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SHANNON, Jack Taylor, 1939-
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The University of Oklahoma, Ph.D., 1973
Education, teacher training

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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

GRADUATES AND NONGRADUATES OF CYCLE IV TEACHER CORPS PROGRAMS: AN ANALYSIS OF GROUP MEMBERSHIP

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

JACK TAYLOR SHANNON

Norman, Oklahoma

1973

GRADUATES AND NONGRADUATES OF CYCLE IV TEACHER CORPS PROGRAMS:

AN ANALYSIS OF GROUP MEMBERSHIP

APPROVED BY

DISSERTATION COMMITTEE

ACKNOWLEDGEMENTS

The author wishes to express deep appreciation to Dr. Gerald T. Kowitz, committee chairman and director of the dissertation, for his patience, support, and skillful guidance. Gratitude is also extended to Dr. Omer J. Rupiper, Dr. Jack F. Parker, and Dr. Eugene F. Cates for their help as members of the committee.

Appreciation is extended to the Teacher Corps project directors and to Mrs. Velma Robinson of the national Teacher Corps office for their assistance in the collection of data.

A special thank you to my wife, Sharon, and to Lori and Randall, for the patience, understanding, and confidence necessary for making the long journey possible and worthwhile.

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GRADUATES AND NONGRADUATES OF CYCLE IV TEACHER CORPS PROGRAMS: AN ANALYSIS OF GROUP MEMBERSHIP

CHAPTER I

Introduction

No aspect of education has been more investigated than that of teacher effectiveness. During the last 50 years, thousands of research studies have investigated the topic, but few generalizations have been established from the findings. Investigations into the relationships between teacher effectiveness and personal and professional characteristics of the teacher have considered such factors as attitudes, adjustment, needs, values, interests, personality, experience, favored activities, cognitive abilities, and special training. The usual finding is that good teachers are friendly, cheerful, sympathetic, bright and well-educated--qualities that improve any human interaction.

Researchers in the area of teacher effectiveness face a number of problems, including definition, instrumentation, and criterion. These are especially troublesome in considering the teacher's personality as related to effective teaching, since both terms represent elusive concepts which can be defined in a number of ways. There are many instruments available for assessing personality factors and the choice of the most appropriate is difficult.

The most frequent criterion for teacher effectiveness is a rating by supervisors or principals. This method is frequently unreliable and also faces the problem of differing concepts of what constitutes effective teaching. Academic or test score gains by students have been tried as a less subjective

method, but have also been found to have shortcomings (Ryans, 1960). Other research limitations include: (1) the grouping of all teachers for treatment as a single group, regardless of age, sex, and other differences; (2) not accounting for variations in the teaching situation from one school to another.

Since little is known about what makes teachers effective or which teacher characteristics are related to effectiveness, professional educators have been handicapped in efforts to improve teacher training and teacher selection procedures. There is also a lack of consensus with regard to the relative importance of training versus selection as contributors to effective teaching.

One aspect of teacher effectiveness is that of teacher success or survival, which deals with effectiveness not in terms of teacher qualities or behaviors which affect educational outcomes, but with the teacher's experiencing enough success, satisfaction, or effectiveness that he is encouraged to continue in the teaching field. The high attrition rate of teachers, especially during the first two years, has prompted investigations into the characteristics of teachers who leave the field (voluntarily and otherwise) and those who remain. A related problem is the number of trained teachers who never enter the classroom.

Researchers have attempted to isolate predictors of success of beginning teachers, to determine the degree of committment on the part of those training to become teachers, and to examine motives for choosing or rejecting teaching as a career. The unanswered questions about teacher effectiveness and longevity, along with the great amount of criticism being directed toward teacher training, have provided impetus for the creation of many experimental programs in teacher education.

Cyphert (1972) investigated the status, prospects, and possibilities of research in teacher education, beginning with his 1964 analysis and adding 83 recent reports gathered by the ERIC Clearinghouse on Teacher Education. He found: (1) a great amount of research literature, most of which was not data-based; (2) that most of the research reported prior to 1964 was of the survey type, with findings reported in percentages and comparisons rarely indicated; (3) a trend away from studying teachers in general and toward studying more precisely defined groups, such as black teachers assigned to inner-city Headstart programs.

In summary, the problems of teacher effectiveness and attrition have been of continuing interest; research has provided but few useful generalizations, partly because of problems of definition, instrumentation, and criteria. There is a need for data-based studies which concentrate on more tightly defined groups of teachers to provide useful information regarding the characteristics of successful teachers.

Review of Research and Related Literature

Studies and literature related to teacher effectiveness date back more than 100 years (Witty, 1950). These present numerous traits considered important for effective teachers, but the vagueness and subjectivity of most of the measurements result in questionable findings. A frequent criticism of such findings is that most of the traits are important qualities for success in any vocation. Barr (1953) observed that in spite of the vast number of studies which have been carried out, one can point to few results that a superintendent of schools can safely employ in hiring a teacher, that an agency can employ in certifying teachers, or that a teacher education faculty can employ in planning or improving teacher education programs.

Getzels and Jackson (1963) conclude that despite the critical importance of the problem and a half-century of prodigious research effort, very little is known about the nature and measurement of teacher personality, or about the relationship between teacher personality and teacher effectiveness. In a summary of contemporary research on teacher effectiveness, Biddle and Ellena (1964) claim that it is not an exaggeration to say that we do not today know how to select, train for, encourage, or evaluate teacher effectiveness. These pessimistic conclusions are shared by Koerner (1963), Fattu (1962), and Harbin (1967).

As Cyphert (1972) pointed out, the trend of recent studies is toward studying more rigorously defined groups of teachers, rather than teachers in general. This approach to teacher effectiveness research, along with the increased interest in such factors as recruitment and selection of teachers, committment to teaching as a career, motives for choosing a teaching career, and investigations of successful and unsuccessful teachers would seem to offer increased chances for useful findings.

For researchers and educational theorists to attempt to define teacher effectiveness by analyzing trained teachers who have been judged by someone to be effective would seem to be an inefficient way of attacking the problem. There would seem to be a better way of separating the effective from the ineffective than by observing, isolating, and analyzing the characteristics of teachers judged successful. One of the many currently proclaimed "break throughs" and "revolutions" in teacher education is the competency-based model now required of the Teacher Corps programs funded by the U. S. Office of Education.

This model is derived from the principles and common features of

teacher education as defined and developed in the Elementary Teacher Education Models sponsored by the U. S. Office of Education in 1968-69. Within the framework of a systems design, these programs specify training objectives and means for their achievement. Some of the proponents of this model have neatly solved the effectiveness problem by listing the competencies required for effective teaching. These required characteristics will sound familiar to those who have read Carl Rogers (1951) on the conditions required for effective client-centered therapy. As noted earlier, these characteristics apply to many successful groups and are not specific to teachers or teaching.

Research and Literature Relating Teacher Effectiveness and Personal Characteristics

While Witty's earlier cited article refers to literature related to effective teachers dating back more than 100 years, it was in the 1930's that researchers became interested in the relationships between personality and effective teaching. A review of these studies reveals considerable disagreement concerning the personal characteristics important to the effective teacher. The Teacher Characteristics Study directed by Ryans (1960) is the single most extensive study of teachers to date. Findings related to the current study deal with the characteristics of age, sex, marital status, and grade point average. Important differences were found between teachers in varying age groups with respect to a number of characteristics. Although Ryans questions whether these differences were dependent primarily on changes in the teacher as he or she grew older, or on college-encountered cultural influences, he does state that age must be taken into account as a relevant independent variable whenever teacher characteristics are considered. He found that male teachers at both elementary and secondary school levels

appeared to be markedly more stable emotionally than female teachers. He also found systematic differences between married and single teachers, and found that teachers who reported having been outstanding students scored higher than other groups on most scales measuring effectiveness.

Rupiper (1962) examined the scholastic aptitude, personality traits, and interests of a group of experienced teachers and concluded that experienced teachers were not essentially different from people in general. According to Cook (1962), various researchers have reported correlation between experienced teachers' scores on the Minnesota Teacher Attitude Survey and the Guilford-Zimmerman Temperament Scale. To see if the same relationship between the two instruments existed for student teachers and beginning teachers, he analyzed data and concluded that although similar relationships exist, the correlations are nowhere as marked as in the case of experienced teachers. He further concluded that neither of the two instruments can be employed successfully as an initial selection device because they do not discriminate sharply enough at the prospective teacher level.

