A STUDY OF THE EFFECT OF TEACHING SELF-EVALUATION PROCEDURES ON THE SELF-CONCEPT OF STUDENT TEACHERS

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Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
DOCTOR OF EDUCATION
May, 1967

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ACKNOWLEDGMENT

The investigator wishes to use this medium for a personal expression of appreciation to Dr. Richard P. Jungers, chairman of his advisory committee, for the advice and direction provided in accomplishing this study. Also, acknowledgment is extended to Drs. Kenneth St. Clair, Idella Lohmann and Guy R. Donnell for their sincere interest and encouragement. Much appreciation is expressed to Dr. Kenneth Wiggins, Director of Student Teaching at the Oklahoma State University, and who also served as a member of the investigator's advisory committee. His sage counsel and encouragement provided the proper incentive at the proper time and his permission to work with the student teachers made the study possible. Recognition is due to Dr. Vernon Troxel and Dr. Idella Lohmann who relinquished part of their own program in the student teaching block in order that the investigator might carry on the study. Special thanks are expressed to Dr. Ned A. Flanders and Dr. Milton Rokeach for words of encouragement and permission to employ their instruments in the study. Sincere appreciation is expressed to Miss Velda Davis who typed the final copy of the study.

Finally, the investigator would be totally remiss if very special appreciation was not officially acknowledged to his wife, Eugenia, and to his son and daughter, Bill and Carolyn. Their untiring patience and consideration for the late hours and household disruptions are deeply appreciated. Their love and encouragement have served to sustain the investigator throughout the period of study for the doctoral degree.

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CHAPTER I

THE NATURE OF THE PROBLEM

Introduction

The purpose of this dissertation is to report the results of an investigation of the effect of teaching self-evaluation procedures. The tools and techniques used were measured by the difference in scores, on the Tennessee Self-Concept Scale, between an experimental and a control group. The groups were comprised of elementary education student teachers. This chapter will present a general description of the investigation by providing background information, stating the purpose of the study, defining the problem, stating the hypotheses, listing limitations of the study, stating the statistical methods used in the analysis of data, listing definition of terms and the organization of the report.

Background Information

Perhaps no facet of the educational process has been the subject of more concern, the subject of more discussion or considered of more importance than that of evaluating the competence or effectiveness of teachers. Teacher attitudes, teacher traits and teacher personality characteristics have all been the subjects of study and investigations. Domas and Tiedeman, in their annotated bibliography of studies on

teacher competence, list over one thousand studies of this nature.[1] Generally, the various types of teacher evaluation for competence and effectiveness may be divided into the following groups: (1) studies based upon the consensus of expert opinion as to the characteristics and prerequisites of competency and efficiency, (2) studies using school grades, practice teaching grades and ratings of student teaching as a criteria of teaching efficiency, (3) use of supervisory in-service ratings, self-ratings and ratings by fellow teachers as the criteria of teacher competence, (4) studies using pupil opinion and reaction as the criteria of teacher effectiveness, (5) studies using measured pupil change as the criterion of teacher effectiveness.[2] In many instances one might observe a classroom situation and define what had taken place as "good teaching" and thus identify the teacher as a good teacher. Incorporating those characteristics of the good teacher so observed into a program for the preparation and training of prospective teachers is a problem, the answer to which administrators, educators and school personnel in general are seeking.

The evaluation of teacher effectiveness is related to the tasks in education of selection, retention and promotion. In addition evaluation has as a goal the improvement of teaching and thereby improvement in the learning process. Biddle says that "we do not know how to define, prepare for, or measure teacher competence and until we know more about classroom interaction," much of what has been developed will go unsupported or untested.[3]

This report is not concerned with the evaluation process for selection, retention or promotion purposes. It is assumed that success in these areas of the educational process will be by-products of any

attempts to improve or enhance the learning situation through more effective evaluative processes. The development of evaluative procedures in the educational field has fairly well followed the developmental steps of evaluation in industry. Evaluation in industry began in the early part of the twentieth century with the emphasis placed on "efficiency" as a part of the scientific management movement. However, it has been only within the past two decades and a half that any real interest has developed in self-evaluative procedures within the educational field and this interest centers primarily in the area of teacher preparation. Most educational programs provide in some manner or another for teacher in-service training. As in-service teacher training programs, however, they are not specifically identified as a procedure for self-evaluation.

One area of common agreement among educators in the discussion of teacher training programs is that any program must include the act of the actual teaching experience. Student teaching has been a part of the teacher training programs in most teacher education institutions since the experience was first initiated by Mr. Cyrus Pierce in his experimental or model school in 1839.[4]

Dr. James B. Conant, in his much discussed recent book entitled The Education of American Teachers states that:

> Whether or not one approves of including such laboratory experiences in the teacher education curriculum, it seems clear that the future elementary school teacher has much to be learned that can be learned only in the elementary school classroom.[5]

The student teaching portion of the training program is the crucible in which the final product is set. A finished product will not emerge from this training experience. Yet the foundation of teacher

techniques may first be made and recognized in this part of the program. Steps can then be taken by the student teacher to formulate procedures in which he will become competent and be comfortable in his future classroom activities. Along with this emphasis on the student teaching phase, quite naturally comes the concern that the student teachers are developing techniques for evaluating their own efforts and accomplishments. Unless they can do this they lack a sound foundation upon which growth can be built.[6]

Purpose of the Study

With emphasis upon quality and excellence in education, every avenue should be explored to provide the prospective teacher with the tools that are necessary for continued personal and professional growth. Evaluation has developed a stigma which has caused individuals to shy from evaluative procedures. This is due perhaps to a dislike for evaluation because of the subjectivity involved or because of an inadequate feeling in this area. Andrews says that "nearly all persons involved with student teaching tend either to dislike or to feel inadequate (or both) in the area of evaluation of student-teacher performance."[7] Andrews also suggests that experienced and skillful cooperating teachers infrequently provide the student teacher with an excellent experience both through direct evaluation and growth in self-evaluation techniques.[8]

Self-appraisal has been used in teacher education institutions mainly as a part of the record of the teacher preparation program. Little information is available as to what methods of teaching self-evaluation techniques are most meaningful in assisting prospective

teachers to develop self-appraisal habits or techniques. This study will provide some information relative to the usefulness of the method utilized in developing insights into the procedures of self-evaluation. In addition, it is anticipated that results of this study will stimulate areas of interest for further study in student teaching evaluation procedures.

Statement of the Problem

There may be differences of opinion as to the value of self-evaluation reports due probably to the use or purposes for which they are made. If self-evaluation is to be used for administrative purposes, the question of objectivity in ratings may arise and it may be likely that the rater will over-rate. However, if self-improvement is the purpose of the rating and the identity or the results will prove harmful only to the extent the rater deems them to be harmful, more objectivity could be expected.

Therefore, if objective self-evaluation procedures could be identified which would assist the student teachers to better understand their own actions and behavior, they may enter the classroom better prepared to cope with the bewildering situations they may face as student teachers. They may also be more able to establish patterns of their own behavior meaningful to their future growth as teachers.

The objective of this study is to determine if a knowledge and ability to use the Interaction Analysis (verbal) system authored by Flanders and his associates as a method for developing self-evaluation procedures on the part of student teachers has merit for use in the teacher education program at Oklahoma State University.[9] The method

employed to develop this knowledge and ability is designed to:

a. assist the student teacher to identify and examine the strengths and weaknesses of his verbal classroom behavior and

b. place emphasis upon the use of self-evaluation tools as a means of continuous personal and professional growth.

