A STUDY OF THE RELATIONSHIP BETWEEN SELECTED BACKGROUND FACTORS OF STUDENT TEACHERS AND PUPIL OPINION OF CERTAIN TEACHING TRAITS

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John V. Hicks

Major professor W K DURR

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ABSTRACT

A STUDY OF THE RELATIONSHIP BETWEEN SELECTED BACKGROUND FACTORS OF STUDENT TEACHERS AND PUPIL OPINION OF CERTAIN TEACHING TRAITS

by William Randall Sleeper

Statement of the Problem

This study was conceived as a means of investigating the relationship between selected experiential background factors of secondary education students at Central Michigan University and pupil opinion of certain teaching traits these students exhibit in student teaching.

The background factors considered were pre-college in time of occurrence and social in nature.

The selection of teaching traits investigated was based on studies of the reactions of high school boys and girls to certain teacher behavior.

Procedure

Pre-college background factors of senior secondary education students were inventoried by means of a questionnaire. Later, as these students did their student teaching, opinions were obtained from their pupils concerning certain exhibited teaching traits.

In this study an analysis was made of the degree of relationship between 19 background factors of the student teachers and 10 teaching traits of the student teachers as rated by their pupils.

Findings

Two hypotheses were posited to aid in the process of constructing answers to questions which pertained to the relationship between selected experiential background factors of student teachers and pupil opinion of certain teaching traits.

1. The first hypothesis was stated as follows: No relationship exists between pupil opinion of certain teaching traits and selected background factors of student teachers.

   As a result of the evidence presented in this study there is little reason to invalidate or cast serious doubt upon the general null hypothesis. Though nine items were discovered where some significance was found, the relationships were entirely too small to permit usefulness of forecasting efficiency.

2. No relationship exists between pupil opinion of the student teacher's all-around teaching ability and certain combinations of home community size of both pupils and student teachers.

From the evidence reported in this study there is little reason to invalidate or cast serious doubt upon the general null hypothesis.

If those persons involved with teacher education and teacher evaluation continue to believe in the importance of experiential background factors, then they must search out ways of measuring the effect of these factors upon teacher effectiveness. For this study has revealed a great deal of evidence to support the conclusion that pupil opinion ratings, on an instrument such as the one utilized, do not discriminate sufficiently between the background factors studied to warrant attaching strong positive or negative values to any single factor.

Recommendations

1. Superintendents, directors of student teaching, and supervising teachers should use extreme caution in utilizing experiential background factors as instruments of evaluating the potential of future teachers.
2. Teacher education institutions should continue the search for adequate instruments of prediction to use in screening future teachers, as the evidence disclosed in this study does not support the use of experiential background factors for that purpose.
3. Teacher education institutions which are basing considerable portions of their pre-student teaching experience program upon the experiential background

of the students, will have to continue to seek evidence to support their contention that these background factors make any significant difference in teacher effectiveness, at least, as rated by pupils.

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by

William Randall Sleeper

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W.R.S.

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CHAPTER I

INTRODUCTION

This study was designed to add to the information in existence concerning a question that many educators already believe to be answered. At least, some appear to function in their positions as if they so believed. The question is one dealing with the importance of the pre-college experiential background of prospective teachers. Through the years superintendents have asked applicants for teaching positions to describe their home background, participation in high school activities, community participation, and other information of an experiential nature. Other things being equal these factors were apparently a deciding influence in the employment of applicants.

Superintendents are, of course, not the only persons who operate under the assumption that pre-college social experiences are important determiners of an individual's readiness for teaching. Directors and supervisors of student teaching make distinct evaluations of these experiences in planning for the student teaching program. In fact, it is reported by some institutions that when a student's academic record is poor, his experiential background may be the deciding factor in permitting him to enroll in student teaching.[1]

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[1]Fligor, R. J., Analysis of the Evaluation, Use, and Value of Certain Competancies for Beginning the Student Teaching Experience, pp. 55-58.

Though the evidence in existence, for the most part, fails to show any strong relationships between experiential factors and teacher effectiveness, the measurements have been made in ways differing from those employed in this study. The evidence collected in the present study should make a particularly meaningful contribution as it supports or rejects the evidence already in existence on this subject. If administrators are going to continue to evaluate the experiential background of applicants, then it is important that research continue in an effort to measure the influence of these factors on teacher effectiveness.

The Problem

This study was conceived as a means of investigating the relationship between selected experiential background factors of secondary education students at Central Michigan University and pupil opinion of certain teaching traits these students exhibit in student teaching.

The background factors considered were pre-college in time of occurrence and social in nature.

The selection of teaching traits studied was based on studies made of the reactions of some 30,000 boys and girls to certain teacher behavior.[2]

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[2]Bryan, R. C., "Student Reactions and Merit Salary Schedules," Faculty Contributions, 4:12, July, 1958.

Null Hypotheses

1. No relationship exists between pupil opinion ratings of certain teaching traits and selected experiential background factors of student teachers. The variables to be tested in this hypothesis are listed below.[3]

Teaching traits

Knowledge of subject taught

Ability to explain clearly

Fairness with students

Maintains good discipline

Sympathetic understanding

Amount learned

Makes class interesting

Business-like manner

Value of subject to pupils

All-around teaching ability

Experiential background factors

Age

Number of residence changes

Size of town in which student was reared

Number of younger brothers

Number of older brothers

Number of younger sisters

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[3]Complete statements, as used in the questionnaire, may be found in the Appendix B.

Number of older sisters

Total siblings

Socioeconomic status

Church attendance

Size of high school attended

Number of varsity awards

Number of intermural activities

Number of organizations in which student participated

Leadership score

Member of Future Teachers Club

Member of Student Council

2. No relationship exists between pupil opinion ratings of all-around teaching ability and certain combinations of home community size of both pupils and student teachers.

Definition of Terms[4]

The term cooperating school is used to designate a school which is not controlled or supported by the college but which does provide facilities for student teaching in the teacher education program.

The term coordinator is used to mean a person who serves as the college representative and who is responsible

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[4]Where feasible definitions adopted and approved by the Association for Student Teaching have been used.

for supervising a group of student teachers, usually in a resident center.

The term director of student teaching is used in this study to mean the person designated by the college with administrative responsibility for organizing and coordinating the college's program of professional experiences.

The term experiential background is used to mean those pre-college experiences of a social nature which the secondary education students identify for this study on the Student Teacher Questionnaire.[5]

The term laboratory school is used to mean a school which is controlled and supported by the college and which is organized as an integral part of the teacher education program to provide significant opportunities to study and relate the various phases of the teacher's activities both in and out of school.

The term pupil is used to mean any boy or girl enrolled in the junior or senior high schools, grades 7-12, which participated in this study.

The terms pupil rating and pupil opinion are used interchangably to refer to the opinion of pupils concerning certain qualities of their teachers. This opinion was

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[5]A copy of the Student Teacher Questionnaire may be found in Appendix A.

collected through the use of a questionnaire of the rating scale variety.[6]

The term socioeconomic status is used to mean the relative position assigned to the student teacher on the North-Hatt[7] ranking of occupations. This position was determined by the occupation of the person contributing most to the support of the student teacher's family during his pre-college life.

The term student is used to mean a person enrolled in the secondary education program at Central Michigan University.

The term student teacher is used to mean the college student who is doing student teaching.

The term student teaching is used to mean the period of guided teaching during which the student takes increasing responsibility for the work with a given group of learners over a period of consecutive weeks.

The term student teaching center is used to mean a community in which the student teacher lives and participates in the community life and activities as a part of his assignment in student teaching.

The term supervising teacher is used to mean one who teaches children or youth and who also supervises student teaching.

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[6]A copy of the Pupil Opinion Questionnaire used in this study may be found in Appendix B.

[7]North, C. C., and Hatt, P. K., "Jobs and Occupations: A Popular Evaluation, "Sociological Analysis, pp. 464-474.

The term teacher education institution is used to mean any school of higher learning where individuals may study for and be graduated with teaching certificates.

The term teaching traits is used to mean a set of environmental conditions which form a part of the composite of the classroom learning situation. Specifically the term refers to those items rated by pupils on the Pupil Opinion Questionnaire.

Major Assumptions

This study was based on the following assumptions:

1. That an investigation of the relationship between selected background factors and pupil opinion of the teaching traits of student teachers constitutes a worthwhile study. This assumption appears reasonable in view of the facts that (a) even though some information exists on this topic, superintendents of schools and supervisors of student teaching continue to give emphasis to the experiential background of their applicants and student teachers in evaluation, (b) additional information on this topic can serve to put these evaluations in their proper perspective, (c) if significant relationships were found, teacher education institutions could use the results to improve their measures of prediction of teacher effectiveness, and (d) these same institutions could

use the results to analyze more carefully their pre-student teaching experience program.

2. That pupil opinion is an important criterion when judging student teacher effectiveness. This assumption appears reasonable for, as Bush points out,

> The findings of this study suggest that the personal liking of a pupil for his teacher is one of the most powerful factors in bringing about an effective learning relationship between the teacher and the pupil. The study shows clearly that those teachers who are most liked personally by their pupils tend to be the most competent. Pupil liking for the teacher is highly related to pupil liking for the subject and the subject-matter achievement. There is a marked tendency for those pupils who most like the teacher to feel that they are learning more.[8]

3. That pupils and student teachers respected the motives of the investigator and responded honestly to his questions.

4. That the techniques employed for collecting data were adequate for their intended purpose.

5. That the sample studied is typical of a larger universe and that the findings of this investigation will have application beyond that of the studied subjects.

Procedure

The following steps were taken in carrying out this study.

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[8]Bush, R. N., The Teacher-Pupil Relationship, p. 189.

1. The literature which is significantly related to this study was reviewed.

2. A questionnaire form[9] was constructed to collect specific information regarding certain background factors of student teachers; factors which, from such evidence as Fligor's[10] were believed to be important considerations by directors of student teaching and supervising teachers.

3. A pupil opinion questionnaire[11] was adopted from among those carefully prepared by previous investigators.

4. A pilot study of four student teachers and their pupils was completed for purposes of improving the instruments and standardizing the procedure of administration.

5. Completed student teacher questionnaires were administered to secondary education students in their psychology and education classes. Pupil opinion questionnaires were distributed to schools by coordinators, administered by supervisors, and then returned to the investigator by the coordinators.

6. Data gathered from the questionnaires were tabulated, analyzed, and interpreted.

7. Conclusions were drawn; and recommendations were made.

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[9]See Appendix A.

[10]Fligor, op. cit. pp. 55-58.

[11]See Appendix B.

Delimitation of the Study

This study was delimited in the following ways:

1. It was limited to senior students in secondary education who were following Plan A[12] at Central Michigan University during the 1959-1960 school year.

2. Pupil opinion of each student teacher was limited to the responses from one regularly instructed class.

3. It was limited in a geographical sense, in that the individuals participating in the pupil opinion phase of the study were restricted to those public high schools where Central Michigan University has cooperative working relationships resulting in the establishment of a student teaching center.[13]

Limitations of the Study

This study was subjected to certain limitations because of the nature of the problem and restrictions on the investigator. These include:

1. An element of fear is aroused in many teachers and administrators when any type of rating of their effectiveness is attempted. This fear, particularly of pupil rating, may have been reflected in the presentation of the Pupil Opinion Questionnaire by the supervising teachers.

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[12]Central Michigan University, Bulletin, 1959-1960, p. 97.

[13]A list of student teaching centers may be found in Appendix B.

2. Whenever a single criterion, such as pupil opinion, is used to judge teacher effectiveness, there are certain limitations imposed. The comprehensiveness of teaching and the relative immaturity of the secondary school pupil are two such factors.

3. The fact that only one investigator with limited financial resources was involved in the direction of this study may have resulted in too little control of the questionnaire administration.

Need for the Study

Will a varied experiential background make a teacher more effective in the classroom? The need for this study is based on the fact that people in strategic positions of authority are answering this question in the affirmative without substantial objective evidence to support this position. Corey referred to the manner in which every up-to-date superintendent of schools will appraise the many background factors, from temperance to outside activities, in order that he may be better able to judge the candidate's potential teaching ability.[14]

Directors of student teaching and supervising teachers are currently among the strongest supporters of the importance of pre-college experiences. The 1959 Yearbook of the

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[14]Corey, S. M., "The Present State of Ignorance About Factors Affecting Teaching Success," Educational Administration and Supervision, 18:481-490, October, 1932.