In recent years, a number of researchers have become interested in the characteristics of the effective teacher in low-income area schools. Goldsmith (1970) used pupil gain scores to compare a group of teachers of the disadvantaged to teachers of non-disadvantaged and found no significant differences. Robertson (1970) used the Edwards Personal Preference Schedule to determine that effective inner-city teachers scored higher than effective teachers of the non-disadvantaged on Affiliation and lower on Aggression. Using the same instrument, plus Rotter's Social Reaction Inventory, Holyfield (1970) concluded that teachers most effective in teaching the disadvantaged possess a high need for Order and Deference and a low need for Change and

Aggression. Heath (1971), interested in the ability of white teachers to relate to black students and to white students, concluded that the ability of teachers to relate to students is likely to vary substantially as a function of the race of the student.

Research and Literature Related to Success and Attrition

One measureable aspect of teacher effectiveness is that of teacher success or survival, which deals with effectiveness not in terms of teacher qualities or behaviors which affect educational outcomes, but with the teacher's experiencing sufficient success, satisfaction, or effectiveness (as judged by himself and his employer) that he continues in the teaching field. Many students who acquire teaching certificates never enter the classroom, while many more leave the profession during the first few years of teaching. The 1972 Report of the Commission on Public School Personnel Policies in Ohio set at 10% the yearly attrition rate for trained teachers, and attributed this drop-out rate in large part to the difficulties encountered by beginning teachers. The Commission also concluded that while there are many competing causes for the high drop-out rate among teachers, it appears clear that one important reason people leave is because they feel they failed.

Computations based upon University of Illinois graduates over a ten-year period (1946-1956) suggest that about 40% of those qualified to teach never take public school jobs. Of those who enter the profession, half had dropped out after two years of teaching. For every 1,000 graduates qualified to teach in the schools of the state, only 150 were still teaching after five years experience. During their tenth year in the profession, the number had dropped to 96 (Charters, 1956). The author calls for research to discover

predictors of professional longevity, stating that a few factors are available as starting points, such as the common knowledge that males are better survival risks than females.

Orlich (1972) concluded from a study of teacher mobility in Idaho that economically related reasons tend to be the primary cause for teacher turnover, with low salary being the most important single reason for mobility. Data collected during this study provided evidence that the teaching corps in Idaho is comprised of three somewhat distinctive age-sex groups: (1) young women, approximately 21-25 years of age; (2) reasonably young men, approximately 26-35 years of age; and (3) older females, whose ages approximated 46 years and over.

This suggested to Orlich the idea that there exists a fairly typical career pattern for female teachers, which is to teach until about the age of 25, then leave to bear and rear a family. As the family grows up, females tend to consider a return to work. Thus, re-entering teachers appear as older females (between 41 and 50) who have completed their academic work approximately 20 years previously and are again assigned to the classroom, with as little additional preparation as possible.

Bennett (1970) also sees the housewife - teacher as a prime contributor to the teacher dropout rate, pointing out that many of the female students who complete teacher education programs are not really interested in teaching, but look upon it as only temporary employment until they marry or as a means of supplementing the family income until children are born. The researcher feels that the problem centers around: (1) the caliber of students in teacher education programs; (2) relatively low standards for entry into programs; and (3) the apparent lack of building into such programs a set of objectives

that lead to a life-long committment to the teaching profession.

Nadel (1970) also focused on the idea of committment as a requisite for success in his investigation of characteristics of volunteers serving in Big Brothers of America. He found no statistically significant difference between volunteer and non-volunteer populations, but did find that successful volunteers scored significantly higher than unsuccessful volunteers on the Revised Scale of Social Responsibility.

The idea of attacking the teacher dropout problem before the teacher completes training is shared by Haubrich (1960) who states that if teacher educators are to presume continued improvement of personnel in education and to assume that young men and women want to become teachers, then it is incumbent upon those who are engaged in the education of those teachers to establish the validity of these presumptions and assumptions. Using a sample of 195 College of Education students at the University of Utah, the author found only 35% of the students with a "strong drive to teach," and a full 30% who held the "mattress philosophy," which regards teaching as something to fall back on.

In another study of teacher education graduates, Hasler (1969) attempted to determine the extent to which selected social and economic factors were perceived by the graduates to be associated with their rejection of public school teaching as a career. Working conditions, social status, salary, and retirement were found to be closely associated with the career decision of these teacher education graduates who chose not to enter the profession.

Browning (1963), Nelson and Thompson (1963), and Stinnet (1970), reported evidence of teacher turnover as a result of such employment

conditions as low salary and excessive classroom load. Charters (1968), however, suggested that the teacher's personal attributes have a greater effect than working conditions in determing his career pattern. Age, sex, and marital status were found to play important roles with older teachers more likely to stay in the district, and young males better risks than females. Impellitteri (1965) found men more persistent than women, older persons more persistent than younger persons, and greater persistence by unmarried than married women.

Whitener (1966) also concluded that teacher attributes, not organizational characteristics, determined survival. Males, older teachers (up to age 54), and single women were associated with higher survival rates, with age at entry the best single predictor of length of service. Charters (1970) built upon Whitener's work by looking at all new teachers in the state of Oregon in 1962-63 academic year and following them for four years. He found that males survive longer than females up to age 40, at which point the survival rates become very similar. Age at time of employment was strongly related to the survival rate of females. Up to about age 55, the older the teacher, the better her survival prospects. Doty (1970) attempted to establish criteria for the prediction of success in teaching of women who begin teaching after age 35, but found that all the mature women performed well on all the measures investigated and all were judged highly effective by their employing principals. If these findings are supported by the results of future research, concluded the author, the prediction of teaching effectiveness among mature female teachers is a rhetorical issue.

Hill (1956), in a study of secondary school teachers in Maryland, found strong positive relationships between a tendency to leave the profession and entrance at an early age, marriage for women, and first year of teaching.

The tendency to drop out during the initial few years of teaching experience was also reported by Griffith, et al. (1966).

E. H. Stone (1964) concluded from a study of problems experienced by first-year teachers that men experienced fewer than women and that the middle age-range of 24-35 years perceived fewer problems than the extremes in age. Timson (1957) found previous academic success an indicator of successful performance in student teaching and Bell (1971) found high undergraduate grade point average highly related to acceptance of the first year teacher by the building principal.

Walton (1971) found the Torrance Tests of Creative Thinking, the Myers-Briggs Type Indicator, and the Edwards Personal Preference Schedule useful as predictors of success for prospective teachers in an urban teacher education. project. Cohen (1971) investigated factors related to the attrition of beginning teachers from inner-city schools using his questionnaire and Shostrom's Personal Orientation Inventory. The sample included 73 first and second year teachers, 32 of whom did not intend to remain in teaching beyond the current year. Factors which significantly differentiated between "stayers" and "leavers" included sex and education hours. Women tended to stay more than men, and "stayers" had more courses in education than "leavers."

Among the attempts to isolate variables associated with success have been studies predicting success and investigations of the characteristics of unsuccessful teachers. In a longitudinal study of college of education students in Toronto, Sandiford (1938) administered intelligence, achievement, and personality tests along with interviews and questionnaires. He found: (1) a low positive correlation between grades in education courses and teaching success; (2) grades in student teaching have some value in predicting success

or failure in the field.

A different approach to the task of prediction was utilized by Johnson (1969) who analyzed selected personal characteristics of Washington teachers whose contracts were terminated during the 1967-68 school year. This group of 26 teachers whose work or conduct was so unsatisfactory as to result in contract termination was compared to a matched group of teachers judged successful. The researcher found the terminated group to be older (41.7 to 35.1 mean years), have fewer years experience (8.1 to 10.3 mean years), and were judged to be more erratic, excitable, and inflexible than the satisfactory group.

In a related study, Klopp (1972) used the Teaching Situation Reaction Test to identify the potentially unsatisfactory among newly employed teachers. Though he concluded that the instrument was not consistently effective in identifying the potentially unsatisfactory, he did learn that the majority of teachers rated unsatisfactory and not to be re-employed were below 26 years of age, female, and in the first year of teaching.

Johnson (1972) used records, case histories, college supervisor's judgements, and Cattell's Sixteen Personality Factor Questionnaire to analyze personality characteristics of unsuccessful student teachers at the University of North Dakota. He found that the unsuccessful students displayed deficiencies in communication ability, planning, and organizational ability along with personal inadequacies that limited them in their relationships with other people. Selection must be considered to be of paramount concern, according to the researcher, for preparation to result in the kind of teacher considered desirable.

