ test to a comparison of mean gain in achievement scores attained by each student group.

Hypothesis two was tested by the application of the $t$ test to a comparison of mean grade point averages achieved by the two groups of students.

Hypothesis three was tested by the application of the $t$ test to a comparison of mean concept of self scores achieved by the two groups of students.

$^{12}$Guilford, loc. cit., 220.
Hypothesis four was tested by a $t$ test applied to a comparison of mean concept of others scores achieved by the two groups of students.

The .05 level of confidence was used as the criterion for testing the four hypotheses and for all comparisons of descriptive teacher and student data contained in this chapter.
CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

The purpose of this chapter is to present the findings of this study. Chapter one contained a statement of the four hypotheses to be investigated. These hypotheses are restated in this chapter. Following each hypothesis is a presentation and analysis of data relative to the testing of the hypothesis.

Hypothesis One

Hypothesis one is stated as follows:

Students taught by teachers who have low T.S.R.T. scores will achieve more during a school year, as measured by the Stanford Standardized Achievement Tests, than will students taught by teachers who have high T.S.R.T. scores.

As was indicated in chapter three, a proper test of this hypothesis required a comparison of the net differences of gain in academic achievement as evidenced by students taught by high and low scoring teachers. It will be recalled from chapter three that the pre-achievement levels of classes of students taught by high scoring teachers did not differ significantly from pre-achievement levels of classes taught by low scoring teachers.
The mean gain in achievement for each class of students taught by high and low scoring teachers was measured by computing the sum of the differences between mean pre-achievement grade scores and post-achievement grade scores.

Table 11 contains a comparison of mean pre-to-post gains in Stanford Standardized Achievement Test scores of classes of students taught by high and low scoring teachers.

Table 11 indicates that eighty-five classes of students were taught by high scoring teachers and ninety-one classes of students were taught by low scoring teachers. The mean pre-achievement grade score for classes taught by high scoring teachers was 73.78. The mean post-achievement grade score for this group was 80.64.

Data contained in Table 11 indicates that the mean pre-achievement grade score for classes taught by low scoring teachers was 74.65. The mean post-achievement grade score for this group was 83.19. The mean pre-to-post achievement gain for classes taught by high scoring teachers was 6.86 grade score points. The mean gain in standardized achievement test grade scores for classes taught by low scoring teachers was 8.54. The difference of these means is 1.68 in favor of the students taught by low scoring teachers. The t value for this difference is 2.02. These results are significant at the .05 level of confidence. The data relative to the gain in standardized achievement
test scores of the students included in this study indicates that those students taught by low scoring teachers showed significantly greater gain in standardized achievement test scores than did those students taught by high scoring teachers. Thus, hypothesis one was supported by the data.

**TABLE 11**

**COMPARISON OF GAIN IN STANFORD STANDARDIZED ACHIEVEMENT TEST SCORES OF CLASSES TAUGHT BY HIGH AND LOW SCORING TEACHERS**

<table>
<thead>
<tr>
<th></th>
<th>Pre-Achievement</th>
<th>Post-Achievement</th>
<th>Pre-to-Post Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students taught by high scoring teachers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX</td>
<td>6,271.43</td>
<td>6,854.18</td>
<td>582.75</td>
</tr>
<tr>
<td>N</td>
<td>85</td>
<td>85</td>
<td>85</td>
</tr>
<tr>
<td>X</td>
<td>73.78</td>
<td>80.64</td>
<td>6.86</td>
</tr>
<tr>
<td>Ex^2</td>
<td>21,193</td>
<td>29,759</td>
<td>2,934</td>
</tr>
<tr>
<td><strong>Students taught by low scoring teachers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX</td>
<td>6,793.26</td>
<td>7,570.17</td>
<td>776.91</td>
</tr>
<tr>
<td>N</td>
<td>91</td>
<td>91</td>
<td>91</td>
</tr>
<tr>
<td>X</td>
<td>74.65</td>
<td>83.19</td>
<td>8.54</td>
</tr>
<tr>
<td>Ex^2</td>
<td>17,240</td>
<td>23,052</td>
<td>2,293</td>
</tr>
<tr>
<td>t</td>
<td></td>
<td></td>
<td>2.02</td>
</tr>
<tr>
<td>p</td>
<td></td>
<td></td>
<td>.05</td>
</tr>
</tbody>
</table>
Hypothesis Two

Hypothesis two is stated as follows:

Students taught by teachers who have low T.S.R.T. scores will achieve higher grade-point averages than will students taught by teachers who have high T.S.R.T. scores.

To test this hypothesis data was gathered concerning the final grade-point averages of students in subject matter classes taught by high and low scoring teachers included in this study. This grade point average was computed on the basis of: A=4 points; B=3 points; C=2 points; D=1 point, and F=0 points.

Table 12 contains a comparison of the final grade-point averages achieved by students taught by high and low scoring pupils.

<table>
<thead>
<tr>
<th>TABLE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPARISON OF THE MEAN GRADE-POINT AVERAGES OF STUDENTS TAUGHT BY HIGH AND LOW SCORING TEACHERS</td>
</tr>
<tr>
<td>Students Taught by High Scoring Teachers N=1928</td>
</tr>
<tr>
<td>EX</td>
</tr>
<tr>
<td>EX²</td>
</tr>
<tr>
<td>X</td>
</tr>
<tr>
<td>s²</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Table 12 indicates that the mean grade point average for students taught by high scoring teachers was 2.12 and the 2.17 for students taught by low scoring teachers. The difference in these means is .06 and the \( t \) value for this difference is 1.80. This value of \( t \) fails to reach the value 1.96 needed for a significance level of .05. Data concerning the final grade-point averages of students taught by high and low scoring teachers indicates that students taught by low scoring teachers did not achieve significantly higher final grade-point averages than did students taught by high scoring teachers. Hypothesis two was not supported by the data.

Hypothesis Three

Hypothesis three was stated as follows:

Students taught by teachers who have low T.S.R.T. scores will show a more positive acceptance of self, as measured by Bills Index of Adjustment and Values, than will students taught by teachers who have high T.S.R.T. scores.

Table 13 contains a comparison of the mean I.A.V. scores, self forms of students taught by high and low scoring teachers.

Table 13 indicates that the mean IAV scores, Self Forms, of students taught by high scoring teachers was 86.66. The mean IAV scores, Self Form of students taught by low scoring teachers was 87.36. The difference in these
means in .60 and the $t$ value for this difference is 1.24.
This $t$ value fails to reach the value 1.96 needed for the
.05 level of confidence. Data in reference to the mean IAV
scores, Self Form, indicated that students taught by low
scoring teachers did achieve significantly higher scores
than did students taught by high scoring teachers. Hypoth­
esis three was not supported by the findings of this study.

