PREDICTING STUDENT TEACHING BEHAVIOR FROM NEEDS PROFILES BY COMPARISON WITH SOCIOMETRICALLY DEFINED GROUPS

DISSERTATION

Presented to the Graduate Council of the North Texas State University in Partial Fulfillment of the Requirements

For the Degree of

DOCTOR OF EDUCATION

By

Eldon G. Clary, Jr., B. S., M. Ed.

Denton, Texas
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CHAPTER I

INTRODUCTION

One of the most important variables in the classroom is the personality of the teacher. The daily interaction of the teacher and students has important consequences for the effectiveness of the school both at the cognitive and the affective level. One of the responsibilities of the education profession is to discover as much as possible about the personalities of teachers and of students preparing to teach.

The importance of the personality of the teacher has brought about the recognition that the sole criterion of teaching ability cannot be the number of degrees a person has obtained. The personality of the teacher determines the type of atmosphere which is developed within the classroom. It will also affect the ability of the teacher to permit the child to develop his potentialities as fully as possible.

Statement of Problem

The problem of this study was the prediction of aggressive, submissive, and normal student teaching behavior.
by the use of needs profiles from sociometrically defined
groups of education students. The criteria profiles were
constructed using beginning education students, and pre-
diction was made on a student teaching population.

Hypotheses

This study was designed to investigate the following
hypotheses:

1. There will be no significant differences among
the group means of the aggressive, submissive, and normal
groups of education students on any of the variables of
the Edwards Personal Preference Schedule (EPPS).

2. There will be no significant differences between
   a. the group means of the normal group versus
      the group means for the female liberal arts norm
      group on the EPPS,
   b. the group means for the submissive group
      versus the group means for the female liberal arts
      norm group on the EPPS,
   c. the group means of the aggressive group
      versus the group means for the female liberal arts
      norm group on the EPPS.

3. The pattern of loadings of the three groups of
   student teachers on a Q-technique factor analysis will be
   independent of the groupings of the student teachers as
   submissive, aggressive, or normal.
4. The selection of student teachers as aggressive, submissive, or normal on the basis of their needs profile will be independent of the classification of the classroom behavior of the students by the college coordinators.

5. The selection of student teachers as aggressive, submissive, or normal on the basis of their needs profile will be independent of the classification of the classroom behavior of the students by the supervising teachers.

Background and Significance

There has been a growing tendency in the past few years to include measures of personality in batteries of instruments administered to students applying for admission to teacher education programs. The growth of this tendency is evidence of the increased emphasis upon the importance of the teacher's personality in the preparation of teachers.

If teaching is primarily a function of the teacher's personality, then emphasis should be placed on the direction and modification of personality trends during the period of preparation and later during actual teaching service (4, pp. 52-53).

The ability to predict with some degree of confidence the future classroom behavior of students preparing to teach is one of the major problems facing teacher education institutions in the matter of selective recruitment of teacher candidates. Attempts to determine a good
teacher personality have been generally unsuccessful. Research has indicated that different teachers often feel that they have not been equally effective in teaching the same students.

Thelen (16) has probed this approach by what he calls "grouping for teachability." This grouping is based upon the premise that the interpersonal relationship between the teacher and the student is vital to the learning situation. If this premise is accepted, a specific teacher would likely have a better relationship with students exhibiting particular characteristics.

That is, the kinds of students a teacher considers teachable may have characteristics that meet his needs.

To the extent that a teacher's needs are met through his participation in activities that also meet the needs of the students, no exploitation is involved. If, however, a teacher has needs that cannot be so channeled, and if these needs are somehow threatening to the students, the students may feel resentment toward him even though they go ahead and help meet his needs (16, p. 20).

The behavior of teachers may vary in their attempts to meet their needs. Teaching behavior becomes an overt indicator of the needs of the teacher. The results of Thelen's experiments indicate that matching students and teachers has some validity. The possibilities of such an approach increases the importance of being able to predict the behavior of teachers with various needs structures.
Although there have been literally hundreds of studies concerned with the personalities of teachers, a review of the literature indicates that much of the evidence is either contradictory or of limited value. The Handbook of Research on Teaching (6) lists three problems which have contributed to the disappointing results of previous research: first, the lack of a concise and wisely acceptable definition of personality; second, the problem of choosing an effective measuring instrument; last, the absence of an adequate criterion of teacher effectiveness.

In an attempt to solve some of these problems, Mitchell has proposed that the study of teacher behavior should take a different approach to that commonly used in research studies of teacher behavior.

But one clear lesson that emerges is that the problem of predicting teacher behavior and influence will not be solved by oversimplified global approaches involving vague and unreliable criterion variables like "teacher effectiveness" and a potpourri of predictor variables. . . . They only serve to reemphasize the importance of focusing research effort on carefully chosen, more specific, and more manageable problems within the area that can lead to insights that will gradually increase our understanding of the larger issues (12, p. 529).

Studies of teacher behavior may be approached from the position of manifest needs. As Combs has said, "People do what they need to. This is a basic principle of behavior all of us have known for a long time" (3, p. 32).
The impact of the needs of the teacher upon his behavior increases the necessity of being able to predict the behavior of teachers. Miller (11) has emphasized the point that teacher education institutions need to be able to predict the behavior of their students before they begin their student teaching. Such knowledge would permit counseling with the student to help them become more aware of themselves.

Sandefur and Hinely (14) have reiterated this need for information regarding the behavior of teacher candidates. The evaluation of student teachers as poor, fair, or good has provided little insight into the actual teaching behavior of student teachers. Descriptive data of the student teacher's actual behavior has more potential usefulness.

It seems logical that if prospective employers are interested in knowing how good a job a student teacher has done that they would also be interested in a description of the particular types of teaching characteristics exhibited by the student teacher. More descriptive data would also be valuable for counseling with the student teacher who has completed his laboratory experience concerning the particular type of situation for which he may be best suited (14, p. 228).

This study was an attempt to determine if information in the form of needs profiles, as measured by the EPPS, gained prior to student teaching can be used to predict selected types of behavior during student teaching. The
ability to predict such behavior before student teaching can be used in counseling students admitted to the teacher education programs and in recommending students for particular teaching assignments. Information from this study will also be helpful to the public schools. Using past behavior as an indicator of future behavior, the schools will be able to select teachers they feel will exhibit the type of classroom behavior the schools desire.

Definition of Terms

College coordinators: those full time faculty members employed by the University who supervise student teachers.

Cooperating teachers: the public school teacher directly responsible for the guidance of the student teaching experience.

Student teachers: those students enrolled in supervised teaching experience at North Texas State University (NTSU) during the spring semester of 1967.

Nonstudent teaching education students: those students enrolled in Education 331 or 343 at NTSU during the spring semester of 1967.

Assumptions

Those students engaged in student teaching constitute a representative sample of students who have taken Education 331 or 343.
Scores on the EPPS remain relatively stable over a period of a few years.

Limitations

This study was limited to junior and senior female education students enrolled at NTSU during the spring semester of 1967.

The measurement of personality characteristics was limited to the EPPS.

The manifest needs considered in this study were limited to those included in the EPPS.

Procedures for Collecting Data

Selection of Non-student Teaching Group

Two populations were involved in this study. The first population consisted of all female students enrolled in Education 331 or 343. Students enrolled in these courses were beginning the professional education sequence at either the elementary or secondary level. From this initial population of 263 female students enrolled in Education 331 or 343, three groups of thirty students each were selected on the basis of sociometric nominations. These groups were designated as aggressive, submissive, or normal groups.

The decision to use only females in the initial population was based on the nature of the norms for the EPPS.
Although there are total norms based on both males and females, there are significant sex differences that might be lost if the population contained both males and females. In fact, there are significant sex differences on twelve of the fifteen variables. It was decided to use female students instead of males since this would establish a larger population for the study.

The first step in assigning the students to one of the three groups was to make five different lists of the names of all the female students enrolled in Education 331 or 343. Each list had the names arranged in a random order determined by the use of a table of random numbers. The lists were then distributed to all the students enrolled in Education 331 or 343 present on the date of administration. In several of the classes it was not possible to administer the instrument directly. In these classes the same directions were duplicated and attached to the lists as were given orally to the other classes.

The following introduction and instructions were given to each of the students receiving the list of names:

The information to be asked for is part of a research project and will be held in confidence. Each of you now has a list of names. Underline the names of those people that you know. Place the letter A by the names of the five people who best exhibit the following behavior: attacks contrary points of view, tells others what he thinks of them, criticizes others publicly, makes fun of others, tells others off when disagreeing with them, gets revenge for
insults, becomes angry and blames others when things go wrong. Look up when you have finished.

Place the letter S by the names of the five people you feel are the best examples of the following behavior: gives in and avoids a fight rather than have his own way, timid in the presence of superiors, lets others make decisions, avoids leadership, and follows instructions and does what is expected. Look up when you have finished.

Finally, place the letter N by the names of the five people you feel are the best examples of the following behavior: does not try to dominate others, respects the rights of others to have opinions and behaviors different from their own yet will stand up for her own rights and opinions, initiates social contacts, greets and talks with other people, active in promoting group plans and objectives, cheerful, optimistic, and a good sense of humor. Look up when you have finished.