Long before his extensive work on teacher effectiveness, Barr (1940)

described the widespread interest in the recruitment and selection of teachers and called for more and better research in the area. Caldwell (1972) surveyed school districts in California, Colorado, Oregon and Texas to test the assumption that cultural pluralism (diverse ethnic, racial, religious, or social groups within a common civilization) is given little consideration in the recruitment process and that competence as measured by appropriate credentials and universal standards of manners and grooming is predominant in the recruitment of teachers. His reported results were overwhelmingly consistent with the hypothesis, since there was "evidence of no serious effort" in the districts to find applicants who could relate to or teach in a pluralistic school or who could communicate to broad segments of the school.

Schimizzi (1973) has suggested that the selection of teacher applicants could be done more effectively through the use of video-taped interviews and samples of teaching ability to be provided to the prospective employer. Such a method would, according to the author, provide specific evidence of the applicants' teaching personality, poise with faculty interviewers, poise with children, ability to communicate with children in the classroom situation, voice projection, personal appearance, and interaction ability.

Another factor to be considered when investigating the availability of high ability people and their staying power is the economic situation. For programs such as Teacher Corps, in which interns are paid a stipend and granted a waiver of tuition fees, prevailing labor market conditions can have a large effect on the number and quality of volunteers, as well as their willingness to remain in the program.

Research and Literature Related to Experimental Teacher Education Programs

The unanswered questions about teacher success and professional longevity, along with the popular and often profitable activity of criticizing urban schools and teachers, have provided impetus for many efforts at improving the training of teachers through experimental programs. An example of the kind of criticism being leveled at traditional teacher preparation programs, and another plea for better selection is the following statement by Gallegos (1972):

> The traditional teacher-training programs that have existed for decades can best be summed up as programs about educational philosophy, social foundations, evaluation, and audiovisual aids, with a traumatic, learn-by-doing finale called student teaching. . . . Teacher education is the only professional field in which deadwood has never been considered a hindrance. As a result, it has unwittingly harbored enough uncommitted students to hamper even the best-designed program. The most reliable figures in the state of Washington for example, show that after only four years of work, over 50% of those trained in 1965 dropped out of the profession. The future wife getting her security, the undecided student, and the relative ease of becoming a professional in the field all contribute to the expansion of teacher education programs in the face of a teacher surplus (p. 43).

The author concludes with the recommendation that most of the locale for training be shifted from the campus to the public schools. The shifting, or at least sharing, of the teacher education program to the public schools is also recommended by Bowman (1972) who states that:: (1) the professional aspect of the training of teachers needs to be centered in the schools and controlled by them; (2) school-based professional training should include a strong component of learning from the community; (3) school-based undergraduate training should involve some sort of in-neighborhood credentialing by the school system and parents. The same line of reasoning is evident in Silberman's (1970) conclusion that one reason many teacher education classes are so irrelevant is that many educationists are as far removed from the public schools

as they are from the arts and sciences faculties.

While it is difficult to quarrel with the idea of designing improved training programs, there appears in the literature the persistent idea that training has little relationship to success. Koerner (1963) points out that the investigators of teacher effectiveness discovered nothing to suggest that the effectiveness of a teacher had much to do with his or her pedagogical training. Keppel (1966) supports and expands this idea in the following statement:

> Discussions of teacher education generally focus upon instruction and programs of courses, so that the relative importance of training versus selection is frequently not considered. Long and sometimes frustrating experience has suggested to many educators that selection is as important as training in teacher education (p. 90).

Whatever the relative importance of selection versus training, many teacher educators are investigating directions in which they should move in their preparation programs, especially those designed to meet the present urban educational problems. An indication of the scope of these efforts can be gained through an examination of the number and types of programs funded by the Bureau of Educational Personnel Development, U. S. Office of Education.

One especially popular feature of many current training programs is the internship. Such programs for college graduates who had not prepared to teach during their undergraduate years are seen as a way of tapping new sources for teachers. These programs are particularly directed at those not normally attracted to teaching, such as housewives seeking careers, returning military personnel, mature men seeking new careers, and liberal arts graduates of all ages.

Different forms of the internship concept have been tried at various times over a number of years. In recent years, internships have come to be

thought of primarily as fifth-year programs or one to two year special internships apart from the undergraduate sequence.

Bergstrom (1956) points out the problems and high attrition rate during the first two years of teaching and suggests a "professional year" internship be superimposed on a four-year liberal arts program. The reasons given for resistance to a five-year requirement are interesting in that they do not seem nearly so important 17 years later. The objections are: (1) it intensifies the teacher shortage; (2) it delays the earning of a salary for an additional year; and (3) it delays marriage. While there may be a shortage of effective teachers who stay in the profession, the supply of trained teachers is sufficient. Most internship programs now provide some subsidy for the intern, so he is not entirely without funds. Resisting the temptation to question the delay of marriage as an unfavorable idea, it can still be pointed out that the current concern with overpopulation and the changing life styles of the young superannuate the third objection.

J. C. Stone (1967), in his evaluation of fifth-year internship programs supported by the Ford Foundation, described the graduates of the program as high-quality, scholarly people who, because of special recruitment and special care during the internship, feel that both they and the program are quite special. In a comparison of interns with regular first-year teachers, Haberman (1965) found interns rated more responsible, systematic, and business-like. The author acknowledges the fact that he is comparing unlike groups of people who are teaching under different sets of conditions. He further qualifies his results by refusing to assume that the interns were experiencing a curriculum which elicited more organized, business-like teacher behavior, preferring to explore several alternate rival hypotheses for explaining the

differences between the groups. Essentially, these have to do with the fact that the interns, as a group, had more work experience, broader life experiences, and might have been more highly motivated because of family responsibility and the cultural pressure facing mature adults beginning new careers. The author concludes with the recommendation that greater weight be placed upon the characteristics and attributes of the individuals selected to be interns than on the likelihood that better preparation for planning was offered. This concern with selection rather than type of training supports the ideas cited earlier by Keppel, Koerner, Doty, Caldwell, and Charters.

One ambitious experiment in teacher education was the Bay City experiment, a five-year study (1953-1957) directed by Central Michigan University. This cooperative study for the better utilization of teacher competencies used time studies to measure and analyze teacher activities, pairing non-professional aides with experienced teachers in the experimental classrooms. While it was demonstrated that elementary teachers spend a great deal of time on tasks that could be handled as well by aides, the experiment received mixed reviews. The Project Director, Charles Park (1956) indicated that while Stanford Achievement Test scores of experimental and control groups were not significantly different, both the experimental group children and their parents were very favorable toward the use of the aides.

An early experimental approach to teacher internships was the Arkansas Experiment in Teacher Education. Krathwohl and Spalding (1956) describe the experiment as a cooperative arrangement among the 14 major Arkansas colleges and the university, each of which received grants to improve its general education program. The fifth-year internship program was designed for persons holding a degree in liberal arts but no training in education. The pre-teaching

phase, the inservice training with pay, and the summer follow-up are all quite similar to the Teacher Corps programs now funded by the U. S. Office of Education.

A present trend in teacher training is the creation of programs especially designed to prepare teachers for inner-city schools. A pioneering program was the Cardozo Project in Urban Teaching, which recruited Peace Corps and VISTA veterans and persons experienced in other types of volunteer service and, later, graduates direct from college to prepare to teach in inner-city schools. Located in Washington, D. C. schools, the key elements of the program were a supervised internship, related seminars focused on urban teaching problems, the development of instructional materials adapted to educationally deprived students, and direct study of family and community life. Results reported by Cuban (1964) indicated that such a program can be effective in recruiting able, mature, and dedicated people from a variety of socioeconomic backgrounds to train for and teach in inner-city schools. In evaluating this project through the use of objective data such as undergraduate academic records and National Teacher Examination results, plus reports by qualified observer-judges, Stiles (1967) concluded that the kinds of teachers produced by this project are more effective in dealing with the instructional problems unique to the urban environment than teachers prepared in traditional programs. Schueler (1963) studied the project in an attempt to predict the type of person who volunteered for the program, but was unsucessful. Hendrix (1970), after examining promising innovative plans for training teachers for inner-city schools, included in the essentials of his model program that 80% of the trainees selected be black, and that 70% be male.

Research and Literature Related to Teacher Corps

One "experimental" model which attempts to incorporate many of the features recommended by critics of traditional programs is Teacher Corps. The writer will make no attempt to justify the rationale of the Teacher Corps model, operation, or premises upon which it is based. The purpose of this section is to describe the model, including its operation and assumptions, and to present available information regarding intern characteristics, attrition rates, and entry to the teaching profession.