Statement of Hypotheses

Festinger states, among others, two hypotheses worthy of mention:

> There exists, in the human organism, a drive to evaluate his opinions and abilities.

and

> To the extent that objective, non-social means are not available, people evaluate their opinions and abilities by comparing them with the opinions and abilities of others.[10]

In other words self-evaluation will in all likelihood occur: however, in the absence of an objective, non-social means the evaluation becomes generalized into value judgments.

Leaving self-appraisal to chance development on an individual basis overlooks a most promising and hopeful instrument for developing the ability to self appraise, and thus leaves a void in the professional training and development of the prospective teachers. Therefore, training in a procedure that will assist the student teacher in developing an open mind with the ability to be critical of his own behavior in an objective manner will assist in the personal and professional growth of the student teacher. The study is based upon the premise that the concept people have of themselves influences their behavior and therefore, a change in behavior will be reflected in a change in

self-concept which is indicative of the ability to look at self with an open mind.

The following two hypotheses will be tested in this study:

Hypothesis 1. There will be no significant difference in the self-concept of student teachers as measured by the Tennessee Self-Concept Scale, after undergoing a period of guidance and training in self-evaluation techniques using verbal interaction analysis procedures.

Hypothesis 2. There is no significant relation in the open or closed minedness of the individual student teachers and their ability to self-criticize as measured by the self-criticism score of the Tennessee Self-Concept Scale and the Rokeach Dogmatism Scale.

Limitations of the Study

The study involves those student teachers enrolled in the student teaching block at Oklahoma State University during the fall semester 1966-67; therefore, the results of this study may be limited to the extent of its implications for the teacher education program at Oklahoma State University.

An uncontrolled variable in this study which might have some influence upon the outcome could be the enthusiasm of the investigator who also served as the director of the experimental group seminar. A qualified person, knowledgeable of the process of the Minnesota System of Interaction Analysis, might have conducted the seminar in a more unbiased fashion. This study is limited to the extent the enthusiasm

of the investigator unwarrantedly influenced the student teachers in the seminar.

Definition of Terms

The following terms appear throughout the study and are further defined here for the reader's understanding of the meanings as used in the study.

(1) Self-concept - The organized perceptual object of self resulting from present and past self-observation leading to what a person believes about himself.

(2) Student teacher - Used interchangeably with the term prospective teacher. A student enrolled in the teacher preparation program and who will be engaged in the actual student teaching laboratory experience.

(3) Episode - Any class period covering twenty or more minutes during which time the teacher engages the students in verbal interaction. Lecture, student reading periods, study periods and the like are not termed episodes.

(4) Matrix - A table of ten rows and ten columns on which paired categorizations of verbal interactions are tabulated for interpretation.

Summary

Chapter I of this study has provided background information to the study. The purpose and need for the study as well as the hypotheses to be tested and the statistical design to be used in the testing have

been identified in the chapter. The limitations of the study are stated and terms used frequently in the study are defined. Finally, this chapter states the organization procedure of the study in summary fashion.

The second chapter treats the literature reviewed relating to the study. Literature relating to the studies on self-concept is reviewed in the early part of the chapter; this is followed by a review of literature related to the observation and classification of verbal behavior and literature relating to open and closed belief systems. The chapter ends with a brief summary of all literature reviewed.

In Chapter III the method used in conducting the experiment is described. In addition, charts used in the experiment are shown and explained.

In the fourth chapter the selection of participants is described and information is provided on instrumentation, interaction analysis procedures and the seminar program of the study. Hypotheses are restated at the end of this chapter.

Chapter V presents the analysis and results of the experiment followed by the summary and conclusions in Chapter VI.

FOOTNOTES

[1]Simeon J. Domas and J. W. Tiedeman, "Teacher Competence: An Annotated Bibliography", Journal of Experimental Education, XIX (1950), pp. 101-218.

[2]Walter Ackerman, "Teacher Competence and Pupil Change", Harvard Educational Review, XXIV (1954), p. 273.

[3]Bruce J. Biddle, Contemporary Research on Teacher Effectiveness (New York, 1964), p. 3.

[4]Nicholar Troisi, "A Brief Historical Look at Evaluation of Student Teaching", The Thirty-Ninth Yearbook of the Association for Student Teaching (Cedar Falls, 1960), p. 2.

[5]James B. Conant, The Education of American Teachers (New York, 1964), p. 161.

[6]Pearl Merriam and Gladys M. Fair. Helping Student Teachers Through Evaluation (Lock Haven, 1953), p. 2.

[7]L. O. Andrews, Student Teaching (New York, 1964), p. 85.

[8]Ibid.

[9]Ned A. Flanders, "Interaction Analysis and Inservice-Training". A pre-publication manuscript. Personal communication, 1966.

[10]Leon Festinger, "A Theory of Social Comparison Processes", Human Relations, VII (1954), pp. 117-119.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

There are many research and training activity studies either in progress or recently completed on the use of category systems in teacher training programs.[1] No study has been located that treats specifically of the use of a category system as a procedure for training student teachers in self-evaluation techniques. Several of the studies indicate implications for the use of a category system of verbal interaction as a basis for self-analysis. This study is concerned with the change in self-concept as a result of exposing subjects to the procedures of a system of observing, recording, tabulating and interpreting the tabulations of verbal interaction.

This review of related literature is divided into three phases as follows: (1) literature related to self-concept (this review is made in order to properly place the importance of self-concept in the framework of teacher influence); (2) literature related to the quantifying and classifying of verbal behavior; and finally (3) literature related to the open and closed belief system. Upon completion of the review of literature, the three areas will be tied together in support of the rationale for the study.

Self-Concept Studies

Many studies have been made relative to the achievement of the pupil as a means of predicting and determining the competence of the teacher. Other studies have been made that identify the personality traits of those teachers who have been labeled "good teachers". The major dictum of this study is that improvement in the learning situation should be set in the frame of reference of the teacher's perception of self more so than in the pupil's perception of the teacher. Combs describes the "self" as playing a more dominant role in the approach to an understanding of good teaching.[2] He defines the effective teacher as one who has learned to use his "self" effectively and efficiently for carrying out his own and society's purposes. Combs further describes a perceptual view of good teaching as characterized by perceptual organizations in several areas, one of which is perceptions of self.

Only as the teacher sees and understands his own behavior will he be able to influence the behavior of the student. In seeing and understanding self-behavior, actions may then be initiated to reinforce desired behaviors or change the behaviors that are observed as being detrimental to the desired learning outcome.

