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THE RELATIVE IMPORTANCE OF SELECTED FACTORS INDICATIVE
OF TEACHER EFFECTIVENESS AMONG GRADUATES IN ELEMENTARY
EDUCATION AT JACKSON STATE COLLEGE

A DISSERTATION
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BY
HANCE GAMBLIN
Norman, Oklahoma
1961

THE RELATIVE IMPORTANCE OF SELECTED FACTORS INDICATIVE
OF TEACHER EFFECTIVENESS AMONG GRADUATES IN ELEMENTARY
EDUCATION AT JACKSON STATE COLLEGE

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TABLE OF CONTENTS

LIST OF TABLES.....	Page v
Chapter	
I. BACKGROUND AND NEED FOR THE STUDY.....	1
Statement of the Problem	
Limitations for the Study	
Definition of Terms	
Basic Assumptions	
Hypotheses Made in this Study	
Procedure and Sources of Data	
Treatment of Data	
II. SURVEY OF RELATED LITERATURE.....	14
III. CHARACTERISTICS OF THE EFFECTIVE TEACHER.....	29
IV. ANALYSIS OF THE DATA.....	40
V. SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS.....	54 34
Findings	
Conclusions	
Recommendations	
BIBLIOGRAPHY.....	60
APPENDIX.....	63

LIST OF TABLES

Table	Page
1. T-Scores Group I.....	65
2. T-Scores Group II.....	67
3. Intercorrelations Among Five Variables, Including One Index of Scholarship and Four Predictive Indices for Group I (N=42)....	42
4. Intercorrelations Among Five Variables Including One Index of Scholarship and Four Predictive Indices for Group II (N=42)...	43
5. Intercorrelations Among Five Variables Including One Index of Scholarship and Four Predictive Indices for the Combined Groups I and II (N=84).....	44
6. Significance of Difference Between the Correlation Coefficients of Matched Pairs of Variables in Groups I and II (N = 42 for Group I, N = 42 for Group II). Statistic Utilized = Fisher's z Test for Significance of Difference	49
7. The Relationship of Grade Point Averages Earned in College Course Work and the Educational Achievement of the Subjects' Parents (N = 24 for Group I, N = 24 for Group II).....	52
8. The Relationship Between the Mean Grade Point Averages Earned in Practice Teaching and the Mean of the Cumulative Grade Point Averages. (N = 42).....	53

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CHAPTER I

BACKGROUND AND NEED FOR THE STUDY

The major responsibility for the preparation of teachers is vested, primarily, in teacher training institutions. In America during recent years the criticisms of teacher education programs have mounted steadily. Though some of these criticisms have come from persons engaged in other academic and professional pursuits, the positions taken by those engaged in the training of teachers have often been defensive in nature. This leads one to assume that these positions are vulnerable to attack and criticism. Indeed some might even be indefensible. Incompetent teachers are admitted to the profession simply because someone has provided sponsorship for their training and subsequent admission to the profession.

In recent years more and more emphasis has been placed upon the selection and training of the effective teacher. The teacher-training as well as the multipurpose

institution must share a greater responsibility for the preparation of the kind of teacher demanded by present day conditions. This responsibility might very well include the factors of (1) selective admission and retention, (2) provisions for a good general education, (3) an effective program of specialization and professional preparation, (4) developing desirable personalities, (5) maintaining standards of good scholarship, (6) an adequate guidance program, (7) final recommendation of the prospective teacher, and (8) continuous follow-up and evaluation of the product and the program.

The teacher is the key person in the educative process. If he demonstrates in his person the essence of a sound education, intellectual alertness, and social concern, he is very likely to be effective in influencing his students constructively. In the report of the 1959 TEPS Conference the following assertions are made concerning the development of the effective teacher:

Genuine professional competence in teaching is a far more complex, far more demanding level of performance than we are accustomed to recognize. Consider one basic function of a professional worker, as often stated for other fields: the ability to make a diagnosis, give a prognosis, and prescribe treatment. Ordinarily these terms are not used in teaching; but in a broader sense this is what a teacher does every time he directs the learning of any student. Actually every teacher goes through this process many times every day, often without realizing it; for every thing that he says and does, all that he stands for, his attitudes and manner - all these, and more have an effect upon his pupils. . . . Our very survival as a nation and as a people demands that we accelerate our efforts to learn how young teachers can

most quickly and most surely acquire this kind of professional competence, which can be valid only when it is an aspect of a mature, personal competence.¹

The ever increasing demands for the production of adequately trained and effective teachers that are made on teacher-training institutions necessitate constant study and revision of preparatory programs. The National Commission on Teacher Education and Professional Standards in the 1953 series of Regional Conferences identified some pressing problems. These Conferences identified the following pressing problems.

- (1) planning selective admission policies, (2) strengthening the professional phase of teacher education,
- (3) expanding and improving laboratory experiences,
- (4) planning five year programs of teacher education,
- and (5) closing the gap between the academic mind and the professional mind in the education of teachers.²

The teacher preparing institution from which this problem situation emanates is Jackson State College in Jackson, Mississippi. This institution became a state supported teacher-training institution in 1940. This college had originally been a privately supported institution of higher learning established in 1877 by the American Baptist Home Mission Society of New York.³ The

¹"Curriculum Programs," National Commission on Teacher Education and Professional Standards, NEA (Washington D.C., 1959), pp. 25-26.

²Improving Standards for the Teaching Profession, 1953 Series of Regional Conferences on TEPS, NEA, Washington D.C. (1953), pp. 8-13.

³B. B. Danshy, A Brief History of Jackson College (New York: American Book-Stratford Press, Inc., 1953), p. 2.

college was foundering because of inadequate support when the state assumed responsibility for its operation as a teacher-training institution by an act of the Legislature of Mississippi in the 1940 session.⁴ A need for this study is indicated in that the evaluation of the teaching effectiveness of Jackson State College graduates is a permanent part of the over-all evaluation of its program in teacher education.

Since the year that Jackson State College became a state supported institution it has graduated more than two-thousand (2,000) students. Many of these graduates are now engaged in the teaching profession in the state of Mississippi and in several other states throughout the country. The need for the more objective type of information concerning the program and its products indicates a definite basis for continuous assessment of the program, in its numerous forms. A study is needed to provide a systematically organized body of information that will aid in this over-all evaluation of the teacher-education program in this institution.

Statement of the Problem

The problem of this study was to determine the extent and the implications of the relationship between teaching effectiveness as determined by the principal of

⁴Ibid., p. 142.

the school and success in the teacher education program of Jackson State College.

In order to pursue the problem it has been broken into sub-problems to establish the extent of the relationship of the following aspects of the program:

1. Teaching effectiveness and college entrance test scores.
2. Teaching effectiveness and students' grade point averages.
3. Teaching effectiveness and students' grade point averages in professional education courses.
4. Teaching effectiveness and student grade point averages in specialized education courses.
5. Teaching effectiveness and student grade point averages in general education courses.
6. Teaching effectiveness and the educational level of the students' parents.
7. The over-all grade point averages and the students' grade point averages in specialized education courses.
8. The over-all grade point averages and the students' grade point averages in professional education courses.
9. The over-all grade point averages and the student teaching grades.

Limitations for the Study

In order to obtain a higher degree of specificity certain limitations were placed upon this investigation.

These are:

1. This study was limited to those students who completed the elementary education program at Jackson State College during the regular terms between the years 1954-1958.
2. It was also limited to individuals who are presently engaged in the teaching profession in the State of Mississippi, and who teach in state accredited schools.
3. It was further limited to a descriptive analysis of the information concerning the population that would yield some aid in planning the future direction of the teacher education program at Jackson State College.

Definition of Terms

In attempting to provide for clarity and understanding operational definitions are given to certain terms used in this study.

1. Student teacher - any one engaged in practice teaching under the direct supervision of the college.
2. Supervising teacher - the person from the college who is directly responsible for maintaining contact

with persons engaged in student teaching.

3. Cooperating teacher - the person in the cooperating school under whose immediate supervision the student does his practice teaching.

4. Teaching effectiveness - a rating by the principal or supervisor where the person is currently employed on a scale developed for this evaluation and using the descriptive levels of: (1) outstanding, (2) above average, (3) average, (4) below average, and (5) ineffective.

5. College entrance test scores - the composite scores yielded by the verbal and non-verbal sections of the California Test of Mental Maturity.

6. General education courses - that common core of courses from the various academic areas required of all students.

7. Specialized education courses - are those courses in special methods required of elementary education majors, e.g. Literature for children, Art for children etc.

8. Professional education courses - are those content courses in educational history, foundations, principles, and psychology that are required of all majors in education. This also includes laboratory experiences.

9. Success in teacher education program - is determined by completion of a certificate program at Jackson State College. Degrees of success in the program are

measured by comparative performance in a) all work taken
b) professional education work taken c) specialized work
completed and d) student teaching grade.

Basic Assumptions

Since certain theoretical considerations are made in this investigation these are stated in the form of basic assumptions.

1. There is a definite relationship between success in the teacher-training program of Jackson State College and the degree of effectiveness as in-service teachers among the graduates of this institution.
2. It is assumed that the principals who will make the evaluations of the teachers involved in this study are qualified and competent persons for making these assessments.
3. It is assumed that the experiential background and certain personal traits have a definite effect upon the developing student as a prospective teacher. Objective instruments for assessing these traits and/or qualities are highly inadequate.
4. It is assumed that the minimum ability required for success in the several areas of the teacher-training program may be determined through statistical techniques. These techniques may ultimately

lead to a regression equation that will lend itself to predictive purposes in the selection and training of prospective teachers.

Hypotheses Made in this Study

The hypotheses tested through this study are in the form of the null hypothesis. Levels of significance were determined through the use of appropriate statistical techniques and the use of confidence intervals. These hypotheses are as follows:

There are no significant relationships between teaching effectiveness and the following aspects of the program:

College entrance examination scores;

College grade point average;

Grade point averages earned in professional education courses;

Grade point averages earned in specialized education courses;

Grade point averages earned in general education courses;

Grade point averages and the educational level of the students' parents;

Grade point average and grade earned in student teaching.

Procedure and Sources of Data

The principal sources of information for this study were the official records of the Registrar's office where college credits and grades were obtained. The office of Student Personnel provided information concerning the educational level of the subjects' parents. The subjects' scores on the college entrance examination were obtained from the records of the Division of Education.

With the approval of the advisory Committee a rating scale was developed for ascertaining the current rating of the teachers included in this study. After examining several instruments for this purpose it was decided that such a scale should be short enough to gain quick attention from the principals who were to use it, but inclusive enough to provide an adequate assessment of the desired qualities in such an evaluation. From these facts a scale consisting of ten broad categories along a five point continuum was developed.⁵ These scales were reproduced and mailed to the principals of the schools where the subjects were employed on May 15, 1961. The principals were asked to make an evaluation of the teachers selected for the study. Enclosed with the scales was a letter of explanation and endorsement⁶ for the study from

⁵See Appendix A, page 63.

⁶See Appendix B, page 64.

Dr. Lamar Fortenberry, Coordinator of Negro Education for Mississippi. By June 10, 1961, of the 102 subjects in the study rating scales had been completed and returned on 84 per cent.