The Teacher Corps was created by Title V-B of the Higher Education Act of 1965. Its purposes, as stated in the legislation, are to strengthen the educational opportunities available to children in areas having concentrations of low-income families and to encourage universities to broaden their programs of teacher preparation. A brochure (Teacher Corps, 1973) prepared by the national office describes the program as

> a nationwide effort to give children from low-income families better educational opportunities and to improve the quality of teacher education programs. Teacher Corps gives school districts in low-income areas, their communities and nearby universities the chance to work together, plan and operate innovative two-year programs for better training and utilization of teachers (p. 3).

The Corps recruits and trains college graduates and upperclassmen who, in most cases, have not prepared to teach. The volunteers receive a summer of orientation and are provided a two-year internship in low-income area schools. Modeled after the Cardoza Project, the program seeks to provide special training for teachers committed to working in the poverty-area schools. The internship features a three-sided approach to teacher training, with the trainees spending approximately 60% of their time in the school, 20% in on-site instruction for academic credit, and 20% in community projects such as tutoring in the homes of students. The level of involvement in the three areas

varies over the two-year period, with interns gradually assuming more responsibility in the schools and spending less time in structured academic classes but more in individual study. Interns receive a stipend and an allowance for each dependent, with the total amount not to exceed the salary for a beginning teacher in the local district.

Recruiting, screening, and selection of interns is an important and expensive process. The ability and survival power of interns has much to do with the effectiveness of the training program and the degree to which Teacher Corps goals are realized. The U. S. Office of Education Teacher Corps Guidelines offer the following information regarding qualifications for admittance to the program:

> Interns must have a strong interest in preparing for a career in the education of the disadvantaged. They must be emotionally mature and capable of empathy with children and adults who have very different backgrounds. Candidates seeking to enter graduate programs must have a bachelor's degree with credentials adequate for admission to advanced study or evidence of a strong desire and potential capability to work at the graduate level. Interns for undergraduate programs must have successfully completed two or more years of study toward a baccalaureate degree. No prior education courses are required (p. 4).

> The selection requirements (for each local program) should recognize outstanding teacher prospects who have only average prior academic records as well as excellent prospects with high level academic records. This should be especially true when considering applicants from lower socioeconomic backgrounds. Proposals should indicate what flexibility will be allowed in admission standards, with alternatives to grade point average requirements (p. 21).

In selecting applicants, the Guidelines require that the local project organize a selection panel consisting of representatives of the university, of the cooperating school system, and of the community. This panel interviews applicants and selects those to be admitted. Recruitment and screening is done by the local projects and by five regional recruitment and referral

centers. The Guidelines specify that local project selection requirements should recognize outstanding teacher prospects who may have only average prior academic records, especially when considering applicants from lower socio-economic backgrounds. They further specify that flexibility in admission standards should be exercised, with alternatives to the grade point average requirements. Projects are also required to obtain a slate of nominees with the ethnic backgrounds and geographical mix established by the local program. One stated objective of the program is to attract people who may not otherwise have entered the teaching profession, including housewives, liberal arts graduates, and retired military personnel. The previously mentioned brochure states, in discussing intern eligibility, that previous education courses are neither required nor recommended. The heavy emphasis on recruitment of and special consideration for applicants from low socio-economic backgrounds, along with the requirement that universities allow flexibility in admission requirements for these candidates, indicates several Washington office assumptions regarding the desirable characteristics of potential interns. The premise upon which this practice is based may be questionable as a method of selecting potentially successful teacher trainees.

The interns selected are on provisional status during the summer orientation period and are assessed to determine their potential for teaching children from low-income families. At the end of this summer phase, which is usually six to eight weeks in length, projects are to terminate candidates who have indicated limited potential.

In many respects, this model would seem designed to respond to many of the problems listed by the critics of traditional teacher training programs. The two-year internship provides a much longer laboratory experience and a

strenuous evaluation of the committment of the trainee. The on-site instruction requires the university instructor to get off campus and back to the reality of the inner-city classroom, and it provides him with a group of students who can give him a good deal of feedback from the experiences they are having in the schools. Ideally, it is not a group of passive students taking notes from a lecture, but a group of active, concerned prospective teachers looking for ways to reach the students with whom they are working. The community involvement activities and the emphasis on group process and team effort, the emphasis on the recruitment of the minority group members, and the participation of school, community and university in the selection process are other features which seem to respond to the usual criticisms of traditional teacher education programs.

In accordance with U. S. Office of Education Teacher Corps Guidelines, there is much flexibility available in the selection of interns insofar as such factors as grade point average, age, educational level, and previous education hours are concerned and therefore much variance between local projects. Recruitment and selection panels are guided only by local project preferences regarding such factors, plus the Guidelines' request for persons who are emotionally mature, emphatic, and interested in working with children from low-income families.

The first two-year cycle began in the summer of 1966 with the funding of 50 projects. Each year, some new projects are funded and others are continued. The initial cycle drew the attention of a small number of researchers, but very little descriptive data is available on succeeding cycles. Goldman (1968) gathered data on 19 Cycle I interns through administering the Edwards Personal Profile Schedule, the Graduate Record Examination, the Minnesota

Teacher Attitude Inventory, and the Wechsler Adult Intelligence Scale. On the Edwards Personal Profile Schedule, the interns exhibited greatest need for Achievement, Autonomy, Dominance, and Change, which he termed a "success-oriented syndrome." Average intelligence score (WAIS) for the group was 114. Attitudes, as measured by the Minnesota Teacher Attitude Inventory, changed negatively after work experience. This study of needs, attitudes and intellectual characteristics of a small sample was an attempt to provide a picture of the kind of person who joins Teacher Corps. No comparison or correlations were made and no conclusions were drawn.

Cort (1968) gathered Cycle I data regarding characteristics of interns, attrition rate, and reasons given for leaving. The average was 23 years of age, although 16% were over 30. Most interns had maintained a grade point average of 3.0 or more in college. Interns were 67% Caucasian, 30% Negro, and 3% Spanish-speaking American or American Indian. An examination of stated reasons for program separation and student records revealed that: (1) enrollees with low Graduate Record Examination verbal scores tended to leave the program; (2) men tended to leave because of concern over funding and finances, and women tended to leave because of academic difficulties; and (3) most interns who left the program went into education or related social service work. Only 49% of Cycle I interns completed the program.

Howard (1969) compared Cycle I interns who persisted in the program with those who did not, using selected personal characteristics. He concluded that white interns were more likely to complete and that persons who had majors in the social sciences and humanities tended to persist, but found little difference in the selected characteristics of the two groups. Since he used no statistical tests to differentiate, his conclusions are based upon a comparison of percentages.

Information on interns who successfully completed Cycles I and II was gathered through a termination questionnaire developed and administered by the research staff of the Teacher Corps national office in Washington, D. C. The percentage of questionnaire response was 63% for Cycle I and 76% for Cycle II. It was determined by the research staff that the respondents were representative of the total groups on demographic characteristics. Table I provides a comparison of successful Cycle I (1966-68) and Cycle II (1967-69) interns on these characteristics. Both groups indicated that their main reasons for joining the program were, in order of importance: (1) to work with the disadvantaged; (2) to become a teacher; and (3) to receive a stipend while earning academic credit. The two groups also gave identical responses when asked to select the three most important factors to be considered in the selection of future interns. Personal warmth and sensitivity were listed as the most important factor, followed by maturity, and then by adaptibility. A follow-up survey of Cycle I graduates found 81% teaching during the year following graduation, with another 5% in education but not teaching. The survey of Cycle II graduates provided figures of 78% and 7%. Characteristics of Cycle III interns are not available, but a follow-up survey revealed that 80% were teaching during the year following graduation. The intern attrition rates compiled by the national office staff are listed at 51% for Cycle I, 20% for Cycle II, and 9% for Cycle III.

The paucity of research and descriptive data on Teacher Corps interns is in part a result of the limited personnel and resources available to the Research and Evaluation Department of the national office. Local projects are encouraged to evaluate their programs and progress, but few of these reports are distributed. Poole (1972) surveyed the University of Pittsburgh education faculty to determine perception of the impact of its Teacher Corps

program (1966-71) on teacher training methodology and attitudes. The Teacher Corps goal of bringing about change in teacher education programs met with very little success at Pittsburg, according to the findings of this study.

TABLE I*

Characteristics of Intern Graduates of Cycles I and II

Characteristic	Cycle I N = 395	CycleII N = 532
Male	56%	58%
Married	53%	53%
Age	Average: 23 yrs.	54% under age 25
Caucasian	68%	79%
Negro	28%	16%
Other minority	4%	5%
Previous education courses	70%	23%
Previous student teaching experience	45%	17%
Previous teacher certification	37%	42%
Undergraduate student when recruited	49%	42%

*Age is reported differently for the two groups because of a change in the questionnaire format after Cycle I.