Rogers says that as changes occur in the perception of self and in the perception of reality, changes occur in behavior.[3] In therapeutic situations these changes refer more to self than to the outside world and alteration of perception of self alters behavior. Raimy postulates that self-concept is the chart to which a person refers in understanding himself, especially when he has a choice to make or is faced with a crisis.[4] In his study of 14 counseling interview cases,

there was a marked shift from a preponderantly self-disapproval level at the beginning of the counseling interviews to a preponderantly self-approval by the end of the interviews. In the study by Raimy the responses given in counseling interviews were classified as positive self-reference, negative self-reference, ambivalent self-reference, ambigious self-reference, external reference, and purely information references. Raimy used two different procedures to determine reliability of his method of analysis. In the first instance Raimy, personally, classified 356 client responses of four selected counseling interviews and recorded the information. Six months later and without reference to the earlier classification he reclassified the information. By Chi-square analysis he found the differences in the two classifications to be insignificant at the .05 level. A second procedure used to establish reliability was the classification by four judges of the 356 client responses. While Chi-square analysis of this procedure indicated that for one of the interviews the difference between judges' classification was not by chance, all other differences were insignificant at the .05 level. Validity of the method of analysis was determined by comparison with an independent analysis of two cases by the respective (initial) counselors. Again Chi-square was used in determining the probability of chance causing any differences. This probability (Fisher's Probability Table) was found to be between .80 and .90 indicating that chance probably did cause any differences that occurred. Another method of ascertaining validity was by comparison of one set of interviews with another method of interview analysis. Both methods revealed the same marked changes, thereby indicating validity for Raimy's procedure.

While strict behaviorists have rejected data observed in immediate

experience studies, such as Raimy's, as being unreliable, Raimy says that the findings of his study cannot be dismissed as "mere superficial descriptions of feelings".[5] The significance of this statement to the present study is that it indicates that in a short time interval the beginning of changes in self-concept can be introduced into the subject's perceptual framework. In fact, a self-concept should not be static. This indicates a closed mind. An adequate self-concept must be stable but not rigid; it must be changing but not fluctuating.[6]

Hatfield made a study of the self-concept of student teachers seeking to determine the relationship of self-concept and successful performance in student teaching.[7] She found that a positive relationship existed between how the student teacher perceived himself and success in student teaching. All student teachers at Northern State Teachers College, Aberdeen, South Dakota, during the 1958-59 academic school year were given four ratings: two by different cooperating teachers and two by different college supervisors of student teaching. The average of these four ratings served as the determinant of teaching success and the students were then divided into two groups of 19 students with the highest average and 19 students with the lowest average. These two groups formed the study groups. Members of each group were asked to sort, by the Q sort technique, 90 items measuring self-concept traits. The sorting was completed twice by each member, once according to how the student perceived himself and once by how he perceived the ideal self. The coefficient of correlation between the sorts was determined and the members found to be significantly different indicating that a positive relationship does exist between a student's self-evaluation and student teaching success. The difference was more

than chance alone would provide. In consideration of Hatfield's study the provisions for counseling or preparing student teachers in self-evaluation techniques appear to have merit.

Perhaps the teacher, more than any other factor in the classroom situation, influences the student. How the teacher views himself may have some bearing upon how he influences the student. If this is true then some concern and consideration need be given to a procedure, method or way of bringing about desirable changes in self-perception. Rogers indicates that in psychotherapeutic experience the absence of threat to the self-concept is important in bringing about any reorganizations of self-perception.[8] The individual's self-concept resists any experience which is inconsistent with a proper functioning of self and, if a change is to be made in self-concept, that change will be enhanced only through experiences which enhance self and not through experiences that threaten self.[9]

For purposes of this study the method by which a change in self-concept is brought about is important not so much from the standpoint of initiating a change in the self-concept of the student teacher by this study, but rather because of the need for the student teacher to understand the best method for influencing the behavior of the pupil. How any person behaves, either student teacher or pupil, is dependent upon how he views himself and the external world.[10] The teacher task is to influence the pupil in such a manner as to bring about adequate feelings of self. The teacher provides the cue for learning. Cogan describes the teacher as being identified by the pupil either with anxiety or liking. It appears that identification with anxiety would pose as a threat to self as described above.[11, 12] This cue

sets the stage for a high or low performance depending upon how the pupil views the teacher. In the study by Cogan the emphasis was upon the teacher and the amount of work accomplished by the pupil; the dependent variables were further identified as pupil-required work and self-initiated work. Two of the three independent variables of teacher behavior listed by Cogan are: (1) Preclusive - a type of behavior in which the teacher is dominant and agressive and produces the cue for anxiety on the part of the students, (2) Inclusive - behavior of the teacher that is warm, integrative, less restrictive, thus permitting the student to see here the cue for respect and liking. The third independent variable is conjunctive behavior. Cogan describes this as incorporating the ability to communicate, competence in classroom management and the level of demands upon the students. Six hypotheses are made, two relative to each of the three independent variables. Generally speaking Cogan hypothesizes that inclusive and conjunctive behaviors are conducive to self-initiated effort and diligent work on the part of the student while preclusive behavior tends to leave the student out or creates a desire on the part of the student to avoid the situation and induces low performance. A note of interest is that the hypotheses relating to inclusive and conjunctive behaviors could not be rejected by Cogan's analysis while the hypothesis relative to preclusive behaviors was rejected.

One other factor relative to Cogan's study is worthy of mentioning. This study was made with the concept that the independent variables (teacher behaviors) can be measured by the perceptions of the pupils. Teacher self-perception is not used.

A study made by Flanders supports the idea that the teacher

may serve as a cue to anxiety on the part of the student.[13] In this study a total of seven students participated; however, each participated in an independent method and not as a group. Two adults were used to interact with each student; one using a learner-centered role with the intent to support the student and one using the teacher-centered role in which support of himself is clearly identified. The teacher-centered role created within the student a sense of compliance because of the authority enforced by the teacher. The teacher's verbal statements generate tension and anxiety on the part of the student.

Edwards hypothesized that if a behavior was a socially desired trait, the subject will attribute this trait to himself and vice versa.[14] One hundred and forty personality traits involving fourteen needs were used as items of social behavior desired in others. By this method, scale values of the desirability of the traits were determined. These items were arranged in a personality inventory form and presented to one hundred forty pre-medical students who were asked to identify those traits characteristic of themselves. The probability of endorsement of the items was then plotted on a sociogram against the pre-determined social desirability of the items. Edwards reports that the probability of endorsement is a linear function of the social desirability of the item and the correlation coefficient was a significant .871.

The importance of the report of Edwards' study for the present report resides in the knowledge that the individual can endorse a behavior when that behavior is deemed desirable. The method whereby student teachers improve their professional capability and thus enhance the learning environment must be presented in a fashion that will establish a desirable social value in the mind of the student teacher.

Thus the concept the student teacher has of self and the understanding of the influence of self-concept upon behavior is important if the student teacher is to be able to improve his teaching technique and to develop a positive approach to teaching and learning.

Category Analysis Literature

It has been mainly within the past twenty-five years that attention has been directed by researchers in major studies toward a quantitative analysis of classroom verbal behavior. Prior to that time evaluation of classroom activities was, generally, by teacher ratings to ascertain the degree of effectiveness of the teacher and by testing to ascertain pupil achievement which, in turn, reflected teacher effectiveness. These procedures were non-quantitative in nature, globular and involved value judgments. The studies made prior to World War II might be characterized as naive and conducted "as if we already knew what teaching is" and we merely test to determine the effectiveness of the educational process.[15] Researchers responsible for much of the research in quantifying classroom verbal behavior for measurement (Withal, 1949, Medley and Mitzel, 1958, Flanders, 1960) advise that much remains to be accomplished in developing a system for quantifying classroom verbal behavior.