TABLE 13

COMPARISON OF MEAN I.A.V. SCORES, SELF FORM OF
STUDENTS TAUGHT BY HIGH AND LOW
SCORING TEACHERS

<table>
<thead>
<tr>
<th></th>
<th>Students Taught by High Scoring Teachers N=1928</th>
<th>Students Taught by Low Scoring Teachers N=2054</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX</td>
<td>167,081</td>
<td>179,147</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$EX^2$</td>
<td>15,090,038</td>
<td>16,331,289</td>
<td>1.24</td>
<td>n.s.</td>
</tr>
<tr>
<td>$\bar{X}$</td>
<td>86.66</td>
<td>87.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$s^2$</td>
<td>312.62</td>
<td>319.20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis Four

Hypothesis four was stated as follows:

Students taught by teachers who have low T.S.R.T.
scores will show more positive acceptance of others, as
measured by the Index of Adjustment and Values than will
students taught by teachers who have high T.S.R.T. scores.
Table 14 indicates that the mean IAV score "Others Form," of students taught by high scoring teachers was 86.09. The mean IAV score, "Others Form," of students taught by low scoring teachers was 88.74. The difference in these means is 2.65 in favor of students taught by low scoring teachers. The t value for this difference is 4.63 which is significant beyond the .001 level. Data concerning the IAV scores, "Others Form," in this study indicates that students taught by low scoring teachers achieved significantly higher scores on the "Others Form" of the IAV than did students taught by high scoring teachers. Hypothesis four was supported by the results of this study.

As was indicated in chapter three, the Index of Adjustment and Values was administered only once to students.
at the end of the 1964-65 school year. Since the IAV was not administered at the beginning of the 1964-65 school year there was no way in which student acceptance of self scores or acceptance of others scores could be ascertained at that time. Neither was it possible, with one administration of the IAV, to establish increases or decreases in student scores over the school year. In an attempt to control this factor IAV data was also analyzed in the following manner.

Two distinct groups of students were identified as follows:

**Group One:** Contained students who during the school year had been taught by three and four teachers included in this study whose T.S.R.T. scores placed them in the upper twenty-seven percent of all teachers tested.

**Group Two:** contained students who during the school year had been taught by three and four teachers whose T.S.R.T. scores placed them in the lower twenty-seven percent of all teachers tested.

A comparison of the mean IAV "Self" scores and IAV "Others" scores achieved by these two groups of students was then made.

Table 15 contains a comparison of mean IAV scores, "Self Form," of students taught by three and four high scoring teachers and three and four low scoring teachers.
### Table 15

**Comparison of Mean IAV Scores, "Self Form," Achieved by Students Taught by Three and Four High Scoring and Three and Four Low Scoring Teachers**

<table>
<thead>
<tr>
<th></th>
<th>Students Taught by Three and Four High Scoring Teachers</th>
<th>Students Taught by Three and Four Low Scoring Teachers</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX</td>
<td>16,480</td>
<td>17,348</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX^2</td>
<td>1,495,421</td>
<td>1,535,602</td>
<td>.82</td>
<td>n.s.</td>
</tr>
<tr>
<td>X</td>
<td>87.20</td>
<td>86.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>s^2</td>
<td>311.58</td>
<td>307.74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data in Table 15 indicates that the mean IAV score, "Self Form," of 189 students taught by three and four high scoring teachers was 87.19. The mean "Self Form" IAV score of 200 students taught by three and four low scoring teachers was 86.74. The difference in these means is .46 and the t value for this difference is .82. This value of t is not significant. The data indicates that there were no significant differences between the mean IAV scores, Self Form, between students taught by three and four high scoring teachers and students taught by three and four low scoring teachers.

Table 16 contains a comparison of the mean IAV score, "Others Form," of students taught by three and four high scoring and three of four low scoring teachers.
## TABLE 16

**Comparison of Mean IAV Scores, "Others Form," Achieved by Students Taught by Three and Four High Scoring and Three and Four Low Scoring Teachers**

<table>
<thead>
<tr>
<th>Students Taught by Three and Four High Scoring Teachers</th>
<th>Students Taught by Three and Four Low Scoring Teachers</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=189</td>
<td>N=200</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>EX 16,284</td>
<td>17,590</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>EX² 1,453,148</td>
<td>1,581,102</td>
<td>3.15</td>
<td>0.01</td>
</tr>
<tr>
<td>X 86.16</td>
<td>87.95</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>s² 307.74</td>
<td>317.11</td>
<td>----</td>
<td>----</td>
</tr>
</tbody>
</table>

Data in Table 16 indicates that the mean IAV score, "Self Form," of 189 students taught by three and four high scoring teachers was 86.16. The mean IAV score, "Others Form," of 200 students taught by three and four low scoring teachers was 87.95. The difference in these means is 1.79 and the t value for this difference is 3.16. This value of t is significant beyond the .01 level. The data indicates that students taught by three and four low scoring teachers achieved significantly higher IAV scores, "Others Form," than did students taught by high scoring teachers.

These latter findings concerning student responses on the IAV appear to be consistent with the earlier findings involving all students which were reported above.
Discussion of the Results

In chapter one reference was made to the need for testing instruments that measure factors which are predictive of teacher competency or effectiveness. As had been pointed out by years of research, teacher competency is difficult to define and, therefore, difficult to measure. However, most researchers agree that regardless of the many characteristics which may be associated with teacher effectiveness, certainly one aspect of such effectiveness is related to pupil achievement.

The major concern in this study was the investigation of the relationship between the performance of in-service teachers on the Teaching Situation Reaction Test and the achievement of their students. An attempt was made to determine (a) whether or not desirable in-service teacher performance on the T.S.R.T. (low scores) was related to greater pupil academic achievement, and, (b) whether or not desirable in-service teacher performance on the T.S.R.T. was related to more positive personality characteristics in terms of the concept of self and concept of others held by students.

The findings of this study clearly indicate that the seventh and eighth grade students included in this study who were taught by low scoring teachers did show significantly greater gain on Stanford Standardized Achievement Test scores and also evidenced a significantly
more positive concept of others, as measured by the Index of Adjustment and Values, than did students taught by high scoring teachers.

The results of this study appear to add new dimensions to the underlying construct and predictive validity of the T.S.R.T. Evidently there are certain items in the instrument which are related to and differentiate among certain characteristics or perceptions held by teachers that enable them to facilitate pupil achievement in their classrooms. On the other hand, these factors do not appear to be strongly related to grade-point averages achieved by students nor to student acceptance of self.