Summary

The following generalizations related to teacher effectiveness, success and attrition, experimental training programs, and Teacher Corps are summarized to serve as a base for the present study:

1. Teacher effectiveness has received much interest and research effort but few useful generalizations have been provided. Problems of definition, instrumentation, and criterion have been troublesome to researchers in the area.

2. There is disagreement as to the importance of such teacher characteristics as age, sex, marital status, and academic achievement as related to success in teaching.

3. A related area of concern to researchers is that of attrition rates of teachers. A number of trained teachers choose not to enter the profession, and many who do enter leave the field during their first two years. Researchers have attempted to isolate predictors of success and longevity and call for refined methods of screening and selection of prospective teachers.

4. One response to the extensive criticism of traditional teacher training programs has been the creation of experimental models. While no one design has been widely acclaimed as a panacea, the Teacher Corps model attempts to incorporate many of the features recommended by critics of the traditional programs.

5. Research in teacher education seems to be turning from studying teachers in general and toward studying more precisely defined groups.

CHAPTER II

THE PROBLEM AND DESIGN

Introduction

The literature reviewed in Chapter I called attention to the lack of consistent results from studies on teacher effectiveness, success, and attrition, and to the disagreement regarding the importance of such teacher characteristics as age, sex, and academic achievement. Ryans (1960) recommended research which would develop and refine predictor materials for greater understanding of the effects of personal characteristics of teachers, and Charters (1956) called for research to discover predictors of professional longevity so that screening and selection of teachers would be improved. Cyphert (1972) approved of the trend toward studying more precisely defined groups of teachers and suggested that researchers seek to learn what behavioral skills a teacher must possess in order to be effective, and what characteristics a prospective teacher must possess before he can acquire these skills.

Statement of the Problem

The purpose of this study was to analyze membership in two groups, graduates and non-graduates of Cycle IV Teacher Corps Programs (1969-1971) in relation to selected demographic characteristics hypothesized as being contributors to group membership. The characteristics considered were age, sex, grade point average, race, previous hours in education courses, marital status, and educational level at the time of program entry.

The overall problem of the study was to evaluate the classification system through the use of the seven variables. The research was directed toward answering three questions. First, how well does each variable classify or separate the subjects into the successful and unsuccessful groups? The problem was to weight each variable, uninfluenced by others, to see how effectively it discriminated between the two groups of subjects. The second question was concerned with identifying the most parsimonious composite of variables required for the classification of subjects. The third area of investigation had to do with the order of variables within the composite, or the analysis of the contribution of each variable.

Five of the variables - age, sex, grade point average, marital status, and ethnic group - have been considered important enough to investigators to merit much attention in studies. The sixth variable, educational level, has a direct relationship to age, since graduate students are typically older than undergraduates. The seventh variable, previous semester hours in education, was selected because of the interesting view of Teacher Corps Washington that such hours are "neither required nor recommended" for applicants. Whereas an uninformed educator might assume that a student's having taken courses in education might be evidence of commitment to the profession, those in Washington who devise program requirements seem to feel that exposure to traditional teacher training programs is something of a contaminating factor.

The general research hypothesis, then, was that membership in the two groups, program graduates and non-graduates, was related to the seven variables, and that the variables would, in varying degrees, discriminate between the two groups. In attempting to state statistical hypotheses in null form, it was necessary to consider this program both in terms of

statistical significance and practical significance. It is possible to obtain statistical significance with a large sample without arriving at a classification system which efficiently separates the subjects into groups. Stated in null form, the statistical hypotheses are as follows:

$H_0 1$: No individuals can be correctly classified on the basis of the seven variables considered individually.

$H_0 2$: There is no weighted combination of variables which will provide a classification system to separate the subjects into the two groups.

The statistical method of multivariate analysis used in investigating the problem was the Stepwise Discriminant Analysis (BMD07M). The ultimate use of this statistical technique is to predict group membership. In this ex post facto design, group membership was known, and the purpose was to analyze the data to investigate relationships between the seven variables and group membership. Stated another way, which variables discriminate between successful and unsuccessful trainees, and what combination of variables provides the best system for classifying subjects into the two groups?

Based on each single variable as a predictor, the BMD07M program will provide an F-value, a classification matrix, and a probability statement regarding each individual's likelihood of being included in each of the two groups. At each step of the program, one variable is selected and entered into the set of discriminating variables. The classification power changes at each step as the program re-evaluates and accounts for variance as each variable is entered in the step-wise manner. If the F-value becomes too low, the variable is deleted. This procedure treats all variables as continuous and shows the interaction of variables.

Definition of Terms

For purposes of this investigation, significant terms to be used are defined in the following statements:

1. Cycle IV Programs - projects which began operation in the summer of 1969 and terminated in 1971 at the end of the academic year.

2. Successful Interns, Program Graduates - both terms refer to those trainees who remained in the projects for the full two years and satisfactorily completed all requirements.

3. Educational Level - refers to the graduate or undergraduate status of the intern at the time of program entry.

4. Previous Education Hours - the number of semester hours of academic credit earned by the intern before program entry.

5. Age and Marital Status - also recorded at time of program entry.

6. Grade Point Average - refers to the intern's over-all grade-point average, figured on a 4.0 scale, at the time of program entry.

7. Team Leader - person having five or more years teaching experience, a masters degree, and supervisory experience. The team leader is the supervisor of a team of interns.

8. Pre-service Training - the six to eight weeks of initial training and orientation for interns and team leaders.

9. Title I Schools, Low-income Area Schools - those schools which receive financial assistance to meet the needs of educationally deprived students through Title I of the Elementary and Secondary Education Act of 1964.

10. Intern Profile Sheets - forms upon which local projects are required to list interns who begin pre-service training. The profile sheets, which include demographic information, are submitted to Washington before projects begin training.

Limitations of the Study

The research procedures of this study were such that the investigation be of ex post facto design. Kerlinger (1973) defines ex post facto research as:

> Ex post facto research is systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable. Inferences about relations among variables are made, without direct intervention, from concomitant variation of independent and dependent variables. (p. 379)

The most serious limitations were those inherent in an ex post facto design. They are the inability to manipulate independent variables and to exercise proper control over the randomization of the subjects. In this study, the dependent or criterion variable is successful completion of the training program. The independent variables are age, sex, grade point average, race, previous hours in education, marital status, and educational level.

Kerlinger states that despite its weaknesses, much ex post facto research must be done in psychology, sociology, and education simply because many research problems do not lend themselves to experimental enquiry. This study was limited to persons who were accepted into the 38 Cycle IV Teacher Corps projects across the nation. The group comprised a specific type of population which may not be typical of any other population. This study was further limited by the unavailability of data on characteristics other than the ones considered.

Although local projects are forced to deal with many federally-imposed regulations in designing and implementing programs, the many reports required of the projects do not seem to result in an organized system of information gathering and storage which would make data available to persons wishing to do research or evaluation on the programs. Except for the Intern

Profile Sheets, which list demographic data, each project determines what, if any, data it will gather on interns for purposes of screening or evaluation. This lack of concern or managerial efficiency results in a lack of available data to the researcher, who must rely upon local projects to respond to yet another request for a form to be completed. If evaluations or studies have been completed on any Teacher Corps programs since Cycle I (1966-68), the results have not been made available to administrators of succeeding programs.

Sample and Data Collection Procedures

Included in this study were all persons who were accepted into the 38 Cycle IV Teacher Corps projects which began in 1969. The students in this two-year internship program of teacher education provided a relatively large group (1,263) which included projects from 25 states and the District of Columbia. Commonality existed on the following factors:

1. All volunteered for a two-year internship in low-income area schools.
2. All were screened and chosen by selection panels whose membership and selection criteria were prescribed by program guidelines set in the U. S. Office of Education.
3. All were assigned to work in low-income area schools, in teams supervised by team leaders hired and trained by the projects.
4. All received a stipend of $75 per week plus $15 per dependent.
5. All Teacher Corps projects were working toward the same objectives and were committed to the same basic methods, including team-teaching, differential staffing, and community involvement.

It was understood by the researcher that in some respects this group fits Guilford's (1965) description of an *incidental sample*, a group taken because it was most available. However, Guilford goes on to say that if we know the significant properties of the incidental sample well enough and can

show that those properties apply to new individuals, those new individuals may be said tentatively to belong to the same population as the members of the sample. More precisely, the new members cannot be shown to be outside of the same population.