Other information has been obtained from Research Bulletins of The Review of Educational Research, publications of the National Education Association, and the National Commission on Teacher Education and Professional Standards. Further sources utilized were microfilms, abstracts, unpublished dissertations, periodicals, and professional books. All related literature has been thoroughly surveyed for the purpose of discovering the historical development, the underlying implications, and basic factors in the study of teacher preparation and the prediction of teaching effectiveness.

Treatment of Data

The Pearsonian r for establishing coefficients of correlation between the several sets of data was utilized. The Fisher z -tests have been used in determining levels of significance for the relationships. All of the rating scales were assorted into two groups. Group I was composed of those persons with a rating of "above average" or "outstanding." Group II was composed of those persons obtaining a rating of "average," "below average," or "ineffective" on the scale that was used in the study.

From the returned scales the number of subjects were 42 in Group I and 42 in Group II. Correlation coefficients were established for each group for comparative purposes. Comparisons were also made for the educational level of the parents and success in college for the subjects in each of the two groups through r 's for t -scores on each category.

In each group grade point averages and standard deviations were computed for each subcategory. From these data t -scores were ascertained for each individual within each subcategory. All possible coefficients of inter-correlation were then computed within the system. The Pearsonian coefficient of correlation was the statistic determined. Each correlation coefficient in Group I was then tested with its corresponding r in Group II, the statistic used for this purpose was Fisher's z -test for significance of relationship. The levels of significance used in testing were 0.01 and 0.05. The entire statistical design was then tested using the chi-square (X^2) technique of testing the equality of k coefficients of correlation.

For the relationship between the educational achievement of the parents and the students' success in college the parental groups were divided on the basis of their having attained at the elementary level or high school and college combined. This test consisted of two groups of 24 subjects each based upon information obtained from the Office of Student Personnel at Jackson State College. The

relationship of practice teaching success of the student to his college achievement was established by computing the coefficient of correlation between the student's grade point average for college work and his grade in practice teaching. The practice teaching grade point value was based upon the college grade point scale. In each test the Pearsonian technique was used.

CHAPTER II

SURVEY OF RELATED LITERATURE

The appraisal of teaching has probably existed as long as teaching itself. Two thousand years after Jesus and Socrates civilization is still evaluating the works of these masters in the art of teaching. Now that teaching has assumed the status and respectability of a profession, and education has developed methods and techniques, evaluation has also developed along newer and definite lines. Greater recognition has been given the role of evaluation in the development of the effective teacher.

The first study in the Teachers College Contribution to Education series was made by Merriam, 1905. From a sample of 1185 normal school graduates Merriam,¹ using objective measurements concluded that normal school scholarship had a negligible relation to future teaching ability, and that practice teaching was only "slightly prophetic."

From the time of the very early studies, such as Merriam's, until the present day no accurate measure for

¹J. L. Merriam, Normal School Education and Teaching Efficiency. Teachers College Contribution to Education. No. 1, Columbia University (1905), pp. 95-97.

teaching ability exists. Neither do we have any means for equating environmental factors affecting success in one school with success in another. Nevertheless subsequent studies have borne out the findings of this early study. The interest in this area of obtaining some method of measuring teacher efficiency continued to develop. A report on this subject was presented at the convention of city superintendents in 1910. The report was given by Edward C. Elliot, and was entitled "A Tentative Scheme for the Measurement of Teacher Efficiency."² The suggested method was directed toward discovering whether "quantitative standards" might be applied to the measurement of teaching efficiency.

F. B. Knight in his study, 1922, "Qualities Related to Success in Teaching,"³ credits Merriam with "much influence in taking the problem of teaching efficiency out of the field of opinion and discussion and placing it, where it properly belongs; namely, in the field of research and objective measurement." In his study Knight established correlations on certain aspects of teaching ability and measurable qualities of effective teaching. These aspects

²Edward C. Elliot, A Tentative Scheme on the Measurement of Teacher Efficiency. Presented to City Superintendents' Conference in Washington, D.C., 1910.

³F. B. Knight, Qualities Related to Success in Teaching (New York: Teachers College, Columbia University, 1922), p. 2.

included general teaching ability, age, amount of experience, quality of handwriting, tested intelligence, scholarship, professional study, and ability to pass a professional test. The correlations in his study were "too low to warrant one in using them for prognostic purposes."⁴ He concluded that, as a whole, the general factor of interest in one's work becomes the dominant factor in determining one's success in teaching.

The increasing interest in teacher appraisal led to many subsequent studies that utilized, to a large extent, the methods and techniques of these pioneer attempts at objective appraisal. In 1923 Grover T. Somers completed his study in Pedagogical Prognosis.⁵ His findings may be summarized as follows:

1. Intelligence as measured by mental tests reveals a relation to achievement in school and success in teaching as signified by a correlation of approximately $+ .54$ and $+ .43$ respectively.

2. Personality as measured by estimates of teachers exhibits a relatively close relationship to an individual's success as student and to her achievement as a teacher, with r 's of $.72$ and $.61$.

3. The first half year's record portends about

⁴Ibid., p. 42.

⁵Grover T. Somers, Pedagogical Prognosis Teachers College Contribution to Education (1923), p. 343.

equally well with personality the end-result. Those activities which make for success during the early weeks and months make for similar success throughout the two years.

4. While all three sets revealed appreciable relationship to the different types of achievement no one alone yielded a sufficiently high correlation with any one type of success to serve as an adequate basis for prediction.

5. Preparatory school records apparently possess but little less value for guidance purposes in the normal school than that found for the elementary school record in predicting success in high school work.

6. The combination of Tests and personality might well serve to determine the fitness of candidates for admission to teacher training institutions, as well as to colleges and universities. . . . the secondary school record is probably the most significant data, concerning the prospective student, because it gives a measure of his or her ability as reflected in a wide array of special areas.

Working with university graduates, in education, Roy R. Ullman, 1930,⁶ undertook to determine the relationship between various items of personal equipment and preparation and teaching success. These factors included

⁶Roy R. Ullman, The Prognostic Value of Certain Factors Related to Teaching Success (Ashland, Ohio: A. L. Garber Co., 1931), pp. 93-95.

(1) social and general intelligence, (2) achievement in knowledge and principles of teaching, (3) knowledge of functions, purposes, and objectives of secondary education, (4) socio-economic status of the pupil, (5) the student's own rating of his teaching ability, (6) an analysis of the student's interest in teaching, and (7) success in courses in education, his major subject, other college courses, and student teaching.

In 1929, the report of A. S. Barr received wide attention in the field of evaluation. His work "Characteristic Differences of Good and Poor Teachers"⁷ asserted that the methods of supervision then in use were of doubtful validity, reliability, and objectivity. Though Barr minimized the importance of his findings by pointing out that the differences he discovered were not critically significant, later research has indicated that much of his summary and conclusions were of great value.

Ullman concluded from his study that:

1. When several factors found to be related to teaching success are combined in a regression equation, predictions of teaching success which are quite accurate can be made.
2. Success in practice teaching is the best single measure of teaching success.
3. Factors other than practice teaching which have been shown to have predictive value are: socio-economic status, academic and professional marks, social intelligence, general intelligence, interest in teaching, and knowledge of principles of teaching.

⁷A. S. Barr, et al. Supervision (New York: D. Appleton Century, 1938).

4. The factors studied are not the only ones contributing to teaching success and others must be studied before highly accurate predictions can be made.

5. Personality, health, vitality, and general conditions existing in the school were found to contribute to the success or failure of the teacher. Since these factors were not measured their exact influence is not known.

Perhaps the more significant work in the prediction of teaching efficiency has been carried on by the students of A. S. Barr in recent years. Answers were sought to questions such as:

- (1) Can teaching efficiency be predicted? (2) Can efficiency be predicted as early as the freshman year?
- (3) Is achievement in various professional academic and professional course work indicative of success in the field? (4) Of what relative value have subjective and objective data in the prediction of teaching efficiency?
- (5) What conditions favor valid and reliable prediction?⁸

In seeking to answer some of these questions Leo J. Lins⁹ investigated the first year performance of individuals after their graduation. Among the data collected and used in the study were: (1) rank in high school class, (2) standardized test scores, (3) number of hours spent in home-study during the senior year of high school, (4) siblings in family, (5) high school principal's prediction, (6) personality ratings, (7) interest in teaching, (8) score on National Teachers Examination, (9) predicted grade point

⁸A. S. Barr, "Introductory Remarks," Journal of Experimental Education, XV (September, 1946), p. 1.

⁹Leo J. Lins, "Prediction of Teaching Efficiency," Journal of Experimental Education, XV (September, 1946), pp. 8-9.

averages, (10) actual grade point averages, and (11) ratings received in education courses combined with impressions of two interviewers relative to professional judgment.

Though the results varied somewhat for the different criteria, a number of items seemed to have predictive value, particularly: high school rank, predicted grade point average, the actual grade point average for different subjects and years, grades in practice teaching (if the criterion of supervisory ratings is employed), and the use of objective data concerning each teacher as a student.

Lins observed that:

Predictions from subjective and objective data seem to be of equal value except when the criterion of pupil gain is employed. Here the predictions using objective data are higher than when subjective data are used. The subjective data held a slight edge over objective data in predicting supervisory ratings.¹⁰

Similar predictive studies were made by H. I. V. Haden,¹¹ and R. D. Jones,¹² who used similar data and like statistical procedures. It appears that data from these studies make it clear that interviews, autobiographies, and subjective evaluations add something of importance to studies in the measurement and prediction of teaching

¹⁰Ibid., p. 60.

¹¹Herbert I. Von Haden, "An Evaluation of Certain Types of Personal Data Employed in the Prediction of Teaching Efficiency," Journal of Experimental Education, XV (September, 1946), 63.

¹²Ronald DeVall Jones, "The Prediction of Teaching Efficiency From Objective Measures," Journal of Experimental Education, XV (September, 1946), 85.

efficiency. The area left to subjective evaluation will doubtless become some what more restricted with the development of new and improved measures of teaching efficiency. However, certain aspects of teaching efficiency will probably have to employ subjective techniques for the present for lack of any objective measures to serve their purpose. The development of new and improved instruments must also be accompanied by careful selection and training of the judges who will use them. A careful definition of the aspects of teaching which are to be evaluated should precede any attempts at improving techniques of measurement.

In studying teacher effectiveness the traits that have had the most frequent mention in the earlier research were: scholarship, personality, general culture, and intelligence. The more recent studies have also concerned themselves with behavioral traits, such as the teacher's attitude toward children, her knowledge and understanding of children, and her interest in contemporary affairs. The techniques that have been employed in determining the traits or qualities that make for effective teaching have centered around (1) the development of trait lists through the use of questionnaires, and (2) using scientific studies in the identification of basic traits and qualities of the effective teacher.