The descriptions used in the instructions were taken from two different sources. The behaviors listed for the aggressive and submissive groups were taken from the appropriate description of the variables found in the manual for the EPPS. The behaviors listed for the normal group were taken from findings on normal personalities by Bonney (2). In all, 1,417 valid lists were returned from the students in the various sections. Following the administration of the sociometric device, the results were tallied for each of the female students.

First, the number of people that indicated they knew a particular student was determined. Second, the number of people nominating each of the female students as
aggressive, submissive, or normal was determined. Three
groups were then formed composed of the thirty females
receiving the greatest percentage of nominations for a
particular group by the people who had indicated that they
knew the particular student. For example, the number of
times a particular student was nominated for the aggressive
group was divided by the number of people who had indicated
that they knew the student. The aggressive group was then
composed of the thirty females having the highest percent-
ages. The same procedure was followed for establishing
the submissive group, and the normal group.

The members of the normal group were all considered to
be normal by at least 55 per cent of the people who knew
them. The submissive students were selected as being sub-
missive by at least 45 per cent of the students who had
indicated that they knew the submissive students. The
aggressive students were selected as being aggressive by
at least 37.5 per cent of the people who knew them. There
was the most agreement on the members of the normal group,
and the least agreement on the members of the aggressive
group.

After the three groups were formed, the results of the
EPPS were obtained for each member of the three groups. The
EPPS is an instrument designed to measure the relative
strength of fifteen theoretical needs.
A needs profile was constructed for each group based on the results of the EPPS. This profile was based on the relationships among the means for the three groups on each of the variables. The difference between variables in which the level of significance between any two means exceeded the .30 level was exaggerated. This exaggeration was accomplished by adding one standard deviation to the larger mean and subtracting one standard deviation from the smaller mean. For example on the subscale deference, the difference between the means of the aggressive and submissive groups exceeded the .30 level of significance. Since the mean of the submissive group exceeded the mean of the aggressive group on this variable, one standard deviation was subtracted from the mean of the aggressive group, and one standard deviation was added to the mean of the submissive group. The standard deviation used in each case was the standard deviation for that particular group. This procedure was followed taking into consideration levels of significance for three different comparisons on each variable: the aggressive group versus the submissive group, the aggressive group versus the normal group, and the submissive group versus the normal group. In each change of the mean for a particular group, the direction of the difference and the approximate relationship of the three groups was maintained. For example, the aggressive
mean on the variable aggression was greater than the submissive group at the .30 level of significance. The means of neither of these two groups were different from the normal group mean at the .30 level. In this case, the aggressive group mean was increased one standard deviation; the submissive mean was decreased by one standard deviation, and the normal group mean was left unchanged.

**Selection of Student Teaching Groups**

The needs profiles established by the above procedure were used in the formulation of groups from the second population. This second population consisted of all the female students engaged in student teaching at NTSU during the spring semester of 1967. The use of two populations arose from two basic considerations. First, a saving of time was accomplished by using two populations rather than following the initial group through their student teaching. Second, and most important, the value of any study is the ability to generalize the results. If certain factors are found to carry through two different populations of somewhat similar backgrounds, this information is much more valuable for predictive purposes than if the factors are found in only one population. Added to these reasons is Miller's plea (11) for the prediction of student behavior prior to student teaching. The test of generalization then comes from identifying factors in one population that are
characteristic of particular behaviors and using these factors to identify students from another population characterized by similar behaviors.

Results were obtained for 212 students in this second population from the EPFS. These individual EPFS results were compared with the needs profiles based on the initial groups. This comparison involved comparing the EPFS of each of the student teachers with the criteria profiles established for each group. This comparison utilized a least sum of squared differences approach. The difference between the scores on each of the scales for the criteria profiles and the scores on the EPFS for each of the 212 student teachers was obtained. This difference was squared and the sum of the squared differences was calculated. This method allowed the determination of the student teachers with needs profiles most like the criterion profile by utilizing all of the variables. This technique obtained similar profiles in that large deviations from the criterion profile were accentuated by the squaring process.

The twenty students with the lowest sum of squared differences which placed them in only one of the three groups was determined. In several instances, a student would be found to have a low sum of squared differences which would make the student eligible for more than one group. These students were eliminated from the study. In every instance, students designated to two of the groups were found to be
in the normal group and either the aggressive or submissive group. In none of these cases was a student a potential member of both the aggressive group and the submissive group.

The twenty student teachers selected as belonging only to one group and whose EPPS scores were most like the criterion profile for one of the groups constituted the final groups. These students were then classified as exhibiting behaviors most like one of the three groups by both their college coordinators and their supervising teachers. Several studies have shown that these two groups can provide reliable data. Hinely (7) found a correlation of .67 between the ratings of college coordinators and cooperating teachers on the readiness for teaching of a group of student teachers. This correlation was significant at the .001 level. Mathis and Park (9) also found a correlation of from .78 to .79 between ratings by university supervisors and cooperating teachers on a success criterion for student teachers.

The method of classification used by the college coordinators involved a modified Q-sort treatment. The behavioral descriptions used in the original sociometric nominations were reworded in terms of use in the classroom. These behavioral descriptions were then given to the college coordinators with a list of student teachers. This list consisted of student teachers that the coordinator had supervised and included both student teachers that had been placed in one of the three groups and student teachers that had not
been placed in any of the groupings. The total number of student teacher names equaled the total obtained by use of a formula designed for that purpose. This formula was $3(m+1)+3$. The largest number of students that the coordinator had in any one of the three groups was equal to $m$. The names on the lists then consisted of all of the student teachers of each particular coordinator that had been placed in one of the three groupings plus enough other student teachers to reach the total as indicated by the formula. The names of the ungrouped student teachers that were used were selected by listing all of the female student teachers not already grouped that the college coordinator had worked with during the spring semester of 1967. These lists were made in alphabetical order. The required number of student teachers was then selected by use of a table of random numbers. In a few instances where the coordinator did not have a sufficient number of female student teachers to satisfy the numerical requirement, additional names were taken from the list of female student teachers supervised during the fall semester of 1966.

The names of those students were added to those already determined by the grouping technique. All of the names of student teachers supervised by the college coordinator that were selected for the list were then placed in alphabetical order and given to the coordinator along with a copy of the behavioral descriptions (Appendix A). The coordinator was
then instructed to place all but three of the student teachers in the group which best described her behavior during student teaching. The coordinator was further instructed to place an equal number of names under each grouping. It was felt that this technique had several advantages. First, it circumvented the tendency to rate all subjects as having the most desirable tendencies as perceived by the coordinator. Second, to be included in any one group, the student teacher had to fit the description better than a number of student teachers. Also, the student teacher of concern to the study remained unknown to the coordinator. One major disadvantage, however, may be that no one single student teacher may fit a particular category, but the coordinator was forced to include the student because she was more like the description than any of the other student teachers on the list.

The reliability of this technique was checked by the test-retest method on thirty subjects. A Pearson's product-moment coefficient of correlation was calculated by assigning the aggressives a value of one, the normals a value of two, the submissives a value of three, and others a value of four. The interval between tests was three weeks. This technique was found to have a value of 0.83.

Such a method was impossible to use with a cooperating teacher. Each teacher was sent a letter with a scaling device (Appendices B and C). The scaling device consisted
of the extreme behavioral descriptions of the aggressive group and the submissive group. The scale was divided into nine divisions. The first three divisions were included in the aggressive group; the last three divisions were included in the submissive group. If the cooperating teacher checked one of the three middle divisions, the student was included in the normal group. This method had some disadvantages, but remained to be the best for achieving the desired behavioral classification.

The reliability of this device was determined on the basis of the test-retest method on thirty-seven students. A Pearson's product-moment coefficient of correlation was obtained by giving a value of one to the aggressive group, a value of two to the normal group, and a value of three to the submissive group. The interval between tests was two weeks. The reliability of this device was 0.72.

Those teachers who either failed to respond or returned invalid scales were sent a follow-up letter (Appendix D) and another scaling device. In some instances, a third letter was required. Returns were obtained for forty-five of the sixty student teachers. This constituted a 75 per cent return.

Procedures for Treating Data

Hypothesis one was tested by the use of simple analysis of variance. F ratios were obtained for the three groups on
each of the fifteen variables. If the F ratio was found to be significant, Fisher's t was used to determine between which two groups the significant differences occurred.

Hypothesis two was tested by the use of Fisher's t in which each of the original groups was compared separately to the norm group on each of the variables.

In testing hypothesis three, a Q-technique factor analysis using the principal axis technique was obtained. Communality estimates were inserted in the principal diagonal. Five factors were isolated and notated using the varimax technique. Q-technique factor analysis correlates between people over stimuli (1). In other words, this technique loads people under certain factors. In using this technique, there is the disadvantage of generalization being to the universe of content rather than to a universe of people. Also, in interpretation, the interpreter must go back to the stimuli or test. A factor loading of .50 was considered to be significant. The degree of independence between the factor loadings and the groupings was tested by chi-square.

Hypotheses four and five were tested by the use of chi-square. The use of chi-square allowed the determination of the degree of independence of the classification of the student teachers on the basis of their needs profile and the classification of the student teachers by the
college coordinators, hypothesis four, and supervising teachers, hypothesis five.