Most research studies have foundation in previous studies and this is true with the research in quantitative analysis.[16] A review of research leading to the efforts to classify classroom behavior will assist in an understanding of the Flanders System of verbal interaction analysis used in this study. The earliest studies relating to classroom behavior were made by Anderson, et al.[17, 18, 19] These studies

were continuous over a period of several years. They started, initially, with the purpose of analyzing teacher behavior. These studies were conducted utilizing the terms dominative and integrative behavior described as:

> The use of force, commands, threats, shame, blame, attacks against the personal status of the individual may be cited as examples of dominative ways of responding to others ... attempts to make others behave according to one's own standards and purposes. Domination may be regarded also as a frustration of the behavior of someone else ... it is consistent with bigotry and with autocracy ...
>
> If, instead of compelling the companion to do as one says, one asks the companion and by explanation makes the request meaningful to the other ... such behavior is said to be an expression not so much of pursuing one's own unique purposes ... the term <u>socially integrative behavior</u> is used.[20]

These studies are based on the observation of all contacts between the teacher and the student as opposed to strictly verbal contacts.

Kirk indicates that in order to quantify classroom behavior three determinations are necessary.[21] First, the person recording the behavior must determine what behaviors are to be observed. Second, he must have a plan for recording and third, he must determine in what manner the observations are to be interpreted. These are precisely the tasks that researchers have faced in seeking to quantify classroom verbal behavior. Withal sought to identify the climate of a classroom by classifying teacher statements into teacher behavior patterns.[22] Withal postulated that learning is most likely to take place when experiences occur in a non-threatening situation. The learner is thus free from personal threat and is also helped to evaluate himself on the basis of objective criteria. Withal also postulates that the teacher's behavior is assumed to be the most important single factor in creating a classroom climate and the teacher's verbal behavior is a

representative sample of the total behavior. In the study by Withal, teacher verbal behavior was initially classified, from taped recordings of classroom situations, into twenty-five categories which, upon analysis, were found to overlap and were reduced to thirteen and subsequently to seven categories. After the verbal statements were classified into the seven categories typescripts from other classroom situations were analyzed by comparison with the seven categories and teacher verbal behavior patterns established.[23] Withal concluded from this study that (1) a valid measure was obtainable through teacher statements and (2) these statements provide a consistent pattern of verbal behavior for a given teacher from day-to-day. This study was the earliest to suggest the use of teacher verbal statements as a means for analyzing the teacher classroom behavior. The categories were to be identified by the pupil perception of the teacher.

Flanders expanded the system of classifying classroom behavior, specifically spontaneous verbal behavior of the teacher and the pupil. The concept of teacher influence expressed through verbal communication is the basis of the Flanders system. Like Withal, Flanders assumes that verbal communication on the part of the teacher is a representative sample of the total behavior of the teacher. Teacher influence exists in the classroom not alone by virtue of the legal authority vested in the teacher but also by the importance of the influence of teacher behavior upon the existing classroom situation. The concepts of "direct" and "indirect" influence of the teacher are used in the Flanders system of interaction analysis.

Direct influence by the teacher over the classroom climate is represented by the verbal communication of the teacher which restricts

the freedom of the pupil. These restrictions set up restraints within the pupil and serve as cues for possible anxiety and, perhaps, withdrawal from verbal interaction. Indirect influence as expressed through the teacher's verbal behavior has the opposite result; the student has the feeling of acceptance of his ideas and he contributes freely to the pattern of verbal interaction.[24] This thought relates to Cogan's idea that the teacher gives the cue for learning and self-initiated work and compares with the inclusive-preclusive behavior identified by Cogan.[25] Indirect and direct influence also relates to integrative and dominative types of behavior as identified by Anderson, et al.

Flanders also identifies two student personality traits as related to direct and indirect teacher influence. These personality traits are dependent and independent proneness.[26] Direct influence on the part of the teacher will create within the student the tendency to "do when told to do" or "talk when told to talk", while indirect influence will create within the student the desire for self directed activity. This, again, relates to Cogan's belief that the teacher provides the cue for learning and is further supported by Rogers in that the direct influence may be the cue for anxiety on the part of the student.[27, 28]

The Flanders System is a procedure for observing, recording and interpreting the verbal interchange between student and teacher. Flanders identifies the classroom behavior to be observed as the spontaneous verbal interaction that takes place in the classroom. The Flanders System uses ten categories for classifying the teacher-pupil verbal action in a classroom teaching situation.[29] These ten categories are broken down into four designations representing indirect teacher verbal influence and three categories representing direct

teacher verbal influence. Two categories relate to student verbal action and the tenth is used for denoting silence, confusion or misunderstanding. Indirect influence encourages student participation and removes restriction on student verbal communication. Direct influence on the other hand places restraints on the students' freedom of participation. Teacher participation increases when direct influence is used. As can readily be seen the Flanders System is suitable mainly for classroom situations in which the teacher and the pupils actively engage in classwork discussion.

To merely observe, record and tabulate classroom verbal interaction is insufficient. Purposive comparisons can be planned in advance. Thus if a teacher wishes to develop the practice of expanding the students' ideas he should be able to look at the matrix row and column 3 cell.[30] In this manner he may analyze his verbal behavior as it is represented in this cell.

Verbal behavior patterns of superior teachers can be identified by the Flanders System of interaction analysis.[31] In a study by Amidon and Giammatteo 153 suburban Philadelphia teachers were used. Thirty-three of the total number were identified by administrators and supervisors as superior or master teachers. The remainder were selected at random from the same school districts in which the thirty-three superior teachers were located. All teachers were observed during a language arts classroom period lasting approximately thirty minutes. No special or substitute teachers were observed and the class session followed no specific or special event. Profiles were established on the superior teachers and on the 123 teachers selected at random who made up the normative group. In addition to comparing the patterns of

interaction, the researchers compared the frequencies of each category of the Flanders System with the following general indications evident:

(1) Acceptance of student feeling (category 1) was used three times as much by the superior teachers as it was by the normative group; however, a low incidence was noted in this category.

(2) Questions occupy one-fifth of all talk in both groups. The superior group asked about twice as many broad questions (tends to permit leeway for student response of a wide nature). The normative teachers asked narrow, limited, one word answer type questions calling for predictable answers.

(3) Praise and encouragement were used equally; however, the superior group used this category after student initiated response more frequently than did the normative group.

(4) The normative group used more continuous type lecture than the superior group. Total time for lecture was about equal.

(5) Directions were used twice as much by normative group and this elicited more silence from the students than did the superior group. In addition, criticism followed directions in the norm group twice as much indicating discipline or control problems.

(6) Criticism, over-all, used sparingly by teachers in both groups.

(7) Twice as many student initiated responses appeared in

superior group pattern.

(8) The normative group students participated approximately 40% of the time while in superior group the students participated approximately 52% of the time.[32]

This study concluded that verbal behavior patterns of the two groups differed markedly. Superior teachers were identified by value judgments on the part of the administrators and supervisors.

The information contained in the study by Amidon and Giammatteo supports the results of the studies by Flanders concluded in 1960.[33] This study by Flanders followed earlier studies in Minnesota and in New Zealand under a grant from the U. S. Office of Education. The earlier studies provided a set of hypotheses related to teacher influence and student achievement and serve to identify superior teachers by relating the high achievers to an identified teacher influence pattern. By identifying the patterns of influence used by teachers associated with student achievers, the superior teacher might be identified without the use of value judgments. Two of the hypotheses used by Flanders in Minnesota in 1958 relate to:

(1) Restricting student freedom of participation early in the cycle of classroom learning activities increases dependence and decreases achievement.