Professional educators, both teachers and administrators, have begun to concentrate their efforts on appraising

how well the schools are meeting their obligation to society. Beecher succinctly points to this fact when he states that:

During the post war years public recognition through the press, radio, and legislation has brought about a sharp rise in the teacher status curve in this country. In addition to the long felt need, there is now a nationwide challenge to teachers to apply themselves as a profession to the vital task of self appraisal.¹³

The increased demand for some evidence of improving teacher efficiency makes it necessary to examine, with a view toward improvement, what evaluation procedures have evolved in the last half century. Again Beecher states, "One of the earliest pieces of research in the field of evaluation of teaching success was made by J. L. Merriam."¹⁴

The report of the Committee on the Criteria of Teacher Effectiveness in 1952 pointed toward some new developments in teacher evaluation. These new concepts of appraisal utilized projective techniques in teacher evaluation. Barr states in his introduction of the report: "Several new instruments have been applied to the measurement and prediction of teaching efficiency."¹⁵ Among these were listed teacher attitude scales, projective devices, such as the Rorschach Test, the Minnesota Teacher Attitude Inventory,

¹³Dwight E. Beecher, The Evaluation of Teaching (New York: Syracuse University Press, 1949), p. 1.

¹⁴Ibid.

¹⁵A. S. Barr, "Measurement of Teacher Characteristics Prediction of Teacher Efficiency," Review of Educational Research, XXII, No. 3 (June, 1952), 169-170.

and the Minnesota Student Rating Scale. Though most of the studies employing these newer devices reported low correlations with teaching success they did point to the need for using these techniques in future evaluation of teaching effectiveness.

In 1952 Bach¹⁶ reported on an investigation made in the study of the pre-service ratings of student teachers and their relationship to success in teaching. In this study it was determined that pre-service measures were relatively high with correlations ranging from .52 to .71. There was a correlation of .61 between first semester practice teaching and academic grade point averages. Based on his findings, Bach concluded that the relationship between success in practice teaching and success in first year teaching was negligible. This led to his questioning the assumption that practice teaching and actual teaching are comparable activities.

In its second report,¹⁷ 1953, the Committee on Criteria of Teacher Effectiveness postulated some direction for needed research in the area. These are:

1. The study of teacher effectiveness must assume the possibility of different patterns of effectiveness for

¹⁶J. O. Bach, "Practice Teaching Success in Relation to Other Measures of Teaching Ability," Journal of Experimental Education, XXI (September, 1952), 79-80.

¹⁷H. H. Remmers, et al. "Second Report of The Committee on Criteria of Teacher Effectiveness," Journal of Educational Research, XLVI (May, 1953), 640-643.

different kinds of teachers, pupils, educational programs, or situations, and the possibility of a variety of patterns of effective teaching for any given teacher-pupil educational program combination. We refer to this as the "multi-dimensional" concept of teacher effectiveness.

2. The ultimate criteria of teacher effectiveness are posited to be in terms of changes in pupil behavior, changes in the operation of the school, or changes in the community in its relation to the school.

3. The problem of predicting teacher effectiveness is one of predicting that a teacher will produce certain changes in pupil behavior.

4. To predict teacher effectiveness it is necessary to relate teacher behaviors and characteristics to the effects of these.

5. The planning of studies and the treatment and interpretation of data must take into account intervening variables (modifying or limiting factors) - for instance the kinds of pupils, the nature of the school program, and situational factors.

6. Psychological theory and theory from other disciplines should serve as bases for setting up hypotheses.

7. Research on teacher effectiveness requires measurement of teacher behaviors and characteristics of the effects of teachers, and of the intervening variables, that is, such other factors as affect the variable under

investigation. All three types of measurement constitute major tasks; since valid devices are not available for many of the pertinent variables.

Approaching the problem of predicting teaching success from an entirely different direction Knoell¹⁸ utilized word fluency ability as a criterion. She made the inference from her study that good teaching, defined by a general rating assigned by different observers, is more closely related to facility in the expression of ideas than to mere quantity in written fluency.

Taking as his primary purpose the investigation of the relationships among certain criteria of teaching effectiveness, H. M. Anderson,¹⁹ 1953, reported some important findings. By using comparative and correlational techniques he established a "low, but positive, association among the assessments of teaching ability made by the principals, pupils, peers, teachers, and an administrative criterion." He also found that a considerable amount of relationship seemed to exist between the evaluations of the teachers based on the final achievement of their pupils in tests of subject matter when differences in age,

¹⁸D. M. Knoell, "The Prediction of Teaching Success from Word Fluency Data," Journal of Educational Research, XLVI (May, 1953), 683.

¹⁹Harold M. Anderson, "A Study of Certain Criteria of Teaching Effectiveness," Journal of Experimental Education, XXIII (September, 1954) 68.

intelligence, average scholastic standing, and pretest knowledge are partialled out and the evaluation based on pupil gain in subject matter after the adjustment for differences in initial score.

Montross,²⁰ and Singer²¹ investigated temperament and social competence and teaching success. In the area of temperament no significant relationships were found to exist between the seven areas investigated on the Thurstone Temperament Schedule and the criteria. In light of the results of his investigation, Montross deemed it reasonable to "postulate that there may be temperamental patterns which distinguish between good and poor teachers as measured by ratings of principals, and others, trained to evaluate teacher effectiveness." However, it was pointed out that the measuring instrument which he employed was highly restrictive in nature.

In using rating scales, self evaluation, pupil reactions, and audio-recordings Singer made a descriptive investigation of forty-one in-service teachers, in Wisconsin, to determine the relationship between success in teaching and certain aspects of social competence. In

²⁰Harold Wesley Montross, "Temperament and Teaching Success," Journal of Experimental Education, XXIII (September, 1954).

²¹Arthur Singer, Jr., "Social Competence and Success in Teaching," Journal of Experimental Education, XXIII (December, 1954).

this single, limited, investigation he attempted to verify the hypothesis that there is a dynamic relationship between teaching success, certain aspects of social competence, and interaction and inter-personal group modes. He concluded that the results from the use of the several devices did tend to indicate that partial measures of teaching success could be derived. The investigation also identified patterns of group structure and individual leaders, fringers, and isolates. This study appears to have proven fruitful in that it adds evidence of another valuable criterion in the evaluation of teaching efficiency.

Dove,²² in 1959, listed these broad areas of appraisal (a) academic or scholastic success, (b) adequate health, (c) personal qualifications, (d) social competence, (e) understanding and knowledge of psychological, philosophical, and social bases of education, and (f) general college requirements. Doubtless trends in appraisal will yet appear in future attempts at evaluation that will employ particulars rather than the general.

Summary of Review of Literature

In a brief assessment of the findings of 15 studies in the appraisal of teaching efficiency, arranged in

²²P. C. Dove, "A Study of the Relationship of Certain Selected Criteria and Success in Student Teaching." (Unpublished Ed. D. dissertation) University Microfilms, Ann Arbor (1959), p. 32.

chronological sequence, the following observations are made:

1. Experimentation has utilized two main approaches in studying the problem of how to evaluate teaching effectiveness. These have been (a) the use of one criterion to correlate with teaching success, and (b) a combination of measures to be studied simultaneously with teaching success.

2. The trends in appraisal of teaching efficiency were (a) largely subjective in nature and based upon opinions in the earlier studies, (b) in present day experimental studies objective measures are extensively used in establishing valid criteria for appraisal of teaching efficiency.

CHAPTER III

CHARACTERISTICS OF THE EFFECTIVE TEACHER

The answer to what is meant by effective teaching must depend upon what is implied in statements made on the subject. Most questions involve criteria of teacher effectiveness. These criteria must define what we are seeking to understand, predict, and control. The report of the Committee on The Criteria of Teacher Effectiveness, 1950, made this statement:

This crucial condition has long been realized. Defining the dependent variable, or knowing what question to ask, is perhaps the most difficult and important step in any scientific enterprise. In short, criteria of teacher effectiveness must stand at the apex of any conceptual system for the development of scientific understanding, prediction, and administration of teacher personnel.¹

This group decided upon the use of the term teacher effectiveness rather than teaching effectiveness. Such a view was taken in light of the fact that only those effects of education that can be ascribed to the teacher should be considered. They sought to define the ideal role of the

¹H. H. Remmers et al. "Report of the Criteria of Teacher Effectiveness," Review of Educational Research, XXII (June, 1952), 238-39.

teacher in the sense of conceptually pure, rather than of most desirable. A frame of reference in which teachers could be perceived was thus provided. The group also attempted to be neutral with respect to values rather than committing itself to a particular set of values or educational objectives. In short they were concerned with the criteria of teacher effectiveness as they might apply in any system of values.

In seeking to survey the entire domain of criteria of teacher effectiveness the Committee agreed upon three important definitions:

Criterion is a standard against which a measurement is made in estimating the validity of the measurement. A criterion is always concerned with one or more specified dimensions of whatever is being measured.

Effectiveness is the degree to which an agent produces effect. Three kinds of objects of teacher effect were specified. These are, in terms of the object affected, (a) the pupil, (b) school operations, and (c) the school community relationship.

Effects on pupils - Those effects on pupils that are relevant as criterion dimensions of teacher effectiveness are the extent to which educational objectives are attained. Effects on pupils other than those of the teacher in relation to accepted educational objectives must be excluded as irrelevant, e.g. if social and emotional adjustment is not considered an objective to be achieved by pupils of a given teacher, then achievement of such an objective is irrelevant as a dimension of the objects of effect, pupils, by which the effectiveness of that teacher is determined. Since educational programs differ in their objectives according to the culture, age level, and the like, in which the teacher operates, the appropriate subcategories of effect on pupils will differ accordingly.²

Any definition of criteria would therefore be in

²Ibid., pp. 241-43.

operational terms, that is, pertinent to the situation. Major concern is with the degree to which stated objectives are achieved by the pupils of the teacher who professes one or more of these objectives. Their effect on pupils constitute the criteria by which the teacher's effectiveness will be judged. The committee recognized that

other factors such as the socio-economic background, previous educational experiences, and previous intellectual and emotional makeup of pupils will affect their achievement of educational objectives under a given teacher.³

In dealing with these factors the committee concluded:

In using pupil growth and achievement as a criterion dimension of teacher effectiveness, we must "purify" our measures of achievement of these non-teacher causes.⁴

The effect of the teacher upon school operations is considered a relevant criterion of teacher effectiveness. Her effect upon school-community relationships may be considered a criterion dimension. These relationships may be in the form of interest or disinterest, favorable or antagonistic attitudes, cooperation or non-cooperation, support or threat. The teacher's effect upon these is a criterion dimension of her effectiveness.

Numerous attempts have been made to list the traits or qualities of the effective or successful teacher. An examination of the literature on this subject reveals

³Ibid., pp. 246-47.

⁴Ibid., pp. 249-50.

the following significant attributes: (a) interest in children, (b) interest in people and events, (c) a sound social philosophy, (d) studious attitudes and habits, (e) originality and creative power, (f) an objective analytical attitude, and (g) a sense of humor along with high professional standards.⁵

In his discussion, "Quest for Quality," I. J. Quillen listed some areas of cruciality at the 1959 convention of The National Commission on Teacher Education and Professional Standards. He stated:

If we had a clearer conception of the role of the school in contemporary American culture and of the competence needed for good teaching, designing a teacher education program of high quality would be much easier. There is, however, widespread agreement that a teacher should (1) be broadly and liberally educated; (2) have depth in learning and a command of the subject matter to be taught; (3) have a knowledge of individual growth and development, individual differences, the nature of learning, and of testing and evaluation; (4) have an understanding of the role of the school in society and culture; (5) have a knowledge of the teaching methods and materials appropriate to the subjects and grade levels to be taught; and (6) have practical experience in observation and teaching under competent supervision.⁶

The effective teacher must be concerned with exemplifying as well as inculcating ideals in the realm of the aesthetic, the moral, and the abstract. Much of the

⁵A. F. Myers and C. O. Williams, Education in a Democracy (New York: Prentice-Hall, 1948), pp. 22-27.