The null hypothesis was rejected at the .05 level of significance. Computations from the data were made by the NTSU and the Southern Methodist University (SMU) Computer Centers.
CHAPTER BIBLIOGRAPHY


CHAPTER II

RELATED LITERATURE

The importance of teacher personality has been evidenced by the numerous studies attempting to determine characteristics of effective teachers. The problem of teacher effectiveness has been reviewed thoroughly by Barr (2) and Domas and Tiedeman (9). These reviews have covered studies in this area through 1950. The pace of studies published in concern to this topic has continued to be rapid. The voluminous quantity of literature published concerning teacher personality precludes a complete review of the topic even since 1950. This chapter will review selected literature in the following areas: (1) studies involving teachers or teacher candidates in which the measuring instrument was the EPPS, (2) publications concerned with normal personalities, and (3) studies involved in predicting teacher behavior from the results of personality inventories other than the EPPS.

Studies Using the EPPS

The introduction of a new personality inventory has invariably been followed by its use in studies of teacher
personality. Compared to the use of some of the other personality inventories, studies using the EPFS involving teachers are relatively scarce. Most of the studies using this instrument have been directed toward comparisons of teachers with other occupational groups to discover differences in manifest needs structures.

Gray (14), for instance, conducted a study in which the manifest needs, as indicated by the EPFS, of experienced male secondary teachers were compared to the needs of accountants and mechanical engineers. Significant differences were found on several of the scales. Teachers had significantly higher average scores on the needs of affiliation, intraception, and nurturance than either of the other two groups. The teachers also scored significantly higher on needs of deference and abasement than did the accountants; succorance was the only additional need on which the teachers scored significantly higher than mechanical engineers. Differences in need structures were also found between teachers grouped on the basis of the degree of job satisfaction as measured by the Index of Job Satisfaction. Gray also found (15) that teachers received significantly higher scores on social reward values than either accountants or mechanical engineers on the Miller's Occupational Values Indicator. On this device, teacher values formed a hierarchy in the following order: career satisfaction, social rewards, security, and prestige.
One of the most frequently quoted studies dealing with the manifest needs of teachers as an occupational group was the study by Jackson and Guba (17). This study utilized a sample of 366 public school teachers from twenty-two suburban schools around Chicago. The sample was composed of: ninety-one male secondary teachers, twenty-seven male elementary teachers, fifty-two female secondary teachers, and 196 female elementary teachers. Each teacher was administered the EPFS. The group mean for each of the four groups on each of the fifteen scales was compared to the norms. In this instance, the norms were based on a sample of liberal arts students.

All four groups were found to have significantly greater scores on the need for deference, but the groups had significantly smaller scores on the need for heterosexuality. With the removal of the elementary male teachers, the three remaining groups were found to have significantly higher mean scores on the needs of order and endurance but lower scores on exhibition. Male secondary teachers scored significantly lower on intraception and succorance; female secondary teachers scored significantly lower on need: change. Female teachers were significantly lower on the need for dominance. The lack of high mean scores on needs of nurturance, affiliation, and intraception seemed to indicate that teachers "are not highly motivated by a strong interest in social service, by powerful nurturant needs, or even by a deep interest in children" (17, p. 180). Males were also found to have
increasingly higher scores on the need of deference with increased experience. All male groups based on experience were also significantly lower on the need for heterosexuality than was the norm group. With increasing experience, females tended to have an increase on the score for the need: order. Females were also high on endurance but low on dominance for all experience groups. On the basis of these results, Jackson and Guba concluded:

These characteristics appear to fit the stereotypic model of the teacher as sexually impotent, obsequious, eternally patient, painstakingly demanding, and socially inept—the stereotype which is frequently portrayed in the mass media (17, p. 189).

This statement must be tempered, however, by the knowledge that the later adult norms for the EPPS have shown significant differences between adults and college students on various scales.

The similarity of needs structures of teachers, administrators, and counselors was studied by Kemp (18). The subjects consisted of forty-five individuals drawn from each of the three groupings. Each subject was administered the EPPS. Differences between the three groups were determined by the use of simple analysis of variance. The resulting data indicated that administrators had significantly greater needs of achievement, endurance, and aggression than either the teachers or the counselors. The teachers had significantly greater needs of succorance and nurturance than
either of the other two groups. The needs of counselors were greater than the two other groups on exhibition, affiliation, and intraception. These results tend to indicate that the needs structures of teachers, administrators, and counselors are not the same, and it is doubtful that the manifest needs of the members of any one group would be met if he served in the roles held by members of the other two groups.

In another study using 781 teacher education students, Merrill (21) found some significant differences between his sample and the norm group for the EPPS. The education students had significantly greater scores on the needs deference, order, affiliation, intraception, abasement, nurturance, and endurance than did the norm group; however, their scores were significantly lower than the norm group on autonomy, change, succorance, heterosexuality, and aggression. When the results for school administrators and experienced science teachers were included, all three groups were found to have significantly greater scores on deference, order, and endurance than the norm group. The only score significantly lower than that for the norm group was on the need heterosexuality.

The needs structures of teacher education students as indicated by the EPPS were also investigated by Hamachek and Mori (16). Their sample was composed of the following subgroups: seventy-seven female elementary education majors,
seventy female secondary education majors, and ninety-nine male secondary education majors. Male secondary education majors scored significantly above the norm group only on the need for intraception. Female education majors, though, scored significantly greater than the norm group on needs of affiliation, intraception, succorance, abasement, and change. They were significantly lower on achievement, autonomy, dominance, nurturance, and aggression. Female secondary education majors were significantly lower on heterosexuality in addition to the needs common to both female groups.

In a study by Garrison and Scott (11), the EFPS was used to determine if the personal needs of college students preparing to teach differ significantly according to the prospective area of teaching. The subjects consisted of 530 college students in professional education. The students were divided into five categories: lower elementary, upper elementary, general secondary, nongeneral secondary, and special education. An analysis of variance resulted in a significant F ratio for achievement, nurturance, order, and succorance. Female prospective teachers of general secondary education scored significantly higher on the need of achievement than the lower elementary, upper elementary, and nongeneral secondary female majors. Both nongeneral and general secondary education majors scored significantly lower than the lower elementary majors on nurturance.
nongeneral secondary majors scored significantly greater than the general secondary majors on the need for order.

An attempt to identify the differences in the manifest needs of education students and of another professional student group, pharmacy majors, was the purpose of a study by Vineyard, Drinkwater, and Dickison (29). Their sample consisted of all of the first year male pharmacy students, a total of fifty, and fifty male third year education students selected at random from the same university. Both groups were administered the EPPS and the group means and variabilities on each of the subscales were determined. The only significant difference between the means of the education students and the pharmacy students was on the need for intraception. The education group showed a significantly higher mean for this need. When differences in variability were examined, the scores of the education group showed significantly more variability on needs for achievement, affiliation, nurturance, and change. Pharmacists were significantly more variable only on the need for order. These results indicate that it is possible for different people to expect to satisfy different needs by entering a specific occupation. Although it may be that many people enter an occupation to meet the presumably obvious needs, others may enter the same occupation to meet other needs.
Cook, Linden, and McKay (8) conducted a factor analysis of the results of 196 education students on the EPFS and the Guilford Zimmerman Temperament Survey (GZTS). The researchers utilized a Multiple Group Centroid analysis with a Varimax rotation of the orthogonal matrix. A loading of .40 was used as the criterion of acceptability. Six factors were found: docility, dependency, authoritarianism, compulsive conformity, introversion-extroversion, and avoidance. These factors present a picture of prospective teachers as denying aggressive feelings, acceptant of nondemanding life goals, a strong need to belong, to provide for the welfare of others, avoiding change, having a passive orientation to the problems of life, avoiding sincere intimate relationships in the activities of life. The authoritarian factor which stresses needs for status and control of the behavior of others, in light of the other factors, might be best realized within the somewhat protective confines of the classroom.

In a follow-up study, Cook, LeBold, and Linden (7) compared the factor analyses of education students and engineering students to determine if such an analysis would yield similar factors. The subjects consisted of 196 students enrolled in educational psychology and 252 students in a freshman engineering orientation course. Both groups were administered the EPFS and the GZTS. The results were analyzed by use of the same techniques used in the previous study. Five common factors were obtained. These factors were called
social drive, social maturity, intraception, flexibility, and emotional maturity. A sixth factor, authoritarianism, was found in the education students but not in the engineering students. Although the factors were common suggesting that the factors were a function of the instruments, the directions of the factor loadings indicated that the direction was a function of the group tested. Although the factors were not given the same names as in the preceding study, the needs of the education students within these factors were quite similar to the previous study.

Adams, Blood, and Taylor (1) compared needs structures of arts and science students, education students, and experienced teachers. Males were found to differ only on the need for order. Females differed on the needs for deference, affiliation, succorance, endurance, heterosexuality, nurturance, and aggression. Results indicated that the experienced teachers were the most manageable of the three groups, and the education students were more docile than the arts and science students.

Differences in needs structures between student teachers of different grade levels were the subject of an investigation by Scandrette (24). The subjects consisted of seventy-three female elementary student teachers and eighty-nine female secondary student teachers. These subjects were given the EPPS. The resulting means for each group were compared with the means for the other group and with the
means for the norm group. The means for the elementary group were significantly greater than the norms on needs for deference, order, and affiliation. Significantly lower scores were found on needs for autonomy and aggression. The secondary group scored significantly higher than the norm group on needs for order and dominance; this group scored significantly lower than the norm group on affiliation and succorance. In addition, the secondary group was found to be more autonomous, dominant, and aggressive than the elementary group, but the elementary student teachers were more affiliative than the secondary group.