Association for Student Teaching explains the importance of securing a great deal of information about the student teacher's background. It points out that the supervising teacher will want to know the student teacher's achievements, his attitudes and his enthusiasms. "He needs to know about the student's family and where he has lived; the circumstances in his life and in his environment; the schools he has attended. . ."[15] This is only one illustration of the many ways in which those in positions of advantage are stressing the importance of experiential background factors. Most books written for supervising teachers contain sample forms to be used in collecting such information; a prime example is Guiding Your Student Teacher by Curtis and Andrews.[16]

Fligor found evidence of this same concept and makes the following statement concerning it: "It seems that both directors and supervisors of student teaching evaluated their student teachers with reference to their background of experiences prior to entrance in college. In many instances this was a very subjective evaluation."[17]

Since importance is being given to experiential backgrounds, it is this investigator's intention to determine whether such backgrounds are significantly related to certain

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[15]Association for Student Teaching, The Supervising Teacher, p. 44.

[16]Curtis, D. K. and Andrews, L. O., Guiding Your Student Teacher, pp. 345-346.

[17]Fligor, op. cit., pp. 57-58.

teacher traits as perceived by pupils. If these factors are important it is necessary that efforts continue to be made to relate them to some measure of teacher effectiveness. Up to the present time investigations appear to reveal little or no relationship.

Predictive possibilities. Teacher education institutions are continually searching for methods of predicting success of candidates for teaching certificates. If relationships between certain background factors and teaching effectiveness were found to exist this would be a real asset in planning individualized programs for students to strengthen areas where shortcomings are discovered. It is also possible that failure in student teaching might be avoided by a better method of screening. Actually there are institutions currently using their knowledge of the students experiential background to build pre-student teaching experience programs to better prepare students for the teaching experience. Fligor[18] discovered this in his survey and interestingly enough, Sinclair[19] found no testably significant difference between groups of student teachers prepared with and without the "experience-type" program.

Central Michigan University. The need for this study has existed at Central Michigan University for some time.

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[18]Ibid., pp. 57-58.

[19]Sinclair, W. W., Analysis of Three Pre-Student Teaching Experiences In the Preparation of Elementary School Teachers, 157 pp.

The pressures for up-dating programs have been particularly strong during recent years. The changes which have been contemplated, and in some cases made, have repeatedly involved experience-type programs. The theory behind these changes is much the same as that discussed above; that is, students with incomplete experiential backgrounds should be given opportunities early in their college careers to fill the void. The intention of a program like this is that these experiences of a social nature are very important to effective teaching. This investigator hopes to add significantly to the information available on the subject, so that wise judgments may be made in the future when change is considered.

Organization of the Study

The remainder of the study is presented in four chapters. Chapter II reviews the literature which is significantly related to this study. Chapter III outlines the method of investigation. Chapter IV contains an analysis of the relationship which exists between certain background factors and pupil opinion of student teachers, and Chapter V includes a summary and discussion of the findings, conclusions, and recommendations.

CHAPTER II

REVIEW OF THE LITERATURE

The related literature reviewed for this study was found to be concentrated largely in two major areas of writing--that of pupil rating of teachers and its correlates, and that of prediction of teacher effectiveness. Though identifiable these two areas are not entirely separable, as there is considerable overlapping. However, the investigator has endeavored to organize the reviews in this way.

Information gained from the pupil rating of teachers studies will be discussed first as they are more closely related to the problem investigated.

Pupil Ratings of Teachers

Many investigators have studied pupil rating as a measure of teacher effectiveness and instructor improvement. As might be expected, one of the first questions which faced these investigators concerned the reliability of pupil ratings. As early as 1922 and 1927, Knight[1] and Guthrie[2] concluded that there was considerable agreement among students concerning the abilities of their teachers.

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[1]Knight, F. B., "Qualities Related to Success in Teaching," Teachers College Contributions to Education, no. 120, Columbia University, 1922, 89 pp.

[2]Guthrie, E. R., "Measuring Student Opinion of Teachers," School and Society, 25:175-176, February, 1927.

Using the chance half technique they received reliability coefficients as high as .91 and no lower than .56. Since the date of these studies their findings have been confirmed by Remmers,[3] Bryan,[4] and Amatora.[5] There are several investigators who have reported findings which have a bearing on the reliability of student rating but in which correlation coefficients are not reported. Fritz[6] discovered that 89 pupils had considerable difficulty in duplicating their judgments on two ratings of one teacher obtained on a seven-part scale when the rating periods were scheduled a week apart. While Porter[7] found, in working with student teachers, that there was great variance in the leniency expressed by different classes. Since he presented no statistical data in his report it is difficult to compare his study with others. Neither does he probe the possibility that some other factor, such as teacher merit, could be the reason for the variance in class responses. In summary, he points to the consistency

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[3]Remmers, H. H., "To What Extent Do Grades Influence Student Ratings of High School and College Students' Judgments of Their Teachers," Journal of Applied Psychology, 18:619-630, October, 1934.

[4]Bryan, R. C., "Reliability, Validity, and Needfulness of Written Student Reactions to Teachers," Educational Administration and Supervision, 27:655-665, December, 1941.

[5]Amatora, S. M., "A Diagnostic Teacher-Rating Scale," Journal of Psychology, 30:395-399, October, 1950.

[6]Fritz, M. F., "The Variability of Judgment in the Rating of Teachers by Students," Educational Administration and Supervision, 12:630-634, December, 1926.

[7]Porter, W. A., "Pupil Evaluation of Practice Teaching," Journal of Educational Research, 35:700-704, May, 1942.

of pupil agreement concerning the best and poorest teachers, but finds judgments of the middle group quite varied, a common problem when using rating scales.

Bryan makes the following statement with respect to the reliability of student reactions:

> From a statistical viewpoint, the responses of 30 pupils to a question dealing with sympathy, i.e., 'What is your opinion concerning the sympathy shown the students by this teacher: excellent, good, average, below average, or poor?' will produce a reliability coefficient of .90.[13] Student responses to the Bryan questionnaire will produce reliability coefficients (chance half method) as high as or higher than those produced by the better standardized tests. Thus it may be said that there is much agreement among the opinions students express concerning their teachers. All the many published studies concerning the reliability of student reactions agree that they are adequately reliable for all practical purposes.

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[13]Bryan, R. C., Pupil Rating of Secondary School Teachers, Contributions to Education, No. 708, Bureau of publications, Teachers College, Columbia University, 1937, 96 pp.[8]

A second question around which a cluster of studies may be found is that of whether or not there is any correlation between pupil ratings and other measures of teacher effectiveness. Teacher ratings by administrators and peers have, in general, received very low coefficients of correlation when tested with pupil ratings of teachers. Varying criteria are used for purpose of comparison, but it is interesting to note that relative few studies have used pupil gains.

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[8]Bryan, R. C., "Student Reactions and Merit Salary Schedules", Faculty Contributions, 4:21, July, 1958.

Self ratings by teachers were compared to pupil ratings, on comparable scales, by Davenport,[9] and the obtained coefficients of correlation were found to be very low, often approaching zero. He implies in his analysis that the teacher's philosophy and her actual practice may not be the same, and this through no fault of her own. Class size, for example, is not teacher controlled, but does have important effects on teacher procedure.

As was mentioned previously, pupil gain has been infrequently used as the criterion of teacher effectiveness. The two studies to be cited here revealed only very small relationships. In a study made by Lins,[10] he concludes that the small relationship may have been due to either the small sample or to the manner in which the students who were to rate each teacher were chosen. Differences in the following traits were found to be significant at the .01 level by Remmers:[11] university student ratings of instructors and care of communal apparatus.

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[9]Davenport, K., "An Investigation into Pupil Rating of Certain Teaching Practices," Purdue University Studies in Higher Education, no. 49, 1944, 64 pp.

[10]Lins, L. J., "The Prediction of Teaching Efficiency," Journal of Experimental Education, 15:2-60, September, 1946.

[11]Remmers, H. H.; Martin, R. D.; and Elliott, D. N., "Are Students' Ratings of Instructors Related to Their Grades?" In H. H. Remmers(Ed.). Student Achievement and Instructor Evaluation in Chemestry, Purdue University Studies in Higher Education, 66:17-26, July, 1949.

Significant at the .02 level were: university student ratings and supervision during tests, knowledge of chemistry, and returning test.

There has been some investigation of a possible relationship between grades given and pupil rating of teachers. Certainly if a relationship were to be found it would have a significant bearing on the validity assigned to students' ratings of their teachers. Bryan[12] found no significant correlation in his study of 22 senior high and 41 junior high teachers and their pupils. While Remmers,[13] however, found coefficients of substantial size, but in both positive and negative directions. He explains this contrast in terms of methodology. Morsh and Wilder sum up the influence of grades as follows:

> If one assumes that good students will approve of instructors who conduct their teaching at a high level (and over the heads of the poorer students), then, a positive correlation between student ratings and grades would result. Conversely, if the instructor pitches his teaching at the level of the weaker students, the brighter students will disapprove and a negative correlation will result. This hypothesis would account both for the range of coefficients obtained and for the fact that when correlations are not computed separately for each instructor, coefficients of negligible magnitude are found.[14]

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[12]Bryan, R. C., "Pupil Ratings of Secondary-School Teachers," Teachers College Contributions to Education, No. 708, 1937, 96 pp.

[13]Remmers, Martin, and Elliott, op. cit., pp. 17-26.

[14]Morsh, J. E. and Wilder, E. W., Identifying the Effective Instructor: A Review of Quantitative Studies, 1900-1952, USAF Personel and Training Research Center, 1954 p. 35.

A number of factors other than grades have been examined in the light of their possible influence on pupil rating of teachers. Some of the factors which have been considered have been age and sex of teacher, length of acquaintance with pupils, pleasurable personal relationship between pupil and teacher, and whether or not the subject taught by the teacher was the pupils' favorite subject. Brookover has contributed two studies in this area. His first[15] in 1940 was a study of 1139 pupils and 37 teachers, in which it was found that for 22 teachers the correlation between interaction and teaching effectiveness was .50 or higher, while only 15 were lower than .50. The correlation between the mean ratings of all pupils on the interaction scale with those of the teaching effectiveness scale was .639. There were no significant differences among sex, age, classification, age or sex of the teachers and the way pupils responded to either of the scales.

Brookover's second study[16] in 1945 was a study of 66 Indiana High School American History teachers in which selected social factors were correlated with both pupil rating and pupil gain. The conclusions which follow were

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[15]Brookover, W. B., "Person-Person Interaction Between Teachers and Pupils and Teacher Effectiveness," Journal of Educational Research, 34:272-287, December, 1940.

[16]Brookover, W. B., "The Relation of Social Factors to Teaching Ability," Journal of Experimental Education, 13:191-205, June, 1945.

the result of a minor hypothesis in the study and bear direct relationship to the present study.

> 1. The nature of the pupil's personal relationship with their teachers affects their ratings of the teachers' abilities. The more friendly the personal relationship the higher the ratings of teaching ability . . although the students' relationship with their teachers was found to be negatively correlated with the extent of their learning, the students apparently feel that they learn more from the teachers with whom they have a close relationship than from those with whom they are less closely associated.
>
> 2. The pupils' ratings of teaching ability are positively related to the age of the teachers. The relation between length of acquaintance is also a positive correlation between pupils' ratings of ability and the length of time the teacher had taught in the school. Married teachers are more frequently rated high or low, while single teachers are more frequently given average ratings of ability.
>
> 3. The pupils ratings are not correlated with the frequency of the teachers' church attendance in the community. However, those teachers who do not participate in other than church activities are considered significantly better teachers by their pupils than those who do participate in such activities.
>
> 4. It seems that pupils are favorably impressed in their opinions of a teacher's ability by long association with him.
>
> 5. Teachers who are better adjusted to their social situation were considered better teachers by their pupils.[17]

In 1954 Drawhorne[18] studied a group of eight student

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[17] Ibid., p. 205.