⁶I. J. Quillen, The Education of Teachers: Curriculum Programs, National Commission on Teacher Education and Professional Standards, Conference Report, NEA (Washington D. C.: 1959), p. 35.

very recent discussion of quality in education has come from the thesis that quality deals with measurable things that can be described by things that can in turn be described by the use of formulae. The wonders of science are not belittled here, but one could hardly expect them to raise the moral or the aesthetic level of the people in this world.

Speaking on this subject of quality in education Corey has aptly stated:

The real essence of man's moral, emotional, and intellectual life refuses to be reduced to figures on a dial, or anything which is susceptible to the quantitative symbolism of science. . . . Certain quantitative aspects of teaching and learning have been isolated, instruments devised for their measurement, and symbols selected for their representation; and formulae are now being used as argument that quality in teaching can be measured quantitatively. A rose can be measured and weighed but none would maintain that these quantitative elements, accurate as they might be, adequately measure the quality of a rose.⁷

Further argument for expanding and improving our techniques of assessing teaching efficiency is found in Corey's concluding remarks. Here he takes the line of reasoning that the appreciation of the aesthetic is a very vital need in effective teaching. The arts have moral connotation and deep spiritual value. In attempting to provide some assurance that the effective teacher will have the aesthetic as a part of her equipment these

⁷Stephen M. Corey, The Education of Teachers: Curriculum Programs, NTEPS, Conference Report, (NEA, Washington, D. C.: 1959), p. 35.

conclusions are drawn:

A functional acquaintance with the fine arts is the best insurance against the gradual dimming of radiance and the beauty of the world in which we live. . . . Now if this is the way good teachers are to teach, this is the way they should be taught.⁸

At this point it is probably wise to postulate that teaching should not be viewed as simply good or bad but that it exhibits varying degrees of effectiveness or excellence. The ultimate criterion of successful teaching is listed by Mursell. He wrote:

Successful teaching is teaching that brings about effective learning. The decisive question is not what methods or procedures are employed, or whether they are old fashioned or modern, time-tested or experimental, conventional or progressive. All such considerations may be important but none of them is the ultimate, for they have to do with means, not ends. The ultimate criterion for success in teaching is results.⁹

As previously indicated these results are probably best understood in terms of their effect, produced by the teacher, upon the pupil, the school, and the community. The real issue, then, is between good and bad teaching - between teaching that gets results and teaching that does not. In the assessment of teacher effectiveness through the use of this ultimate criterion Mursell has again identified some important "elements of the teaching-learning process." It then follows that:

⁸Ibid., p. 69.

⁹J. L. Mursell, Successful Teaching (New York: McGraw-Hill, 1954), p. 1.

The teacher is not on the one hand a purveyor, an artisan, or an encyclopedia. Nor is he on the other hand primarily a guidance person, counselor, amateur psychiatrist, social prophet, or good example. He is a vitalizer of subject matter. His prime business is to organize situations in which the content of the curriculum can perform its rightful function of promoting and fostering the mental, emotional, and social development of human beings.¹⁰

School administrators and supervisors tend, almost invariably, to place what they call "teaching personality" at the top of their list of qualities essential to teaching success. From many of the studies made in the area of success in teaching, or teacher effectiveness, the conclusion can be drawn that few of the factors investigated seem to be closely associated with teaching success as measured by ratings of supervisors. However a positive correlation is often found in these studies. Mills and Douglass concluded:

It is more than merely possible that the ratings of supervisors are not reliable and valid measures of teaching success. In fact many students of the problem have concluded that the coefficients of correlation, which are usually between 0.15 and 0.40, would be materially higher between the respective factors and reliable valid measures of teaching success.¹¹

Because of the pervasive effect of many factors involved in being an effective teacher such a list of essential qualities could be vastly extended. On this

¹⁰J. L. Mursell, Developmental Teaching (New York: McGraw-Hill, 1949), p. 27.

¹¹H. H. Mills and H. R. Douglass, Teaching in High School (New York: Ronald Press, 1957), pp. 32-33.

subject Mills and Douglass wrote:

In general personality seems to include such things as animation, personal appearance, congenial manner, effective speech, emotional stability, apparent interest in students, maturity of thought and action, a sense of humor, optimism, temperament, poise, and sociability. In analyzing teacher personality, it is necessary to consider the total impact of the entire pattern of these qualities upon the pupil. The individual qualities which make for excellence are not identical in all effective teachers. It would be as undesirable as it would be futile to attempt to fit teachers into a common mold. Individuality and uniqueness is a priceless ingredient of a teaching staff. . . . Moreover, personal characteristics requisite for effective teaching vary in kind and in degree at different grade levels and in different types of schools and communities.¹²

The premise that there is no universal set of standards, or list of qualities, that is equally applicable in all situations is easily acceptable. Many different investigations utilizing teachers, administrators, supervisors, students, parents, and laymen have produced lists of desirable qualities for effective teaching. A quality encountered many times under many different sets of circumstances tends toward having some universal value. In evaluating and describing teacher effectiveness it is paramount that as many of these qualities or traits as is possible will be employed.

A summary is presented under the captions of those qualities mentioned most frequently as contributing to success by Myers and Williams.

¹²Ibid., p. 34.

1. Vigorous health. The teachers work is exhausting. Well done, it demands both physical and mental effort, and if the teacher's health fails he soon finds that his work suffers. Even temporary fatigue may affect his work.

2. Intelligence. This is one basic factor in success in school and college.

3. Liking for study. The teacher is usually one who was a good student in high school and at least average in college. As he must always do some studying, he should enjoy it. Evidence for this is seen in his selection of the "harder courses."

4. Emotional maturity and balance. This a somewhat inclusive term. It comprises such traits as poise, self-confidence, self-control, persistence (at whatever he undertakes to do), patience, and decisiveness. A great part of a person's adjustment to others depends on the degree of his emotional maturity.

5. Love of children. If a person does not thoroughly enjoy children, especially of the age he intends to teach, and get along with them, he should try another profession.

6. Sympathy (or social intelligence). By this is not meant sentimentality, but the ability imaginatively to put one's self in the other person's place - and act accordingly. Other desirable qualities stem from it, such as leadership - not dominance - of the sort that persuades others to do what is for their own good and the good of those around them, and like it.

7. Interest in and liking for teaching. Perhaps this should have been mentioned sooner. The teacher should enjoy his work and the associations it furnishes, and be proud of the services he can render. The teacher with a critical and disparaging attitude toward his profession is not so likely to be successful.

8. Cheerfulness and sense of humor. Pupils in school, no less than others, enjoy a cheerful teacher and one who can see a joke even at his own expense. In a sense, both are evidences of emotional maturity, for the really mature person does not take himself too seriously.

9. Friendliness. The aloof person should not teach, since so large a part of the teacher's work is bound up in personal relationships. The teacher should like people and welcome friendship from all quarters.

10. Good work habits. The teacher has to work hard at a variety of tasks. He should be able to plan them and carry them out quickly and accurately. Also, where initiative, originality, and resourcefulness are called for by the work, he should be able to meet the demand.

11. Cooperativeness. The teacher must be able to work with others and be willing to do so.

12. Breadth of interest. Teachers with many different kinds of interests succeed; some with narrow interests succeed. Yet to appeal to the varied interests of pupils the teacher must be sincerely interested in many things. Pupils are quick to detect and dislike sham.

13. Tolerance. This is probably an outcome of sympathy. The teacher who is prejudiced against different customs, kinds of people, religions, and so forth, loses pupil respect and influence.

14. Good judgment. Many of the teacher's difficulties stem from his use of poor judgment as to the sensible, kind, and suitable course to take.

15. Sense of justice. It must be applied to the treatment of people and the organization of the work (tests should cover fairly what was taught).

16. Good appearance and voice. These seem to be less important than many have thought, but failure in either respect can affect the teacher's work unfavorably even if pupils and others cannot put a finger on what is wrong. (Especially true of voice).

17. Ability to explain clearly. With pupils this trait ranks very near the top. It probably results from the interaction of general intelligence, breadth of interest, and good training in methods of teaching.

18. Personality is the total of these traits and others.¹³

Summary

Any scheme of appraising teacher effectiveness has depended upon the development of instruments for evaluation of characteristic traits that lend themselves to scientific applications. As pointed out in the literature, definitions of criteria are also necessary for guiding those that would engage in the intricately involved process of appraising teacher effect upon the pupils, the school, and the community environment where the teacher operates. No

¹³Myers and Williams, op. cit., 28-31.

"fool proof" scheme that is equally applicable in all situations has yet been devised. However certain operational conditions have been developed that tend toward utilitarian value in a variety of situations.

The various aspects of a "teaching personality" that might be considered as having some universal value have been listed. These aspects or traits that produce effect upon the pupil, school, and community are:

- (1) personal appearance, including health and vitality;
- (2) community acceptance; (3) poise - as demonstrated by emotional control; (4) professional pride - including ethics, philosophy (personal), and a sense of values;
- (5) educational preparation - including command of subject matter, facility in oral and written expression, and knowledge of contemporary affairs; (6) effectiveness in directing learning experiences as demonstrated by pupil learning and achievement; (7) understanding of and a liking for children; (8) classroom efficiency as demonstrated by good discipline, effective organization, and accurate record keeping; and (9) an understanding of the nature of the learning process and ability in its evaluation.

CHAPTER IV

ANALYSIS OF THE DATA

This investigation was concerned with pointing up the magnitude and direction of relationships among the several variables included in the data. These variables were:

(1) Ratings by principals where the teachers are currently employed.

(2) Cumulative grade point averages for college courses.

(3) Grade point averages earned in professional education courses.

(4) Grade point averages earned in specialized education courses.

(5) Grade point averages earned in general education courses.

(6) College entrance test scores on the California Test of Mental Maturity.

(7) Educational achievement of the parents.

(8) Grades earned in practice teaching.

The appropriate statistic for this analysis is the

Pearsonian Coefficient of Correlation.

The raw data after conversion to McCall's T-scores were then analyzed for all possible intercorrelations. (See Tables III, IV, and V). The resulting matrix was tested as a whole utilizing the technique presented by Hald.¹ This resulted in a value for Chi-square of 29.557 which was significant at the 0.001 level of significance. This indicated the necessity to test within the system to determine the comparative significance by pairs.

The coefficients of correlation determined in this investigation were established upon the bases of measurements in the several categories involving matched pairs of individuals. In every case the magnitude and the direction of the correlation coefficients became the paramount issues in the analysis of the data for the purpose of this study.²

The T-score equivalents for the subjects in each group are presented in Tables I and II.³ The statistic for determining the Pearsonian coefficient of correlation was employed and all data were analyzed on the IBM digital computer.⁴ The correlation coefficients for Group I

¹A. Hald, Statistical Theory With Engineering Applications (New York: John Wiley and Sons, 1952), p. 611.