Elementary education majors were divided into early-elementary-preference and later-elementary-preference groups by Southworth (27). These students were then administered both the EPPS and the Study of Values. The early elementary group indicated greater needs for abasement, succorance, affiliation, and nurturance. The later elementary group had greater needs for achievement, aggression, and exhibition. There were no significant differences on any of the values included in the Study of Values between the early and later elementary groups.

Saltz (23) conducted a study in an attempt to determine if there was a teacher stereotype, and if such a stereotype did exist what relationship would it have to actual needs of teachers. Thirty-seven middle-class women were instructed
to answer the EPPS as they felt the majority of teachers would answer. These results were then compared with the results for the study conducted by Jackson and Guba (7). When compared with the results for elementary teachers, the judged needs were greater on the needs for achievement, dominance, order, and aggression. Judged needs were found to be lower than actual needs for autonomy, affiliation, abasement, nurturance, and change. When compared to secondary teachers, the judged needs were found to be greater for needs of dominance, order, intraception, and aggression. The judged needs for autonomy, abasement, affiliation, nurturance, and change were significantly less than the actual results. This small sample tended to stereotype teachers as ambitious, domineering, fussy and tyrannical.

Sheldon, Coale, and Copple (25) attempted to determine if high and low scorers on "warm teacher scales" could be identified by certain personality measures. The "warm teacher scales" were the Minnesota Teacher Attitude Inventory (MTAI), and the K, Hostility, Pharisaic Virtue, and Teacher Prognosis scales of the Minnesota Multiphasic Personality Inventory (MMPI). High scores on the "warm teacher scales" were found to have significantly greater scores than the low scorers on the needs for affiliation and dominance. High scorers scored significantly lower on needs for succorance, aggression, and abasement as measured by the EPPS. High scorers or "warm teachers" tended to be less
authoritarian, in less need of succorance, and with a greater need for affiliation than low scorers.

Goody and Finlay (6) attempted to determine if it was possible to differentiate, by use of the EBPS, between the needs structurers of student teachers rated as dominant and those rated as submissive by their college coordinators. The dominant student teachers were significantly higher on needs autonomy, dominance, and aggression than the submissive student teachers. The dominant group scored significantly lower on needs abasement and succorance. A factor analysis also revealed differences between the two groups on one factor. This factor was called "self-centeredness." This factor was characterized by a general concern for oneself and a lack of concern for others. The dominant group tended to have high positive loadings on this factor; the submissive group tended to have negative loadings with a number of the loadings being significant. Both groups tended to load positively with a number of significant loadings on a factor designated "noninvolvement." This factor was characterized by an avoidance of routine, responsibility, leadership, and a lack of perseverance.

Somewhat unusual results were found by Medley (19) in his study of teacher needs and teacher-pupil rapport. No relationships were found between any of the needs, as measured by the EBPS, and the teacher-pupil rapport, as measured by the reaction of the pupils to the student teachers. When
only the results of the inconsistent records were used, there were some significant results. Medley justified this approach of using only selected scores by reasoning that the inconsistent scorers were more likely to be telling the truth. Student teachers with a high degree of teacher-pupil rapport and inconsistent scores on the EPFS expressed needs for intraception, achievement, abasement, aggression, and heterosexuality.

Normal Personality

The inclusion of a group of normal student teachers was valuable since it forms a halfway point if aggressive-submissive behavior is seen as a continuum. Research on normal teacher behavior gains importance due to the common findings of clinical studies which have found a high degree of psychological maladjustment in teachers (12).

The study of normal personality has begun to take a new direction. Several authors such as Nuttin (22) have pointed out weaknesses in common concepts of normal personality. Normal personality has often been characterized as the absence of mental illness. This concept of normal personality has been predicated upon the data obtained from the study of people exhibiting abnormal behavior. Normal behavior has been seen as behavior in which these abnormal tendencies are not present; therefore, normal behavior becomes an abnormality of abnormal behavior.
Combs (5) was identified the four aspects he feels are characteristic of people with adequate personalities. First, these people see themselves as being adequate. This does not mean that these people regard themselves in a completely positive manner. It does mean that negative aspects are recognized and accepted without destroying the self-concept. A second aspect is that the adequate personality is capable of identifying with others. This identification does not mean that the person with an adequate personality is an extrovert. It does mean that the person exhibits a feeling of oneness with others. Third, the adequate personality is both open to and acceptant of experience. It uses experience to determine adjustments and changes necessitated by the situation. Last, the adequate personality must have a perceptual field available to it that is extensive enough to enable it to understand a variety of situations.

The development of a conceptual model of the normal personality was of concern to Shoben (26). He again pointed out the lack of information about the normal personality. There is not a single generally accepted concept of normal personality. In fact, some have argued that no man has a normal personality. Statistical and relativistic concepts are meaningless. By the statistical concept, a person free of nervous traits must be considered abnormal. A relativistic concept is considered in terms of group standards; however, this leaves the group free from appraisal. The
normal personality is conceived of as one characterized by self-control, willingness to assume responsibility for one's actions, a need for others and responsibility for social relations, a concern for others above a concern for things, and attempts to achieve one's ideals even though the attempt may occasionally fail. This concept does not picture the individual as being totally happy and carefree. He may fall short of his ideals, experience guilt, and have other problems; however, the problems do not incapacitate the ability to perform. The normal individual, thus, enjoys the respect and positive feelings of others with a minimum difference between his ego-ideals and self-concept.

Bonney (3, 4) conducted studies utilizing a social definition of normal personality. On the EPPS, the high normal group had higher median scores on achievement, intraception, and autonomy. He found the low normals to be consistently lower on these scales; however, the differences were not significant. In general, the high normals were found to have interpersonal attractiveness to other students, honesty and forthrightness in communicating with others, a capacity for self assertion and for aggressive response against efforts to dominate or reject them, and strong motivations to maintain self autonomy and to actualize their potentials. Low normals were found to score significantly higher on the "Detached Independent Self" scale of the California Self-Structure Scale. This scale is characterized
by an avoidance of interpersonal relations and emotion laden situations. On a self rating scale constructed by Bonney, based on characteristics of normal personalities, four scales were found to be significant at the .05 level in favor of the high normal group. These scales were friendliness and sociability, group interests and group identifications, enjoyment of life, and sympathetic and altruistic interests. High normals, those students seen as being normal by their fellow students, were not found to be free from difficulties. In fact, many of the high normal students were found to have quite severe problems, such as problems with their parents. The main difference between the two groups seemed to be the response made to such problems. High normals had problems but were able to reconcile their problems. The low normal group seemed to have difficulty reconciling similar difficulties. The high normal group also tended to react to the situation. That is they did not tend to have rigid behavioral patterns. Their mode of response varied according to the situation. Their behavior was flexible. The low normal group was more characterized by inflexible behavioral patterns.

Teacher Personality

Much of the research conducted in the area of teacher personality has been directed toward the identification of effective teachers. Even so progress has been slow. As
Eisner pointed out, "We have barely gone beyond the 'Do you like Children?' stage in attempting to evaluate a student's fitness to teach" (10, p. 353). It is obvious that teachers, as is true of other occupational groups, enter teaching in order to satisfy certain needs.

Wallen, Travers, Reid, and Wodtke (30) attempted to determine the relationship between teacher needs and the classroom behavior of a sample of elementary teachers. A paper-and-pencil questionnaire provided scores on needs of achievement, in terms of academic excellence; affiliation, in terms of warm and personal interaction with students; control, moment to moment control by the teacher of the students; recognition, the need of the teacher to be the center of attention. Teacher behavior was measured by an adapted Withall technique, observer ratings, and a Q-sort. The Q-sort was based solely on classroom behavior as "in some cases there seemed to be striking differences between the behavior of the teacher in the classroom and behavior in other situations in which these teachers could be observed" (30, p. 24). A significant positive correlation was found between the need for control and the rated behavior of the controlling tendencies of the teacher. A positive correlation was found between control and affiliation on measures of teacher behavior; however, when teacher behavior was viewed by observers, the relationship between control and affiliation was significant but negative. In
effect, the authors concluded that devices that ask an individual how he will behave in familiar stimulus conditions may provide the best prediction of how the individual will behave.

Symonds (28), after analyzing the autobiographies of fifty women teachers, concluded that many teachers find that teaching satisfies needs other than financial return or professional achievement. Some teachers, having strong inferiority feelings, become teachers because they work with children inferior to themselves. He also felt that many of these teachers have strong feelings of deference toward those in positions of authority. Other teachers need to be dominant and aggressive. Teaching, to them, appears to be a socially approved opportunity to express otherwise repressed aggressive and sadistic tendencies. Although the filling of needs provides intrinsic motivation for entering teaching, various teachers may be characterized by needs different from those above.

Medley and Mitzel (20) attempted to relate teacher behavior to teacher effectiveness. Teacher effectiveness was measured by improvement on the California Reading Test, improvement in problem solving skill, pupil ratings of pupil-teacher rapport, teacher ratings of three teacher's roles, and principal ratings of the teacher for the same three roles. Classroom behavior was measured by the OSCAR technique including the dimensions of emotional climate,
verbal emphasis, and social organization. The results indicated that neither reading nor group problem solving was related to any dimension of behavior. Emotional climate was found to be related to pupil-teacher rapport. Those teachers rated most effective by their supervisors were those who had the friendliest classrooms. Teachers rating themselves high in teaching fundamental skills gave less opportunity for students to work in small autonomous groups.