[18] Drawhorne, C. L., "Relationship Between Pupil and Student-Teacher Interaction and Pupil Ratings of Teacher Effectiveness," Educational Administration and Supervision, 40:283-296, May, 1954.

teachers and 156 pupils in an effort to see if a relationship existed between pupil and student teacher interaction and pupil ratings of teacher efficiency. He used two rating scales, his own Person-Person Interaction Scale and Bryan's[19] Teaching Effectiveness Scale. He found the following:

1. Reasonably high correlations between pupil ratings of interaction and those of teacher effectiveness, which indicates that the relation between the pupil and his student-teacher is predictive of how the pupil will rate his teacher on teaching effectiveness.

2. Pupils gave more positive than they did negative ratings.

3. Pupils in the Laboratory School rated their student-teachers higher on interaction and teacher effectiveness than those of the Northwest High School. Critical ratios of 4.08 and 3.64, respectively, were significant beyond the one per cent level.

4. The criteria used in this study reveal no reliable difference between boy and girl ratings of interaction and teacher effectiveness.

5. Even though high-achievers seem to rate higher interaction between themselves and their student-teachers than low-achievers the critical ratio of 1.50 is not significant.

6. Regardless of the fluctuation in pupil response from one student-teacher to another, the relationship of pupil ratings on interaction to those of teacher effectiveness remains about the same. Correlations between the two variables for the two student-teachers rated by the same four pupils were .45 and .46, respectively.

7. The Laboratory School pupils who rated themselves less interested in the course, rated their student teachers as high on interaction and teacher effectiveness as those who expressed more interest in the course.

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[19]Bryan, R. C., "Eighty-Six Teachers Try Evaluating Student Reaction to Themselves," Educational Administration and Supervision, 27:513-526, October, 1941.

8. As rated by themselves, more pupils in the Laboratory School rated themselves more interested in the course than pupils in the Northwest High School.

9. The Northwest High School pupils who were more interested in the course rated their student-teachers higher in interaction and teacher effectiveness than those who were less interested. Critical ratios of 4.04 and 3.25, respectively, are significant beyond the one per cent level.[20]

Pupil ratings during recent years have become an important part of investigations directed toward development of some type of workable evaluation as a basis for merit pay schedules. Symonds' study of the characteristics of the effective teacher based on pupil evaluations is a typical example of this group of studies. His study is two-fold. Part one describes a method of locating more effective teachers by having pupils rank their teachers on seven bases. He found that pupil rankings agree with each other, with coefficients of correlation in the .70's, .80's, or low. 90's. This appears to indicate considerable halo effect in the rankings on the seven questions. Pupil rankings correlated with principal ratings of teacher discipline in the .60's, in the .70's for teacher-relationship with pupils, and in the .40's for teacher ability to secure pupil achievement. In the second part of the study based on the observation of teachers who were ranked high and those ranked low by pupils,

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[20]Drawhorne, op. cit., p. 296.

the following three factors seemed to differentiate the teachers in the extreme groups:[21]

a. Superior teachers liked children; inferior teachers disliked children.

b. Superior teachers were personally secure and self-assured; inferior teachers were personally insecure and had feelings of inferiority and inadequacy.

c. Superior teachers were well integrated and possessed good personality organization; while the inferior teachers tended to be personally disorganized.[22]

In addition to the above mentioned research where correlations between pupil rating and the ratings of others were sought there have been a number of studies where examinations have been made of the possible relationships between pupil rating and various test scores, personality test scores in particular. The findings vary, but in general, the results obtained by Rabinowitz[23] are typical. In his study a large group (over 1600) of student teachers were given a number of personality and attitude tests during their senior year in college. Observations were conducted approximately one year later in the rooms of 49 of these subjects who were employed as elementary school teachers.

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[21]Symonds, P. M., "Characteristics of the Effective Teacher Based on Pupil Evaluations," Journal of Experimental Education, 23:289-310, June, 1955.

[22]Ibid. p. 310.

[23]Rabinowitz, William and Rosenbaum, Ira, "A Failure In the Prediction of Pupil-Teacher Rapport," Journal of Educational Psychology, 49:93-98, April, 1958.

A measure of pupil teacher rapport based on pupil responses to questions about their teacher and class was also obtained An analysis showed none of the test measures correlated significantly with pupil-teacher rapport as measured. Only one of the 63 correlations between the test measures and classroom behavior measures proved significant. Manifest Teacher Hostility, a measure based on classroom observation of the teacher correlated significantly with rapport.

Cooper's study[24] of quantitative Rorschach factors as indicators of teacher effectiveness also makes an interesting contribution at this point. The primary purpose of this study was to investigate the use of current methods of quantifying Rorschach data as a means for differentiating between a group of teachers favorably rated by their pupils and a group of teachers less favorably rated by their pupils. The study further attempted to examine the relationship between pupil ratings of their teachers and (a) the sex of the teacher rated; (b) the subject taught; (c) the marital status of the teacher; and (d) inservice and preservice status.

A checklist developed through a review of the literature was administered to the pupils of 72 inservice teachers and 153 student teachers who had volunteered for the experiment. These teachers were then divided into two groups, those with less favorable ratings and those with favorable

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[24]Cooper, J. G. and Lewis, R. B., "Quantitative Rorschach Factors in the Evaluation of Teacher Effectiveness," Journal of Educational Research, 44:703-707, May, 1951.

ratings. The Rorschach test was administered to each. Chi square was used as the method of determining significance.[25]

The conclusions relative to Rorschach as stated by Cooper are:

1. Current methods of quantifying Rorschach data are not dependable as a means of differentiating between liked and less-liked teachers.

2. The presence of Maile and Harrower-Erickson psychoneurotic signs was associated with unfavorable pupil ratings. The extent of overlapping prevents individual predictions.

3. No relationship was found between pupil ratings and personality maladjustment as measured by the Munroe Inspection Rorschach.

4. The percentage of the number and kind of determinants used bore no relationship to pupil ratings.

5. The median number of human movement responses was slightly higher for the well-liked teachers than the less-liked teachers. The difference was not statistically significant.

6. Introversiveness-extratensiveness was not related to pupil ratings.

7. Emotionally impulsive persons were found equally among liked and less-liked teachers.

8. Emotionally constricted individuals were more often found among less-liked teachers than liked teachers.

Conclusions in Respect to Teacher Status

1. Preservice teachers were rated more favorably than inservice teachers.

2. Pupil ratings were affected by neither the teachers sex nor marital status.

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[25] Ibid., pp. 703-707.

3. In some cases, the subject taught affects pupil ratings of teachers.[26]

Prediction of Teacher Effectiveness

"The literature pertaining to investigations of the relationship between various hypothesized predictors and teaching effectiveness is extensive, but consists to a deplorable degree of reports of researches which suffer particularly from inadequate consideration of control and lack of replication, and which therefore yield questionable results."[27]

There have been many reviews of the literature concerned with predicting teacher effectiveness, but two of the most comprehensive are Barr and others[28] who have published their reviews every three years over the last twenty years, and Morsh and Wilder[29] whose very thorough work in 1955 made a significant contribution. In general, these reviewers point first to a primary problem in studies of teacher effectiveness; that is determining the criterion by which effectiveness will be judged. Usually the approaches to this problem evolve around the evaluation of either (1) teacher behavior, in process, (2) a product of teacher behavior, or

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[26] Ibid., pp. 706-707.

[27] Ryans, D. G., "Prediction of Teacher Effectiveness," in The Encyclopedia of Educational Research, p. 1486.

[28] Barr, A. S., "The Measurement and Prediction of Teaching Efficiency: A Summary of Investigations," Review of Educational Research, 28:256-264, June 1958.

[29] Morsh and Wilder, op. cit., 150 pp.

(3) concomitants of teacher behavior.

The number of predictors which investigators have studied in attempts to find significant relationships to effectiveness are many. Among the predictive characteristics more often studied and for which measurement has been attempted, are:[30]

> Scores on tests of verbal and other cognitive abilities;
> Scores on tests of knowledge and understanding of general and special subject matter;
> Scores on tests of professional information;
> Course marks representing academic achievement;
> Course marks or ratings representing performance in student teaching;
> Amount of general and of professional education;
> Scores derived from inventories and/or projective devices developed to measure various personality traits, and emotional and social adjustment;
> Scores on attitude scales and inventories developed to measure teacher-student relationships;
> Age;
> Experience;
> Sex;
> Marital status;
> Socio-economic status;
> Speech and voice characteristics;
> Factors influencing choice of teaching as a career;
> Social participation;
> Expressions of interest in, participation in, and preference for various sorts of activities.[31]

Progress toward an understanding of teacher behavior and the problem of teacher effectiveness and its prediction has proceeded slowly. One of the principal reasons reported for this is the lack of attention which has been devoted to theory development, which, of course, restricts the generation of hypotheses.

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[30]Ryans, op. cit., p. 1488.

[31]Ibid., p. 1488.

As research in prediction is examined, it is found that most of the studies producing information about teacher characteristics in relation to teaching have been derived from correlation studies. There has been little evidence produced which would aid in the understanding of cause and effect relationships.

Examination of the literature concerning one of the possible predictors, that of tested intelligence, reveals that in the 60 indexed studies over the last 30 years where correlations have been run with various teacher ratings, there is tremendous variance in findings. The highest relationship, a correlation coefficient of .57 with student gains, was reported by Rostker[32] for a group of 28 teachers. Among the 60 available studies in which correlations are reported between intelligence scores and various criteria of teacher effectiveness, the number of subjects is often so small, some with as few as six, that the correlation coefficients reported have little meaning.[33] Morsh and Wilder point-up the short comings of intelligence as a predictive measure in the following way:

> Considering the more or less restricted range into which the intelligence of the public school teacher may be expected to fall (intelligence quotients with a range of 103 to 126 and an average of 114 as reported in findings with the Army Alpha); for all practical purposes

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[32]Rostker, L. E., "The Measurement of Teaching Ability," Journal of Experimental Education, 14:6-51, September, 1945.

[33]Morsh and Wilder, op. cit., pp. 60-61.

> this variable is of little value as a single predictor of rated teacher successes, inasmuch as it would be used with a population already selected on the basis of intelligence.[34]

Efforts to use socioeconomic status of the instructor as a predictor is typically reflected in a study by Ullman.[35] He used, among other measures, the Sims Score Card to determine socioeconomic status of 116 junior and senior high school teachers with one semester experience. Coefficients resulting from correlations of socioeconomic status scores with social intelligence, general intelligence, knowledge of principles of teaching, knowledge of aims of secondary education, self-rating, academic marks, education marks, major subject marks, and practice teaching rating were near zero.

Most of the studies where socioeconomic status was used as the factor to be tested for relationship with teacher effectiveness have used supervisory ratings as the criterion, and these ratings are very often found to be negatively correlated with pupil gains.

A number of investigators have studied the effect of the sex of teachers as it relates to their effectiveness. The conclusions reached in most cases are that no particular differences have been shown when the relative effectiveness of men and women teachers has been compared. However,

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[34] Ibid., p. 65.

[35] Ullman, R. R., "The Prediction of Teaching Success," Educational Administration and Supervision, 16:598-608, November, 1930.

Nemec in 1946[36] and Cooper and Lewis in 1951[37] found small differences in favor of men teachers.

Research outside the field of teacher education which is interestingly related to various parts of the problems herein discussed is represented by the work of J. J. Crowly.[38] His study is a follow-up study of 485 graduates of ten consecutive high school classes in a small town. The purpose being to determine the graduates' degree of leadership in their community. Cole's review of the study follows:

> Adult success in leadership was judged on the basis of general reputation, positions of trust (school superintendents, bank managers, judges, superior officials) or superior positions in business or industry, ownership of business, and election to chairmanship of community undertakings. In their high school days the 186 male graduates had shown the four levels or kinds of leadership in school life: 64 were prominent athletes, 22 played dominant roles in nonathletic student affairs, 23 were outstanding in both these classifications, and 77 had no record of any leadership. Nearly two thirds of the second and third groups became leaders in adult life. The student who was prominent in athletics but nothing else did not fare so well in later years. Only a few nonleaders in high school became leaders as adults. Among the 299 women graduates, only 59 had occupied positions of leadership in school. Of these, 37 per cent held such positions as adults. Only 2 per cent of the 240 other women graduates, all nonleaders in high school, had had success as leaders in their communities.[39]

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[36]Nemec, L. G., "Relationship Between Teacher Certification and Education in Wisconsin: A Study of Their Effects On Beginning Teachers, "Journal of Experimental Education, 15:101-132, December, 1946.