²J. P. Guilford, Statistics in Psychology and Education (New York: McGraw-Hill, 1956), p. 139.

³See Appendix C, page 65.

⁴The computations were carried out by the staff of the University of Oklahoma Computer Center using the IBM 650.

(outstanding and above average teachers) and II, (weak to average teachers) are explained in Tables III, IV, and V.

TABLE III

INTERCORRELATIONS AMONG FIVE VARIABLES, INCLUDING
ONE INDEX OF SCHOLARSHIP AND FOUR PREDICTIVE
INDICES FOR GROUP I (N=42)

Variable	X ₂	X ₃	X ₄	X ₅	X ₁
X ₂		.49*	.19	.65*	.60*
X ₃	.49*		.41*	.23	.77*
X ₄	.19	.41		.17	.21
X ₅	.65	.23	.17		.17
X ₁	.60	.77	.21	.17	
M _x	.51	.52	.51	.51	.51
S.D. _x	9.55	9.92	10.67	28.10	5.96

*Significant at .05 and .01 levels.

X₁ = Cumulative grade point averages for college courses.

X₂ = Grade point averages earned in professional education courses.

X₃ = Grade point averages earned in specialized education courses.

X₄ = Grade point averages earned in general education courses.

X₅ = College entrance test scores on California Test of Mental Maturity.

TABLE IV

INTERCORRELATIONS AMONG FIVE VARIABLES INCLUDING
ONE INDEX OF SCHOLARSHIP AND FOUR PREDICTIVE
INDICES FOR GROUP II (N = 42)

Variable	X ₂	X ₃	X ₄	X ₅	X ₁
X ₂		.66*	.68*	.38*	.75*
X ₃	.66		.72*	.58*	.79*
X ₄	.68	.72		.53*	.81*
X ₅	.38	.58	.53		.54*
X ₁	.75	.79	.81	.54	
M _x	49	50	50	50	50
S.D. _x	11.46	6.34	10.74	6.86	10.74

*Significant at .05 and .01 levels.

X₁ = Cumulative grade point averages for college courses.

X₂ = Grade point averages earned in professional education courses.

X₃ = Grade point averages earned in specialized education courses.

X₄ = Grade point averages earned in general education courses.

X₅ = College entrance test scores on California Test of Mental Maturity.

TABLE V

INTERCORRELATIONS AMONG FIVE VARIABLES INCLUDING
ONE INDEX OF SCHOLARSHIP AND FOUR PREDICTIVE
INDICES FOR THE COMBINED GROUPS I AND II
(N = 84)

Variable	X ₂	X ₃	X ₄	X ₅	X ₁
X ₂		.55*	.46*	.11	.69*
X ₃	.55		.52*	.26	.69*
X ₄	.46	.52		.21	.71*
X ₅	.11	.26	.21		.19
X ₁	.69	.69	.71	.19	
M _x	50	51	50	50	50
S.D. _x	10.55	8.27	10.65	20.10	8.71

*Significant at .05 and .01 levels.

X₁ = Cumulative grade point averages for college courses.

X₂ = Grade point averages earned in professional education courses.

X₃ = Grade point averages earned in specialized education courses.

X₄ = Grade point averages earned in general education courses.

X₅ = College entrance test scores on California Test of Mental Maturity.

When tested for significant deviations from zero, the following coefficient of correlations were found to be significant at the 29.557 level of significance. (Groups I and II combined). (See Table VI page 49.

(1) Cumulative grade point averages for college course work and grade point averages earned in professional education courses ($r's = .60 + .75$)⁵

(2) Cumulative grade point averages for college course work and grade point averages earned in specialized education courses. ($r's = .77 + .79$)

(3) Cumulative grade point averages for college course work and grade point averages earned in general education courses. ($r's = .21 + .81$)

(4) Grade point averages earned in general education courses and grade point averages earned in professional education courses. ($r's = .19 + .68$)

(5) Grade point averages earned in general education courses and grade point averages earned in specialized education courses. ($r's = .41 + .72$)

(6) Grade point averages earned in specialized education courses and grade point averages earned in professional education courses. ($r's = .49 + .66$)

(7) College entrance test scores and the grade point averages earned in professional education courses.

⁵The first numerals are r for Group I and the second for Group II.

(r's = .65 + .38)

When tested for significant deviations from zero, the following coefficient of correlations were found not to be significant. (29.557)

(1) Cumulative grade point averages earned in college courses and the college entrance test scores.

(r's = .17 + .54)

(2) College entrance test scores and the grade point averages earned in general education courses.

(r's = .17 + .53)

(3) College entrance test scores and the grade point averages earned in specialized education courses.

(r's = .23 + .58)

The matched pairs of coefficients of correlation, Table VI, all tested significantly different at the .05 levels of significance on Fisher's z-test for significance of difference. Because of these significant differences each correlation coefficient was treated individually in this study.

Summary of Findings as Indicated by Tables III and IV

In Group I, which is taken as the criterion group, Table III, the following significant coefficients of correlation were found that led to the conclusion that a positive relationship among the several factors does exist:

(1) between cumulative grade point averages for

college course work and grade point averages earned in professional education courses.

(2) between cumulative grade point averages in college course work and the grade point averages earned in specialized education courses.

(3) between grade point averages earned in professional education courses and grade point averages earned in specialized education courses.

(4) between grade point averages earned in professional education courses and college entrance test scores.

(5) between grade point averages earned in specialized education courses and grade point averages earned in general education courses.

(6) between grade point averages earned in specialized education courses and cumulative grade point averages for college course work.

The positive relationships between these factors tend to indicate their efficacy as predictive indices.

The following factors demonstrated no significant relationship. Though the direction of all r 's was positive their magnitude was such in size as to provide bases for the conclusion that their predictive efficiency is practically negligible. These factors are:

(1) the relationship between grade point averages in professional education courses and grade point averages

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TABLE VI

SIGNIFICANCE OF DIFFERENCE BETWEEN THE CORRELATION
COEFFICIENTS OF MATCHED PAIRS OF VARIABLES IN
GROUPS I AND II (N = 42 FOR GROUP I, N = 42
FOR GROUP II). STATISTIC UTILIZED =
FISHER'S Z TEST^a FOR SIGNIFICANCE OF
DIFFERENCE

Paired Variables	r's		Paired Variables	r's	
r ₁₁	.66	z = 3.42	r ₁₆	.23	z = 5.70
r ₂₁	.49		r ₂₆	.58	
r ₁₂	.19	z = 8.47	r ₁₇	.77	z = 6.80
r ₂₂	.68		r ₂₇	.79	
r ₁₃	.65	z = 4.99	r ₁₈	.17	z = 5.57
r ₂₃	.38		r ₂₈	.53	
r ₁₄	.60	z = 3.72	r ₁₉	.21	z = 12.14
r ₂₄	.75		r ₂₉	.81	
r ₁₅	.41	z = 6.28	r ₁₀	.17	z = 5.75
r ₂₅	.72		r ₂₀	.54	

^aPaul Blommers and E. F. Lindquist, Elementary Statistical Methods in Psychology and Education (Boston: Houghton Mifflin Co., 1960), pp. 467-468.

Legend

r₁₁ and r₂₁ = r's of grade point averages earned in professional education courses and the grade point averages earned in specialized education courses.

r_{12} and r_{22} = r's of grade point averages earned in professional education courses and grade point averages earned in general education courses.

r_{13} and r_{23} = r's of grade point averages earned in professional education courses and college entrance test scores.

r_{14} and r_{24} = r's of grade point averages earned in professional education courses and cumulative grade point averages for college course work.

r_{15} and r_{25} = r's of grade point averages for general education courses and grade point averages earned in specialized education courses.

r_{16} and r_{26} = r's of grade point averages earned in specialized education courses and college entrance test scores.

r_{17} and r_{27} = r's of grade point averages for specialized education and cumulative grade point averages for college course work.

r_{18} and r_{28} = r's of grade point averages earned in general education courses and college entrance test scores.

r_{19} and r_{29} = r's of grade point averages earned in general education courses and cumulative grade point averages for college course work.

r_{10} and r_{20} = r's of cumulative grade point averages earned in college courses and college entrance test scores.

earned in general education courses.

(2) the relationship between grade point averages earned in specialized education courses and college entrance test scores.

(3) the relationship between grade point averages earned in general education courses and college entrance test scores.

(4) the relationship between grade point averages

earned in general education courses and the cumulative grade point averages for college course work.

In Group II, Table IV, all factors showed significant relationships. Since this group was composed of individuals rated, by the principals, as average and below average in teaching effectiveness, the conclusion was made that these indices held a positive predictive value for persons who fall within this group, as described by the several related factors. However, when the groups were combined, as shown in Table V there was no appreciable difference from the relationships demonstrated by Group I. This was justification for its establishment as the criterion group.

When the educational achievement, by grade level attained, of the parents of the subjects were correlated with the subject's performance in college courses, a relationship that was not significant was determined. This is shown in Table VII.

As demonstrated by the low positive correlation of .11, the inference was made that the educational achievement of parents had no appreciable effect upon success of the subjects in college course work as demonstrated by cumulative grade point averages. When Fishers t-test for significance

⁶W. J. Dixon and F. J. Massey, Introduction to Statistical Analysis (New York: McGraw Hill, 1951, pp. 103-104.

was used the null hypothesis was accepted in that no significant relationship was established.

TABLE VII

THE RELATIONSHIP OF GRADE POINT AVERAGES EARNED IN COLLEGE COURSE WORK AND THE EDUCATIONAL ACHIEVEMENT OF THE SUBJECTS' PARENTS (N = 24 FOR GROUP I, N = 24 FOR GROUP II)

Group	Parental Level of Educational Achievement	Mean Grade Point Average	S.D.	
Upper	High School, College, and Graduate School	1.64	.06	r for combined groups = .11*
Lower	Elementary Education Grades 1 - 8	1.38	.24	

*Not significant at .05 and .01 levels.

The relationship between the mean grade point average for practice teaching and the mean of cumulative grade averages was determined through the use of the Pearsonian technique. These results are shown in Table VIII.

The r of .10 which is not significant was indicative of the fact that the relationship between the cumulative grade point average and the practice teaching grade was not significant. For the purposes of this study such a low correlation coefficient renders the conclusion that the

relationship of these factors are only slightly prophetic .
as a predictive index.

TABLE VIII

THE RELATIONSHIP BETWEEN THE MEAN GRADE POINT AVERAGES
EARNED IN PRACTICE TEACHING AND THE MEAN OF THE
CUMULATIVE GRADE POINT AVERAGES. (N = 42)
GROUP I

	Mean	S.D.	
Mean GPA Practice Teaching	2.05	.59	r = .10*
Mean of the Cumulative GPA	1.62	.30	

*Not significant at .01 and .05 levels.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The major purpose of this study was to determine the extent and the implications of the relationship between the teaching effectiveness and success in the teacher education program of Jackson State College. The elements of the program that were studied were: Cumulative grade point averages in college course work, professional education courses, specialized education courses, general education courses, and grades earned in practice teaching. Also included in the investigation were college entrance test scores on the California Test of Mental Maturity and the educational achievement of the subjects' parents.