Gillis (13) attempted to determine the needs structures of students in teacher education programs. The subjects were administered the Stern Activities Index based on Murray's work on manifest needs. Teacher education students were found to feel less need for intellectualism than the general college population. They also exhibited a need for dependency markedly greater than the general college population. Men in the sample were found to have greater needs for intellectualism; while women were found to express greater needs for dependency.

Summary

The ability to identify the behavior of teacher candidates prior to student teaching has been of concern to institutions of teacher education for a considerable period. Unfortunately, the results of most of the studies have been inconclusive. The majority of such studies have been
concerned with the prediction of effective or "good" teachers. These studies have utilized almost, if not, all of the published personality inventories.

Some authors have urged that efforts to predict the identify of effective teachers be replaced by efforts to predict teaching behavior. The EPPS has not received extensive use in the prediction of teacher behavior. The majority of studies involving teachers or teacher candidates, in which the EPPS has been used as a measuring instrument, have been concerned with comparing the means of the various variables with the means of other occupational groups.

Other types of research using the EPPS have included identifying the different needs structures of teachers at various grade levels, teaching assignments, comparing varied teacher groups with the norm group, correlating the results of the EPPS with the results of other measuring instruments.

Two studies (6, 19), utilizing the EPPS, were discussed in which the major purpose of the studies was to determine if the instrument discriminated on the basis of behavioral characteristics. Both studies indicated the possible value of the EPPS in this line of research.

The results of the studies in which the EPPS was used have indicated that as an occupational group teachers tend to express some of the needs which are not generally considered to be indicative of good mental health. Studies
using other instruments have tended to add some substance to these studies. Studies have typically pictured teachers or education students as having high scores on needs for deference and abasement. Scores on aggression were usually low. These studies have presented a picture of the teacher or teacher in training as one who does what others tell him, has a general feeling of unworthiness, and lacks a tendency to express his feelings toward his own views and the views of others.

Those studies that have utilized other measuring instruments have generally come to similar conclusions of the needs structures of education students and teachers. Although the names of the variables are not the same, the characteristics identified by the various instruments are similar to those characteristics identified by the EPPS.

The problem of psychological maladjustment of teachers has been compounded by the difficulty of identifying normal personalities by the use of objective personality devices. Bonney's studies (3, 4) presented evidence of the difficulty of separating "high normals" from "low normals" on the basis of objective personality measurements.

It is not enough to be able to distinguish submissive student teachers from aggressive student teachers, or to distinguish any other two groups if at the same time the members of these groups cannot be distinguished from the student teachers that have been designated as having
normal personalities on the basis of some criterion. The difficulty of choosing a criterion has been considered in this chapter, and social definitions of behavior appear to have validity.
CHAPTER BIBLIOGRAPHY


CHAPTER III

PRESENTATION OF RESULTS

Introduction

This chapter is concerned with the presentation of the results of this study. The tenability of each of the research hypotheses was considered in the light of the data and the interpretation of the data. The null hypothesis was rejected at the .05 level of significance. In instances where the level of significance reached the .01 or .001 level, these levels were reported. Computations were done by the computer centers at Southern Methodist University and NTSU.

Hypothesis I

The first hypothesis stated that there would be no significant differences among the mean scores on the EPPS of three groups of female students. These groups were composed of those female education students enrolled in professional education courses that had been identified as aggressive, submissive, or normal by their peers. Table I presents the results of the analysis of variance for the three groups on the fifteen variables of the EPPS.

The data shown in Table I reveals that the only significant F ratio was for the need deference. The level of
significance of the F ratios indicates that for all of the variables, except deference, any difference between the means of the three groups could have resulted from a variation due to chance.

### TABLE I

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sums of Squares</th>
<th>Variance Estimates</th>
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<th>Level of Significance</th>
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<td>Within</td>
<td>Between</td>
<td>Within</td>
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<td>1907.33</td>
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</table>
The only variable having an F ratio that was statistically significant was the variable called deference. The F ratio on this variable was significant at the .05 level. People scoring high on this variable are described in the manual for the EPFS as being conventional, doing what is expected, permitting others to make decisions, following leaders, and seeing the viewpoint of others.

The F ratio for deference was significant; therefore, Table II shows the relationships among the three groups on the variable for deference in an attempt to locate the source of variation.

**TABLE II**

**Means, Standard Deviations, t Ratios, and Levels of Significance Used in Comparing Each Group of Female Student Teachers with Each of Two Other Groups on the Need: Defference**

<table>
<thead>
<tr>
<th>Groups</th>
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<th>S.D.</th>
<th>t</th>
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<tr>
<td>Submissives vs.</td>
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<td>3.70</td>
<td>2.14</td>
<td>.05</td>
</tr>
<tr>
<td>Aggressives</td>
<td>11.07</td>
<td>3.59</td>
<td></td>
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</table>
Table II indicates the source of the variation. The variation between the submissive group and the normal group is quite small. The variation between these two groups could easily be due to chance. The aggressive group was significantly lower than either the normal group or the submissive group on the need for deference. The variation in both cases was significant at the .05 level. According to the description of this variable, members of the aggressive group are less likely to do what is expected, to permit others to make the decisions, to follow leaders, and to be conventional.

Hypothesis one must be rejected on the basis of this data; however, it should be recognized that it is very unlikely that behavioral groups could be distinguished on the basis of one variable.

The t ratios obtained by contrasting the mean of each group with the means of the other two groups were not used except for the need of deference. For reference purposes, the t ratios comparing the three groups are included in the Appendix (Appendix E).

Hypothesis II

The second hypothesis stated that there would be no significant difference between the means of each of the three groups and the means for the norm group on any of the variables of the EPQS.
Table III depicts the $t$ ratios obtained when the means from each of these groups was compared to the means for the norm group. Table III presents three sets of $t$ ratios: normal group versus the norm group, the aggressive group versus the norm group, and the submissive group versus the norm group.

An examination of the data presented in Table III reveals that none of the fifteen $t$ ratios comparing the normal group with the norm group are significant. The means of the normal group are so close to those of the norm group that any variation between the two groups could easily be attributed to chance. On the basis of this data, the second hypothesis, in reference to the normal group, was accepted.

Similarly, the $t$ ratios obtained by comparing the means of the submissive group with the means of the norm group are also included in Table III. Again, none of the $t$ ratios were of sufficient value to indicate that any variation was due to actual differences. Members of the submissive group could not be distinguished from the norm group by the EPPS. In light of these results, the hypothesis of no difference was accepted in reference to the submissive group versus the norm group.
TABLE III
MEANS, STANDARD DEVIATIONS, t RATIOS AND LEVELS OF SIGNIFICANCE USED IN COMPARING THE NEEDS OF THREE GROUPS OF FEMALE STUDENT TEACHERS WITH THE NORM GROUP

<table>
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<td>17.17</td>
<td>5.83</td>
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<tr>
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<td>10.59</td>
<td>4.61</td>
<td>11.33</td>
<td>4.68</td>
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</table>
Only in the comparison of the means of the aggressive group versus the norm group did any of the _t_ ratios reach a level of significance great enough to justify the rejection of the null hypothesis. Even between these two groups, only two of the fifteen scales produced significant _t_ ratios. The aggressive group had a smaller mean score on the need for deference than the norm group. This difference was significant at the .05 level. The other scale found to have a significant value was for the need heterosexuality. The aggressive group had a mean score significantly greater, at the .01 level, than the mean score for the norm group.

According to the manual for the EPPS, the members of the aggressive group in comparison to the norm group would not tend to accept the leadership of others, would not conform or avoid the unconventional, and would not follow directions and do what was expected. The aggressive members would engage in heterosexual social activities, fall in love, kiss those of the opposite sex, and talk about sex. The null hypothesis was rejected in reference to the comparison between the aggressive group and the norm group.

On the basis of the data presented in Table III, hypothesis two is accepted in reference to the normal and submissive groups. The hypothesis of no difference is rejected in reference to the aggressive group.

Hypothesis III

Hypothesis three predicted that the factor loadings of a _Q_-technique factor analysis would be independent of the
groupings of the student teachers as normal, aggressive, or submissive. This step provided evidence as to the success of the criteria profiles in selecting student teachers for each group with varying specific needs patterns.

Table IV presents the results of the Q-technique factor analysis of the three groups. Two primary factors were obtained. Three other factors loading about one-half as many students as the first two factors were also obtained. A factor loading of .50 was considered to be acceptable.

The first factor might be called "self-seeking." People loading on this factor are characterized as not forming attachments with others, being aloof, resistant to give up the old for something new, and an inability to analyze the motives for the behavior of themselves or of others. Factor two might best be described as "systematic." The student teachers loading on this factor are characterized by neatness, being systematic, planning in advance, and a lack of consideration for those with differing viewpoints. Factors three and four are similar somewhat to factor two. People loading on factor three are characterized by neatness, planning in advance, being organized, not forming new friendships, and doing things alone. Factor four is characterized by neatness, organization, orderliness, saying what one thinks, makes independent decisions, does not tend to conform, little ability to analyze behavior of others, and little ability to put one in the place of others. The fifth factor was
considered to be a residual factor since few members of any one group loaded on this factor.