[37]Cooper and Lewis, op. cit., pp. 703-707.

[38]Crowley, J. J., "High School Backgrounds of Successful Men and Women Graduates," School Review, 48:205-209, March, 1940.

[39]Cole, Luella, Psychology of Adolescence, pp. 424-425.

Summary

Pupil rating of teacher effectiveness has been widely researched during the past 40 years. As a result of the recent growth of interest in merit pay the possible use of pupil rating has added considerable interest to studies of the subject. The reliability of such ratings appears to be high enough to make them usable for many purposes in today's high schools.

The correlation of pupil rating with ratings by others is low, and it is likewise low when the correlation is calculated with most teacher background factors. The one place where there may be a significant relationship is between pupil opinion and pupil-teacher interaction.

The study of predictors of teacher effectiveness has produced no emergence of a factor or factors strongly enough related to teacher effectiveness to be very useful. Ryans in his final summarizing paragraph in The Encyclopedia of Education Research asserts:

> Certain of the above-named characteristics, then, do seem to be associated with certain dimensions of teacher behavior and teacher effectiveness, although the extent of obtained relationships frequently has not been high. It is important here to recall that relationships and differences which have been noted are in terms of averages for groups of teachers and any obtained relationship is limited by, and may be expected to vary with, conditions outlined above. The usefulness of research findings pertaining to the prediction of teacher effectiveness will be greatest when the results are considered

in an actuarial context, rather than in attempting highly accurate prediction for given individuals, and when variations in relationship found among different classifications of teachers and with the use of different approaches to the predictor criterion relationship are taken into account.[40]

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[40]Ryans, op. cit., pp. 1490-1491.

CHAPTER III

METHOD OF INVESTIGATION

The purpose of this study was to investigate the relationship between selected background factors of student teachers and pupil opinion of certain teaching traits. In addition, the investigator proposed to study the possibility of relationships between various combinations of pupil's and student teacher's home community size and the teaching traits as rated by pupils. The steps which were taken in carrying the study through to its completion were outlined briefly in Chapter I. A more detailed account of the methods used in the procurement and treatment of the data follows.

Sources of Data

Central Michigan University, the teacher education institution to which this study was confined, has listed in its catalog two plans for preparing candidates for secondary school teaching. One plan, Plan A,[1] is designed for the student who is continuously enrolled at the institution over a period of eight consecutive semesters. This program includes a number of education courses which must be taken in sequence; these normally culminate in an eight week period of full-time student teaching in a public school. The other

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[1]Central Michigan University Bulletin, 1959-1960, p. 79.

plan, Plan B,[2] is designed for the student who transfers from another institution or finds it necessary to enroll intermittently, possibly as a part-time student. For this student the course sequences are frequently broken, and other concessions made.

In the present study the sample was drawn from Plan A students only, who were seniors during the 1959-1960 school year. It was necessary for purposes of this study that these students be enrolled in student teaching during their senior year. The total number eligible to participate was found to be 315. Of this number it was discovered that thirty were destined to teach in special education, e.g. speech correction, mentally retarded, socially maladjusted. This eliminated them from the study because it was believed that the responses of their pupils would be quite difficult to obtain within the framework of this study. The remaining 285 students were intended to constitute the sample until it was discovered that one junior high school where student teachers are placed by Central Michigan University refused to cooperate in the study. The reason given by the school principal was that soliciting pupil opinion concerning student teachers might negatively affect the attitudes of pupils toward all future student teachers. Since nineteen students were to teach in that school the sample for this study was limited to 266 seniors on Plan A at Central Michigan University during the 1959-1960 school year.

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[2] Ibid., p. 79.

The 266 seniors were asked as a part of their psychology and education classes, which met on campus prior to their eight week student teaching period, to cooperate in this study. The investigator personally entered each psychology and education class and combined an explanation of the study with the administration of the student teacher background questionnaire.[3]

Student teachers at Central Michigan University are assigned to teach for an eight week period, and there are four eight-week student teaching periods during the school year. Students may be assigned to any one of nine student teaching centers. During the 1959-1960 school year the 266 student teachers in this study were assigned as shown in Table 1.

TABLE 1. NUMBER OF PARTICIPATING STUDENT TEACHERS ASSIGNED IN EACH OF THE NINE STUDENT TEACHING CENTERS

Student teaching centers	Number of participating student teachers assigned
Bay City	21
Cadillac	24
Clare	19
Ludington	21
Manistee	24
Midland	35
Mt. Pleasant	75
Saginaw	34
Scottville	13
Total	266

[3]A copy of the student teacher background questionnaire may be found in Appendix A.

It can be seen from Table 1 that the distribution of student teachers among the centers presents a somewhat balanced picture with the notable exception of Mt. Pleasant which, because of its proximity to campus, has a greater number of student teachers than its size alone would warrant.

Contacts with the school systems and supervisors of student teaching were initially made by the Director of Student Teaching who is also the Associate Dean of the School of Education at Central Michigan University.[4] Each of the contacted parties agreed to cooperate in the study. The Director of Student Teaching and the investigator discussed the purposes of the study at some length with the student teaching coordinators and secured their help as distributors and collectors of the Pupil Opinion Questionnaire.

Each student teacher was rated by one class with which he had had regular contact for a period of seven weeks. All Pupil Opinion Questionnaires[5] were administered to pupils by the student teacher's supervising teacher, with the student teacher absent from the room, on Tuesday morning of the seventh week of student teaching. Table 2 is presented to show the number of pupil responses obtained for this study.

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[4]A copy of the letters from the Director of Student Teaching may be found in Appendix B.

[5]See Appendix B.

TABLE 2. NUMBER OF PUPIL RESPONSES GIVING PUPIL OPINION OF TEACHING TRAITS

Classrooms	Pupils	Mean Class size	Range
266	7073	26.59	10-49

Table 2 indicates that the sample of pupil opinion was very broad and that the mean class size was very near the state average for classes in Michigan secondary schools. Though the range of class size shown in Table 2 is 10-49, the investigator's examination of returns revealed a large cluster in the 20's and 30's.

Instruments

The Student Teacher Questionnaire was developed to obtain desired experiential background information about the student teachers participating in this study. The items represent a number of years of thought, reading, conversation, and speculation on the part of the investigator. True, there are many other background factors which might have been included, but those selected are the ones which were most continuously brought to the foreground by authors Corey[6] and Fligor,[7] and which the superintendents interviewed

[6]Corey, S. M., "The Present State of Ignorance About Factors Affecting Teaching Success," Educational Administration and Supervision, 18:481-490, October, 1932.

[7]Fligor, R. J., Analysis of the Evaluation, Use, and Value of Certain Competancies for Beginning the Student Teaching Experience, 218 pp.

informally in teacher education institution placement offices would defend as important. In addition, the examination of applications for student teaching assignments revealed the incorporation of many of these items.

The form of the Student Teacher Questionnaire and some of the items were drawn from duplicated material from the Michigan State University Social Research Service.[8] Most items are self explanatory in terms of content desired, and additional information concerning the more complex items will be given under the Treatment of Data section of the chapter.

The Pupil Opinion Questionnaire used is one adapted to this study from a form prepared by Roy C. Bryan.[9] Dr. Bryan's questionnaire is one which was designed after very careful study of the research reviewed by Beecher, who makes the comment, "Attention is called to the consistency of findings in the pupil-reaction studies reviewed. If 30,000 boys and girls react similarly to certain teacher behavior, it must certainly follow that these strategic behaviors deserve serious consideration by the teacher as well as by all

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[8]The sixth draft of a student questionnaire by Dr. Wilbur B. Brookover, dated March 27, 1952.

[9]Bryan, R. C., "Student Reactions and Merit Salary Schedules," Faculty Contributions, 4:1-67, July, 1958. Permission granted by Dr. Bryan for the use of the cited questionnaire.

who attempt to evaluate the latter's effectiveness."[10] Bryan also used the questionnaire extensively at Western Michigan University in Kalamazoo, Michigan.

The investigator had two principal sources of help in perfecting the adaptation of the questionnaires for this study. One was a seminar in sociology taken with Dr. Wilbur B. Brookover in which the class members and instructor gave many helpful suggestions. The second was a pilot study of four student teachers and their classes at Mt. Pleasant, Michigan, Junior High School. This study made it possible to re-word some of the statements so that clarity would be better insured. The instructions at the beginning of each questionnaire received the most attention, and it is believed that the results of the pilot study greatly facilitated later administration of both instruments.

Treatment of the Data

In this study an analysis was made of the degree of relationship, if any, between 19 background factors of student teachers and 10 teaching traits of the student teachers as rated by their pupils. A description of the procedures used to quantify these two types of data, and of the methods employed to compute the correlation coefficients between them, follow.

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[10]Beecher, Dwight E., The Evaluation of Teaching, Syracuse University Press, New York, 1949, 105 pp.

The information concerning the background factors was translated to numerical data either by counting the number of characteristics in each category of a dichotomous factor or in each interval of a continuous scale. The numerical data were then coded in digit form as shown in the Student Teacher Questionnaire, with a few exceptions which are described below, and transcribed to tabulating cards by means of a punching machine.

The socioeconomic background data were quantified by converting the responses to item 12 in the Student Teacher Questionnaire to numerical scores by first placing them on the North-Hatt Occupational Rating Scale[11] and then dividing the scale arbitrarily into five equal categories. The occupations were then coded into five classes from a low of one to a high of five and placed on punch cards.

The background data concerning the degree of leadership demonstrated by the student teachers while they were in high school were quantified by counting the number of responses listed in the third column of item 18 on the Student Teacher Questionnaire. The background information describing the number of high school organizations participated in by the student teachers was obtained by the number of entries in item 19 of the Student Teacher Questionnaire which had a value of fifty per cent or larger.

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[11]North, and Hatt, op. cit., pp. 464-474.

The 10 teaching traits of the student teachers were evaluated by pupils on a four-category scale as shown on the Pupil Opinion Questionnaire. These evaluations were quantified by arbitrarily assigning the "below average" rating a value of one; the "average" rating a value of two; the "good" rating a value of three; and the "excellent" rating a value of four.

A median rating for each of the ten teaching traits was computed for each student teacher and placed on punch cards according to the following code:

1	1.00-1.49	5	3.00-3.49
2	1.50-1.99	6	3.50-3.99
3	2.00-2.49	7	4.00-4.49
4	2.50-2.99	8	4.50-4.99

From the above code it may be seen that the limits of the class intervals 1, 2, 3, and 4 were defined as follows: the interval "1" extended from 1.00 to 1.99; the interval "2" from 2.00 to 2.99; the interval "3" from 3.00 to 3.99; and the interval "4" from 4.00 to 4.99.

After the background and teaching trait variables were quantified, coded, and placed on punch cards, they were placed in electromechanical machines in order to obtain indices of the degree of correlation, if any, between them.

Since 15 of the 19 background factors and all of the 10 teaching traits were in the form of metric data, 150

product-moment coefficients of correlation were calculated. These r's are presented in tables together with the .95 and .99 confidence intervals and the coefficients of forecasting efficiency.

The tests of relationship between the teaching traits and those background factors which were described in terms of frequency data were made by the use of the chi square technique. The background factors falling into the latter category were sex, marital status, membership or non-membership in student council, and membership or non-membership in Future Teacher clubs.

Because preliminary analysis indicated a complete lack of relationship with other factors, the chi square analysis of relationship between the four dichotomous background variables and the teaching traits was based only on the all-around teaching factor. In addition, the all-around teaching ability factor was chosen because it is a summary item and was found to correlate to a rather high degree with other teaching trait items.

For the purposes of the chi square tests, the all-around teaching factor was coded into three classes as follows: (1) below average and average, (2) good, and (3) excellent. The "below average" and "average" ratings were grouped together due to the small number of frequencies in the "below average" category.

Because other studies have shown significant relationships between leadership in high school organizations and leadership in adult activities, the relationship between the student council membership background factor and all-around teaching ability was studied by means of the chi square technique.