(2) Expanding student freedom of participation early in the cycle of classroom learning activities decreases dependence and increases achievement.

Teacher influence was designated as the independent variable and achievement as the dependent variable. Four observers rated 16 mathematics and 16 social studies teachers an average of 42 times. In this

manner the teacher statements of each teacher could be converted into an indirect-direct ratio. Finally, three groups were determined from the total 32 teachers. These groups were the "most direct", "average", and "most indirect". Comparison of the most direct to most indirect teachers followed the pattern shown above for the study by Amidon and Giammatteo. Indirect teachers made greater use of student ideas and student statements. More extended questions were asked by indirect teachers. Direct teachers experience more discipline problems as indicated by more use of criticism followed by directions. Direct teachers give longer and more involved directions and students more often tend to question and even resist directions given by the most direct teachers.[34]

The Interaction Analysis system was used to study the behavior of student teachers in elementary schools to ascertain patterns, if any, common among student teachers and to determine whether a knowledge of the interaction analysis would cause student teachers to change their teaching behavior.[35] Thirty student teachers were equally divided into control and experimental groups. The groups were equated relative to age, experience, basic personality and attitude toward teaching. This study was conducted during the actual student teaching phase of the teacher preparation program.

The experimental group received instruction in the procedures of interaction analysis prior to reporting for their student teaching assignments. While they were not experts, after five hours of training in the interaction analysis process, they did understand the basic procedures and could categorize with fair reliability. Both control and experimental group student teachers were observed during their student teaching for four periods of an open discussion in social studies.[36]

The control group was given no training in the interaction analysis process. Becoming knowledgeable in the basic fundamentals of interaction analysis produced changes in the bahvior patterns of student teachers.

Upon completion of the study the experimental group student teachers were inclined to talk less than control group personnel and seemingly resisted the tendency to exert more direct influence. In addition, they gave fewer directions and asked more questions after a student voluntary response. The direct to indirect influence ratio was determined by examining the observational matrices tabulated by the visiting supervisory college staff member. Knowledge of interaction analysis did cause the experimental group to alter their teaching behavior and patterns of common student teacher behavior were evident.

One major hypothesis of a study conducted by Amidon and Powell was that student teachers are more indirect at the end of the student teaching phase of training after being taught the Flanders Interaction Analysis process than those not so taught.[37] A total of approximately 60 student teachers was envolved in this study for five consecutive semesters. This study incorporated a total of 105 hours of training in the interaction analysis procedures or approximately 21 hours for each semester. Amidon indicated that from 12 to 30 hours training in Interaction Analysis affects the student teachers' behavior.[38]

At the time of printing of the mimeographed paper reporting this study only the data gathered during the first semester of the report had been analyzed. Some pertinent results of comparisons between student teachers who had been taught Interaction Analysis and those who had not been taught Interaction Analysis are: (1) student teachers

who knew Interaction Analysis talked less in the classroom, (2) student teachers who knew Interaction Analysis were more indirect in using motivating and controlling type behaviors, (3) student teachers taught Interaction Analysis used more extended indirect influence and less extended direct influence, and (4) student teachers taught Interaction Analysis used more extended acceptance of student ideas. Implications of this study are for self-directed supervision. The teacher can observe himself, using a tape recorder, and thus provide his own feedback without the presence of another person.[39]

Literature Related to Open-Closed Belief Systems

Getzels and Jackson list the personality of the teacher as a significant variable in the classroom.[40] Rogers, (1947), Raimy, (1948), Fitts and others relate the self-concept to the individual personality structure.[41] The Dogmatism Scale developed by Rokeach has been a useful instrument in measuring certain aspects of this structure which is an important factor in the study of the teachers and pupils in a school social system.[42]

The Dogmatism Scale was developed for the purpose of measuring individual differences in the open or closed belief systems.[43] This belief system is comprised of two parts: (1) all beliefs, expectancies, sets, or hypotheses, conscious and unconscious, that a person accepts as true and (2) all disbeliefs, sets and expectancies, both conscious and unconscious, that a person looks upon as untrue. High scores on the Dogmatism Scale represent a closed mind while low scores are indicative of an open mind. Of course, a completely open and a completely closed mind are ideal types and in reality no one ever

possesses a completely open or a completely closed mind.[44] The open minded person is deemed capable of receiving, evaluating and acting on information from without himself unfettered by irrelevant facets of that information originating within himself or coming from without himself. He evaluates and acts solely upon the basis of the relevancy of the information received. Examples of irrelevant information originating from within that might preclude or interfere with open minded reception and evaluation are: preconceived ideas, habits, ego motives, anxiety, personal needs. Examples of irrelevant information coming from without are: external authority, social norms, cultural norms, peer expectancies and parental influences. On the other hand, the closed mind will experience greater difficulty in resisting the irrelevant factors unrelated to the information received. Because of the pressures of the irrelevant factors the closed mind evaluates and acts upon the information received in accordance with the manner in which the irrelevant internal or external factors force him to act. The open minded person views his environment as being friendly and he evaluates on the strength of the intrinsic merit of the information he receives. Conversely, the closed minded person views the world as threatening and he evaluates information on the strength of the influence of the source of the information and the degree to which the information does not conflict with his own ideas and beliefs. This behavior is characteristic of the dominative type described by Anderson as "behavior of one who is so insecure that he is not free to utilize new data, new information, new experience."[45] This type of behavior on the part of the teacher also parallels the "direct influence" described by Flanders.[46]

The openness of the belief system was found by Hough and Amidon

to influence the attitudes student teachers have for teaching.[47] A student teacher or an inexperienced teacher is confronted with a host of confusing, challenging and on-the-spot situations in the classroom. His ability to cope with the classroom developments rests to a great extent upon his own value system. If he possesses a closed belief system his preconceived thoughts, ideas and feelings may preclude the proper and correct evaluation of the classroom situation and thus appropriate handling of classroom learning situations may be lost.

In the study by Hough and Amidon, two groups of forty student teachers were used: twenty as a control group and twenty as an experimental group. The experimental group was taught the Interaction Analysis process while the control group followed the normal course work. The groups did not differ significantly on the Dogmatism Scale, (one instrument used in the study) at the beginning of the study. A significant change in scores pre to post-test on the Teaching Situation Reaction Test (second instrument used in the study) was noted for those students who scored in the lower quartile of the Dogmatism Scale and who had received instruction in the Interaction Analysis process. Hough and Amidon concluded that the openness of the student teachers' personality structure was influential in changing their attitudes toward teaching.[48]

Summary

This chapter describes and relates the concepts of (1) self-perception, (2) interaction analysis as a means of evaluating self-perception and (3) open mindedness. Studies in the area of the self-concept indicate the increasing importance of this component of

personality in achieving personal and professional growth. Studies relating to the use of Flanders' Interaction Analysis provide evidence of this system as a valuable tool for the study of verbal behaviors in the classroom. Open mindedness as measured by the Dogmatism Scale relates to an ability to change as information is received and evaluated in a healthy, critical and constructive manner. The self-perception of an individual influences his behavior; and changes in behavior will be reflected in changes in self-concept. When changes occur in the self-concept it is indicative of the ability to view self with an open mind.

FOOTNOTES

[1]Anita Simon, ed., Classroom Interaction Newsletter, I. (Philadelphia, 1965), p. 1.