An examination of Table IV indicates that twenty-six students loaded on factor one. Of these twenty-six, nineteen students were from the aggressive group; five were from the submissive group, and two were from the normal group. A total of twenty-five students loaded on factor two. None of the aggressive group loaded on this second factor. It would appear that the members of the aggressive group were similar in need patterns. Fifteen of the students loading on this factor were from the submissive group; the remaining ten were from the normal group. Of factors three and four, only members of the normal group had any number of its members loading on these factors. In all nineteen of the twenty aggressive students loaded on one of the first two factors; eighteen of twenty submissive students loaded on one of these two factors, and twelve of the twenty normal students loaded on one of these two factors. Table IV also reveals that the normal group had members loading on more factors in greater numbers than the other two groups. Another interesting detail is that only five members of each of the aggressive and submissive groups loaded on more than one factor; however, twelve members of the normal group loaded on more than one factor. It is possible that this was due to the similarity of factors two, three, and four. The pattern of loadings indicate that the aggressive group was different in the nature of the factor loadings from the submissive and normal groups.
### TABLE IV

**Final Rotated Orthogonal Q-Technique Factor Matrix Showing Loadings on Five Factors by Student Teachers Classified by Needs Profiles as Normal, Aggressive, or Submissive**

<table>
<thead>
<tr>
<th>Variables (Students)</th>
<th>Factor I</th>
<th>Factor II</th>
<th>Factor III</th>
<th>Factor IV</th>
<th>Factor V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive</td>
<td>0.95*</td>
<td>0.02</td>
<td>0.10</td>
<td>-0.28</td>
<td>-0.10</td>
</tr>
<tr>
<td>1</td>
<td>0.90*</td>
<td>-0.11</td>
<td>0.12</td>
<td>0.05</td>
<td>0.08</td>
</tr>
<tr>
<td>2</td>
<td>-0.01</td>
<td>0.09</td>
<td>0.65*</td>
<td>-0.06</td>
<td>0.76*</td>
</tr>
<tr>
<td>3</td>
<td>0.78*</td>
<td>-0.17</td>
<td>-0.28</td>
<td>0.51*</td>
<td>0.16</td>
</tr>
<tr>
<td>4</td>
<td>0.93*</td>
<td>0.09</td>
<td>0.09</td>
<td>-0.28</td>
<td>-0.20</td>
</tr>
<tr>
<td>5</td>
<td>0.90*</td>
<td>-0.11</td>
<td>0.18</td>
<td>0.38</td>
<td>0.12</td>
</tr>
<tr>
<td>6</td>
<td>0.87*</td>
<td>-0.30</td>
<td>-0.33</td>
<td>0.19</td>
<td>0.04*</td>
</tr>
<tr>
<td>7</td>
<td>0.70*</td>
<td>-0.07</td>
<td>0.26</td>
<td>-0.11</td>
<td>0.65*</td>
</tr>
<tr>
<td>8</td>
<td>0.88*</td>
<td>0.08</td>
<td>-0.13</td>
<td>0.27</td>
<td>0.35</td>
</tr>
<tr>
<td>9</td>
<td>0.87*</td>
<td>0.14</td>
<td>-0.33</td>
<td>0.27</td>
<td>-0.21</td>
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<tr>
<td>10</td>
<td>0.57*</td>
<td>0.21</td>
<td>0.72*</td>
<td>-0.29</td>
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</tr>
<tr>
<td>11</td>
<td>0.61*</td>
<td>-0.32</td>
<td>0.27</td>
<td>-0.60</td>
<td>0.30</td>
</tr>
<tr>
<td>12</td>
<td>0.98*</td>
<td>-0.10</td>
<td>0.18</td>
<td>0.06</td>
<td>-0.04</td>
</tr>
<tr>
<td>13</td>
<td>0.91*</td>
<td>0.23</td>
<td>0.24</td>
<td>0.25</td>
<td>0.03</td>
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<tr>
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<td>0.14</td>
<td>0.43</td>
<td>0.15</td>
<td>0.51*</td>
</tr>
<tr>
<td>15</td>
<td>0.83*</td>
<td>-0.27</td>
<td>0.23</td>
<td>-0.41</td>
<td>-0.05</td>
</tr>
<tr>
<td>16</td>
<td>0.79*</td>
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<td>-0.08</td>
<td>-0.17</td>
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<tr>
<td>17</td>
<td>0.98*</td>
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<td>0.05</td>
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<td>-0.02</td>
</tr>
<tr>
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<td>-0.01</td>
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<td>0.11</td>
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TABLE IV—Continued

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<th>Factor III</th>
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<th>Factor V</th>
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<td>.27</td>
</tr>
<tr>
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<td>.57%</td>
<td>.39</td>
<td>- .20</td>
<td>.44</td>
<td>.54%</td>
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<td>.03</td>
<td>- .44</td>
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<td>.02</td>
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<td>- .06</td>
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<td>- .07</td>
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<td>- .33</td>
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<td>- .02</td>
<td>- .03</td>
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<td>Variables (Students)</td>
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<td>Factor III</td>
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</tr>
<tr>
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<td>- .20</td>
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<td>.62*</td>
<td>.19</td>
<td>- .27</td>
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<td>- .08</td>
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<td>.54*</td>
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<td>.19</td>
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<td>.26</td>
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<td>.58*</td>
<td>.12</td>
<td>.57*</td>
<td>.54*</td>
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<tr>
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<td>.00</td>
<td>.79*</td>
<td>.56*</td>
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<td>- .00</td>
</tr>
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<td>- .08</td>
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<td>.32</td>
<td>.71*</td>
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<td>- .25</td>
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<td>- .20</td>
</tr>
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<td>.04</td>
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<td>.51*</td>
<td>.02</td>
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<td>.35</td>
<td>.66*</td>
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<td>- .18</td>
<td>.33</td>
<td>.88*</td>
<td>- .19</td>
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<td>.47</td>
<td>.18</td>
<td>.72*</td>
<td>.11</td>
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</tr>
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<td>.66*</td>
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</tr>
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<td>.48</td>
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<td>.15</td>
<td>.54*</td>
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<td>.00</td>
<td>.07</td>
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<td>.32</td>
<td>.11</td>
<td>- .17</td>
<td>.83*</td>
<td>.41</td>
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</tbody>
</table>

*Level of acceptability is .50.*
Tables V and VI verify that there are differences in the pattern of loadings for the three groups. Table V is a two-by-three chi-square table used to determine if the pattern of factor loading of the student teachers on factor one was independent of their classification as aggressive, submissive, or normal.

**TABLE V**

**OBSERVED FREQUENCIES, THEORETICAL FREQUENCIES, CHI-SQUARE, AND LEVEL OF SIGNIFICANCE USED IN A TEST OF INDEPENDENCE BETWEEN FACTOR I AND THREE GROUPS OF STUDENT TEACHERS**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Did Load</th>
<th>Did Not Load</th>
<th>Chi-Square</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive</td>
<td>19.00%</td>
<td>1.00%</td>
<td>10.33**</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>8.67**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submissive</td>
<td>5.00%</td>
<td>15.00%</td>
<td>10.33**</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>8.67**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>2.00%</td>
<td>18.00%</td>
<td>10.33**</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>8.67**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Observed frequencies.

**Theoretical frequencies.**

An examination of Table V indicates that the chi-square value of 35.30 was significant at the .001 level. The pattern of loadings on factor one was not independent of the grouping of the students. The proportion of aggressive students loading on this factor was greater than expected;
the proportion of submissive student teachers and normal student teachers was less than expected. Factor one did identify the aggressive students.

Table VI is a two-by-three chi-square table used to determine if the pattern of factor loading of the student teachers on factor two was independent of their classification as aggressive, submissive, or normal.

**TABLE VI**

OBSERVED FREQUENCIES, THEORETICAL FREQUENCIES, CHI-SQUARE, AND LEVEL OF SIGNIFICANCE USED IN A TEST OF INDEPENDENCE BETWEEN FACTOR II AND THREE GROUPS OF STUDENT TEACHERS

<table>
<thead>
<tr>
<th>Groups</th>
<th>Did Load</th>
<th>Did Not Load</th>
<th>Chi-Square</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive</td>
<td>0.00</td>
<td>20.00</td>
<td>11.67**</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>8.33**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submissive</td>
<td>15.00</td>
<td>5.00</td>
<td>11.67**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.33**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>10.00</td>
<td>10.00</td>
<td>11.67**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.33**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Observed frequencies.

**Theoretical frequencies.*

The chi-square value of 24.08 was significant at the .001 level. Fewer aggressive students loaded on this factor than expected. More normal and submissive students loaded on this factor than expected.
On the basis of Tables V and VI, the members of the aggressive group had need patterns which were not like the need patterns of the submissive and normal groups. There was a tendency for members of both the normal and submissive groups to load on factor two. On the basis of these two tables, it was evident that the factor loadings were not independent of the classification of the student teachers as aggressive, submissive, or normal; therefore, hypothesis three must be rejected. On the basis of the data presented in Tables IV, V, and VI, it appears that criteria profiles can be developed that will select people having needs profiles which are similar to the criterion profile but are different from people having patterns based on other criteria profiles.

Hypothesis IV

The fourth hypothesis predicted that the ratings of the student teachers by their college coordinators would be independent of the classification of the student teachers as aggressive, submissive, or normal based on their needs profiles.