Correspondence with the National Teacher Corps office revealed that 38 projects were funded for Cycle IV (See Appendix A). A study proposal was prepared and submitted to the Corpsmember Branch of Teacher Corps and permission to use the records of the national office was granted. Records relevant to this study included Intern Profile Sheets submitted by the projects at the start of the program and graduation lists submitted at the conclusion of the projects. The computer printout containing the Intern Profile Sheets, or characteristics of all interns who began preservice training, was secured from the Corpsmember Branch, but a comparison of the data listed for Oklahoma in the printout to the data on file revealed the information so inaccurate as to be useless. Another questionable feature of the printout was the listing of zero previous hours in education for many team leaders, all of whom were required to have masters degrees in education to quality for the position. The researcher then requested and received the original copies of Intern Profile sheets submitted to Washington by each local project. This information coincided with records kept by the Oklahoma project and records from other projects contacted by telephone. Also available from Washington files was a computer printout of interns graduating from 21 of the 38 projects. The other 17 projects failed to respond to the national office request for a list of graduating interns, according to a staff member in the Corpsmember Branch. Names of graduating and non-graduating interns were requested from each local project.

Data sheets were prepared for each of the projects, with a listing of names of interns who entered the program and columns for recording the seven characteristics and whether or not the trainee successfully completed the program. Data available from the original Intern Profile Sheets and graduation lists were entered onto each project data sheet.

Packets were then mailed to the director of each project. Each packet contained the following materials:

1. The data sheet containing intern names and characteristics known (See Appendix B).
2. A letter explaining the study and requesting necessary data (See Appendix C).
3. A stamped, self-addressed envelope.

All projects responded to either the initial request, a follow-up letter (See Appendix D), or telephone calls, and the data collection was completed. This return can be attributed to several factors: (1) approximately 70% of each project data sheet was complete when mailed; (2) the incomplete columns required only a recording of information readily available; (3) most personnel in local projects expressed a desire for research findings which might be of use to them; (4) many of the requests were to persons whom the researcher had known during his experience as administrator of a Teacher Corps project.

The completed data sheets returned from the projects listed 1,265 interns who entered Cycle IV programs, with two interns listed as deceased during the training period. The remaining 1,263 persons for whom data were recorded comprise the sample for this study.

A great majority of the students (86%) were between 20-29 years of age at the time of program entry. The 30-39 years age range contained 9%

of the students, and 5% were below 20 or above 39 years of age. Subjects were also distributed unevenly according to previous semester hours in education, since projects were encouraged to recruit mainly students whose major field was not education. Fewer than 10 semester hours of education had been earned by 76% of the group, 15% had 10-19 hours, and 3% had more than 19 hours in education. The students were 58% Caucasian, 33% Negro, 5% Mexican-American, 2% American Indian, and 2% other ethnic groups. Using a 4.0 grade point average base, 58% fell between 2.0 - 2.9, 39% between 3.0 - 3.9, and 3% below 2.0. Table 2 presents the distribution of subjects by sex, marital status, and educational level.

TABLE 2

DISTRIBUTION OF SUBJECTS BY SEX,

MARITAL STATUS, AND EDUCATIONAL LEVEL (N = 1,263)

	Sex		Marital		Educational Level	
	Male	Female	Married	Single	Graduate	Undergraduate
Number	686	577	427	836	860	403
Percentage	54%	46%	34%	66%	68%	32%

Summary

Data Sheets were completed by project personnel of the 38 local Teacher Corps projects. These data sheets, which were developed for this study, provided information on the seven variables under consideration and an identification of interns who failed to complete the program. This obtained data provided the means for evaluating the classification system through an analysis of successful and unsuccessful interns using Stepwise Discriminent Analysis.

CHAPTER III

PRESENTATION AND ANALYSIS OF DATA

The problem of this study was to evaluate the classification system based on an analysis of successful and unsuccessful interns in relation to selected characteristics hypothesized as being contributors to group membership. This chapter presents results of data obtained from investigational procedures described in Chapter II.

Included in this study were all persons who were accepted into the 38 Cycle IV projects in 1969. Data on these 1,263 students were gathered from the files of the Washington Teacher Corps office and from each of the 38 local projects.

This research was directed toward answering three questions. First, how well does each variable classify or separate the subjects into the successful and unsuccessful groups? The second question was concerned with the order of variables within the total composite, or the analysis of the contribution of each variable. The third area of investigation involved the identification of the most parsimonious composite of variables required for the classification of subjects. Although two statistical hypotheses were stated in null form for discussion purposes in Chapter II, the study was directed toward investigating the three research questions rather than testing statistical hypotheses on a reject or fail-to-reject basis.

A multivariate analysis was used to classify individual subjects into the successful or unsuccessful groups on the basis of the seven variables, using Sampson's (1967) stepwise discriminant analysis computer program.

A summary of the size of sample, mean and standard deviation for each of the continuous variables for each group is presented as Table 3. The discrete variables were Sex, Marital Status, Educational Level, and Ethnic Group. Of the 963 graduates, 515 (53%) were male and 448 (47%) female. Of the 300 non-graduates, 171 (57%) were male and 129 (43%) female. The graduates included 632 (66%) unmarried persons and 331 (34%) married, while 204 (68%) married persons and 96 (32%) single persons were in the nongraduate group. Of those who completed the program, 635 (66%) entered as graduate students and 328 (34%) as undergraduates. The nongraduating interns included 225 (75%) graduate students and 75 (25%) undergraduates. By Ethnic Group, the program graduates included 527 (55%) Caucasians, 330 (34%) Negroes, 64 (7%) Mexican-Americans, 29 (3%) American Indians, and 13 (1%) from other ethnic groups. Nongraduates included 205 (68%) Caucasians, 70 (23%) Negroes, eight (3%) Mexican-Americans, four (2%) American Indians, and 13 (4%) other ethnic groups.

TABLE 3

MEAN AND STANDARD DEVIATION OF
GRADUATES AND NONGRADUATES FOR THE CONTINUOUS VARIABLES

	Nongraduates (N = 300)		Graduates (N = 963)	
Variable	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1. Age	23.54	5.07	24.71	5.55
2. Educ. Hours	4.28	9.80	6.93	10.09
3. GPA	2.54	0.46	2.89	0.49

The within groups correlation matrix is presented as Table 4. Although this matrix has little direct bearing on the purpose of this study, it does provide a view of the relationships between variables. With this large sample, the table values required for significance are .062 at the .05 level and .081 at the .01 level (Guilford, 1965). These values were exceeded in a number of cases, with the highest correlations occurring between Marital Status and Age (.31) and between Grade Point Average and Educational Level (-.24).

TABLE 4

WITHIN GROUPS CORRELATION MATRIX

		1 Age	2 Sex	3 Marital	4 Ed. Level	5 Ed. Hrs.	6 Ethnic	7 GPA
1.	Age	1.00						
2.	Sex	0.09**	1.00					
3.	Marital	0.31**	-0.04	1.00				
4.	Educ. Level	0.01	0.22**	0.08*	1.00			
5.	Educ. Hours	0.09**	0.13**	0.04	0.09**	1.00		
6.	Ethnic	0.06	0.14**	0.03	0.21**	0.01	1.00	
7.	GPA	0.10**	-0.02	-0.02	-0.24**	-0.01	-0.16**	1.00

*Significant at the .05 level
**Significant at the .01 level

The next step for the program was to consider each of the variables, uninfluenced by others, to see how effectively it discriminated between the two groups of subjects. Based on each variable as a predictor, the program provided an F-value and a probability statement regarding each individual's likelihood of being included in each one of the two groups.

Table 5 presents the F-value and overall probability of correct classification for each variable, for the composite, and for the most parsimonious composite. This table provides an illustration of the point made in Chapter II regarding statistical significance and practical significance. The large sample allowed Variable 1, Age, Variable 4, Educational Level, and Variable 5, Education Hours to have F-values which far exceed the 6.66 table value required for statistical significance at the .01 level (Guilford, 1965), but so many subjects were misclassified by each of these variables that they can be said to have no practical value as individual predictors of group membership. Since the purpose of this study was to build a classification system having practical value, Table 6 results were used to calculate overall probability of correct classification for each variable, the composite, and the most parsimonious composite. These probability figures appear as the last column in Table 5.