Finally, the chi square test was used to analyze the relationship between the different combinations of sizes of home communities of both the student teachers and of the pupils who evaluated their teaching traits on the one hand and all-around teaching ability on the other. The sizes of the home communities were divided into the three categories of large, medium, and small and coded into nine classes as follows:

Code number	Size of home community of student teacher	Size of home community of the pupils
1	large	large
2	large	medium
3	large	small
4	medium	large
5	medium	medium
6	medium	small
7	small	large
8	small	medium
9	small	small

All-around teaching ability was classified into three groups as described earlier.

Summary

In this chapter the methods of the study have been described in some detail, and the persons participating in the study have been identified. The selection and development of questionnaires was outlined, and the procedures used in the analysis of data were discussed.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

As described in Chapter I, the two major purposes of this study were (1) to investigate the relationship between 19 background factors of student teachers and 10 teaching traits of student teachers as revealed through a pupil opinionnaire; and (2) to investigate the relationship between certain combinations of home community size of student teacher and pupil background factors and all-around teaching ability of the student teachers as appraised by pupils. Chapter IV presents and analyzes indices of relationship between these variables of student teacher and pupil background factors on the one hand and teaching traits of the student teachers as rated by pupils on the other hand.

Since it was assumed that most of the background factors and all of the teaching traits could be measured on a continuous scale and that any possible relationship between these variables would approximate linearity, Pearsonian coefficients of correlation were used in most cases. In those instances in which a factor constituted a truly dichotomous variable, chi-squares were computed from contingency tables.

Table 3 presents the 15 Pearsonian coefficients of correlation which resulted from testing the relationship between 15 background factors and the student teacher's knowledge of the subject taught as rated by pupils. Also included

TABLE 3. PEARSONIAN COEFFICIENTS OF CORRELATION (r) BETWEEN 15 STUDENT TEACHER BACKGROUND FACTORS AND THE STUDENT TEACHER'S KNOWLEDGE OF THE SUBJECT TAUGHT AS RATED BY PUPILS

Student teacher background factors*	r	Confidence intervals		E
		.95	.99	
Age	.01	.12 to -.10	.16 to -.14	.001
No. of residence changes	-.03	.08 to -.14	.12 to -.18	.001
Size of town reared in	.00	.11 to -.11	.15 to -.15	.000
No. of younger brothers	-.05	.06 to -.16	.10 to -.20	.002
No. of older brothers	.00	.11 to -.11	.15 to -.15	.000
No. of younger sisters	.08	.19 to -.03	.23 to -.07	.003
No. of older sisters	.00	.11 to -.11	.15 to -.15	.000
Total siblings	.02	.13 to -.09	.17 to -.13	.001
Socioeconomic status	.05	.16 to -.06	.20 to -.10	.002
Church attendance	.14	.25 to .03	.29 to -.01	.010
Size of high school	.02	.13 to -.09	.17 to -.13	.001
No. of varsity awards	-.08	.03 to -.19	.07 to -.23	.003
No. of intermural activities	-.03	.08 to -.14	.13 to -.18	.001
No. of organizations	.07	.18 to -.04	.22 to -.08	.003
Leadership score	.06	.17 to -.05	.21 to -.09	.002

*Abbreviated background factors may be found in full in Appendix A, r = correlation, E = coefficient of forecasting efficiency.

in Table 3 for each r are the .95 and .99 confidence intervals as computed by use of the Fisher's z function,[1] and indices of forecasting efficiency.[2]

It may be seen in Table 3 that the 15 background factors of the 266 student teachers are not closely related to the student teacher's knowledge of the subject taught as rated by pupils. While church attendance, number of younger sisters, number of varsity awards, and the number of organizations to which the student teachers held membership while in high school appear to correlate highest with knowledge of subject taught, the resulting coefficients of correlation are very small, not exceeding .14.

The significance of the r's listed in Table 3 may be determined by observing the confidence intervals and the coefficients of forecasting efficiency. With a sample size of 266, coefficients of correlation as large as .11 may arise as many as 5 times in 100 trials from chance fluctuations of sampling alone when the true r in the population is actually .00. And coefficients as large as .15 may occur once in 100 trials from chance fluctuations when the population r is zero.[3]

Since church attendance is the only background factor

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[1]Fisher, R. A., Statistical Methods for Research Workers, pp. 190-203.

[2]Garrett, H. E., Statistics In Psychology and Education, p. 178.

[3]Garrett, H. E., op. cit., p. 201.

which may be said to be related to knowledge of subject taught at the .95 confidence level, and none of the background factors are related at the .99 confidence level, there is little reason to invalidate or cast serious doubt upon the general null hypothesis. If a real correlation over and above chance does exist between church attendance and knowledge of subject taught, the degree of relationship is very small. As shown in Table 3 the coefficient of forecasting efficiency for an r of .14 is only about .01.

Table 4 presents the 15 Pearsonian coefficients of correlation which resulted from testing the relationship between 15 background factors and the student teacher's ability to explain things clearly as rated by pupils. Also included in Table 4 for each r are the .95 and .99 confidence intervals as computed by use of Fisher's z function, and indices of forecasting efficiency.

Table 4 indicates that the coefficients of correlation between the 15 background factors of 266 student teachers and the student teacher's ability to explain things clearly as rated by pupils are small. Socioeconomic status, number of residence changes, size of high school attended, size of town reared in, and number of varsity awards are the background factors which appear to be correlated highest with the ability to explain things clearly. The r's resulting from these correlations range from -.07 to .16.

TABLE 4. PEARSONIAN COEFFICIENTS OF CORRELATION (r) BETWEEN 15 STUDENT TEACHER BACKGROUND FACTORS AND THE STUDENT TEACHERS' ABILITY TO EXPLAIN THINGS CLEARLY AS RATED BY PUPILS

Student teacher background factors*	r	Confidence intervals		E
		.95	.99	
Age	-.02	.13 to -.09	.13 to -.17	.001
No. of residence changes	.10	.21 to -.01	.25 to -.05	.005
Size of town reared in	-.08	.03 to -.19	.07 to -.23	.003
No. of younger brothers	.02	.13 to -.09	.13 to -.09	.001
No. of older brothers	.01	.12 to -.10	.16 to -.14	.001
No. of younger sisters	-.03	.08 to -.14	.12 to -.18	.001
No. of older sisters	-.03	.08 to -.14	.12 to -.18	.001
Total siblings	-.01	.10 to -.12	.14 to -.16	.001
Socioeconomic status	.16	.27 to .05	.31 to .01	.010
Church attendance	.03	.14 to -.08	.18 to -.12	.001
Size of high school	.09	.20 to -.02	.24 to -.06	.004
No. of varsity awards	-.07	.04 to -.18	.08 to -.22	.003
No. of intermural activities	.00	.11 to -.11	.15 to -.15	.000
No. of organizations	.02	.13 to -.09	.17 to -.13	.001
Leadership score	.03	.14 to -.08	.18 to -.12	.001

*Abbreviated background factors may be found in full in Appendix A, r = correlation, E = coefficient of forecasting efficiency.

Since r's as large as .11 and .15 may occur from pure chance fluctuations in samples containing 266 subjects, when the true population r is zero, 5 times in 100 trials and 1 time in 100 trials respectively, socioeconomic status is the only background factor which appears to be related to the ability to explain things clearly.[4] And the degree of relationship represented by an r of .16 is very small. As listed in Table 4, the coefficient of forecasting efficiency for an r of .16 is approximately .01.

Table 5 presents the 15 Pearsonian coefficients of correlation which resulted from testing the relationship between 15 background factors and the student teacher's fairness in dealing with pupils as rated by pupils. In addition Table 5 includes for each r the .95 and .99 confidence intervals as computed by use of Fisher's z function, and indices of forecasting efficiency.

It may be observed in Table 5 that the background factors of the 266 student teachers are not closely related to the student teachers' fairness in dealing with pupils as rated by pupils. While the number of residence changes, size of town reared in, number of older brothers, and size of high school attended appear to correlate highest with the student teachers' fairness in dealing with pupils, the

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[4] Ibid. p. 201.

TABLE 5. PEARSONIAN COEFFICIENTS OF CORRELATION (r) BETWEEN 15 STUDENT TEACHER BACKGROUND FACTORS AND THE STUDENT TEACHERS' FAIRNESS IN DEALING WITH PUPILS AS RATED BY PUPILS

Student teacher background factors*	r	Confidence intervals		E
		.95	.99	
Age	.00	.11 to -.11	.15 to -.15	.000
No. of residence changes	-.11	.00 to -.22	.04 to -.26	.006
Size of town reared in	-.07	.04 to -.18	.08 to -.22	.003
No. of younger brothers	-.04	.07 to -.15	.11 to -.19	.002
No. of older brothers	.08	.19 to -.03	.23 to -.07	.003
No. of younger sisters	.02	.13 to -.09	.17 to -.13	.001
No. of older sisters	.00	.11 to -.11	.15 to -.15	.000
Total siblings	.04	.15 to -.07	.19 to -.11	.002
Socioeconomic status	.04	.15 to -.07	.19 to -.11	.002
Church attendance	.03	.14 to -.08	.18 to -.12	.001
Size of high school	.14	.25 to -.04	.29 to -.01	.010
No. of varsity awards	-.04	.07 to -.15	.11 to -.19	.002
No. of intermural activities	.04	.15 to -.07	.19 to -.11	.002
No. of organizations	-.03	.08 to -.14	.12 to -.18	.001
Leadership score	.01	.12 to -.10	.16 to -.14	.001

*Abbreviated background factors may be found in full in Appendix A, r = correlation, E = coefficient of forecasting efficiency.

resulting coefficients of correlation are very small, not exceeding .14.

Since r's as large as .11 and .15 may occur from chance fluctuations in samples containing 266 subjects, when the true population r is zero, 5 times in 100 trials and 1 time in 100 trials respectively, size of high school is the only background factor which appears to be related to the student teachers' fairness in dealing with pupils. And the degree of relationship represented by an r of .14 is very small. As listed in Table 5, the coefficient of forecasting efficiency for an r of .14 is approximately .01.

Table 6 presents the 15 Pearsonian coefficients of correlation which resulted from testing the relationship between 15 background factors and the student teacher's ability to maintain good discipline as rated by pupils. Also included in Table 6 for each r are the .95 and .99 confidence intervals as computed by use of Fisher's z function, and indices of forecasting efficiency.

Table 6 indicates that the coefficients of correlation between 15 background factors of 266 student teachers and the student teacher's ability to maintain good discipline as rated by pupils are small. Size of town reared in, socio-economic status, and size of high school attended are the background factors which appear to be correlated highest with the ability to maintain good discipline. The r's resulting from these correlations range from -.13 to .14.

TABLE 6. PEARSONIAN COEFFICIENTS OF CORRELATION (r) BETWEEN 15 STUDENT TEACHER BACKGROUND FACTORS AND THE STUDENT TEACHERS' ABILITY TO MAINTAIN GOOD DISCIPLINE AS RATED BY PUPILS

Student teacher background factors*	r	Confidence intervals		E
		.95	.99	
Age	-.02	.09 to -.13	.13 to -.17	.001
No. of residence changes	.03	.14 to -.08	.18 to -.12	.001
Size of town reared in	-.13	-.02 to -.24	.02 to -.28	.009
No. of younger brothers	-.06	.05 to -.17	.09 to -.21	.002
No. of older brothers	.06	.17 to -.05	.21 to -.19	.002
No. of younger sisters	.02	.13 to -.09	.17 to -.13	.001
No. of older sisters	.00	.11 to -.11	.15 to -.15	.000
Total siblings	.02	.13 to -.09	.17 to -.13	.001
Socioeconomic status	.07	.18 to -.04	.22 to -.08	.003
Church attendance	.00	.11 to -.11	.15 to -.15	.000
Size of high school	.14	.25 to .03	.29 to -.01	.010
No. of varsity awards	-.01	.10 to -.12	.14 to -.16	.001
No. of intermural activities	.00	.11 to -.11	.15 to -.15	.000
No. of organizations	.03	.14 to -.08	.18 to -.12	.001
Leadership score	.04	.15 to -.07	.19 to -.11	.001

*Abbreviated background factors may be found in full in Appendix A, r = correlation, E = coefficient of forecasting efficiency.