[2]A. W. Combs, "The Personal Approach to Good Teaching", Educational Leadership, XXI (1964), p. 373.

[3]Carl R. Rogers, "Some Observations on the Organization of Personality", American Psychologist, II (1947), p. 359.

[4]Victor C. Raimy, "Self Reference in Counseling Interviews", Journal of Consulting Psychology, XII (1948), p. 155.

[5]Ibid., p. 161.

[6]A. W. Combs and Donald Snygg, Individual Behavior: A Perceptual Approach to Behavior (New York, 1959), p. 157.

[7]Agnes B. Hatfield, "An Experimental Study of the Self-Concept of Student Teachers", The Journal of Educational Research, LV (1961), pp. 87-89.

[8]Rogers, p. 265.

[9]Prescott Lecky, Self-Consistency: A Theory of Personality (New York, 1945), p. 150.

[10]Rogers, p. 265.

[11]Morris L. Cogan, "Research on the Behavior of Teachers: A New Phase", Journal of Teacher Education, XIV (1963), p. 239.

[12]Morris L. Cogan, "The Behavior of Teachers and the Productive Behavior of Their Pupils: I Perception Analysis", Journal of Experimental Education, XXVII (1958), p. 90.

[13]Ned A. Flanders, "Personal-Social Anxiety as a Factor in Experimental Learning Situations", Journal of Educational Research, XLV (1951), pp. 100-110.

[14]Allen L. Edwards, "The Relationship Between the Judged Desirability of a Trait and the Probability That the Trait Will be Endorsed", The Journal of Applied Psychology, XXXVII (1953), p. 90.

[15]B. O. Smith, "Conceptual Framework for Analysis of Classroom Social Interaction", Journal of Experimental Education, XXX (1962), p. 326.

[16]Ned A. Flanders, "Teacher Influence, Pupil Attitudes and Achievement", Cooperative Research Monograph No. 12, United States Office of Education (Washington, 1965), p. 3.

[17]Harold H. Anderson and Helen Brewer, "Studies of Teachers Classroom Personalities, I", Applied Psychological Monographs, No. 6 (1945), pp. 1-157.

[18]Harold H. Anderson and J. E. Brewer, "Studies of Teachers Classroom Personalities, II", Applied Psychological Monographs, No. 8 (1946), pp. 1-128.

[19]Harold H. Anderson, J. E. Brewer and M. F. Reed, "Studies in Teachers Classroom Personalities", Applied Psychological Monographs, No. 11 (1946), pp. 1-157.

[20]Harold H. Anderson and Helen Brewer, p. 9.

[21]Jeffrey Kirk, "Effects of Teaching the Minnesota System of Interaction Analysis to Intermediate Grade Student Teachers", (Unpub. Ed. D. dissertation, Temple University, 1964), p. 16.

[22]John Withal, "The Development of a Technique for the Measurement of Socio-Emotional Climate in Classrooms", Journal of Experimental Education, XVII (1949), p. 347.

[23]See Appendix D.

[24]Flanders, 1965, pp. 7-9.

[25]Cogan, p. 323.

[26]Flanders, 1965, pp. 9-12.

[27]Cogan, p. 323.

[28]Rogers, p. 365.

[29]See page 36 in Chapter III.

[30]Flanders, 1966 a, p. 18.

[31]E. Amidon and M. Giammatteo, "The Verbal Behavior of Superior Teachers", Elementary School Journal, LXV (1965), p. 285.

[32]Ibid.

[33]Ned A. Flanders, Interaction Analysis in the Classroom: A Manual for Observers (Minneapolis, 1960), pp. 58-62.

[34]Ned A. Flanders, "Some Relationships Between Teacher Influence, Pupil Attitudes and Achievement", A pre-publication manuscript. Personal Communication, 1966.

[35]Kirk, p. 2.

[36]E. Amidon, "Interaction Analysis and Its Application to Student Teaching", Association for Student Teaching Yearbook 1965 (Dubuque, 1965), p. 78.

[37]E. Amidon and E. Powell, "Interaction Analysis as a Feedback System in Teacher Preparation", A paper given at the ASCD Curriculum Research Institute in Washington, D. C., November 1965 (Mimeograph), p. 7.

[38]Amidon, p. 90.

[39]Ibid.

[40]J. W. Getzels and P. W. Jackson, "The Teacher's Personality and Characteristics", in N. L. Gage (ed.), Handbook of Research on Teaching (Chicago, 1963), p. 506.

[41]W. H. Fitts, Manual for Tennessee Self Concept Scale (Nashville 1965), p. 1.

[42]W. K. Hoy, "Dogmatism and the Pupil Control Ideology of Public School Professional Staff Members," (Unpub. Ed.D. dissertation. The Pennsylvania State University, 1965), p. 20.

[43]Milton Rokeach, The Open and Closed Mind (New York, 1960), p. 71.

[44]Hoy, p. 11.

[45]Harold H. Anderson, "The Measurement of Domination and Socially Integrative Behavior in Teacher's Contacts With Children", Child Development, X (1939), p. 73.

[46]Flanders, 1960, p. 8.

[47]Amidon, p. 75.

[48]Amidon, p. 77.

CHAPTER III

CONDUCT OF THE EXPERIMENT

Introduction

The research was conducted during a nine week period just prior to the student teachers' entry into their student teaching assignments. To preclude disruption in the regularly scheduled program the investigator worked with the Director of Student Teaching and the education professors in charge of the student teaching seminars. These seminars are designed to discuss and review student teaching assignments, procedures, problems and, in general, prepare the student teacher for the coming student teaching assignment.

The control group was comprised of twenty-five participants. This group met the student teaching seminar on Tuesday and Thursday for one hour and forty minutes each session. After the pre-test no further contact was made with this group until the last hour of the seminar work when they were post-tested using the same instruments as the pre-test except that the Rokeach Dogmatism Scale was not used in the post-test.

The experimental group was comprised of twenty participants. This group met on Tuesday and Thursday for one hour and forty minutes each session. (See schedule - Appendix A.) In stimulating, emphasizing and creating an incentive for self-evaluation of their efforts as student teachers and even later as teachers, the Minnesota System of

Interaction Analysis was used. The use of this tool was the central theme for the development of self-evaluative techniques and approximately 90% of the 15 hours (or 13 hours) was devoted to the discussion of analysis of classroom verbal interaction.

Both groups were initially administered the Tennessee Self-Concept Scale (see Appendix B) as a pre-test instrument. The experimental group was treated for nine weeks at one seminar per week, prior to departing for their various student teaching assignments, in the procedures of Interaction Analysis as developed by Dr. Ned A. Flanders and associates at the University of Minnesota. A series of five film strips and one tape containing three classroom episodes were used in the experimental group during the nine week period as a tool for self-evaluation. The control group attended the regular student teacher seminar program and received no experimental treatment.

The Minnesota System of Interaction Analysis

The following description of the interaction analysis process will assist the reader in an understanding of the work accomplished during the seminar sessions.

Interaction analysis is a system of observing and coding verbal interchange that takes place between the teacher and pupil during a class period. Any class activity (other than a straight lecture session, reading lesson or study period) and especially class periods such as general discussion, group work, teacher-pupil planning session provide an excellent opportunity to observe classroom verbal interaction. The Minnesota system utilizes a three second time interval for identification of a category of verbal interaction (Figure 1), i.e., every

1.* ACCEPTS FEELING: accepts and clarifies the feeling tone of the students in a non-threatening manner. Feelings may be positive or negative. Predicting or recalling feelings are included.