Table VII presents the results of the attempt to verify this hypothesis. The four-by-three chi-square table indicates the placement of the student teachers by the rating of their college coordinators compared to their placement on the basis of their needs profiles. This table contains ratings on all sixty student teachers.
### TABLE VII

OBSERVED FREQUENCIES, THEORETICAL FREQUENCIES, CHI-SQUARE, AND LEVEL OF SIGNIFICANCE USED IN A TEST OF INDEPENDENCE BETWEEN RATINGS BY COLLEGE COORDINATORS AND CLASSIFICATION AS AGGRESSIVE, SUBMISSIVE, OR NORMAL ON THE BASIS OF NEEDS PROFILES

<table>
<thead>
<tr>
<th>Groups Based on Needs Profiles</th>
<th>Coordinator Ratings</th>
<th>Chi-Square</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aggressive</td>
<td>Submissive</td>
<td>Normal</td>
</tr>
<tr>
<td>Aggressive</td>
<td>6.00*</td>
<td>6.00*</td>
<td>3.00*</td>
</tr>
<tr>
<td>Submissive</td>
<td>2.00%</td>
<td>7.00%</td>
<td>6.00%</td>
</tr>
<tr>
<td>Normal</td>
<td>6.00%</td>
<td>2.00%</td>
<td>5.00%</td>
</tr>
</tbody>
</table>

#Observed frequencies.

**Theoretical frequencies.

The value of chi-square obtained in Table VII of 6.37 was not significant. This low value of chi-square indicates that the ratings of the student teachers by their college coordinators was independent of the grouping of the student teachers based on their needs profiles. An examination of the table reveals that only eighteen of the sixty ratings agreed with the grouping of the student teachers based on their needs profiles. On the basis of this data, hypothesis four was accepted.
Hypothesis V

The fifth hypothesis predicted that the ratings of the student teachers by their supervising teachers would be independent of the classification of the student teachers as aggressive, submissive, or normal based on their needs profiles.

Table VIII presents the results of the attempt to verify this hypothesis. The three-by-three chi-square table indicates the placement of the student teachers by the rating of their supervising teachers compared to their placement on the basis of their needs profiles. This table includes ratings on forty-five of the student teachers.

TABLE VIII

OBSERVED FREQUENCIES, THEORETICAL FREQUENCIES, CHI-SQUARE, AND LEVEL OF SIGNIFICANCE USED IN A TEST OF INDEPENDENCE BETWEEN RATINGS BY SUPERVISING TEACHERS AND CLASSIFICATION AS AGGRESSIVE, SUBMISSIVE, OR NORMAL ON THE BASIS OF NEEDS PROFILES

<table>
<thead>
<tr>
<th>Groups Based on Needs Profiles</th>
<th>Supervisor Ratings</th>
<th>Chi-Square</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aggressive</td>
<td>Submissive</td>
<td>Normal</td>
</tr>
<tr>
<td>Aggressive</td>
<td>1.00%</td>
<td>4.00%</td>
<td>12.00%</td>
</tr>
<tr>
<td></td>
<td>0.76**</td>
<td>5.29**</td>
<td>10.96**</td>
</tr>
<tr>
<td>Submissive</td>
<td>0.00%</td>
<td>6.00%</td>
<td>7.00%</td>
</tr>
<tr>
<td></td>
<td>0.58**</td>
<td>4.04**</td>
<td>3.38**</td>
</tr>
<tr>
<td>Normal</td>
<td>1.00%</td>
<td>4.00%</td>
<td>10.00%</td>
</tr>
<tr>
<td></td>
<td>0.67**</td>
<td>4.66**</td>
<td>9.66**</td>
</tr>
</tbody>
</table>

*Observation frequencies.

**Theoretical frequencies.
The chi-square value of 2.59 was not significant. Of the forty-five ratings, seventeen ratings agreed with the grouping of the student teachers based on their needs profiles. Of the forty-five ratings, only two students were rated as aggressive; more than one-half, twenty-nine, of the student teachers were rated as normal. On the basis of this data, hypothesis five was accepted.

Summary

This chapter has presented the data obtained in determining the tenability of the hypotheses. The .05 level of significance was accepted as the level for the rejection of the null hypothesis.

In testing hypothesis one, it was found that the normal, aggressive, and submissive education students differed significantly on only one of the fifteen variables of the EPPS. This variable was deference. There was no significant difference between the submissive and normal groups on this variable. The aggressive group was significantly lower on this variable than either of the other two groups. The hypothesis of no difference was rejected.

In testing hypothesis two, it was found that the normal group did not differ significantly from the norm group on any of the variables of the EPPS; there was not a significant difference between the means of the submissive group and the norm group on any of the fifteen variables of the EPPS. The
hypothesis of no difference was accepted for these two groups. The aggressive group did differ significantly from the norm group on the needs for deference and heterosexuality. The difference on the variable deference was significant at the .05 level; the variable called heterosexuality was significant at the .01 level. The hypothesis of no difference was rejected for the aggressive group.

In testing hypothesis three, it was found that the grouping of the student teachers was not independent of the pattern of factor loadings. The aggressive student teachers loaded on a factor characterized by being aloof, not forming attachments with others, resistant to change, inability to analyze the motives of the behavior of themselves or of others. Seventy-five per cent of the submissive group and fifty per cent of the normal group loaded on factor two. This factor characterized people as being neat, systematic, planning in advance, inconsiderate of differing viewpoints. The hypothesis of independence of factor loading and group placement was rejected.

In testing hypotheses four and five, it was found that the ratings of the college coordinators and the cooperating teachers were independent of the grouping of the student teachers based on their needs profiles. The hypotheses of independence was accepted.
These findings were used in the formulation of conclusions and recommendations which are included in Chapter IV.
CHAPTER IV

SUMMARY AND CONCLUSIONS

Summary

The primary purpose of this study was to determine if a needs profile could be prepared based on student responses prior to student teaching that would predict aggressive, submissive, or normal behavior patterns during student teaching.

The study utilized two difference populations. The first population consisted of all female students enrolled in the beginning professional education courses at NTSU. From this population, three groups of thirty students each were formed. These students were identified by their peers on the basis of sociometric nominations as best exhibiting aggressive, normal, or submissive behavior. The results on the EPPS were obtained for these students. The mean scores and standard deviations for each of these groups were calculated. A comparison of these means indicated that the EPPS did not identify students chosen on the basis of exhibiting different behavioral characteristics. The behavioral descriptions used in selection having been taken from the manual for the EPPS, it would appear that either the students were not chosen on the basis
of the descriptions or that the EPPS does not measure these characteristics as it claims.

The means for these three groups were similarly compared to the means for the liberal arts norm group as found in the manual for the administration of the EPPS. The results of this comparison indicated that the groups were not different from the norm group. Again as the submissive and the aggressive groups should have been constituted of extreme members, this failure to find conclusive differences indicated that either the EPPS does not measure what it claims to measure or that the members of the beginning professional education courses do not contain an appreciable number of overly aggressive or submissive students.

The means for these three groups were compared, and a criterion profile was established for each group. These profiles were then compared with the profiles for the members of the second population. The second population of this study was composed of female student teachers at MTSU during the spring semester of 1967. From this population three groups of twenty students each were selected: an aggressive group, a submissive group, and a normal group. The selection of the female student teachers was based on the sum of the squared differences between the individual's scores on each of the fifteen variables and the criteria profiles. The twenty student teachers having the lowest sum of squared
differences when compared to one of the criteria profiles were established as the group and referred to by the behavioral term of the group which had served as the basis of the profile. The twenty most like the aggressive profile formed the aggressive student teacher group. The same procedure was followed for the submissive and normal groups. If a student was eligible for more than one group, she was eliminated from the study.

A Q-technique factor analysis indicated that the members of the groups did load on different factors. The aggressive group loaded on a factor that indicated their profiles were different in nature from the profiles of the members of the submissive and normal groups. Both submissives and normals were found to load on factor two. This indicates that, although their profiles may be different, they were more like each other than they were like the aggressive group.

The student teachers included in each of the three groups were then rated by their college coordinators and their cooperating teachers. The students were rated on the similarity between their behavior and the characteristic behaviors of the three specified groups. In each case, the rater was instructed to rate the student in the group that best described her.

The results from both the cooperating teachers and the college coordinators indicated that the raters did not
consider the student teachers to exhibit the behavior of the group they were placed in on the basis of the similarity of their needs profile to the criteria profiles. In all of the ratings received, the agreement between the ratings and the placement of the student based on her needs profile was not significant. Agreement was found in only thirty-five of 105 ratings. The successful ratings were split relatively evenly between the two rating groups. Of the sixty ratings by the college coordinators, eighteen ratings agreed with the group placement based on needs. The cooperating teachers correctly rated seventeen of forty-five.

On the basis of the data presented in Chapter III, the results of the ratings indicate that such a procedure as followed by this study to develop criteria needs profiles will not result in behaviorally predictive needs profiles.

Conclusions

The findings of this study led to the following conclusions:

1. Students identified by their peers as exhibiting aggressive, submissive, and normal behavior cannot be predictively distinguished on the basis of their needs profiles. Although a significant F-ratio was found on the need for deference, behavioral groups cannot be identified on the
basis of one variable. The lack of difference among the
groups may be accounted for by one of several possibilities.
First, the EPPS may not measure what it purports to measure.
Second, the female education students comprising the first
population may not have contained an appreciable number of
overly aggressive or submissive students. Last, the group-
ing technique may not have been sensitive enough to dis-
tinguish among the students having the characteristics of
each of the three groups.