The investigation was limited to the 84 graduates of Jackson State College during the regular terms of 1954-1958 inclusive who were currently employed as elementary teachers in the State of Mississippi. Each teacher was rated on a scale, provided for that purpose, by the principal of the school where he was employed. Two groups were then established on the basis of the ratings they received. Group I was composed of those persons receiving a rating

of "above average" and "outstanding." Group II members received ratings of "average," "below average," and "ineffective." Each group included 42 persons in these categories.

The data in the several factors was obtained from the Registrar's Office, The Office of Student Personnel, and the records of the Division of Education at Jackson State College. The Pearsonian technique was used to determine the extent of relationship among the several factors after the data had been converted to McCall's T-score equivalents. Statistical analyses also included Fisher's t and z tests for significance and a chi-square test for significance of the entire system.

The .05 level of significance was accepted as indication of the existence of a significant level of relationship among the various factors involved.

Findings

The following findings showing the extent of the relationship between teaching effectiveness and success in the program at Jackson State College became evident from a statistical analysis of the data. Correlation coefficients at the 0.05 level of significance were found in these areas:

(1) Between grade point averages earned in professional education courses and grade point averages earned in specialized education courses.

(2) Between grade point averages earned in professional education courses and grade point averages earned in general education courses.

(3) Between grade point averages earned in professional education courses and cumulative grade point averages for college course work.

(4) Between grade point averages earned in specialized education courses and grade point averages earned in general education courses.

(5) Between grade point averages earned in specialized education courses and cumulative grade point averages for college course work.

(6) Between grade point averages earned in specialized education courses and college entrance test scores.

(7) Between grade point averages earned in general education courses and cumulative grade point averages for college course work.

The following areas showed no significant relationship to exist:

(1) Between grade point averages earned in professional education courses and the scores made on the college entrance test.

(2) Between grade point averages earned in general education courses and scores made on the college entrance test.

(3) Between cumulative grade point averages for college course work and scores made on the college entrance test.

(4) Between practice teaching grades and cumulative grade point averages earned in college course work.

(5) Between the level of educational achievement of the subjects' parents and their performance in college courses as demonstrated by their cumulative grade point averages.

Conclusions

The findings in this investigation have led to the following conclusions:

(1) The principals tended to rate as highly effective teachers those subjects who had also ranked higher in achievement in college work.

(2) Those objective factors included in this investigation, e.g. cumulative grade point averages for college work, specialized, general, and professional education courses tended to be more reliable as predictive indices of teaching effectiveness.

(3) The information provided by the data included in this study can prove useful in establishing criteria for selective admissions to the teacher education program.

(4) The college entrance test used at Jackson State College proved ineffective as a predictive index of success

in the teacher education program; however, this may be attributed to the social-cultural background of the subjects since the composite came from the language-non-language sections of the test.

(5) The statistical analyses of the data included in this study tended to indicate the discriminatory efficiency of several of the factors utilized as predictive indices for effectiveness in teaching; and were generally substantiated by the choice of the principals.

(6) The low coefficient of correlation of practice teaching grades and cumulative grade point averages for college course work may be attributed to the inadequacy, and the lack of objective instruments for evaluation of the students teacher's performance. The "halo effect" often influences grades in an area where subjective techniques are used in evaluation.

(7) The educational achievement of the subjects' parents tended to have little if any effect upon their performance in college as demonstrated by the low coefficient of correlation between these two factors.

Recommendations

The continuous assessment of the teacher education program is dependent upon the increasing amount of objective information for this purpose. With a view toward possible improvement of the teacher education program at Jackson

State College the following recommendations are made.

(1) The Division of Teacher Education should expand its testing program to include tests of general culture and knowledge of contemporary affairs since there is a lack of information in these areas concerning the students.

(2) The Division of Teacher Education should employ some other form of college entrance test (e.g. The School, and College Aptitude Test of the American Council of Education). The efficacy of this admissions instrument could be enhanced through the use of a more reliable test for predictive purposes.

(3) An admissions committee should be established for the teacher education program. It should be composed of members from the various academic disciplines, the division of education, the college health department, the office of student personnel, and the dean's office. Screening of applicants would occur at the end of the sophomore year and utilize all the information available.

(4) Further study in this area is recommended. Such study should have as one of its purposes the derivation of a regression equation for predicting success in the teacher education program.

(5) Some revision in instruments or changes in techniques should be made in the area of evaluating student teaching. This could very well be a cooperative enterprise involving persons concerned.

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APPENDIX A

Please Complete This Form for the Teacher Named below and return.

TEACHER EVALUATION SCALE

To H. Gamblin, College of Education, Univ. of Okla.,
Norman, Okla.

Name of Teacher _____ Date _____

Teaching Area _____ School _____ City _____

Evaluation based on contacts with teacher= (Check each item in one column Only)

Teaching Competencies	Out- standing	Above Average	Average	Below Average	Ineffective
Personal Appearance - Health and Vitality					
Community Adjustment - Acceptance by Parents					
Poise - Emotional Facility - Self-control					
Facility in Oral and Written Expression					
Favorable reaction to Criticism					
Educational Preparation - Command of Subject Matter					
Classroom Efficiency - Records - Organization - Discipline					
Effectiveness in Directing Learning Experiences					
Understanding Children - Developing Desirable Pupil Behavior					
Professional Ethics - Attitude - Sense of Values					
CONFIDENTIAL ASSESSMENT In my judgment this teacher is (Check in one column only)					

Signature of Principal _____



State of Mississippi

DEPARTMENT OF EDUCATION
JACKSON

May 11, 1961

TO: Principals of Certain Mississippi Schools

FROM: Dr. Lamar Fortenberry, Coordinator, Negro Education,
State Department of Education, Jackson, Mississippi

Mr. Hance Gambling, one of our Southern Education Foundation fellows who is now working toward the doctorate at the University of Oklahoma, is making a follow-up study of the graduates of Jackson State College. According to the best information available to Mr. Gambling, the teacher's name (or teachers' names) appearing on the enclosed evaluation scale (or scales) graduated from Jackson State College during the years covered by his study. Will you please complete the enclosed teacher evaluation scale, or scales, and return it, or them, to Mr. Gambling, College of Education, University of Oklahoma, Norman, Oklahoma. The information submitted by you will be held in strictest confidence and will be used for no purpose other than contributing to Mr. Gambling's study.

Please complete the evaluation scale even though a teacher is not now teaching in your system provided the teacher taught under your supervision during the past year or so.

I shall consider it a special favor if you will submit this information to Mr. Gambling as soon as possible.

APPENDIX C

TABLE I

T Scores Group I

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆
1.	61	64	73	56	30	67
2.	52	56	66	53	10	67
3.	51	54	46	37	90	51
4.	56	47	70	61	92	51
5.	51	50	45	53	44	51
6.	55	37	50	67	11	31
7.	53	64	60	50	90	67
8.	56	62	48	57	50	51
9.	60	46	60	69	70	51
10.	65	73	71	71	56	67
11.	49	61	54	67	49	51
12.	48	50	41	45	90	51
13.	51	52	54	49	95	51
14.	49	36	47	56	20	31
15.	47	37	41	46	80	31
16.	46	46	46	41	38	51
17.	63	47	66	70	80	51
18.	60	66	70	67	80	51
19.	47	39	51	44	78	31
20.	45	37	49	37	30	31
21.	47	50	45	43	15	51
22.	49	56	50	50	16	51
23.	51	51	50	71	95	51
24.	66	66	68	61	70	67
25.	54	55	57	47	50	67
26.	45	46	58	38	60	31
27.	46	55	40	53	45	67
28.	51	54	41	51	40	31
29.	48	37	48	45	20	51
30.	49	58	50	39	19	31
31.	44	51	36	36	30	51
32.	44	45	37	53	20	51
33.	54	56	54	37	40	51
34.	46	42	48	53	41	51
35.	54	58	45	64	20	51
36.	59	69	62	46	70	51
37.	47	46	39	51	63	67
38.	53	62	55	34	17	51
39.	42	42	48	46	90	67
40.	47	46	50	49	76	51
41.	50	51	46	45	34	51
42.	50	51	46	45	34	51

TABLE I--Continued

Legend

X_1 = Cumulative grade point average for college course work.

X_2 = Grade point average earned in professional education courses.

X_3 = Grade point average earned in specialized education courses.

X_4 = Grade point average earned in general education courses.

X_5 = Score on California Test of Mental Maturity.

X_6 = Practice teaching grade.

TABLE II

Group II

	X_1	X_2	X_3	X_4	X_5	X_6
1.	69	70	70	75	60	70
2.	68	59	54	81	61	58
3.	55	64	52	68	55	70
4.	54	59	53	51	47	58
5.	50	39	51	49	50	43
6.	71	71	55	64	46	58
7.	67	75	55	58	56	58
8.	46	43	47	47	43	43
9.	37	40	45	39	50	43
10.	50	41	49	46	48	58
11.	50	40	50	47	46	43
12.	50	41	48	49	61	43
13.	40	44	45	39	47	43
14.	50	54	51	47	58	58
15.	44	47	47	43	58	43
16.	43	45	47	44	47	43
17.	40	40	46	42	48	43
18.	34	40	46	43	49	43
19.	70	64	68	63	56	70
20.	43	49	48	40	51	58
21.	41	35	45	45	45	43
22.	68	50	54	64	55	70
23.	73	67	60	66	58	58
24.	49	50	51	47	51	58
25.	55	60	45	52	46	58
26.	39	50	51	39	57	58
27.	37	37	47	50	44	43
28.	53	46	53	46	57	58
29.	47	41	50	48	44	43
30.	46	48	44	47	54	43
31.	46	36	47	47	57	43
32.	49	45	52	41	40	43
33.	41	44	47	40	46	58
34.	41	36	47	48	40	43
35.	50	65	47	61	45	70
36.	61	59	55	52	55	58
37.	51	37	46	39	47	43
38.	42	63	48	41	38	43
39.	41	36	45	52	49	43
40.	51	52	45	45	47	43
41.	42	40	47	39	41	43
42.	42	51	47	51	42	58

TABLE II--Continued

Legend

X_1 = Cumulative grade point average for college course work.

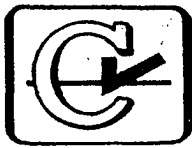
X_2 = Grade point average earned in professional education courses.

X_3 = Grade point average earned in specialized education courses.

X_4 = Grade point average earned in general education courses.

X_5 = Score on California Test of Mental Maturity.

X_6 = Practice teaching grade.