2.* PRAISES OR ENCOURAGES: praises or encourages student action or behavior. Jokes that release tension, but not at the expense of another individual; nodding head, or saying "um hm?" or "go on" are included.

3.* ACCEPTS OR USES IDEAS OF STUDENTS: clarifying, building, or developing ideas suggested by a student. As teacher brings more of his own ideas into play, shift to category five.

4.* ASKS QUESTIONS: asking a question about content or procedure with the intent that a student answer.

5.* LECTURING: giving facts or opinions about content or procedures; expressing his own ideas, asking rhetorical questions.

6.* GIVING DIRECTIONS: directions, commands, or orders to which a student is expected to comply.

7.* CRITICIZING OR JUSTIFYING AUTHORITY: statements intended to change student behavior from non-acceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.

8.* STUDENT TALK--RESPONSE: talk by students in response to teacher. Teacher initiates the contact or solicits student statement.

9.* STUDENT TALK--INITIATION: talk by students which they initiate. If "calling on" student is only to indicate who may talk next, observer must decide whether student wanted to talk. If he did, use this category.

10.* SILENCE OR CONFUSION: pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

*There is NO scale implied by these numbers. Each number is classificatory; it designates a particular kind of communication event. To write these numbers down during observation is to enumerate, not to judge a position on a scale.

Figure 1. Categories of Interaction Analysis

three seconds there should be verbal activity and for every three seconds one categorization is made identifying one of the ten categories of verbal interaction developed by the Minnesota researchers. On this basis, a twenty minute general discussion period would produce 400 category identifications. This number of categorizations will provide an excellent picture pattern when tabulated on a matrix (see Figure 2).

An example of the categorization process as the observer listens and records category markings:

> Teacher - For this period in our geography lesson we will make an imaginary (1) visit to the land of the Incas. Mary informed us yesterday about the importance of cleanliness in our (2) daily living habits. Can you add to that discussion Peter, by telling us about the (3) daily living habits of the Incas?
>
> Student - Yes'm, I don't know but I believe the outdoor life of (4) the early Indians was important for their health.
>
> Teacher - Yes, go on. (5)
>
> Student - and besides that - Indians didn't have frozen foods like we have today and my mother believes (6) .....

Proper categorization of the above six statements might be:

$$\begin{matrix} 6) \\ (3 \\ 4) \\ (8 \\ 9 \end{matrix}$$

The first statement by the teacher is directive in nature (6) and this is followed by identifying an idea a student presented previously (3). The teacher shifts from 6 to 3 to 4 by asking a question of a particular student and his response is teacher solicited (8); however, the student continues and expands into self-initiated response (9). Each three second interval is identified by a verbal interaction category. The category numbers are entered into the matrix (see Figure 2) in pairs

CATEGORY	1	2	3	4	5	6	7	8	9	10	TOTAL
1		11			111			7HH 11			12
2	111			111	11					7HH 1111	17
3		7HH 111	1	7HH 7HH 11	111			7HH 1 7HH 7HH 7HH		1111	49
4		1	1111	7HH 7HH 7HH 7HH	111			7HH 7HH 7HH 7HH 7HH 7HH 7HH 7HH	1	7HH 111	88
5	1111	1	1	7HH 7HH 7HH 1	7HH 7HH 7HH 7HH 11	1		1		1	47
6		11			1			11		1	6
7			7HH	1	1		11				9
8	1111	111	7HH 7HH 7HH 7HH 7HH 11	7HH 1 7HH 7HH 7HH	7HH 1111	11	1	7HH 11	11	7HH 7HH 111	94
9	1		7HH 1	7HH 1		1					14
10				7HH 1111	111	11	7HH 11	7HH 1	7HH 7HH 1		38
TOTAL	12	17	49	88	47	6	9	94	14	38	394

Figure 2. Observation Matrix

as indicated above. In this manner each number receives both a row and a column entry in the 10 x 10 matrix. The row entry of the matrix is represented by the first number of the pair and the column entry by the second number of the pair. A twenty minute class period should provide an excellent picture pattern. This is especially true when several twenty minute sessions are compared in the light of the individual self observer goals that should have been established (i.e., the student teacher might select as one goal the development of more use of verbal communication relating to indirect influence). Reviewing a series of matrices of twenty minute sessions will provide indications of how the student teacher is progressing toward attainment of the goal established. This could be accomplished by examining cells 1-1, 2-2, and 3-3. Increases in the number of category entries in this area would provide some indication of increased use of indirect influence.

Further examination of a matrix could reveal many things about the classroom verbal interaction. For the following description the reader should refer to the matrix table, Figure 3. Area E of the matrix is a block of nine cells. Heavy loading in this area indicates continued use of praise, acceptance of student feelings and development of student ideas. Any goals aimed at developing the teacher's use of these categories would require an analysis of this block of nine cells. Area F is a block of four cells and high or heavy loading in this area indicates continued use of criticism and directions and could reflect classroom management problems. Area H indicates the type of teacher talk that induces student response. High loading in the 4-8 cell indicates a rapid drill class session. Area I indicates continued or sustained student participation. The cells forming a line from top left to bottom