The T.S.R.T. appears to be related to teacher effectiveness if such effectiveness is defined in part as the ability to facilitate gain in academic achievement and growth in pupil concept of others. It would seem that such factors as openness to new experiences, human relations ability, and the type of structure (direct or indirect) which are factors that previous research has shown the T.S.R.T. to measure may be related to the facilitation of pupil achievement.

Student responses on the "Self Form" and "Others Form" of the Index of Adjustment and Values seems to indicate that there are certain pupil characteristics consistent with phenomonological psychology concepts that
may be enhanced in the classroom. However the findings of this study indicated that regardless of whether students were in contact with three or four high scoring teachers or three or four low scoring teachers, their responses were similar to the responses of all students as measured by the I.A.V.
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to validate further the Teaching Situation Reaction Test (T.S.R.T.) by determining the degree of relationship that existed between in-service teacher performance on the T.S.R.T. and the achievement of students taught by these teachers. In this study, student achievement was related to four criteria:

1. Gain in academic achievement over one school year as measured by pre- and post-testing of students on the Stanford Standardized Achievement Test.

2. Final grade-point averages achieved by students in subject matter classes.

3. Acceptance of self as measured by the "Self" form of the Index of Adjustment and Values.

4. Acceptance of others as measured by the "Others" form of the Index of Adjustment and Values.

The T.S.R.T. was administered to 106 seventh and eighth grade teachers of English (N=32), social studies (N=25), science (N=26), and mathematics (N=23). From this
sample the seven highest scoring and the seven lowest scoring teachers in each of the four subject areas were selected. Such a selection controlled the subject matter representation of the high and low scoring teachers and also constituted approximately the upper 27 percent and lower 27 percent of the total sample of 106 teachers. The mean T.S.R.T. score for the twenty-eight high scoring teachers was 105.93. The mean T.S.R.T. score for the low scoring teachers was 78.75. The difference in these means is 27.18 and the t value for this difference is 12.58. The two samples of teachers were clearly different with respect to factors measured by the T.S.R.T.

In addition to T.S.R.T. scores data concerning the age, sex, number of years of teaching experience, hours of training in the subject area, and degrees held was collected for each teacher. Analysis of this data revealed that there were no significant differences between the two groups of teachers on these variables.

Data was then collected relative to pupils taught by the above two groups of teachers. This data included age, sex, I.Q., attendance, grade achievement scores on the Stanford Achievement Test Battery administered in April, 1964, and in April, 1965, and grades received by pupils. The Index of Adjustment and Values was administered to these pupils during April, 1965. No significant differences were found between the students taught by high and
low scoring teachers with reference to class size, mean age, sex, mean I.Q., mean attendance, and mean achievement grade scores on the Stanford Standardized Achievement Test administered in April, 1964.

Four hypotheses were developed relating to the relationship between teacher performance on the T.S.R.T. and the achievement of their students. These hypotheses were:

1. It was hypothesized that students taught by teachers who have low T.S.R.T. scores would show a significantly greater gain in academic achievement as measured by Stanford Standardized Achievement Tests than would students taught by teachers who have high T.S.R.T. scores.

2. It was hypothesized that students taught by low scoring teachers would achieve higher grade point averages than students taught by high scoring teachers.

3. It was hypothesized that students taught by low scoring teachers would show a more positive concept of self, as measured by the Index of Adjustment and Values, than would students taught by high scoring teachers.

4. It was hypothesized that students taught by low scoring teachers would show a more positive concept of others, as measured by the Index of Adjustment and Values, than would students taught by high scoring teachers.
The results of this study supported hypotheses number one and number four. The findings of this study did not support hypothesis number two nor hypothesis number three.

Conclusions

The results of this study add new dimensions to the predictive validity and construct of the T.S.R.T. In light of the findings reported in chapter four, the following conclusions are drawn.

1. It appears that a relationship exists between in-service teacher performance on the T.S.R.T. and the gain in achievement of pupils taught by these teachers.

2. There appears to be a relationship between in-service teacher performance on the T.S.R.T. and the concept of others held by their pupils.

3. There does not appear to be a relationship between in-service teacher performance on the T.S.R.T. and the grade-point averages achieved by students taught by these teachers.

4. There does not appear to be a relationship between in-service teacher performance in the T.S.R.T. and the concept of self held by their pupils.

5. The T.S.R.T. appears to be an instrument that measures certain characteristics and/or perceptions held by teachers that are related to teacher competency.
6. Teacher performance on the T.S.R.T. appears to be related to and predictive of teaching potential.

7. The T.S.R.T. would appear to have strong promise for use in the study of pre-service and in-service training programs involving the preparation of teachers.

**Discussion of conclusions**

The results of this study seem to add further support to the proposition that the T.S.R.T. has predictive validity with reference to the measurement of teaching potential. The findings of this study also tend to corroborate previous research findings concerning the underlying construct of the T.S.R.T. These past findings, as reported in chapter two, indicated that certain items of the T.S.R.T. measure the relative openness or closedness of one's belief-disbelief system. Other studies have established that the T.S.R.T. measures human relations ability including such factors as positive regard for others, empathy, congruence, and willingness to be known. Additional research has indicated that certain items in the T.S.R.T. are related to the type of teaching style (direct or indirect) used by teachers. These factors have been found to be related to pre-service teaching potential as measured by supervisor ratings of student teachers and student teaching grades.

In the present study desirable performance on the T.S.R.T. (low scores) appears to be related to factors that
enable in-service teachers to create, organize, and control learning experiences in such a manner as to facilitate increased academic achievement and the development of a more positive acceptance of others on the part of students. This study seems to support the contention that the T.S.R.T. reflects teacher reactions to various aspects of the teaching role. Evidently, such reactions are manifested in certain overt behaviors in the classroom which in turn influence the cognitive and affective behaviors of students.

The purpose of the present study was not to ascertain the precise differences that may exist in the behaviors of high and low scoring teachers as measured by the T.S.R.T. However, in the view of the past and present research involving the T.S.R.T., it would seem reasonable to assume that the instrument measures, to some extent, all of the factors referred to above.

These factors may be related to the type of emotional climate and classroom atmosphere that is created by teachers. Perhaps teachers who score low on the T.S.R.T. are more open to and acceptant of student behaviors and are better able to diagnose learning difficulties experienced by students. Low scoring teachers may be more perceptive of the total learning situation and may employ greater variety and flexibility in the use of instruction methods and materials than do high scoring teachers. Low scoring may be more genuine in their relationships with students,
more open to change, and less threatened in performing the teaching role than high scoring teachers.