Since r's as large as .11 and .15 may occur from pure chance fluctuations in samples containing 266 subjects, when the true population r is zero, size of town reared in and size of high school attended appear to be the only factors related to ability to maintain good discipline. And the degree of relationship represented by r's of -.13 and .14 is very small. As listed in Table 6 the coefficient of forecasting efficiency for r's of -.13 and .14 is approximately .01.

Table 7 presents the 15 Pearsonian coefficients of correlation which resulted from testing the relationship between 15 background factors and the student teacher's sympathetic understanding as rated by pupils. In addition, Table 7 includes for each r the .95 and .99 confidence intervals as computed by use of Fisher's z function, and indices of forecasting efficiency.

Table 7 shows that the coefficients of correlation between the 15 background factors of 266 student teachers and the student teacher's sympathetic understanding as rated by pupils are small. Number of younger brothers and number of older brothers are the background factors which appear to be correlated highest with the student teacher's sympathetic understanding. The r's resulting from these correlations are -.07 and .09.

Since r's as large as .11 and .15 may occur from pure

TABLE 7. PEARSONIAN COEFFICIENTS OF CORRELATION (r) BETWEEN 15 STUDENT TEACHER BACKGROUND FACTORS AND THE STUDENT TEACHERS' SYMPATHETIC UNDERSTANDING AS RATED BY PUPILS

Student teacher background factors*	r	Confidence intervals		E
		.95	.99	
Age	-.05	.06 to -.16	.10 to -.20	.002
No. of residence changes	-.03	.08 to -.14	.12 to -.18	.001
Size of town reared in	.00	.11 to -.11	.15 to -.15	.000
No. of younger brothers	-.07	.04 to -.18	.08 to -.22	.003
No. of older brothers	.09	.20 to -.02	.24 to -.06	.004
No. of younger sisters	.01	.12 to -.10	.16 to -.14	.001
No. of older sisters	.00	.11 to -.11	.15 to -.15	.000
Total siblings	.03	.14 to -.08	.18 to -.12	.001
Socioeconomic status	.06	.17 to -.05	.21 to -.09	.002
Church attendance	.06	.17 to -.05	.21 to -.09	.002
Size of high school	.06	.17 to -.05	.21 to -.09	.002
No. of varsity awards	-.05	.06 to -.16	.10 to -.20	.002
No. of intermural activities	.00	.11 to -.11	.15 to -.15	.000
No. of organizations	.03	.14 to -.08	.18 to -.12	.001
Leadership score	.05	.16 to -.06	.20 to -.10	.002

*Abbreviated background factors may be found in full in Appendix A, r = correlation, E = Coefficient of forecasting efficiency.

chance fluctuations in samples containing 266 subjects, when the true population r is zero, 5 times in 100 trials and 1 time in 100 trials respectively, none of the background factors presented appear to be significantly related to the student teacher's sympathetic understanding as rated by pupils.

Table 8 presents the 15 Pearsonian coefficients of correlation which resulted from testing the relationship between 15 background factors and the amount pupils are learning in class as rated by pupils. Also included in Table 8 for each r are the .95 and .99 confidence intervals as computed by use of Fisher's z function, and indices of forecasting efficiency.

Table 8 reveals that the coefficients of correlation between the 15 background factors of 266 student teachers and the amount pupils are learning in class as rated by the pupils themselves are small. Number of older brothers, number of older sisters, total siblings, and size of high school attended are the background factors which appear to be correlated highest with the amount pupils are learning. The r's resulting from these correlations range from .08 to .15.

Since r's as large as .11 and .15 may occur from pure chance fluctuations in samples containing 266 subjects, when the true population r is zero, 5 times in 100 trials and 1

TABLE 8. PEARSONIAN COEFFICIENTS OF CORRELATION (r) BETWEEN 15 STUDENT TEACHER BACKGROUND FACTORS AND THE AMOUNT PUPILS ARE LEARNING IN CLASS AS RATED BY PUPILS

Student teacher background factors*	r	Confidence intervals		E
		.95	.99	
Age	.06	.17 to -.05	.21 to -.09	.002
No. of residence changes	.06	.17 to -.05	.21 to -.09	.002
Size of town reared in	-.07	.04 to -.18	.08 to -.22	.003
No. of younger brothers	.06	.17 to -.05	.21 to -.09	.002
No. of older brothers	.10	.21 to -.01	.25 to -.05	.005
No. of younger sisters	.06	.17 to -.05	.21 to -.09	.002
No. of older sisters	.08	.19 to -.03	.23 to -.07	.003
Total siblings	.15	.26 to .04	.30 to .00	.011
Socioeconomic status	.03	.14 to -.08	.18 to -.12	.001
Church attendance	.07	.18 to -.04	.22 to -.08	.003
Size of high school	.08	.19 to -.03	.23 to -.07	.003
No. of varsity awards	-.02	.09 to -.13	.13 to -.17	.001
No. of intermural activities	.00	.11 to -.11	.15 to -.15	.000
No. of organizations	-.06	.05 to -.17	.09 to -.21	.002
Leadership score	-.06	.05 to -.17	.09 to -.21	.002

*Abbreviated background factors may be found in full in Appendix A, r = correlation, E = coefficient of forecasting efficiency.

time in 100 trials respectively, at the .95 level, total siblings is the only background factor which may be said to be related to amount pupils are learning and an r of .15 is too low to be meaningful. None of the background factors are related at the .99 confidence level. This evidence gives little reason to invalidate or cast serious doubt upon the general null hypothesis. If a real correlation over and above chance does exist between total siblings and amount pupils are learning, the degree of relationship is very small.

Table 9 presents the 15 Pearsonian coefficients of correlation which resulted from testing the relationship between 15 background factors and the ability of the student teacher to make class lively and interesting as rated by pupils. In addition, Table 9 includes for each r the .95 and .99 confidence intervals as computed by use of Fisher's z function, and indices of forecasting efficiency.

Table 9 indicates that the coefficients of correlation between the 15 background factors of 266 student teachers and the ability of the student teacher to make the class lively and interesting as rated by pupils are small. Number of older sisters, socioeconomic status, and size of high school attended are the background factors which appear to be correlated highest with the ability of the student teacher to make the class lively and interesting. The r's resulting from these correlations range from -.09 to .15.

TABLE 9. PEARSONIAN COEFFICIENTS OF CORRELATION (r) BETWEEN 15 STUDENT TEACHER BACKGROUND FACTORS AND THE ABILITY OF THE STUDENT TEACHER TO MAKE THE CLASS LIVELY AND INTERESTING AS RATED BY PUPILS

Student teacher background factors*	r	Confidence intervals		E
		.95	.99	
Age	.04	.15 to -.07	.19 to -.11	.002
No. of residence changes	.06	.17 to -.05	.21 to -.09	.002
Size of town reared in	-.02	.09 to -.13	.13 to -.17	.001
No. of younger brothers	-.02	.09 to -.13	.13 to -.17	.001
No. of older brothers	.03	.14 to -.08	.18 to -.12	.001
No. of younger sisters	.02	.13 to -.09	.17 to -.13	.001
No. of older sisters	-.09	.02 to -.20	.06 to -.24	.004
Total siblings	-.02	.09 to -.13	.13 to -.17	.001
Socioeconomic status	.15	.24 to .04	.30 to .00	.011
Church attendance	.00	.11 to -.11	.15 to -.15	.000
Size of high school	.08	.19 to -.03	.23 to -.07	.003
No. of varsity awards	.01	.12 to -.10	.16 to -.14	.001
No. of intermural activities	.03	.14 to -.08	.18 to -.12	.001
No. of organizations	.00	.11 to -.11	.15 to -.15	.000
Leadership score	.04	.15 to -.07	.19 to -.11	.002

*Abbreviated background factors may be found in full in Appendix A, r = correlation, E = coefficient of forecasting efficiency.

Since r's as large as .11 and .15 may occur from pure chance fluctuations in samples containing 266 subjects, when the true population r is zero, 5 times in 100 trials and 1 time in 100 trials respectively, socioeconomic status is the only background factor which appears to be related to the ability of the student teacher to make the class lively and interesting. And the degree of relationship represented by an r of .15 is very small. As listed in Table 9, the coefficient of forecasting efficiency for an r of .15 is approximately .01.

Table 10 presents the 15 Pearsonian coefficients of correlation which resulted from testing the relationship between 15 background factors and the ability of the student teacher to get things done in a business-like manner as rated by pupils. Also included in Table 10 for each r are the .95 and .99 confidence intervals as computed by use of Fisher's z function, and indices of forecasting efficiency.

It may be seen in Table 10 that the 15 background factors of the 266 student teachers are not closely related to the ability of the student teacher to get things done in a business-like manner as rated by pupils. While age, number of younger sisters, and number of organizations participated in while in high school appear to correlate highest with the ability to get things done in a business-like manner, the resulting coefficients of correlation are very small, not exceeding .12.

TABLE 10. PEARSONIAN COEFFICIENTS OF CORRELATION (r) BETWEEN 15 STUDENT TEACHER BACKGROUND FACTORS AND THE ABILITY OF THE STUDENT TEACHER TO GET THINGS DONE IN A BUSINESS-LIKE MANNER AS RATED BY PUPILS

Student teacher background factors*	r	Confidence intervals		E
		.95	.99	
Age	-.07	.04 to -.18	.08 to -.22	.003
No. of residence changes	.04	.15 to -.07	.19 to -.11	.001
Size of town reared in	.00	.11 to -.11	.15 to -.15	.000
No. of younger brothers	.02	.13 to -.09	.17 to -.13	.001
No. of older brothers	.00	.11 to -.11	.15 to -.15	.000
No. of younger sisters	.12	.23 to -.01	.27 to -.03	.007
No. of older sisters	-.02	.09 to -.13	.13 to -.17	.001
Total siblings	.06	.17 to -.05	.21 to -.09	.002
Socioeconomic status	.03	.14 to -.08	.18 to -.12	.001
Church attendance	.06	.17 to -.05	.21 to -.09	.002
Size of high school	.04	.15 to -.07	.19 to -.11	.001
No. of varsity awards	-.01	.10 to -.12	.14 to -.16	.001
No. of intermural activities	.01	.12 to -.10	.16 to -.14	.001
No. of organizations	.09	.20 to -.02	.24 to -.06	.004
Leadership score	.07	.18 to -.04	.22 to -.08	.003

*Abbreviated background factors may be found in full in Appendix A, r = correlation, E = coefficient of forecasting efficiency.

The significance of the r's listed in Table 10 may be determined by observing the confidence intervals and the coefficient of forecasting efficiency. With a sample size of 266 coefficients of correlation as large as .11 may arise as many as 5 times in 100 trials from chance fluctuation of sampling alone when the true r in the population is actually zero. And coefficients as large as .15 may occur once in 100 trials from chance fluctuations when the population r is zero.

Since number of younger sisters is the only background factor which may be said to be related to ability to get things done in a business-like manner at the .95 confidence level, and none of the background factors are related at the .99 confidence level, there is little reason to cast serious doubt upon the general null hypothesis. If a real correlation over and above chance does exist between number of younger sisters and ability to get things done in a business like manner, the degree of relationship is very small.

Table 11 presents the 15 Pearsonian coefficients of correlation which resulted from testing the relationship between 15 background factors and the value of the subject to the pupil as rated by pupils. In addition, Table 11 includes for each r the .95 and .99 confidence intervals as computed by use of Fisher's z function, and indices of forecasting efficiency.

Table 11 shows that the coefficients of correlation

TABLE 11. PEARSONIAN COEFFICIENTS OF CORRELATION (r) BETWEEN 15 STUDENT TEACHER BACKGROUND FACTORS AND THE VALUE OF THE SUBJECT TO THE PUPIL AS RATED BY PUPILS

Student teacher background factors*	r	Confidence intervals		E
		.95	.99	
Age	.01	.12 to -.10	.16 to -.14	.001
No. of residence changes	.03	.14 to -.08	.18 to -.12	.001
Size of town reared in	-.03	.08 to -.14	.12 to -.18	.001
No. of younger brothers	.05	.16 to -.06	.20 to -.10	.002
No. of older brothers	.11	.22 to .00	.26 to -.04	.005
No. of younger sisters	.10	.21 to -.01	.25 to -.05	.005
No. of older sisters	.10	.21 to -.01	.25 to -.05	.005
Total siblings	.19	.30 to .08	.34 to .04	.018
Socioeconomic status	-.03	.08 to -.14	.12 to -.18	.001
Church attendance	.03	.14 to -.08	.18 to -.12	.001
Size of high school	.03	.14 to -.08	.18 to -.12	.001
No. of varsity awards	-.08	.03 to -.19	.07 to -.23	.003
No. of intermural activities	.02	.13 to -.09	.17 to -.13	.001
No. of organizations	-.01	.10 to -.12	.14 to -.16	.001
Leadership score	-.10	.01 to -.21	.05 to -.25	.005

*Abbreviated background factors may be found in full in Appendix A, r = correlation, E = coefficient of forecasting efficiency.

between the 15 background factors of 266 student teachers and the value of the subject to the pupils as rated by pupils are small. Number of older brothers, number of younger sisters, number of older sisters, total siblings, and leadership score are the background factors which appear to be correlated highest with the value of the subject to the pupils. The r's resulting from these correlations range from -.10 to .19.