Table 6 presents the number of cases classified into each of the two groups. For example, using the single variable, Age, as a predictor, the program correctly classified 252 of the 300 nongraduates and 292 of the 963 graduates. To arrive at the .43 overall probability presented in Table 5, the steps were to compute the probability of any case being: (1) classified a nongraduate, (2) classified a graduate, (3) correctly classified as a nongraduate, and (4) correctly classified as a graduate. The final procedure is to add the results of step 3 times step 1 and step 4 times step 2.

TABLE 5

F-VALUES AND CLASSIFICATION POWER OF SINGLE VARIABLES, COMPOSITE, AND MOST PARSIMONIOUS COMPOSITE

Variable	F-Value	D.F.	Correct % Classification
1. Age	10.47**	1/1261	.43
2. Sex	1.27	1/1261	.49
3. Marital	.81	1/1261	.42
4. Educ. Level	11.85**	1/1261	.44
5. Educ. Hours	15.92**	1/1261	.53
6. Ethnic	1.98	1/1261	.49
7. GPA	119.20**	1/1261	.63
Composite	29.45**	6/1256	.67
Most Parsimonious Composite	78.65**	2/1260	.66

**Significant at .01 level

TABLE 6

CLASSIFICATION MATRIX FOR EACH VARIABLE, COMPOSITE, AND MOST PARSIMONIOUS COMPOSITE FOR GRADUATES (GROUP 1, N=963) AND NONGRADUATES (GROUP 2, N=300)

	Age		Sex		Marital	
	Group 2	Group 1	Group 2	Group 1	Group 2	Group 1
Group 2	252	48	172	128	205	95
Group 1	671	292	518	445	635	328

	Educ. Level		Educ. Hours		Ethnic	
	Group 2	Group 1	Group 2	Group 1	Group 2	Group 1
Group 2	230	70	229	71	206	94
Group 1	637	326	527	436	548	415

	Grade Point Average		Composite		Most Parsimonious Composite	
	Group 2	Group 1	Group 2	Group 1	Group 2	Group 1
Group 2	207	93	209	91	208	92
Group 1	379	584	327	636	339	624

The probability of correct classification into either group provides a different and more practical view of the effectiveness of the variable as a predictor of group membership.

Tables 7, 8, and 9 present the functions and constants computed by the program for the assignment of subjects into groups. The function, or numerical estimate of the contribution of each variable, provides the equation for classifying the subjects into groups. The equation is a constant plus a function times the variable. From the data, the function determines the maximum predictive scheme.

TABLE 7

FUNCTIONS AND CONSTANTS BY VARIABLE AND GROUP

Variable	Graduates		Nongraduates	
	Function	Constant	Function	Constant
1. Age	0.84	-10.33	0.80	-9.38
2. Sex	5.79	- 4.24	5.65	-4.02
3. Marital	5.64	- 3.80	5.52	-3.63
4. Educ. Level	6.27	- 4.19	5.78	-3.56
5. Educ. Hrs.	0.07	- 0.24	0.04	-0.09
6. Ethnic	2.21	- 1.74	2.10	-1.57
7. GPA	12.47	-18.03	10.97	-13.96

TABLE 8

FUNCTIONS AND CONSTANTS FOR COMPOSITE

Variable	Graduates		Nongraduates	
	Function	Constant	Function	Constant
1. Age	.65	-38.04	0.63	-31.63
2. Sex	3.39	-38.04	3.49	-31.63
4. Educ. Level	8.08	-38.04	7.26	-31.63
5. Educ. Hours	-0.01	-38.04	-0.04	-31.63
6. Ethnic	2.06	-38.04	1.89	-31.63
7. GPA	14.19	-38.04	12.48	-31.63

TABLE 9

FUNCTIONS AND CONSTANTS FOR MOST PARSIMONIOUS COMPOSITE

Variable	Graduates		Nongraduates	
	Function	Constant	Function	Constant
4. Educ. Level	9.87	-27.85	8.96	-22.05
7. GPA	14.69	-27.85	12.99	-22.05

Table 10 illustrates the multiple discriminant analysis yielded by the program in a stepwise manner, with one variable selected and entered into the set of discriminating variables at each step. The variables are selected on the basis of having the largest F-value, or the highest multiple correlation and the greatest decrease in ratio of within groups variance to total variance. The classification power changes at each step as the program re-evaluates and accounts for variance as each variable is entered in the stepwise manner. If the F-value becomes too low, the variable is deleted.

The variable having the largest F-value is selected first for entry. In this case, Grade Point Average carried the highest F-value, 119.20, df 1/1261. The next entries, in order of F-value magnitudes, were Educational Level, F = 34.89, Education Hours, F = 11.31, Ethnic, F = 4.13, Age, F = 1.76, and Sex, F = 0.46. The Marital Status variable was deleted when the F-value became too low. The deletion of this variable was also reflected in Tables 5 and 8.

The re-evaluation by the program at each step is illustrated by the differing contribution made by Educational Level first as a single predictor, then as a member of the composite competing for entry. As an individual classifier, the variable carried a lower F-value than Education Hours and only slightly higher than age. In the stepwise analysis, Grade Point Average is entered, the correlation between it and Educational Level is removed, and the contribution of each remaining variable is calculated. Educational Level emerges as far the most significant in accounting for the remaining variance.

In summary, the data were analyzed in terms of answers for the three research questions previously stated. First, how well did each variable classify or separate the subjects into the successful and unsuccessful groups? Table 5 presents the F-value for each variable and notes which exceeded

TABLE 10

F-VALUES FOR VARIABLES ENTERED

Step Number	Variable Entered	F-Value To Enter	Number of Variables Included	D.F.
1	GPA	119.20**	1	1/1261
2	Educ. Level	34.89**	2	2/1260
3	Educ. Hours	11.31**	3	3/1259
4	Ethnic	4.13**	4	4/1258
5	Age	1.76	5	5/1257
6	Sex	0.46	6	6/1256

**Significant at .01 level

the table value required for significance at the .01 level. The number of cases classified into each group is presented in Table 6. The overall probability of correct classification reveals that some variables which provided statistically significant F-values for this large sample actually misclassified so many cases as to be of very little practical value as individual predictors. Grade Point Average and Education Hours were the only variables which had overall probability of correct classification higher than 50%.

The second research question was concerned with the order of variables within the composite, or the analysis of the contribution of each variable. The discussion of Table 10 which was presented earlier deals with this question.

The third area of investigation involved the identification of the most parsimonious composite of variables required for the classification of subjects. The overall probability of correct classification column in Table 5 reveals a .67 figure for the composite. A second computer run using the three variables with highest F-values, then using only the two highest indicated a .66 probability of correct classification for Grade Point Average and Educational Level, the most parsimonious composite.

CHAPTER IV

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary

The problem of this study was to evaluate the classification system based on an analysis of successful and unsuccessful intern teachers in relation to selected characteristics hypothesized as being contributors to group membership. Included in this study were the 1,263 students accepted into Teacher Corps projects in 1969. The review of literature appropriate to this study, particularly the literature dealing with teacher effectiveness and with Teacher Corps, resulted in the selection of the seven variables which were analyzed as contributors to membership in the two groups. The study was directed toward answering the following three questions:

1. How well does each of the variables classify or separate the subjects into the successful and unsuccessful groups?

2. What is the order of variables within the composite and the contribution of each?

3. What is the most parsimonious composite of variables required for the classification of subjects?

The data were analyzed through the use of a stepwise discriminant analysis computer program written by Sampson (1967). This procedure treats all variables as continuous and shows the interaction of variables. Based on each variable as a predictor, the program provided an F-value and a probability statement regarding each individual's likelihood of being included in the two groups. The multiple discriminant analysis of the composite of variables provided the order and contribution of each variable. A second computer run using only the three variables with the highest F-values provided the most parsimonious composite.

Findings

Three of the variables, Marital Status, Sex, and Ethnic, had F-values lower than the table value required for statistical significance at the .05 level. Education Hours, Educational Level, and Age had F-values which exceeded the table value, but each of these misclassified so many cases as to have little practical value as single predictors. Grade Point Average had by far the highest F-value, and was the only variable for which the overall probability of correct classification was higher than 60%. The composite of variables had a .67 probability of correct classification. The most parsimonious composite, Grade Point Average and Educational Level, had a .66 probability of correct classification.

The order and contribution of variables within the composite were presented on Table 10. Grade Point Average had by far the largest F-value and was entered first, followed by Educational Level, Education Hours, Ethnic, Age, and Sex. After the first three, contribution of the remaining variables was minimal.

Conclusions and Recommendations

Conclusions presented here are based on the results of the selected procedures for analyzing the data, with consideration for the established limitations, and are confined to the subjects of this study.