The research reported in chapter two concerning the self-concept and the Index of Adjustment and Values indicates that the concept of self and the concept of others held by students are related to their perceptions of themselves as learners. It has also been theorized that the development of the concept of self and concept of others is at least in part a product of the classroom.

The findings of this study indicate that students taught by low-scoring teachers did possess a more positive concept of others than students taught by high scoring teachers. It should be noted that students taught by low scoring teachers also showed a slightly more positive concept of self than did students taught by high scoring teachers. These findings indicate that desirable teacher performance on the T.S.R.T. is related to the affective development of students taught by these teachers. Perhaps low scoring teachers are more tolerant and accepting of student emotions and feelings. Low scoring teachers may use more praise and encouragement in the classroom and may be somewhat less structured in dealing with classroom interaction.

Implications of the study

This study indicates that it is possible to create testing instruments that measure teaching potential in terms
of the product of teaching—the cognitive and affective
development of students. It should be emphasized again
that the Teaching Situation Reaction Test is still in the
developmental stages. Results of previous research and the
findings of the present study clearly indicate that the
T.S.R.T. has sufficient reliability and validity to be
implemented in the study of teacher education programs.
Enough is presently known concerning the underlying con-
structs of the test to warrant its use as a diagnostic tool
in the study of pre-service and in-service education
programs.

In an era in which much emphasis is being placed on
educational assessment programs that are nationwide in
scope, it would seem important to exercise caution in the
application of the T.S.R.T. The designers of the instru-
ment have not intended that it should be used as a selection
device or a screening device to be applied to either pre-
service or in-service teacher candidates. The instrument
has been designed with the express purpose of the improve-
ment of teacher education courses and programs. It should
be noted that further predictive validity studies with
various population samples and further revision of the
T.S.R.T. is planned for the near future.
Recommendations for Further Study

In the light of the results of this study, the following recommendations are made:

1. Continued research should be undertaken to further clarify the relationships of teacher performance on the T.S.R.T. and the cognitive and affective achievement of pupils taught by these teachers.

2. Replication of the present research should be undertaken with student and teacher populations representing grade levels and school settings similar to those involved in this study.

3. Replication of the present investigation should be undertaken with student and teacher populations representing different grade levels and varying school settings from those included in this study.

4. Investigation should be undertaken concerning whether or not teachers representing different subject matter areas tend to respond differently to items on the T.S.R.T. and to achieve different T.S.R.T. scores.

5. Studies should be made concerning whether or not male and female teachers tend to respond differently to items on the T.S.R.T. and to achieve different T.S.R.T. scores.
APPENDIX A

TEACHING SITUATION REACTION TEST
T.S.R.T. COVER SHEET

Name__________________________________________

School__________________________________________

Age_________ Male_______ Female_______

Degree(s) held__________________________________________

Number of years of teaching experience, including this year__________

Please indicate below the subject area(s) you are now teaching and for each area the approximate number of semester hours training you have had in that area.

Subject areas you are now teaching: ___________________________ Semester hours training____

_________________________ ______________________

_________________________ ______________________

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### Answer Sheet

**TEACHING SITUATION REACTION SHEET**

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<thead>
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</thead>
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<td>37</td>
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TEACHING SITUATION REACTION TEST
Revised April, 1965

Directions: The case example that follows has been planned to measure your ability to work through some of the problems of handling a classroom group. You will be given certain information about the classroom group and the working situation. You will then be asked to respond to a number of questions. This will be repeated through a series of problem situations. The case study has been designed so that you can respond regardless of your teaching subject field. You do not need technical subject matter knowledge to take this test.

You are asked to indicate your first, second, third, and fourth choice under each question by inserting respectively the numbers 1, 2, 3, 4, in the spaces provided on the answer sheets under (a) (b) (c) and (d). The most desirable choice could be labeled 1 and the least desirable 4. For example if your first choice was response (c), your second choice was response (a), your third choice was response (b), and your fourth choice was response (d), you would record your responses on the answer sheet as follows:

\[
\begin{array}{cccc}
(a) & (b) & (c) & (d) \\
2 & 3 & 1 & 4 \\
\end{array}
\]

Please do not write on the test booklet.
The Situation:

You have been employed by a school system which is engaged in a series of experimental studies. One of these studies involves an experimental class designed to improve pupils' general adjustment to their environment. A heterogeneous group (physically, mentally, socially) of twenty-five thirteen to fourteen year old youngsters have signed up for this class entitled "Teen Topics" because they thought that it would be interesting.

The class is scheduled to meet the last period of the day on Tuesday and Thursday during the second semester. Arrangements have been made so that the class might take trips and students might have an opportunity to meet informally with the teacher after class.

Around the first of November your principal calls you in to tell you that, if you are interested, you have been chosen to teach the experimental class. You were chosen because of your background in adolescent psychology and your interest in helping youngsters with minor problems of adjustment typical of the young adolescent. You believe that the most efficient learner is the student who is relatively free from personal problems and thus can direct his attention to conventional school learning uninhibited by his personal concerns. You agree to take the class and believe that by being informed of your new teaching responsibility this early in the year that you will have adequate time to plan for the course.

Your principal has given you pretty much of a "free hand" to develop the content of the course and the activities in which the students will be engaged. A good supply of instructional materials (e.g., books on the adolescent and descriptions of similar programs in other schools) has been made available to you. There will be no direct supervision of your work, but an evaluation by students and yourself will be requested at the middle and close of the semester. Studies will also be made of the gain in personal adjustment evidenced by a selected number of your students. You do know the names of the students who have signed up for your course, but you do not know which students in the class have been chosen to be studied and will not know until the end of the semester. An experienced teacher-counselor has been asked by the principal to help you when and if you ask for help. The teacher-counselor knows each of the youngsters who have signed up for your class.
The Group:

Some of the youngsters who have signed up for the course know each other very well, having gone through school together. Three do not know anyone else in the group. Others are only casually acquainted. Members of the group have a variety of interests and abilities, and they represent many levels of competence and come from a variety of socioeconomic backgrounds. The quality of their personality adjustment varies, but none is seriously mal-adjusted.

A. You have about eight weeks plus the Christmas vacation to plan for your class.

1. When you begin planning the course you would:

   (a) Ask your teacher-counselor what he thinks should be in the course.

   (b) Examine the materials available to you and determine how they might be used by members of the class.