Advanced • GRADES
10 to Adult • 1957 S-Form

California Short-Form Test of Mental Maturity

Devised by
ELIZABETH T. SULLIVAN, WILLIS W. CLARK, AND ERNEST W. TIEGS

INSTRUCTIONS TO EXAMINEES

This is a test of mental maturity. In taking it you will show how well you understand relationships and what you do when you face new problems. No one is expected to do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

5th Printing

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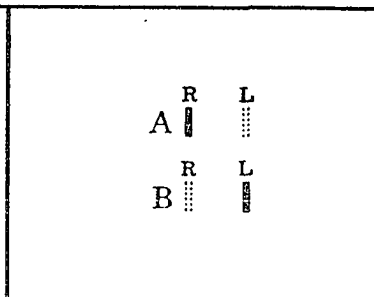
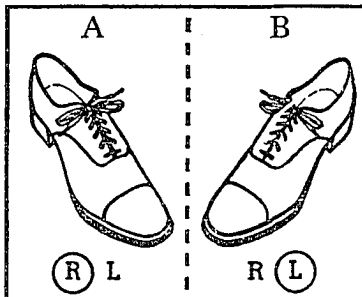
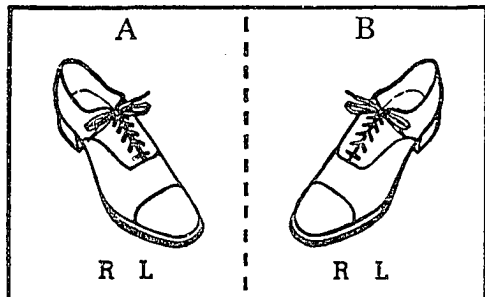
A

DIRECTIONS: Mark as you are told the letter, R, for each picture that shows a right; mark the letter, L, for each picture that shows a left.

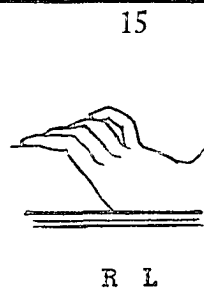
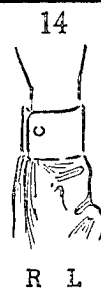
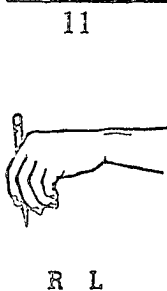
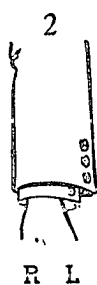
Samples A and B

Correct Test Booklet Marks

Correct Answer Sheet Marks



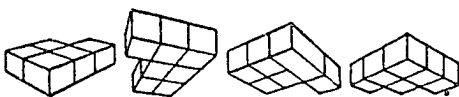
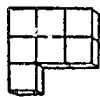
TEST 1



DIRECTIONS: In each row find the drawing that is a different view of the first drawing. Mark its number as you are told.

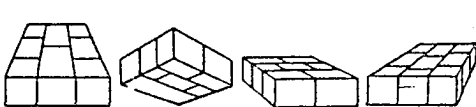
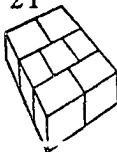
TEST 2

C



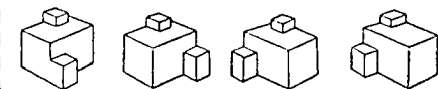
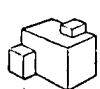
1 2 3 4 ____ C

21



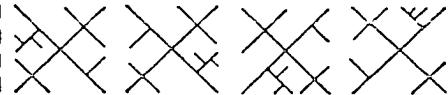
1 2 3 4 ____ 21

22



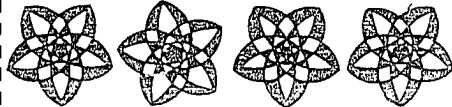
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23



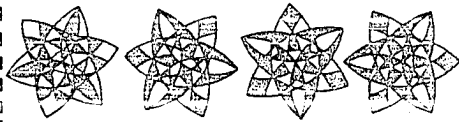
1 2 3 4 ____ 23

24



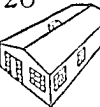
1 2 3 4 ____ 24

25



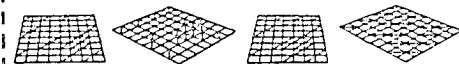
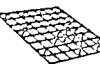
1 2 3 4 ____ 25

26



1 2 3 4 ____ 26

27



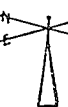
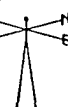
1 2 3 4 ____ 27

28



1 2 3 4 ____ 28

29



1 2 3 4 ____ 29

30



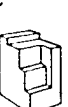
1 2 3 4 ____ 30

31



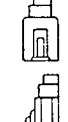
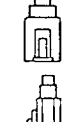
1 2 3 4 ____ 31

32



1 2 3 4 ____ 32

33



1 2 3 4 ____ 33

34



1 2 3 4 ____ 34

35



1 2 3 4 ____ 35

STOP

NOW WAIT FOR FURTHER INSTRUCTIONS

DIRECTIONS The first three pictures in each row are alike in some way. Decide how they are alike, and then find the one picture among the four to the right of the dotted line that is most like them and mark its number.

TEST 3

<p>D</p> <p>1 2 3 4 <u> </u> D</p>	<p>43</p> <p>1 2 3 4 <u> </u> 43</p>
<p>36</p> <p>1 2 3 4 <u> </u> 36</p>	<p>44</p> <p>1 2 3 4 <u> </u> 44</p>
<p>37</p> <p>1 2 3 4 <u> </u> 37</p>	<p>45</p> <p>1 2 3 4 <u> </u> 45</p>
<p>38</p> <p>1 2 3 4 <u> </u> 38</p>	<p>46</p> <p>1 2 3 4 <u> </u> 46</p>
<p>39</p> <p>1 2 3 4 <u> </u> 39</p>	<p>47</p> <p>1 2 3 4 <u> </u> 47</p>
<p>40</p> <p>1 2 3 4 <u> </u> 40</p>	<p>48</p> <p>1 2 3 4 <u> </u> 48</p>
<p>41</p> <p>OSC TEUZ</p> <p>1 2 3 4 <u> </u> 41</p>	<p>49</p> <p>1 2 3 4 <u> </u> 49</p>
<p>42</p> <p>1 2 3 4 <u> </u> 42</p>	<p>50</p> <p>1 2 3 4 <u> </u> 50</p>

DIRECTIONS: Read each group of statements below and the conclusions which follow. Then mark as you are told the number of each answer you have decided is correct.

TEST 4

- E. All four-footed creatures are animals.
All horses are four-footed.
Therefore
¹ Creatures other than horses can walk
² All horses can walk
³ All horses are animals _____ E
51. Elm Street is parallel to Oak Street.
Oak Street is parallel to Palm Avenue.
Therefore
¹ Elm Street crosses Palm Avenue
² Palm Avenue is longer than Elm Street
³ Elm Street is parallel to Palm Avenue _____ 51
52. George Washington was a skillful general.
George Washington was President of the United States.
Therefore
¹ Skillful generals make good presidents
² A President of the United States was a skillful general
³ Good presidents make skillful generals _____ 52
53. If he steers toward the land he will be wrecked, and if he steers toward the open sea he will be wrecked.
But, he must steer either toward the land or toward the open sea.
Therefore
¹ He should head for the open sea
² The coast is dangerous for ships
³ He will be wrecked _____ 53

54. If the wind changes it will either grow warmer or it will storm.
The wind does not change.
Therefore
¹ It will probably grow warmer
² The conclusion is uncertain
³ It will not grow warmer nor will it storm _____ 54
55. X is younger than Y.
Y is younger than Z.
Therefore
¹ Y is younger than X
² X is younger than Z
³ Y has lived longer than Z _____ 55
56. All circles are round figures.
A certain figure is not round.
Therefore
¹ It is oval
² It is either a square or a triangle
³ It is not a circle _____ 56
57. A is situated to the east of B.
B is situated to the east of C.
Therefore
¹ C is situated close to A
² A is situated to the east of C
³ C is nearer to A than to B _____ 57

TEST 4 (Continued)

58. If he is to complete his high school course, he must avoid wasting his energy and his money.

But, he will not avoid wasting his energy, nor will he avoid wasting his money.

Therefore

- 1 He will not complete his high school course
- 2 He will be sorry some day
- 3 He should be criticized for not doing better _____58

59. If the students are in error, your refusal to listen to their side is unreasonable.

If they are not in error, your refusal is unjust.

But, the students are in error or they are not.

Therefore

- 1 Your refusal is justifiable
- 2 Your refusal is either unreasonable or it is unjust
- 3 Your refusal may be reconsidered later _____59

60. Three boys are up on a ladder. Tom is farther up the ladder than Paul.

Jim is farther up than Tom.

Which boy is in the middle position on the ladder?

- 1 Tom
- 2 Paul
- 3 Jim _____60

61. A is either B or C or D.

A is not B.

Therefore

- 1 A is C
- 2 A is either C or D
- 3 The conclusion is uncertain _____61

62. If he were loyal he would not speak unkindly of his family in earnest.

If he were wise he would not speak unkindly of them in jest.

He speaks unkindly either in earnest or in jest.

Therefore

- 1 He is either not loyal or not wise
- 2 He is unkind
- 3 The conclusion is uncertain _____62

63. If A is B, E is F; if C is D, G is H.

Either A is B or C is D.

Therefore

- 1 Either A is F or C is H
- 2 Either E is F or G is H
- 3 The conclusion is uncertain _____63

64. A is between B and C.

B is between C and D.

Therefore

- 1 A is not between C and D
- 2 A is between B and D
- 3 A is nearer to B than to D _____64

65. Five cities (P, Q, R, S, and T) are in the same state.

S is between P and Q. T is between P and S.

R is the same distance from P and T, and S is the same distance from P and Q.

Therefore

- 1 Q is nearer to T than to S
- 2 R is nearer to Q than to P
- 3 T is nearer to P than to Q _____65

STOP

NOW WAIT FOR
FURTHER INSTRUCTIONS

DIRECTIONS: In each row of numbers below, there is one that does not belong. Find the number that should be omitted from each row among the answer numbers on the right, and mark its letter as you are told. When you have finished as many as you can from 66 to 75, read the Directions in the middle of the page and proceed with rows 76 to 80.

TEST 5

- | | | | | | | | | | | | | | | | |
|-------|---------------|----|----|----|----|----|----|----|----|------|-----------------|------|------|------|-----------|
| F. | 2 | 4 | 6 | 8 | 9 | 10 | 12 | 14 | | a 6 | b 9 | c 10 | d 12 | e 14 | — F |
| (66). | 18 | 15 | 13 | 12 | 9 | 6 | 3 | | | a 13 | b 12 | c 9 | d 6 | e 3 | — 66 |
| (67). | $\frac{1}{2}$ | 0 | 1 | 2 | 4 | 8 | 16 | | | a 1 | b $\frac{1}{2}$ | c 0 | d 8 | e 16 | — 67 |
| (68). | 4 | 5 | 7 | 10 | 11 | 13 | 14 | 16 | 17 | 19 | a 7 | b 10 | c 11 | d 13 | e 14 — 68 |
| (69). | 56 | 49 | 43 | 38 | 35 | 34 | 31 | 29 | | | a 43 | b 38 | c 35 | d 31 | e 29 — 69 |
| (70). | 7 | 9 | 10 | 13 | 16 | 19 | | | | | a 7 | b 9 | c 10 | d 13 | e 19 — 70 |
| (71). | 27 | 25 | 22 | 17 | 12 | 7 | | | | | a 27 | b 22 | c 25 | d 17 | e 12 — 71 |
| (72). | 3 | 5 | 6 | 11 | 12 | 14 | 15 | 19 | 20 | 21 | a 19 | b 15 | c 14 | d 11 | e 6 — 72 |
| (73). | 37 | 34 | 31 | 29 | 27 | 24 | 22 | 21 | 19 | | a 37 | b 31 | c 27 | d 24 | e 22 — 73 |
| (74). | 1 | 2 | 4 | 7 | 11 | 15 | 16 | 22 | | | a 1 | b 4 | c 15 | d 16 | e 22 — 74 |
| (75). | 18 | 21 | 19 | 22 | 20 | 22 | 23 | 21 | 24 | | a 18 | b 19 | c 20 | d 21 | e 22 — 75 |

DIRECTIONS: Go right on with the following until told to stop. In each row of numbers below, the numbers grow larger or smaller in a regular series of whole numbers. Decide what numbers are missing, find them among the answers on the right, and mark the letter of your choice for the correct answer.