Of the individual variables considered as predictors of group membership, only Grade Point Average, with an overall probability of correct classification of .63, was effective enough to be considered effective in the practical sense. While three other variables carried F-values which exceeded the table value required for statistical significance due to the large sample, too many cases were misclassified to attribute any practical value to their predictive power. The probability of correct classification for the composite (.67) and for the most parsimonious composite (.66) offered little improvement

over Grade Point Average alone. It should be noted that the three variables with the highest classification power, Grade Point Average, Educational Level, and Education Hours, are academic rather than demographic characteristics.

Because of the relatively low classification power of the variables, the data were further analyzed in an attempt to discover why so many cases were misclassified. The individual cases misclassified by the most parsimonious composite were checked against those misclassified by each single variable. Not enough of the same cases were misclassified by enough variables to provide evidence of some commonality causing the misclassification. Another fruitless attempt at stratification involved separating the cases misclassified by the most parsimonious composite into successful and unsuccessful groups, then further sorting them into variable subcategories, where possible. The next step was to determine how many cases in each of the two groups were misclassified in each of the 38 projects. Stratification efforts involving geographic and urban-rural training sites also failed to provide useful information.

While this study did provide information regarding the limited discriminating power of most of the variables selected for classifying this sample, and did answer the three research questions, analysis of the present investigation raises other questions. A concern of future researchers must be the unavailability of data on Teacher Corps interns. Since Teacher Corps Washington has no standard procedure for gathering intern information other than the characteristics used in this study, other potentially helpful data, such as personality characteristics, are not available. This nonexistent data may possibly present a critical limitation in the present study, in that it limited full understanding of the available data and interpretation of the results.

Another pessimistic possibility is that federal guidelines and regulations place so many restrictions on local recruitment and selection that the applicants selected present a group so homogeneous that no variable or

combination of variables can discriminate with a high degree of effectiveness between successful and unsuccessful interns. This problem relates back to the information presented by the literature and research relating to effective teaching. There is wide disagreement as to the definition of effective teaching and the criteria for assessing it. Investigations into the relationships between teacher effectiveness and personal and professional characteristics of the teacher have considered almost every imaginable factor, including special training. The usual finding is that good teachers are friendly, cheerful, sympathetic, bright, and well-educated--qualities that improve any human interaction and which are not specific to teachers or teaching.

The most frequently used criterion for assessing teacher effectiveness has been a rating by supervisors. This method faces the problem of differential expectations by supervisors. For the purposes of this study, successful interns were defined as those who remained in teaching for the full two years and satisfactorily completed all requirements.

From a statistical viewpoint, a classification system which correctly places 67% of the subjects may seem a questionable improvement upon the toss of a coin. In considering the results of the study first from this point-of-view, several factors can be discussed as possible reasons for the relatively low level of accurate classification. The unavailability of other potentially helpful data has been mentioned as a possible limitation.

An examination of the individual cases misclassified reveals that many persons who completed the program possessed characteristics which made them appear to be unlikely candidates for success. This information, plus the program experience of the researcher, suggests that in projects where funds are granted on the basis of number of trainees, economic and political

considerations sometimes compete with good educational practice in the area of fulfillment of academic requirements.

Another consideration is the heavy emphasis on recruitment of and special consideration for applicants from low socio-economic backgrounds, along with the requirement that universities allow flexibility in admission requirements for these applicants. The fact that academic characteristics proved to be most effective of the variables in discriminating between the two groups may have implications for those in Washington who must make assumptions as to the desirable characteristics of potential interns. The implicit assumption that a low socio-economic background is more important than demonstrated academic ability for those who wish to become effective teachers of low-income area children may deserve further analysis. Many of the persons who are attracted to a stipend-paying internship program which puts little emphasis on prior academic achievement have had unsuccessful academic and vocational experiences and are looking for a second chance. For those of this type who are accepted, Teacher Corps becomes a compensatory education program, training losers to go out and teach the children of low-income families how to be winners.

However, the previously discussed problems of definition and criteria relative to effective teaching also suggest the possibility that additional data on these subjects would not greatly improve the predictive power of the classification system. The limitations of the study were known when it was designed. From an administrative point-of-view, the results of this study may be quite useful. Very little descriptive data and almost no research is available on this experimental teacher education program. While the classification system which resulted from this research is perhaps less than

impressive in the statistical sense, the results of the study may prove valuable to administrators who attempt to design, implement, and evaluate improved programs of teacher education.

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APPENDIX A

CYCLE IV TEACHER CORPS PROJECTS

1. Livingston State University (Alabama)
2. State College of Arkansas
3. University of the Pacific (California)
4. Hartford University (Connecticut)
5. University of Hawaii
6. Carbondale Corrections Program (Illinois)
7. University of Kentucky
8. University of Louisville (Kentucky)
9. Springfield College (Massachusetts)
10. Massachusetts University
11. Montclair State College (New Jersey)
12. Western Carolina University
13. Ohio University
14. University of Toledo (Ohio)
15. University of Oklahoma
16. Oregon State University
17. Pittsburgh University (Pennsylvania)
18. Memphis State University (Tennessee)
19. East Tennessee State University
20. Texas Christian University
21. Texas A & I University
22. University of Washington
23. University of Minnesota
24. Hartford Correction Program (Connecticut)
25. Northern Arizona University
26. University of Georgia

27. University of Georgia
27. University of Southern California
28. University of Indiana
29. Marshall University (West Virginia)
30. Oakland University (Michigan)
31. Bank Street College of Education (New York)
32. City College of New York
33. University of Southern Mississippi
34. University of Miami (Florida)
35. Temple University (Pennsylvania)
36. San Francisco State College
37. Washington, D. C. Public Schools
38. Southern Illinois University

APPENDIX B

DATA REQUEST FORM

Project:

Number:

Ethnic Code: (1) Caucasian (2) Negro
(3) Mexican-American
(4) American Indian
(5) Other

Name	Age	Sex	Marital	Educa. Level	Previous Ed. Hrs.	Ethnic	GPA	Completed Program?

APPENDIX C

DATA REQUEST LETTER

The University of Oklahoma 1700 Asp Avenue Norman, Oklahoma 73069

I am writing to ask your help in gathering data on Cycle 4 Teacher Corps interns for a research study. The purpose of the study is to see if the seven variables listed on the enclosed data sheet discriminate between interns who completed the Cycle 4 program and those who did not complete. This study is being done with the cooperation and encouragement of the Washington Teacher Corps Office.

The project data on the enclosed sheet was taken from the intern profile sheets submitted by your project to Washington at the beginning of pre-service training. Not all projects submitted a graduation list to Washington at the end of the cycle. For those who did, I have recorded the data as it appears on the Washington records, but this information should be closely checked for accuracy by local projects, since the non-completion rate seems much higher than the figures Washington gives. Although it is necessary to use interns' names in gathering data, neither intern names nor project names will be identified in the study.

Teacher Corps

Would you please have a secretary or other staff member pull your Cycle 4 records and complete the enclosed data sheet? All of the variables apply to the time of program entry, though marital status changed during the program for some interns. Overall grade point averages appear on item 18 of the formal application form completed by interns and previous education hours is listed on item 66.

A stamped, self-addressed envelope is enclosed for your convenience in returning the enclosed data sheet to me after it is complete. You will receive a summary of the findings at the completion of the study. Thank you for your cooperation.

Sincerely,

Jack T. Shannon
Associate Director, Teacher Corps
(405) 325-1751

APPENDIX D

DATA REQUEST FOLLOW-UP LETTER

The University of Oklahoma 1700 Asp Avenue Norman, Oklahoma 73069

Dear

A data sheet containing incomplete information on your cycle 4 Teacher Corps interns was recently mailed to your institution. As yet I have not received the completed data sheet from you. If it has already been mailed, thank you for your cooperation.

The information gathered from the data sheet is necessary to complete a study dealing with Teacher Corps interns in all Cycle 4 programs. The purpose of the study is to see if the seven variables listed on the data sheet discriminate between interns who completed the program and those who did not complete. Your assistance in supplying the necessary data to complete this study will be appreciated.

Teacher Corps

In case you have misplaced the data sheet, another is enclosed. All of the variables apply to the time of program entry. Overall grade point averages appear on item 18 of the formal application form completed by interns and previous education hours is listed on item 66. Would you please have a secretary or other staff member pull your cycle 4 records and complete the enclosed data sheet? Also enclosed is a stamped, self-addressed envelope for your convenience in returning the completed data sheet. Thank you again.

Sincerely,

Jack T. Shannon
Associate Director, Teacher Corps
(405) 325-1751