   (c) Read through the copies of publications describing other school programs of a similar nature and draw ideas from them.

   (d) Interview a randomly selected group of the young people signed up for the course and set your own tentative objectives based on these interviews.

2. During early December an important local civic group comes out against teaching sex education in the schools. Your planning had included some sex education. At this point in your planning you would:

   (a) Continue planning as you have been.

   (b) Ask the principal if you should include any sex education in your course.

   (c) Remove the lessons dealing with sex education.

   (d) Find ways to get the sex education material across without causing an issue.
3. About three weeks before your class is scheduled to meet for the first time, your principal asks you to come in and talk with him about the course. You would hope that your principal would:

(a) Say that if there was anything that he could do to be of help that you should feel free to call on him.

(b) Indicate to you what he would hope the course would accomplish during the semester.

(c) Encourage you to talk about the purposes of your course as you see them after several weeks of planning.

(d) Make specific suggestions to help you in your planning, and encourage you to drop in for further suggestions if you need help.

4. The weekend before the course is to start it would be natural for you to feel:

(a) Concern that your planning has been inappropriate

(b) Anxious to get started and prove your ability to handle this rather difficult assignment

(c) Hopeful that the course will prove of real value to the students

(d) Confident knowing you have done the best you could under the circumstances

B. You will have your first meeting with the group tomorrow.

5. It will be important that you have planned for:

(a) students to get well acquainted with each other

(b) explaining your grading system

(c) activities to catch student interest

(d) explaining your complete program for the semester
6. The teacher-counselor drops by your room and asks if he can be of help. You would ask him for:

(a) his opinion about what you have planned for tomorrow

(b) suggestions to help you make a good impression

(c) suggestions as to what student reaction might be on the first day

(d) nothing until you had an opportunity to meet with the group

7. The more important personal information to gather at the first meeting would be:

(a) interests of the different students

(b) parent or guardian, home address and phone number

(c) what they would like to do in the course

(d) why they are taking the course

8. Of the things you would do the evening before meeting the class, the most essential would be to:

(a) become familiar with the noted for such — presentation as you might make

(b) become familiar with students' names and any information you have about them from their files

(c) become familiar with the sequence and nature of any activities you may have planned

(d) be sure any materials you were to use were available and in good condition
9. Your greatest concern on this night before the first meeting would be:

(a) how to appear poised and at ease
(b) how to gain control of the group
(c) how to handle problem pupils
(d) how to get your program moving rapidly and well

C. On meeting the group the first day a number of students come in from three to five minutes late. Following this, as you get your program underway the students get restless.

10. With the students that come in late you would:

(a) simply acknowledge their presence and noticeably mark them present in the record book
(b) inform them politely about the time at which the class starts
(c) ask them politely why they were unable to get to class on time
(d) make clear to the class as a whole and the late students in particular the standards you will maintain with regard to tardiness

11. You would handle the restlessness of the group by:

(a) presenting your program more dynamically
(b) asking students why they were restless
(c) speaking to the group firmly about paying attention
(d) picking out one or two of the worst offenders and reprimanding them
12. You would tell the group your name and:
(a) the rules of conduct for your class
(b) your expectations for the class
(c) some of your personal adjustment problems at their age
(d) some of your interests and hobbies

13. You would, by your general behavior and manner, try to present yourself as:
(a) firm and serious but fair
(b) efficient, orderly and business-like
(c) friendly, sympathetic and understanding
(d) understanding, friendly and firm

14. You would prepare for the next meeting by:
(a) discussing with pupils what they would like to do and deciding on one or two ideas
(b) telling them what pages to read
(c) giving students a choice of two ideas and determining in which the majority are interested
(d) discussing your plans for the next meeting with them

D. You have met with your class four times and have made some observations. Two boys seem particularly dirty and you have found they come from a lower class slum area. One girl seems to be withdrawn. The students do not pay any attention to her. She is a pleasant looking well dressed girl. There are four or five youngsters, apparently very good friends (both boys and girls) who do most of the talking and take most of the initiative. Students seem to continually interrupt each other and you.
15. In the interests of the two boys from the slum area you would:

(a) find an opportunity to discuss the matter of cleanliness with the class

(b) speak to the boys about their need to be clean in a conference with them

(c) inaugurate a cleanliness competition with a prize to that half of the class with the best record, putting one boy in each half

(d) speak to the boys about their need to be clean and arrange facilities at school where they could clean up

16. In the interests of the apparently withdrawn girl you would:

(a) talk to her informally over a period of time to see if you could determine her difficulty

(b) call on her regularly for contributions to the discussion

(c) discover a skill she has and have her demonstrate for the class

(d) have a conference with her and tell her to become involved with the class discussion and speak up

17. To improve the relationship of the group to the apparently withdrawn girl you would:

(a) determine who, if anyone, is friendly with her and arrange to have them work together on occasion

(b) take the girl aside and help her see how she can establish better relations with her classmates

(c) arrange to have her work with the group of boys and girls who take most of the initiative

(d) allow her to work out her own problem
18. With regard to the four or five youngsters who do most of the talking and take the initiative you would tend to believe:

(a) they are brighter than most of the other students

(b) they are the leaders of the class

(c) there is considerable variation in student's ability to participate in class

(d) they are a little too cocky and think they know more than the others

19. With regard to the tendency of class members to interrupt while others are talking you would:

(a) tell the class politely but firmly that interruptions are impolite and should not continue

(b) discuss the matter with the class, determining why this happens and what should be done about it

(c) organize a system of hand raising and set rules for students participation in discussion.

(d) set rules for student participation in discussion and firmly but fairly reprimand each person who breaks the rules

20. One of the important problems facing you now is to do something which:

(a) will insure that no one is rejected or disliked

(b) will result in everybody's being liked

(c) will encourage each person's acceptance of the others

(d) will guarantee that no one's feelings get hurt
E. At the beginning of the eighth class session (fourth week) Johnny comes into class holding on to his arm and very nearly crying. The tears are welled up in his eyes and he looks away from the others. You notice that Peter, the largest and strongest boy in the class, looks at Johnny occasionally with a sneering smile. You do not feel that you can let this pass, so you arrange to meet with Johnny and Peter separately after class.