Since r's as large as .11 and .15 may occur from pure chance fluctuations in samples containing 266 subjects, when the true population r is zero, 5 times in 100 trials and 1 time in 100 trials respectively, number of older brothers appears to approach relationship at the .95 confidence level, while total siblings is significantly related at the .99 level to the value of the subject to the pupil. And the degree of relationship represented by r's of .11 and .19 are very small. As listed in Table 11, the coefficient of forecasting efficiency for an r of .19 is less than .02.

Table 12 presents the 15 Pearsonian coefficients of correlation which resulted from testing the relationship between 15 background factors and all-around teaching ability of the student teacher as rated by pupils. Also included in Table 12 for each r are the .95 and .99 confidence intervals as computed by use of Fisher's z function, and indices of forecasting efficiency.

TABLE 12. PEARSONIAN COEFFICIENTS OF CORRELATION (r) BETWEEN 15 STUDENT TEACHER BACKGROUND FACTORS AND ALL-AROUND TEACHING ABILITY AS RATED BY PUPILS

Student teacher background factors*	r	Confidence intervals		E
		.95	.99	
Age	-.01	.10 to -.12	.14 to -.16	.001
No. of residence changes	.03	.15 to -.08	.18 to -.12	.001
Size of town reared in	-.05	.06 to -.16	.10 to -.20	.002
No. of younger brothers	-.12	-.01 to -.23	.03 to -.27	.007
No. of older brothers	.02	.13 to -.09	.17 to -.13	.001
No. of younger sisters	-.01	.10 to -.12	.14 to -.16	.001
No. of older sisters	-.01	.10 to -.12	.14 to -.16	.001
Total siblings	-.05	.06 to -.16	.10 to -.20	.002
Socioeconomic status	.04	.15 to -.07	.19 to -.11	.001
Church attendance	.02	.13 to -.09	.17 to -.13	.001
Size of high school	.09	.20 to -.02	.24 to -.06	.004
No. of varsity awards	-.02	.09 to -.13	.13 to -.17	.001
No. of intermural activities	-.03	.08 to -.14	.12 to -.18	.001
No. of organizations	.03	.14 to -.08	.18 to -.12	.001
Leadership score	.05	.16 to -.06	.20 to -.10	.002

*Abbreviated background factors may be found in full in Appendix A, r = correlation, E = coefficient of forecasting efficiency.

Table 12 reveals that the coefficients of correlation between the 15 background factors of 266 student teachers and the student teacher's all-around teaching ability as rated by pupils are small. Number of younger brothers and size of high school attended are the background factors which appear to be correlated highest with all-around teaching ability. The r's resulting from these correlations are -.12 and .09.

Since r's as large as .11 and .15 may occur from pure chance fluctuations in samples containing 266 subjects, when the population r is zero, 5 times in 100 trials and 1 time in 100 trials respectively, number of younger brothers is the only background factor which appears to be related to all-around teaching ability. And the degree of relationship represented by an r of -.12 is very small. As listed in Table 12, the coefficient of forecasting efficiency for an r of -.12 is less than .01.

The relationship between four background factors of student teachers which were true dichotomies and the all-around teaching ability of the student teachers as appraised by pupils is presented in Table 13.

Table 13 reveals that of the four truly dichotomous background factors of the student teachers, only student council membership or non-membership appears to be significantly related to the all-around teaching ability of the

student teachers as appraised by pupils. The obtained chi square for this factor is 10.209, as shown in Table 13, which is significant at the .99 level.

TABLE 13. CHI SQUARE TESTS OF RELATIONSHIP BETWEEN CERTAIN BACKGROUND FACTORS OF STUDENT TEACHERS AND THE ALL-AROUND TEACHING ABILITY OF THE STUDENT TEACHERS AS EVALUATED BY PUPILS

Background factor of student teacher correlated with all-around teaching ability	Chi square	Level of significance
Sex	4.114	.80
Member of FTA	.597	.20
Member of student council	10.209	.99
Married or single	1.878	.50

A test of relationship between all-around teaching ability of student teachers and the following combinations of home community size of student teacher and pupils was made by use of the chi square technique:

Large - large

Large - medium

Large - small

Medium - large

Medium - medium

Medium - small

Small - large

Small - medium

Small - small

Table 14 presents the observed frequency distribution as given in the chi square contingency table.

TABLE 14. DISTRIBUTION OF PUPIL RATINGS OF STUDENT TEACHERS FROM COMMUNITIES OF A SIZE SIMILAR TO THAT OF PUPILS

Community size*	High pupil rating	Average pupil rating	Low pupil rating	Total
L_1-L	6	19	7	32
L_1-M	3	9	8	20
L_1-S	14	15	9	38
M_1-L	4	2	2	8
M_1-M	2	11	8	21
M_1-S	1	17	9	27
S_1-L	10	14	10	34
S_1-M	13	21	13	47
S_1-S	10	16	13	39
Total	63	124	79	266

*L_1, M_1, and S_1 refer to the size of community in which the student teacher was reared. L, M, and S refer to the size of community in which pupils were attending school.

Table 14 shows that the chi square of 21.305 obtained from the figures above, which did not approach significance at

the .95 level, is based on a frequency distribution which can only lead to support of the null hypothesis.

Summary

Chapter IV has included the presentation and analyses of data collected for this study. A series of eleven tables were presented for the purpose of supplying the information needed to make a judgment concerning the first null hypothesis. This null hypothesis is that no relationship exists between selected background factors of student teachers and pupil opinion of certain teaching traits. The tables indicate very few coefficients of correlation beyond that which might be expected to occur in chance fluctuations. In the few cases in Tables 3 through 12 where r's were determined to be significant at the .95 and .99 confidence levels they were so very small that the .02 level of forecasting efficiency was never reached. Table 13 offers the one exception as it reveals a relationship between membership in student council and all-around teaching ability as rated by pupils. The obtained chi square for this factor of 10.209 was determined significant at the .99 level. Table 14 revealed no meaningful pattern of pupil ratings when pupil's and student teacher's home community size were compared.

Concluding the presentation and analyses of data in Chapter IV, it appears reasonable to state that there has been little evidence to invalidate or cast serious doubt upon the general null hypotheses.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The major purpose of this study was to investigate and analyze the relationship between selected experiential background factors of student teachers and pupil appraisal of certain teaching traits. In order to accomplish this purpose, data concerned with student teacher background were collected from students by questionnaire[1] in their psychology and education classes prior to student teaching, and pupil appraisal of the teaching traits was obtained by questionnaire[2] during the seventh week of student teaching.

The data for this investigation were collected from a sample of 266 secondary student teachers who were seniors at Central Michigan University during the 1959-1960 school year. These students were each assigned to teach in one of nine student teaching centers. During the seventh week of an eight-week student teaching period they were rated on ten teaching traits by one of their classes. This was a questionnaire rating of the checklist variety which was administered by the supervising teachers in the absence of the student teachers. There was a total of 7,073 individual pupil ratings.

The student teacher questionnaire requested information which the investigator had found superintendents,

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[1]Student Teacher Questionnaire may be found in Appendix A.

[2]Pupil Opinion Questionnaire may be found in Appendix B.

directors of student teaching, and supervising teachers were collecting from future teachers for the purpose of forecasting their ability as teachers. A form was adopted which would facilitate coding for punch card operation.

The pupil opinion questionnaire requested, from secondary pupils, a rating of ten teacher traits on a four point scale. Dr. Roy C. Bryan[3] kindly consented to let the investigator use a questionnaire form which he had developed and used.

Data obtained from student teachers were translated into numerical data for coding in digit form and placing on punch cards. Data obtained from pupil rating questionnaires were also coded for use on punch cards. Class median scores were then computed for each of the ten teaching traits for each student teacher. These medians were coded and punched into the student teachers master card. Finally, cards containing 15 experiential background factor scores and 10 teaching trait scores were placed in electromechanical machines to obtain indices of the degree of correlation.

One hundred fifty product-moment coefficients of correlation resulted, and these r's were presented in tables together with the .95 and .99 confidence intervals and the coefficients of forecasting efficiency.

Four student teacher background factors where the responses were dicotomies were tested for possible relationship

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[3]Bryan, R. C., "Student Reactions and Merit Salary Schedules," Faculty Contributions, 4:10-11, July, 1958.

with all-around teaching ability by use of the chi square technique.

In order to investigate hypothesis two, as listed in Chapter I, home community size of both student teachers and pupils were divided into the three categories of large, medium, and small and paired in nine different ways. They were then tested by the chi square method to see if any relationship existed between these pairs and the student teachers all-around teaching ability as rated by pupils.

Summary of Findings

With respect to the student teacher's knowledge of subject taught as rated by pupils. When each of the fifteen background factors was tested for relationship with knowledge of subject taught only one was found to be significant at even the .95 level. That one was church attendance, and the r of .14 which was obtained is very small. The coefficient of forecasting efficiency for this r is approximately .01.

With respect to the student teacher's ability to explain things clearly as rated by pupils. Only one of the fifteen student teacher background factors tested was found to be significantly related to this teaching trait. Socio-economic status was significantly related at the .99 level of confidence. However, an obtained r of .16 is so small that the coefficient of forecasting efficiency only approximates .01.

With respect to the student teacher's fairness in dealing with pupils as rated by pupils. Size of high school attended is the one background factor related to the student teacher's fairness in dealing with pupils. The relationship is represented by an r of .14, which is significant, but very small, at the .95 level.

With respect to the student teacher's ability to maintain good discipline as rated by pupils. Two student teacher background factors appear to be related to the student teacher's ability to maintain good discipline. They are size of town reared in, with an r of -.13 and size of high school attended, with an r of .14. These r's are so small that the coefficient of forecasting efficiency is .01 or less.

With respect to the student teacher's sympathetic understanding as rated by pupils. Since r's as large as .11 and .15 may occur from pure chance fluctuations in samples containing 266 subjects, when the true population r is zero, none of the background factors presented appear to be significantly related to the student teacher's sympathetic understanding.

With respect to amount pupils are learning in class as rated by pupils. When each of the fifteen background factors was tested for relationship with the amount pupils are learning only one obtained an r beyond that which would be expected by chance at the .95 level. Total siblings was the

factor with an r of .15. This r is still very low as represented by a coefficient of forecasting efficiency of approximately .01.

With respect to the student teacher's ability to make the class lively and interesting as rated by pupils. Socio-economic status is the only background factor which appears to be related to the student teacher's ability to make the class lively and interesting. The relationship which is represented by an r of .15 is significant at the .95 level, but is so small that only approximately .01 forecasting efficiency could be expected.

With respect to the ability of the student teacher to get things done in a business-like manner as rated by pupils. Only one of the fifteen background factors tested appears to be related to the ability of the student teacher to get things done in a business-like manner. That one factor was the number of younger sisters, and its relationship at the .95 level was represented by an obtained r of .12. The coefficient of forecasting efficiency for an r of .12 is less than .01.

With respect to the value of the subject to the pupils as rated by pupils. A single background factor, total siblings, appears to be related at the .99 level to the value of the subject to the pupils. The obtained r is .19 and is represented by a coefficient of forecasting efficiency of approximately .02.

With respect to the student teachers all-around teaching ability as rated by pupils. Number of younger brothers is the only background factor which appears to be related to all-around teaching ability. The obtained r of -.12 is significant at the .95 level, but is so very small that the coefficient of forecasting efficiency is less than .01.