2. Female students judged aggressive by their peers
exhibit this aggressiveness primarily through their be-
havior toward their superiors and members of the opposite
sex.

The female education students that were considered to
be aggressive by their peers were found to have scores that
were significantly different from the norm group on the needs
of deference and heterosexuality. Their scores were low on
deference and high on heterosexuality. These two variables
and the direction of the difference from the norm would tend
to be consistent with aspects of an aggressive personality.
Studies reported in Chapter II have, in some cases, found
teachers and education students to score high on deference
and low on heterosexuality. This might indicate that groups
of teacher education students do not generally contain an
appreciable number of aggressive students.
3. Contrary to previously published studies, female students in beginning professional education courses are not significantly different from the college norm group on the EPPS.

Other studies utilizing the EPPS with various teacher groups have found significant differences on various scales. One of the most quoted studies, however, used college norms with an older group of experienced teachers. Other studies comparing teacher groups to the norm group have generally found the teacher groups to be highly conforming, following the leadership of others, and unassertive. The difference between the results of this study and prior studies may be due to one or more of several reasons. The EPPS may not measure what it purports to measure. The members of the three groups may have constituted nonrepresentative samples of the total population. There may be geographic differences in the groups sampled by the various studies. NTSU draws its student body heavily from the surrounding areas; therefore, students sampled from the student body may exhibit geographic peculiarities. As a result of increased emphasis upon selective recruitment of teacher candidates, the characteristics of teacher candidates may be changing.

4. Most student teachers are seen by both their college coordinators and cooperating teachers as exhibiting normal behavior.
Prior studies, using the EPFS, mentioned in Chapter II were not generally concerned with the behavior of the subjects, but other studies have shown teachers to be more maladjusted than other professional groups. It may be possible that behavior that is seen as normal by cooperating teachers and college coordinators would not be seen as normal by raters from other professions; however, based on the data presented, it may be that many education students would be considered normal based on their EPFS results. According to many definitions of normality, most people would be considered normal.

5. Submissive behavior is more likely to be seen by the college coordinators and cooperating teachers than is aggressive behavior.

The data on which this conclusion was based may reflect the attitude of college coordinators and cooperating teachers toward aggressive and submissive behavior. Studies have indicated that teachers are more likely to consider student behavior as serious if the behavior is disruptive or aggressive rather than withdrawn or submissive. It may be that the college coordinators and cooperating teachers have a similar attitude toward the seriousness of aggressive or submissive behavior by student teachers.

6. Criteria needs profiles based on students selected by sociometric nominations prior to student teaching will not predict student teaching behavior.
Evidence has indicated that people with normal personalities cannot be identified by objective personality measurements. If this is true, it would not be possible to prepare a criterion profile to identify people with a normal personality. This might make it difficult for a personality instrument to identify any but the most extreme needs profiles as exhibiting certain particular types of behavior. If there is no way of accurately identifying the members of the normal group, there would be no way to be sure that they would be kept from being chosen as members of another group.

These results may also be a reflection of perceptual differences between the peer group and the college coordinators and supervising teachers. Since the peers, college coordinators, and supervising teachers have observed the subjects in different roles, ratings made by these three groups may not be based on similar behaviors.

7. Those students considered normal by their peers cannot be identified solely on the basis of the EPFS.

The results of this study, in agreement with other studies on normal personality, indicate that objective personality measures cannot identify those people considered to exhibit normal behavior. This may possibly be due to the fact that people with normal personalities are flexible and respond according to the situation rather than having rigidly followed behavioral patterns. This
possibility is increased by data showing members of the normal group tending to load on more than one factor.

Recommendations

The following recommendations are based on the results of this study:

1. It is recommended that the use of the EPFS in the selection of applicants for admission to teacher education programs be questioned if it is to be used as a predictor of teaching behavior.

2. A longitudinal study should be conducted to determine if the needs profile of people undergo a change with teaching experience.

3. A study should be conducted to determine the degree of similarity between student teaching behavior and later behavior as a regular classroom teacher.

4. A study should be conducted to determine the relationships among classroom behavior, social behavior, and student teaching behavior of students designated as aggressive, submissive, or normal by some criterion.

5. A study should be conducted to determine if education students differ significantly from the norm group.

6. A national study should be conducted to determine if there are geographic differences in the personality characteristics of education students in different areas of the country.
7. A longitudinal study should be conducted to determine if the personality characteristics of students entering education are changing.

8. A study should be conducted to determine whether college coordinators and cooperating teachers perceive submissive and aggressive behavior as differing in seriousness.
APPENDIX A

Classification Sheet Used
By College Coordinators

This student teacher:
Controlled the class with little consideration of the suggestions of students, criticized administrators and other faculty members publicly, criticized and made fun of students in class, was easily irritated by actions of students, avoided taking responsibility for her mistakes.

This student teacher:
Was timid in the presence of superiors, did not take the responsibility for the planning and conducting of classroom activities, did not use new and varied teaching methods, was easily discouraged, students seemed to be able to get her off the subject.

This student teacher:
Did not try to dominate students, respected the rights of the students to have opinions and behaviors different from her own yet would stand up for her rights and opinions, greeted and talked with students, initiated social contacts, promoted group plans and objectives, was cheerful, optimistic, and had a good sense of humor.
Dear Teacher:

As part of a research project being conducted at North Texas State University, certain information concerning some student teachers is necessary. All information will be kept confidential. The research is being conducted under faculty supervision.

Please complete the accompanying form for the designated student teacher. A self-addressed stamped envelope is included for your convenience. Your cooperation is sincerely appreciated.

Sincerely,

Eldon Clary, Jr.
APPENDIX C

Scalp Used By Supervising Teachers

Indicate the relationship of the student teaching behavior of ________ to the following descriptive passages by placing a check at the place on the line that you feel best describes the student teacher's behavior in terms of the descriptions:

Utilized little teacher-student planning, tended to be critical of administration policies or other faculty members, tended to reprimand students publicly, used sarcasm to keep students under control, tended to be easily irritated by student mistakes and behavior, found excuses for her mistakes.

Was quiet in the presence of superiors, was not overly aggressive in the planning and conducting of classroom activities, tended to be conservative in the use of new or varied teaching methods, tended to be easily discouraged, students seemed to be able to get her off the subject.
APPENDIX D

Follow-Up Letter for Supervising Teachers

Dear Teacher:

You have been contacted previously concerning information about student teachers in connection with a doctoral study at North Texas State University. Enclosed is another copy of the rating sheet. We realize that your student teacher may not have been exactly like either of the descriptions; however, you are requested to check the blank which would indicate the relationship to the descriptions that was most like the student teacher.

The research is being conducted under faculty supervision, and all information will be kept confidential and will not affect the student teacher in any way.

A self-addressed stamped envelope is included for your convenience. Your cooperation is sincerely appreciated.

Sincerely,

Eldon Clary, Jr.
APPENDIX E

t Ratios Obtained By Comparing Each Of The
Nonstudent Teaching Education Students
Groups Against The Other Two Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Submissive vs. Aggressive</th>
<th>Submissive vs. Normal</th>
<th>Aggressive vs. Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>0.27</td>
<td>-0.16*</td>
<td>-0.14*</td>
</tr>
<tr>
<td>Deferece</td>
<td>2.14</td>
<td>-1.19*</td>
<td>-2.33*</td>
</tr>
<tr>
<td>Order</td>
<td>1.60</td>
<td>-1.11*</td>
<td>-1.71*</td>
</tr>
<tr>
<td>Exhibition</td>
<td>-1.13*</td>
<td>-1.15*</td>
<td>-1.02*</td>
</tr>
<tr>
<td>Autonomy</td>
<td>0.51</td>
<td>1.56</td>
<td>1.05</td>
</tr>
<tr>
<td>Affiliation</td>
<td>0.00</td>
<td>-1.28*</td>
<td>-0.28*</td>
</tr>
<tr>
<td>Intraception</td>
<td>-1.65*</td>
<td>0.98</td>
<td>1.63</td>
</tr>
<tr>
<td>Succorance</td>
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<td>1.11</td>
<td>1.18</td>
</tr>
<tr>
<td>Dominance</td>
<td>-1.85*</td>
<td>-3.82*</td>
<td>-0.97*</td>
</tr>
<tr>
<td>Abasement</td>
<td>0.03</td>
<td>-0.51*</td>
<td>-0.53*</td>
</tr>
<tr>
<td>Nurturance</td>
<td>-0.84*</td>
<td>-0.62*</td>
<td>0.23</td>
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<tr>
<td>Change</td>
<td>0.24</td>
<td>0.64</td>
<td>0.46</td>
</tr>
<tr>
<td>Endurance</td>
<td>-0.20*</td>
<td>0.55</td>
<td>0.75</td>
</tr>
<tr>
<td>Heterosexuality</td>
<td>-1.02*</td>
<td>0.31</td>
<td>1.33</td>
</tr>
<tr>
<td>Aggression</td>
<td>-1.49*</td>
<td>-0.72*</td>
<td>0.77</td>
</tr>
</tbody>
</table>

*Indicates the direction of the difference is in favor of the second named group in each column.
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