21. You would tend to believe:
   (a) that Johnny probably did something for which this was just, but maybe severe, repayment
   (b) that Peter is something of a bully
   (c) that Johnny was hit on the arm by Peter
   (d) that Johnny felt badly and Peter was quite aware of it

22. When you meet with Johnny you would:
   (a) ask him if Peter hit him and why
   (b) engage him in conversation and lead slowly into the difficulty he had that afternoon
   (c) tell him you were aware that he had some difficulty and offer your help to him
   (d) let him guide the discussion and reveal what he would about the incident

23. When you meet with Peter you would:
   (a) tell him that Johnny was upset this afternoon and you had noticed that he (Peter) was looking strange - proceed from there
   (b) make him aware that you know he had trouble with Johnny and proceed from there
   (c) make him aware that he is bigger and stronger than the other boys and that he is a bully if he picks on smaller boys
   (d) ask him if he and Johnny had had difficulty
24. To insure that this kind of thing did not happen again you would:

(a) discuss bullying with the class
(b) do nothing
(c) get the two boys together to talk over the difficulty
(d) find the cause of the trouble and work with those involved to eliminate it

F. In general your program has been moving along satisfactorily. After the eighth meeting you have a feeling that the students are beginning to lose interest. A number of students seem to be sitting through class without really getting involved. Others seem to stay interested and active. The teacher-counselor asks to see you informally over coffee.

25. When you meet with the teacher-counselor you would:

(a) not talk about your class or its present lack of involvement
(b) discuss your concern with him and listen for suggestions he might have
(c) speak about how satisfactory the early meetings had been
(d) allow the teacher-counselor to orient the discussion

26. Your planning for the next (ninth) session would include:

(a) some new ideas that you had not tried
(b) some clarification of the importance of students doing well in their work
(c) a request for ideas from students as to how to make the class more interesting
(d) ways to get more students actively doing something in class
27. During the ninth session you would:

(a) behave much as you had in earlier sessions.

(b) put some stress on the importance of everybody paying attention in class

(c) by careful observation determine which students seemed disinterested

(d) speak pointedly to those who were not paying attention

28. You would tend to believe the loss of interest due to:

(a) a rather natural reaction in an elective experimental course

(b) failure of students to realize that they must contribute much to a course of this kind

(c) a rather natural group reaction to the experience of working together on personal adjustment problems

(d) your own failure in developing good human relationships in the class and stimulating the students

G. Before the mid term (eighteenth) meeting of the class you take time out to think about the experiences you have had. The class has been good some days and poor other days. You have had no word from your principal about how your work has been. The teacher-counselor has seemed satisfied but not very much impressed with what you are doing. You have heard nothing about the young people who are being studied. You are asked to meet with the parents to discuss the experimental class in an informal way.
29. You would be most concerned about:
   (a) your apparent failure to impress your teacher-counselor
   (b) what you should say to the parents
   (c) the lack of reaction from your principal
   (d) what the studies of the children are showing

30. You would resolve to:
   (a) discuss your progress with the teacher-counselor
   (b) ask for an appointment with the principal to find out how he feels about your work
   (c) plan to work harder with your group
   (d) not let the present state of affairs worry you

31. When talking with the parents you would:
   (a) encourage them to ask questions about the program
   (b) tell them what the program has consisted of so far
   (c) tell them you don't know how well the program is going
   (d) impress upon them the importance of student participation in the class activities

32. In this case you would feel that parents:
   (a) ought to be told how their children are doing in this class
   (b) ought not to become involved in such an experimental program
   (c) are entitled to an opportunity to question you
   (d) ought to be referred to those in charge of the experiment
33. At your next class meeting:
   (a) you would tell students what you told their parents
   (b) you would not initiate any discussion about your visit with the parents
   (c) you would discuss briefly the parents' interest in the class
   (d) you would tell the students that you expected more cooperation from them now that their parents were involved

H. The nineteenth and twentieth class sessions are very unsatisfactory. You leave class at the end of the twentieth session with doubts in your mind as to whether students are gaining in personal and social adjustment. You can see problems with the structure and organization of the class and believe that if these could be corrected or if you had done some things differently over the past few weeks that you would not have a problem with the class.

34. At this point you would:
   (a) decide to go to class the next day and ask your students how they feel about the progress of the course
   (b) think through the problem carefully and start planning revisions for the course next year
   (c) try to help yourself accept the fact that life is often filled with disappointments and redouble your efforts to make your class better in the future by spending more time in preparation and encouraging your students to work harder
   (d) mention your concerns at the next meeting of your class and encourage students to talk with you after class about the progress of the course
35. You would feel much better regarding the accuracy of your estimate about what is wrong with the class if you:

(a) were sure that some of the students were not being difficult on purpose to test your authority as a new teacher

(b) knew more about the expectations of your students and to what extent they felt their expectations were being met

(c) could have a colleague in whom you could confide and in whom you could trust, come in and observe your class and talk with you

(d) were sure of your own needs for success and the extent to which these needs influenced your feelings

36. After the twentieth session, it would be natural for you to feel that:

(a) you wished that students accepted the fact that things that are taught them in schools are usually good for them even though they may not like what they are learning all of the time

(b) you would like to go out for an evening of relaxation and think about the situation over the weekend

(c) it must have been wonderful to teach in the good old days when students were in school because they wanted to learn

(d) things seldom go well all the time for everybody and that they couldn't be expected to always go well for you
37. In an attempt to analyze the source of the problem you are having with your class you would:

(a) have a conference with several of the brighter and more interested students to see if they could give you any insight into the problem

(b) take part of a class session to share your concerns with the class, get their reactions, and using this information, rethink the problems

(c) ask the teacher-counselor to come in and observe the class several times and talk with you about his observations

(d) consult the records of the students to see if you could find any clues there

I. At your twenty-fourth meeting you wish to make plans for a series of visits to different community health and welfare agencies. You want to be sure that the youngsters learn from the experiences and conduct themselves properly while traveling to and from and visiting in the agencies.

38. In order to assure that all youngsters learned from their first trip you would:

(a) assign particular things for all of them to look for and listen to

(b) ask each to write a brief commentary on the most important things they saw and heard

(c) encourage them to ask questions while they are there

(d) present them with a check sheet of items to be seen and heard and ask them to check off those that they saw or heard
39. In preparation for the first trip you would:
   (a) tell them as much as you could about the agency to which they are going
   (b) tell them you were sure it would be interesting and fun and let them see and hear for themselves
   (c) ask them what they thought they could expect and encourage guided discussions about their expectations
   (d) tell them about the most interesting things they would see and hear

40. To insure that the group conducted themselves properly you would:
   (a) set out rules of conduct for them
   (b) ask them to behave as young ladies and gentlemen representing their school
   (c) ask them what rules of conduct they would propose and develop a code with the group
   (d) assure them that if they did not behave properly they would not go on trips in the future

41. On the trips you would:
   (a) divide them into small groups with a leader responsible for each group and arrange their itinerary and meetings after you get to the agency
   (b) ask the youngsters to get your permission first and on this basis allow them to pursue their own interests
   (c) let the agency people take responsibility for deciding where they could go and when
   (d) keep them all together as a manageable group
J. At the close of the thirtieth class session Bob, one of the most able boys, summarizes a class discussion on boy-girl relationships with, "Well, we've talked all around the subject but we never get down to the important questions." The agreement of a number of the class members is evident.