- | | | | | | | | | | | | | | | | |
|-------|--|-------|-------|-------|-------|-------|-------|-------|-------|--------------|--------------|--------------|------|---|--|
| X. | 12 | | 14 | 15 | | | 18 | | | a 13, 15, 16 | b 13, 15, 17 | c 13, 16, 17 | | | |
| | (In Sample X the correct answer is C, meaning 13, 16, 17.) | | | | | | | | | d 14, 16, 17 | e 15, 16, 18 | | C | X | |
| (76). | 15 | 16 | 18 | ..... | 21 | ..... | 24 | 25 | ..... | a 20, 23, 27 | b 19, 22, 27 | c 19, 23, 29 | | | |
| | | | | | | | | | | d 20, 22, 26 | e 19, 23, 27 | | — 76 | | |
| (77). | 17 | 19 | ..... | ..... | 23 | ..... | 26 | 28 | 29 | a 21, 22, 24 | b 20, 21, 25 | c 20, 21, 24 | | | |
| | | | | | | | | | | d 20, 22, 25 | e 21, 22, 25 | | — 77 | | |
| (78). | 27 | 29 | ..... | 28 | ..... | 27 | 24 | ..... | 23 | a 22, 24, 26 | b 21, 25, 27 | c 22, 25, 26 | | | |
| | | | | | | | | | | d 25, 26, 25 | e 26, 25, 26 | | — 78 | | |
| (79). | 60 | ..... | 55 | 51 | 49 | ..... | ..... | 40 | 37 | a 57, 45, 43 | b 59, 45, 42 | c 58, 46, 42 | | | |
| | | | | | | | | | | d 58, 45, 42 | e 56, 46, 41 | | — 79 | | |
| (80). | 48 | ..... | 44 | 41 | ..... | 36 | 34 | ..... | 28 | a 46, 38, 31 | b 45, 39, 30 | c 46, 39, 31 | | | |
| | | | | | | | | | | d 47, 38, 42 | e 47, 39, 30 | | — 80 | | |

DIRECTIONS: Work these problems on a sheet of scratch paper. Mark as you are told the letter of each correct answer.

TEST 6

- G. If a man earned \$25.00 and spent \$10.00, how much money would he have left? a \$5.00
b \$15.00
c \$20.00
d \$10.00 —G
-
81. How many picture post cards can you buy for 15 cents at the rate of 3 for 5 cents? a 9
b 3
c 15
d 34 —81
-
82. How many feet of railroad track can be laid with 750 ties if 25 ties are needed for each 50 feet? a 1250
b 1500
c 325
d 30 —82
-
83. What number if multiplied by 3 is equal to 2 times 9? a 3
b 9
c 18
d 6 —83
-
84. A sample rug is 12 inches long and 9 inches wide. How long will a larger rug of the same proportions be if it is 36 inches wide? a 108 in.
b 48 in.
c 15 in.
d 36 in. —84
-
85. What is the number which if divided by 4 is equal to $\frac{1}{6}$ of 72? a 12
b 18
c 48
d 3 —85
-
86. A high school student borrowed \$75.00 for one year at 6% to start a chicken ranch. How many little chickens must he sell at 10 cents each to pay back the money he borrowed with interest? a 45
b 450
c 750
d 795 —86
-
87. A dealer allowed an old customer a discount of 10% on the marked price of bookcases. What is the marked price of a bookcase for which this customer paid him \$36.00? a \$40.00
b \$32.40
c \$3.60
d \$39.60 —87

TEST 6 (Continued)

88. A circular flower bed 7 feet in diameter is to be bordered by plants set one foot apart. What will be the cost of the plants at the rate of 2 for 15 cents? (Circumference of a circle is about $3\frac{1}{7}$ times the diameter.)
- a 52¢
b \$1.65
c 70¢
d \$1.57½ —88
-
89. A man placed four stepping stones one foot square in a row in a section of his garden so that there were equal spaces on all four sides of each of the stones. If the section was 3 feet wide, how long was it?
- a 12 ft.
b 3 ft.
c 9 ft.
d 8 ft. —89
-
90. Ben lives 1.5 miles east of the library. James lives 2.5 miles directly west of the library. On a scale of $\frac{1}{2}$ inch = 1 quarter mile, how many inches will represent the distance between the boys' houses?
- a 8
b 16
c 6
d 2 —90
-
91. What is the number which if added to 5 is 3 less than $\frac{1}{3}$ of $\frac{3}{5}$ of 60?
- a $\frac{1}{2}$
b 9
c 4
d 12 —91
-
92. A gallon of water weighs 8.4 pounds. A gallon of gasoline weighs 68 per cent as much as a gallon of water. A pilot flying the air mail carried 50 gallons. How many pounds did this gasoline weigh?
- a 285
b 285.6
c 278.6
d 380 —92
-
93. A coffee shop buys a blend of coffee composed of $\frac{2}{3}$ of Grade A at 60 cents a pound and $\frac{1}{3}$ of Grade B at 30 cents a pound. If they change the mixture, using $\frac{1}{3}$ of Grade A and $\frac{2}{3}$ of Grade B, how much will they save on every 10 pounds of coffee?
- a 3¢
b 10¢
c 30¢
d \$1.00 —93
-
94. A man's will provided that his estate of \$15,000.00 should be divided as follows: $\frac{2}{5}$ to his wife and $\frac{1}{5}$ each to three children, except that in the event any of the children were deceased, their share should be divided equally between the remaining children and the wife. Two children were killed in an automobile accident. How much did the remaining child receive from the estate?
- a $\frac{1}{5}$
b \$6000.00
c \$4500.00
d \$5000.00 —94
-
95. If a set of tires for one automobile costs one-half of what a set costs for another automobile; and if three sets of the cheaper tires last only as long as two sets of the more expensive kind, the total cost of the cheaper tires during a given period will average what fraction or per cent of the cost of the more expensive kind?
- a $\frac{1}{3}$ or 33⅓%
b $\frac{1}{2}$ or 50%
c $\frac{3}{4}$ or 75%
d $\frac{3}{8}$ or 37½% —95

DIRECTIONS: Mark as you are told the number of the word that means the same or about the same as the first word.

TEST 7

- H. blossom ¹ tree ² vine
³ flower ⁴ garden _____ H
96. inefficient ¹ avoidable ² able
³ incompetent ⁴ unruly _____ 96
97. confiscate ¹ assert ² seize
³ compile ⁴ comfort _____ 97
98. malign ¹ insure ² muffle
³ slander ⁴ invade _____ 98
99. whimsical ¹ accurate ² weighty
³ fashionable ⁴ fanciful _____ 99
100. avarice ¹ virtue ² prominence
³ greed ⁴ honor _____ 100
101. eradicate ¹ destroy ² vacate
³ use ⁴ solve _____ 101
102. impeachment ¹ prayer ² burial
³ resignation ⁴ accusation _____ 102
103. discordant ¹ clashing ² sad
³ unsteady ⁴ distinctive _____ 103
104. titanic ¹ reddish ² acid
³ large ⁴ ancient _____ 104
105. edict ¹ decree ² diction
³ sovereign ⁴ edition _____ 105
106. recumbent ¹ saving ² curved
³ reclining ⁴ cumbersome _____ 106
107. caprice ¹ action ² whim
³ capture ⁴ tact _____ 107
108. expedite ¹ expel ² dictate
³ delay ⁴ hasten _____ 108
109. loquacious ¹ talkative ² logical
³ legal ⁴ delicious _____ 109
110. idiosyncrasy ¹ ode ² peculiarity
³ office ⁴ imbecility _____ 110
111. perfidious ¹ treacherous ² glad
³ studious ⁴ responsible _____ 111
112. artifice ¹ artless ² hate
³ definition ⁴ device _____ 112
113. anomaly ¹ ceremony ² illness
³ irregularity ⁴ normal _____ 113
114. reciprocal ¹ charming ² mutual
³ agreeable ⁴ meditative _____ 114
115. travesty ¹ burlesque ² tragedy
³ meeting ⁴ hotel _____ 115
116. obtuse ¹ pointed ² reversible
³ blunt ⁴ objectionable _____ 116
117. abstemious ¹ stormy ² bright
³ mournful ⁴ temperate _____ 117
118. tangent ¹ blend ² agent
³ touching ⁴ sensing _____ 118
119. extraneous ¹ extra ² foreign
³ transparent ⁴ noisy _____ 119
120. erudite ¹ crude ² learned
³ rugged ⁴ polite _____ 120
121. ameliorate ¹ improve ² harden
³ dilute ⁴ decorate _____ 121
122. malapert ¹ sick ² lazy
³ slow ⁴ saucy _____ 122
123. opulence ¹ jewel ² generosity
³ wealth ⁴ honor _____ 123
124. urbanity ¹ loyalty ² refinement
³ weakness ⁴ barbarism _____ 124
125. propinquity ¹ nearness ² speed
³ diligence ⁴ propriety _____ 125
126. trajectory ¹ court ² project
³ area ⁴ curve _____ 126
127. corollary ¹ crown ² inference
³ enclosure ⁴ supersede _____ 127
128. ostensible ¹ actual ² available
³ genuine ⁴ pretended _____ 128
129. salient ¹ salty ² outstanding
³ merciful ⁴ agreeable _____ 129
130. probity ¹ uprightness ² weight
³ suspicion ⁴ interference _____ 130
131. acephalous ¹ false ² warlike
³ headless ⁴ sensible _____ 131
132. porphyry ¹ papyrus ² rock
³ cave ⁴ manuscript _____ 132
133. strident ¹ muscular ² shrill
³ battered ⁴ strong _____ 133
134. effete ¹ exhausted ² festive
³ fragile ⁴ plentiful _____ 134
135. tyro ¹ scold ² village
³ law ⁴ beginner _____ 135
136. perimeter ¹ measure ² sound
³ boundary ⁴ difficulty _____ 136
137. diurnal ¹ seasonable ² timely
³ occasional ⁴ daily _____ 137
138. obloquy ¹ disaster ² blame
³ pride ⁴ obligation _____ 138
139. eyot ¹ island ² lake
³ river ⁴ insect _____ 139
140. detritus ¹ fossil ² dextrous
³ fragment ⁴ poem _____ 140
141. palladium ¹ burden ² safeguard
³ title ⁴ residence _____ 141
142. quiddity ¹ oddity ² doubt
³ essence ⁴ presence _____ 142
143. ambient ¹ slow ² surrounding
³ surprising ⁴ well-wishing _____ 143
144. orrery ¹ book ² prophecy
³ apparatus ⁴ error _____ 144
145. syzygy ¹ separation ² choice
³ conjunction ⁴ nonsense _____ 145