In addition to the 15 background factors tested and represented in the findings reported above, four background factors in which the responses are true dicotomies, were tested for possible relationship with the student teachers all-around teaching ability by the chi square technique. One factor, that of student council membership was found to be significantly related at the .99 level of significance. Actual examination of pupil ratings revealed that former student council members receive fewer "average" and "below average" ratings than do non-members.

With respect to the relationship between the student teacher's all-around teaching ability and certain combinations of both pupil and student teacher home community size. The chi square technique used to test this relationship revealed nothing approaching significance at the .95 level.

Conclusions

Hypotheses. Two hypotheses were posited to aid in the process of constructing answers to questions which

pertained to the relationship between selected experiential background factors of student teachers and pupil opinion of certain teaching traits.

1. The first hypothesis was stated as follows: No relationship exists between pupil opinion of certain teaching traits and selected background factors of student teachers.[4]

   As a result of the evidence presented in this study there is little reason to invalidate or cast serious doubt upon the general null hypothesis. Though nine items were discovered where some significance was found, the relationships were too small to permit usefulness for forecasting efficiency.

2. No relationship exists between pupil opinion of the student teacher's all-around teaching ability and certain combinations of home community size of both pupils and student teachers.

   From the evidence reported in this study there is little reason to invalidate or cast serious doubt upon the general null hypothesis.

If those persons involved with teacher education and teacher evaluation continue to believe in the importance of experiential background factors, then they must search out

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[4]The variables tested are listed in Chapter I.

ways of measuring the effect of these factors upon teacher effectiveness. This study has revealed a great deal of evidence to support the conclusion that pupil opinion ratings, on an instrument such as the one utilized, do not discriminate sufficiently between the background factors studied to warrant attaching strong positive or negative values to any single factor.

Recommendations

1. Superintendents, directors of student teaching, and supervising teachers should use extreme caution in utilizing experiential background factors as instruments of evaluating the potential of future teachers.
2. Teacher education institutions should continue the search for adequate instruments of prediction to use in screening future teachers, as the evidence disclosed in this study does not support the use of experiential background factors for that purpose.
3. Teacher education institutions which are basing considerable portions of their pre-student teaching experience program upon the experiential background of the students, will have to continue to seek evidence to support their contention that these background factors make any significant difference in teacher effectiveness, at least, as rated by pupils.

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APPENDIX

Appendix A

Questionnaire Form Used to Collect Student Teacher Background

University
10/59

STUDENT TEACHER QUESTIONNAIRE

In order to better prepare teachers an effort is being made to study selected factors in the background of our teacher candidates, and see if there is any relationship between these factors and pupil opinion. Your cooperation in filling out the following questionnaire will be appreciated. All information will be kept in confidence and at no time in the course of this study will you as an individual be identified.

Instructions: Most of the questions below can be answered by circling a number or checking an answer. In those cases where you are asked to write out your own answer, space is provided for you to do so. Specific instructions will be given with each question where the appropriate method of responding is not obvious.

1. Name _____
   Last First Middle

2. Age? _____ 3. Sex? . . . Male . . . Female 4. Married . . . Yes . . . No

5. City in which your student teaching is being done? _____

6. Home address during most of your pre-college life was?

   _____
   Street or Route City State

7. During your pre-college life, how many times did your place of residence change?
   (Put a circle around the number following the correct answer)

   None 0
   One 1
   Two 2
   Three 3
   More than three 4

8. Where did you live during most of your pre-college life?
   (Put a circle around the number following the correct answer)

   In a town or city of the following size-
   Over 100,000 1
   50,000 to 100,000 2
   25,000 to 49,000 3
   5,000 to 24,000 4
   Under 5,000 5
   Suburban area 6
   Village 7
   Open country 8

9. How many brothers and sisters do you have?
   (Circle the correct number on each line)

Younger brothers	0	1	2	3	4 or more
Older brothers	0	1	2	3	4 or more
Younger sisters	0	1	2	3	4 or more
Older sisters	0	1	2	3	4 or more

10. With which of the following older adults were you living during your pre-college life?
    (Make only one circle)

    Mother only 1
    Father only 2
    Mother and Father 3
    Mother and Stepfather 4
    Father and Stepmother 5
    Foster parents 6
    Other relatives 7
    Other people not relatives . . 8

11. During your pre-college years, who contributed most to the support of your family?
    (If you did not live with either or both of your parents, answer for the family with which you were living)

    Father 1
    Mother 2
    Some other person (Who) _____

12. What did the person mentioned in 11 above do for a living?

    _____

    12a. Describe as accurately as possible what this person made or did on the job. (For example: He supervises the work of others; he works on his own machine; he sells from door-to-door; etc.)

    _____

13. About how often did you attend church or Sunday school during your pre-college school years?
    (Put a circle around the number following the correct answer)

    Every week or more than 80% 1
    More than half but less than 80% 2

15. Did you receive a high school varsity athletic award in

One sport 1
Two sports 2
Three sports 3
More than three 4
None 0

16. Did you participate in intramural athletic activities in

One sport 1
Two sports 2
Three sports 3
More than three 4
None 0

Answer 17-19 by placing a check in the appropriate blank following the names of organizations to which you belonged while in high school.

17. WHAT ORGANIZATIONS DID YOU BELONG TO?	18. WHAT PART DID YOU TAKE? Belong but not very active	Active member but not one who holds office regularly	Quite active and generally have some official position	19. WHAT PROPORTION OF THE MEETINGS DID YOU ATTEND?
1. Student Council				
2. Freshman, Sophomore, Junior, and Senior class organization				
3. Science Club				
4. Math Club				
5. Language Club				
6. Industrial Arts Club				
7. Art Club				
8. Commerce Club				
9. Speech Club				
10. Dramatics Club				
11. Music Club				
12. Future Teachers				
13. Future Homemakers				
14. Future Farmers				
15. Varsity Club				
16. Booster Club				
17. Newspaper Staff				
18. Yearbook Staff				
19. Hobby Clubs, i.e. photography, radio, archery, rifle, etc.				
20. 4-H Club				
21. Scouts				
22. High-Y or Y-Teens				
23. Others (name) _____				

Appendix B

Introductory Requests, Directions for Administration, and Student Opinion Questionnaire

The following letters, directions, and questionnaires were distributed and used in the Central Michigan University student teaching centers listed below:

Bay City, Michigan
Cadillac, Michigan
Clare, Michigan
Ludington, Michigan
Manistee, Michigan
Midland, Michigan
Mt. Pleasant, Michigan
Saginaw, Michigan
Scottville, Michigan

CENTRAL MICHIGAN UNIVERSITY

Mount Pleasant, Michigan

October 14, 1959

Superintendent of Schools

Dear

Enclosed you will find a note which I would like to have permission to send each of the supervising teachers working with student teachers during the current school year. As you can see it involves their cooperation in a piece of research which is being conducted by Mr. William Sleeper of this institution in connection with his work as a Coordinator of Student Teaching. We like very much to sponsor this kind of research and I hope that you will feel free to give us permission to cooperate. I think Miss Gladys Griffith can give you more information about this project should you desire it.

Since I do not want to distribute this letter until I have your specific permission to do so, would you please write me a note as soon as you feel free to consent to this request.

Cordially yours,

Curtis E. Nash,
Associate Dean
School of Education

CEN:vls

CENTRAL MICHIGAN UNIVERSITY

Mount Pleasant, Michigan

March 12, 1960

TO: Supervisors of Student Teaching

FROM: Curtis E. Nash, Associate Dean,
School of Education

The student teaching program at Central has grown rapidly during the past few years and future growth seems inevitable. As numbers increase there is an ever growing need to study all aspects of the program in order to insure continuance of desirable high quality experiences.

The School of Education is cooperating on a research project designed to improve its teacher education program. A part of this project is aimed at securing the opinion of secondary pupils toward certain qualities which student teachers possess in varying degrees. The opinions of pupils will not be used to evaluate student teachers, but simply to check on possible relationships between pupil opinion and selected background factors of student teachers.

An effort is going to be made to sample the opinion of one class of pupils being taught by each student teacher. The sample is to be taken on Tuesday morning of the seventh week of student teaching. Questionnaires, of the checklist type, will be distributed to supervising teachers together with an explanatory cover letter approximately one week in advance of the date of administration. Every effort has been made to keep the questionnaire brief and clear, with the approximate time of administering estimated at from ten to fifteen minutes.

It is sincerely hoped that you will find time to cooperate in this research project designed to improve teacher education. If for any reason you cannot participate in this endeavor, please let me know.

Dear Supervisor:

The enclosed questionnaire is designed to secure pupil-opinion of some of the qualities your student teacher possesses. It should be administered to a class with which the student teacher has worked quite closely. If at all possible the questionnaire should be used on Tuesday morning, November 3rd. If this is not possible simply note the time and date it was administered at the bottom of this letter and return it with the questionnaires. The approximate time required for administration is 10 to 15 minutes. The student teacher should not be present during this time.

Instructions

1. Pass questionnaires to pupils, commenting briefly that this is a project of Central Michigan University. If you do not receive a sufficient supply of questionnaires, please use what you have; if you have extra copies please return them with the completed forms.

2. Read aloud the instructions at the top of the questionnaire. Have pupils fill in the name of student teacher and the city in which their school is located.

3. The instructions on the questionnaire indicate that as pupils finish they are to fold the paper, and when all have completed the form the supervisor is to appoint a pupil to pick up the papers and deposit them in the large envelope provided.

4. The supervisor is requested to turn the envelope in at the principal's office.

5. If for some reason you find it impossible to administer the questionnaire please return the envelope to the principal's office.

Your cooperation is greatly appreciated.

Sincerely,

Bill Sleeper
Coordinator of Student Teaching

Student Teacher's Name _____ Student Teaching Center _____

STUDENT OPINION QUESTIONNAIRE

The questions on this sheet are about your present student teacher, please answer them honestly and frankly. Your teacher will never know how you, as an individual, answer these questions. Do not give your name.

After completing this report, fold it and sit quietly or study until all students have completed their reports. There should be no talking. All reports will be collected by a member of the class and shuffled before being given to the teacher.

Circle the correct word:

Sex? Boy Girl Home? Rural farm / Rural non-farm / City

Father's occupation _____

Describe briefly the kind of work your father does at his job. _____

_____

(Circle your answers)

WHAT IS YOUR OPINION CONCERNING:

1. THE KNOWLEDGE THIS TEACHER HAS OF THE SUBJECT TAUGHT?
   (Has thorough knowledge and understanding of his teaching field?)

   Excellent Good Average Below average

2. THE ABILITY OF THIS TEACHER TO EXPLAIN CLEARLY?
   (Are assignments and explanations clear and definite?)

   Excellent Good Average Below average

3. THIS TEACHER'S FAIRNESS IN DEALING WITH STUDENTS?
   (Is fair and impartial in treatment of students?)

   Excellent Good Average Below average

4. THE ABILITY OF THIS TEACHER TO MAINTAIN GOOD DISCIPLINE?
   (Keeps good control of the class without being harsh? Is firm but fair?)

   Excellent Good Average Below average

5. THE SYMPATHETIC UNDERSTANDING SHOWN BY THIS TEACHER?
   (Is he patient, friendly, and considerate?)

   Excellent Good Average Below average

6. THE AMOUNT YOU ARE LEARNING IN THIS CLASS?
   (Are you encouraged to do your best? Are you learning much?)

   Excellent Good Average Below average

7. THE ABILITY THIS TEACHER HAS TO MAKE CLASSES LIVELY AND INTERESTING?
   (Shows enthusiasm and a sense of humor?

   Excellent Good Average Below average

8. THE ABILITY OF THIS TEACHER TO GET THINGS DONE IN AN EFFICIENT AND BUSINESS-LIKE MANNER?
   (Has foresight and plans thoroughly and well? Little time wasted?)

   Excellent Good Average Below average

9. THE VALUE THIS SUBJECT HAS FOR YOU?
   (Are the problems and topics studies useful and valuable?)

   Excellent Good Average Below average

10. THE GENERAL (ALL-AROUND) TEACHING ABILITY OF THIS TEACHER?
    (All factors considered, how close does this teacher come to your ideal?)

    Excellent Good Average Below average