42. You would tend to believe:

(a) the class members are too young to be dealing with important questions in this area

(b) you had allowed just a little too much freedom in the discussions of boy-girl relationships

(c) this simply reflects a natural desire on the part of students to introduce some excitement into the class sessions

(d) the class could handle important questions in this area with teacher guidance and support

43. Before the thirty-first session you would:

(a) clarify the significance and implications of Bob's statement in your own mind

(b) determine what you will and will not allow to be discussed in class in this area

(c) consult the principal and get direction from him

(d) discuss the situation with the teacher-counselor with a view to getting ideas for handling the next session

44. During the thirty-first session you would:

(a) propose a list of carefully selected questions you believe the students have in mind and begin discussions on the most manageable of these

(b) repeat Bob's comment and draw from the class a list of what they thought should be discussed
(c) suggest that some questions are not appropriate for discussion in school and that some of these fall in the area of boy-girl relationships

(d) ask Bob to pick up where he left off and encourage him and other class members to clarify the directions further discussion should take

K. Your class has at last developed into a fairly cohesive unit. The discussions are more animated and everyone participates to some degree. Disagreements on ideas begin to appear and the students give evidence of intense feelings on a number of issues. George has been particularly outspoken. He has very radical ideas that seem to provoke the other students who disagree but you know that the ideas he expresses have some support from some adolescent psychologists that you consider to be the "lunatic fringe." George seldom gives in on a point.

45. You would believe that these conditions are likely to:

(a) ultimately strengthen the group

(b) do little but make it uncomfortable until George learns his lesson

(c) destroy the group unity unless you intervene

(d) make it difficult for progress to be made for some students until they learn to accept George

46. With regard to George you would:

(a) refer him to the teacher-counselor

(b) point out to George that he is intolerant of the views of other class members

(c) encourage him to express his ideas in ways that could not irritate other students

(d) politely but firmly keep him from agitating the class and if this fails, call on him less often
47. With regard to the other students you would:

(a) encourage them in their effort to stand up to George

(b) help them to understand what George is doing to them and why

(c) help them to get onto topics and ideas where George could not disagree with them so forcefully

(d) get into the discussion on their side and show George that he is wrong

48. With regard to your concern for George as a person, you would feel that:

(a) he is developing undemocratic traits by behaving as he does, and you would hope to help him change

(b) he does not understand how to behave in a democratic setting and may need help

(c) he probably has never learned certain social skills necessary for democratic group behavior and the possibilities of developing such skills should be shown him

(d) he will learn sooner or later that in a democracy some ideas are undesirable because they tend to destroy the group
APPENDIX B

INDEX OF ADJUSTMENT AND VALUES
SELF INSTRUCTIONS FOR IAV, GRADES 7 and 8

There is a need for each of us to know more about ourselves, but seldom do we have an opportunity to look at ourselves as we are or as we would like to be. On the following page is a list of terms that to a certain degree describe people.

Column I

Take each term separately and apply it to yourself by completing the following sentence:

I AM A (AN) ___________________ PERSON.

The first word in the list is agreeable, so you would substitute this term in the above sentence. It would read -- I am an agreeable person.

Then decide HOW MUCH OF THE TIME this statement is like you by checking under one of the three possible answers.

1. Most of the time, I am like this.
2. About half of the time, I am like this.
3. Hardly ever, I am like this.

Place a check in the box under the term that suits you best.
EXAMPLE: Under the term agreeable, check the first box - Most of the time I am an agreeable person.

Column II

Now go to Column II. Use one of the statements given below to tell HOW YOU FEEL about yourself as described in Column I.

1. I like being as I am in this respect.
2. I neither dislike being as I am nor like being as I am in this respect.
3. I dislike being as I am in this respect.

Place a check in the box under the term that suits you best.
EXAMPLE: In Column II beside the term agreeable, check the first block - I like being as agreeable as I am.
Column III

Finally, go to Column III: Using the same term, complete the following sentence:

I WOULD LIKE TO BE A (AN) ________________ PERSON.

Then decide HOW MUCH OF THE TIME you would like this to be an example of you and rate yourself on the following scale.

1. Most of the time, would I like this to be me.
2. About half of the time, would I like this to be me.
3. Hardly ever, would I like this to be me.

EXAMPLE: In Column III beside the term AGREEABLE, place a check in the box under the term MOST OF THE TIME, I would like to be this kind of person.

Start with the word AGREEABLE and fill in Column I, II, and III before going on to the next word. There is no time limit. Be honest with yourself so that your description will be a true measure of how you look at yourself.
<table>
<thead>
<tr>
<th></th>
<th>I AM LIKE THIS</th>
<th>II THE WAY I FEEL ABOUT BEING AS I AM</th>
<th>III I WISH I WERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>agreeable</td>
<td>MOST OF THE TIME</td>
<td>HARDLY EVER</td>
</tr>
<tr>
<td>2.</td>
<td>alert</td>
<td>ABOUT 1/2 OF THE TIME</td>
<td>I LIKE IT</td>
</tr>
<tr>
<td>3.</td>
<td>brave</td>
<td>ABOUT 1/2 OF THE TIME</td>
<td>I NEITHER LIKE NOR DISLIKE</td>
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<td>4.</td>
<td>busy</td>
<td>I DISLIKE</td>
<td>MOST OF THE TIME</td>
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<td>5.</td>
<td>careful</td>
<td>HARDLY EVER</td>
<td>ABOUT 1/2 OF THE TIME</td>
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<td>6.</td>
<td>cheerful</td>
<td>I LIKE IT</td>
<td>HARDLY EVER</td>
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<td>7.</td>
<td>considerate</td>
<td>I NEITHER LIKE NOR DISLIKE</td>
<td>MOST OF THE TIME</td>
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<td>8.</td>
<td>cooperative</td>
<td>I DISLIKE</td>
<td>ABOUT 1/2 OF THE TIME</td>
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<td>9.</td>
<td>dependable</td>
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<td>10.</td>
<td>fair</td>
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<td>I LIKE IT</td>
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<td>11.</td>
<td>friendly</td>
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<td>12.</td>
<td>generous</td>
<td>I LIKE IT</td>
<td>MOST OF THE TIME</td>
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<tr>
<td>13.</td>
<td>good</td>
<td>I NEITHER LIKE NOR DISLIKE</td>
<td>ABOUT 1/2 OF THE TIME</td>
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<tr>
<td>14.</td>
<td>good sport</td>
<td>I DISLIKE</td>
<td>MOST OF THE TIME</td>
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<tr>
<td>15.</td>
<td>happy</td>
<td>MOST OF THE TIME</td>
<td>ABOUT 1/2 OF THE TIME</td>
</tr>
<tr>
<td>16.</td>
<td>helpful</td>
<td>ABOUT 1/2 OF THE TIME</td>
<td>HARDLY EVER</td>
</tr>
</tbody>
</table>

**I AM THE WAY I FEEL ABOUT BEING AS I AM**

- I LIKE IT
- I NEITHER LIKE NOR DISLIKE
- I DISLIKE

**I LIKE THIS**

- MOST OF THE TIME
- ABOUT 1/3 OF THE TIME
- HARDLY EVER

**I WISH I WERE**

- MOST OF THE TIME
- ABOUT 1/3 OF THE TIME
- HARDLY EVER
OTHERS INSTRUCTIONS FOR IAV, GRADES 7 and 8

We would like to gain a better idea of what you think other people are like. To do this, we would like for you to first think of other people who are in general like you, for example members of your class, students in grades 7 and 8. Now take the test and complete it as you think the average person in this group would complete it for himself.

Column I

Take each of the 35 words and use it to complete the following sentence for the average person in your group:

He or she is a (an) ____________ person.

Now decide how much of the time this statement is like the average person and rate him as he would himself on the following scale:

1. Most of the time, this is the way he sees himself.
2. About half of the time, this is the way he sees himself.
3. Hardly ever, this is like he sees himself.

Place a check in the box under the term that suits the average person best. EXAMPLE: Under the term AGREEABLE, check the first box - Most of the time, this is the way he sees himself.

Column II

Use one of the statements given below to tell how he usually feels about himself as described in Column I.

1. He likes being as he is in this respect.
2. He neither dislikes being as he is nor likes being as he is in this respect.
3. He dislikes being as he is in this respect.

Place a check in the box that suits him best. EXAMPLE: In Column II beside the term AGREEABLE, check the first block to indicate that the person likes being as he is in this respect.
Column III

Using the same term, AGREEABLE, complete the following sentence:

He would like to be a (an)________________person.

Then decide how much of the time this average person in your group would like this statement to be characteristic of him and rate him on the following scale:

1. Most of the time, he would like this to be him.
2. About half of the time, he would like this to be him.
3. Hardly ever, he would like this to be him.

EXAMPLE: In Column III beside the term AGREEABLE place a check in the box under the term Most of the time this average person in your group would like to be this kind of person.

Start with the word AGREEABLE and fill in Columns I, II and III before going on to the next word. There is no time limit.
<table>
<thead>
<tr>
<th></th>
<th>I HE IS LIKE THIS</th>
<th>II THE WAY HE FEELS ABOUT BEING AS HE IS</th>
<th>III HE WISHES HE WERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>agreeable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>alert</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>brave</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>busy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>careful</td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>cheerful</td>
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</tr>
<tr>
<td>7</td>
<td>considerate</td>
<td></td>
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<tr>
<td>8</td>
<td>cooperative</td>
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</tr>
<tr>
<td>9</td>
<td>dependable</td>
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<td>10</td>
<td>fair</td>
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</tr>
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<td>friendly</td>
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<td>12</td>
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</tr>
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<td>13</td>
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<td>14</td>
<td>good sport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>happy</td>
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<td></td>
</tr>
<tr>
<td>16</td>
<td>helpful</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I HE IS LIKE THIS</td>
<td>II THE WAY HE FEELS ABOUT BEING AS HE IS</td>
<td>III HE WISHES HE WERE</td>
</tr>
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<td>---</td>
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<td>----------------------------------------</td>
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<tr>
<td>17. honest</td>
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<td></td>
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<tr>
<td>18. kind</td>
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<td></td>
<td></td>
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<tr>
<td>19. loyal</td>
<td></td>
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<td></td>
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<tr>
<td>20. likeable</td>
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<tr>
<td>21. obedient</td>
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<tr>
<td>22. patient</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>23. polite</td>
<td></td>
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<td></td>
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<tr>
<td>24. popular</td>
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<td></td>
<td></td>
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<tr>
<td>25. quiet</td>
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<td></td>
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<tr>
<td>26. reliable</td>
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<td>27. sincere</td>
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<td></td>
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<td>28. smart</td>
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<td>29. studious</td>
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<td>30. successful</td>
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<td>31. thoughtful</td>
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<td>32. trustworthy</td>
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<td>33. understanding</td>
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<td>34. unselfish</td>
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<tr>
<td>35. useful</td>
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</table>
APPENDIX C

SUMMARY OF DATA CONCERNING THE TOTAL POPULATION OF 106 TEACHERS

163
<table>
<thead>
<tr>
<th></th>
<th>English Teachers</th>
<th>Social Studies Teachers</th>
<th>Mathematics Teachers</th>
<th>Science Teachers</th>
<th>Men</th>
<th>Women</th>
<th>All Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>32</td>
<td>25</td>
<td>26</td>
<td>23</td>
<td>69</td>
<td>37</td>
<td>106</td>
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<tr>
<td>$\bar{x}$</td>
<td>2,711</td>
<td>2,263</td>
<td>2,511</td>
<td>2,145</td>
<td>6,429</td>
<td>3,234</td>
<td>9,663</td>
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<tr>
<td>$\Sigma x^2$</td>
<td>233,799</td>
<td>209,551</td>
<td>252,616</td>
<td>201,301</td>
<td>609,847</td>
<td>287,420</td>
<td>897,267</td>
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<tr>
<td>$\Sigma x^3$</td>
<td>84.72</td>
<td>90.52</td>
<td>97.85</td>
<td>93.26</td>
<td>93.17</td>
<td>87.41</td>
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<tr>
<td>$\Sigma x^4$</td>
<td>132.86</td>
<td>195.88</td>
<td>147.04</td>
<td>57.26</td>
<td>160.08</td>
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<td>Range</td>
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<td>66-115</td>
<td>77-126</td>
<td>79-105</td>
<td>57-126</td>
<td>66-115</td>
<td>57-126</td>
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</tbody>
</table>
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