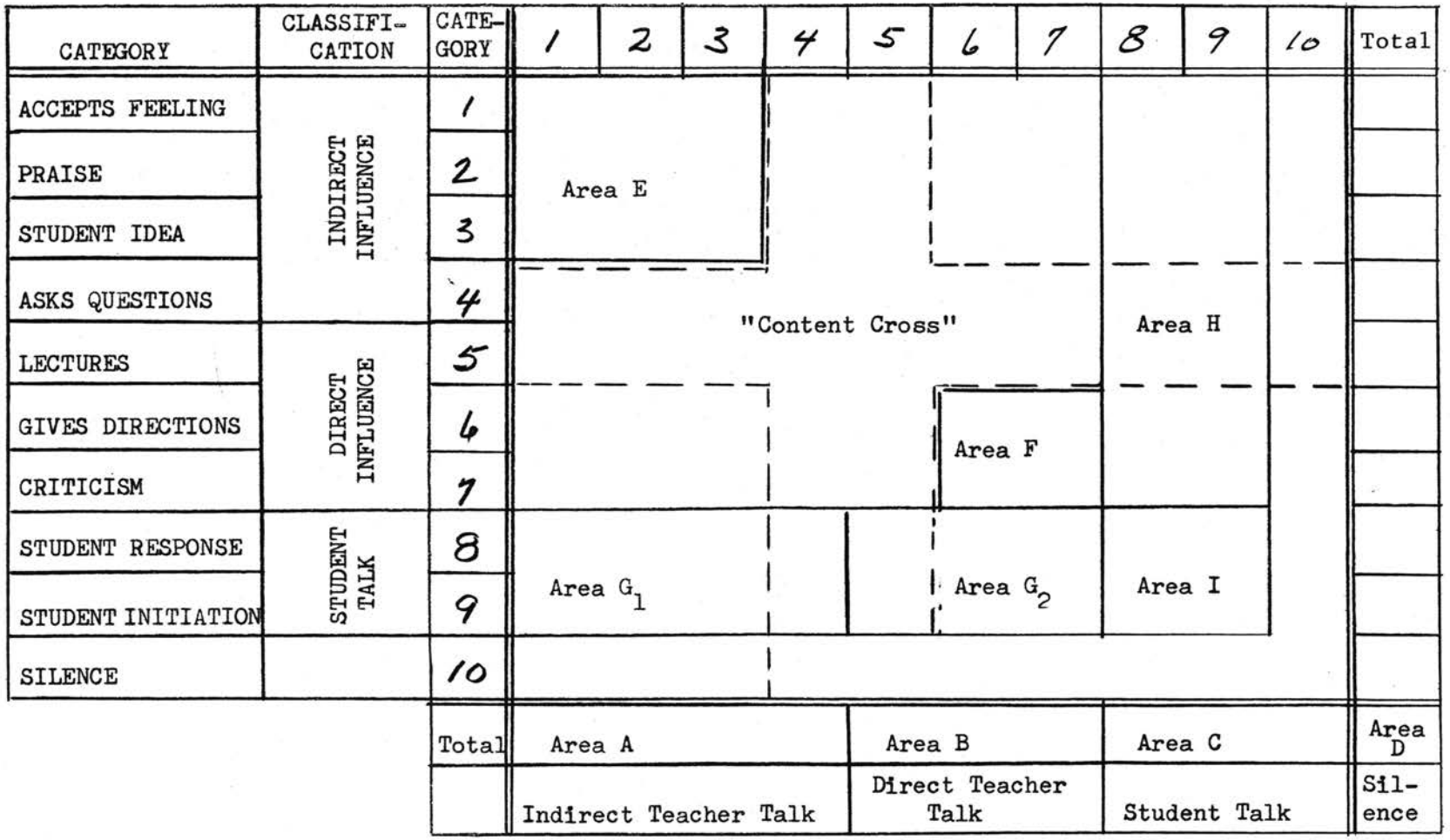

Figure 3. Areas of Matrix Analysis

right are termed the steady state cells, i.e., 1-1, 2-2 .... 8-8, 9-9. Heavy loading in any of these cells denote continued, sustained talk - 1 is teacher talk, accepting feeling of the student, high loading in 1-1 indicates the teacher sustains the verbal statements in the category. The content cross represents the staying close to the textbook in discussion. A comparison of the number of entries in this area with the number outside this area gives an indication of the content orientation of the class activity.

Dividing the sum of entries in Area A by the sum of Area B provides a ratio of indirect to direct teacher talk. Likewise, by dividing the sum of Area A, B and C individually, by the total number of categorizations the percent of teacher talk (both direct and indirect) can be determined as well as the percent of student talk.

Thus by analysis of the interaction matrix, in the light of clearly defined goals, changes can be effected in the verbal behavior of the student teacher. A brief description of the procedure for each seminar period follows.

First Seminar Period

The Tennessee Self Concept Scale (Appendix B) and the Rokeach Dogmatism Scale (Appendix C) were administered during the first seminar period. The pre-testing was accomplished with the experimental group on the first class hour of the fall semester 1966 and at the second class hour of the fall semester for the control group. The purpose for testing was not explained to either group inasmuch as intercommunication between groups in the least amount possible was desired. The experimental design made it advisable not to mention the program as

comprising two groups at any time during the study.

Second Seminar Period

During the second hour of the program, the experimental group was informed relative to the purpose of the study. At this time it was emphasized that each student teacher should develop the attitude (if not already possessed) that the student teacher, individually, was the most important person in developing habits and techniques that would serve as a base for improvement in teaching and professional growth. A twenty-five minute film "You, Yourself Incorporated" was shown. This film stresses the importance of "self" and the development of a positive attitude toward self as the source of improvement in any endeavor. A partial bibliography of writings related to Interaction Analysis and classroom behavior was distributed. The bibliography was not for required reading; however, it was suggested that information could be found in the writings that would enhance professional growth as a teacher.

Third Seminar Period

The third seminar session included the first of five film strips and accompanying typescript on the Minnesota System of Interaction Analysis. The film strip and typescript were developed by the College of Education at the University of Minnesota in connection with the public schools of St. Paul and Minneapolis. The first film strip sets the stage for a program of instruction in interaction analysis by dealing with attitudes, opinions and teacher reactions to an in-service education program. Following the film strip a brief discussion was held

relating the film "You, Yourself Incorporated" to the idea of self-evaluation through a program of self-inservice education.

Fourth Seminar Period

The second film strip and typescript on interaction analysis were to be used during the fourth seminar period. The second film unfortunately did not arrive in time to be used in proper sequence. Although this film strip was later received it was decided not to interrupt the sequence and therefore this film strip and accompanying typescript were not used. The intent or purpose of the second film strip was accomplished by discussion of the concepts of direct and indirect teacher influence; dependent and independent prone students and the necessity for the teacher or student teacher to have clearly defined goals to be accomplished before interaction analysis can be of value in examining teacher behavior. Studies conducted by Amidon and Flanders (1961) and Amidon and Giammatteo (1965) were used to develop the understanding of direct and indirect teacher influence, and dependent and independent prone children. Clearly defined goals were identified as goals identifying the type of verbal behavior the teacher or student teacher desired to develop. A handout showing the ten categories of verbal behavior, identified by Flanders, was distributed. The student teachers were asked to review this listing and to commit it to memory.

Fifth Seminar Period

During the fifth seminar session the third film strip was used along with its accompanying typescript. This film strip describes the ten categories of verbal behavior developed by Flanders. Each category

was explained and illustrated in the film strip. This film strip served to reinforce the information provided in the fourth session relative to direct and indirect teacher influence and dependent and independent prone children.

During this period, and in succeeding periods, an effort was made by the investigator to indicate the value of using a tape recorder and therby becoming a self observer of any classroom session the teacher might wish to observe. No effort was made to play down the use of another individual as an observer; however, it was noted that the absence of a trained observer need not be a deterrant to successful use of interaction analysis as a tool for improving classroom technique. In fact, acting as a self observer would increase the reliability of observer categorization of verbal interaction. The problem of knowing when shifts in categories were made and whether the teacher had shifted from developing the student's idea (category 3) to praise (category 2) or lecturing (category 5) would be eliminated because the self observer would recognize his own intentions whereas another observer would have had to observe the particular teacher a sufficient number of times to establish his reliability of categorizations. The effort by the investigator during the fifth seminar period was a deliberate attempt to promote the idea of self-evaluation of the teaching performance by analysis of verbal interaction.

At the close of the fifth session a copy of the typescript of the first episode of a classroom teaching situation was distributed. This typescript was developed at the University of Michigan by Flanders. The student teachers were urged to read this typescript and to continue committing to memory the ten categories of interaction analysis. A

handout listing possible problem areas that might develop during the categorization process was distributed at the close of the session (Figure 4). Thorough memory of the ten categories and continued training in categorization were stressed in assisting the student teachers to become skillful observers.

Sixth Seminar Period

The fourth film strip showing how to tabulate a 10 x 10 matrix and how to interpret the tabulation was used during the sixth session. After the film strip showing and a discussion of matrix tabulation and interpretation the first attempt at categorization was initiated. The third episode of the training aid tape was used for categorizing (see Appendix E).

Seventh Seminar Period

The seventh session consisted entirely of examining matrices and categorizing verbal statements from the training aid tape of classroom episodes. At the beginning of this session the suggested proper categorization of the third episode (used in the previous session) was reviewed and comparisons made with the categorizations by the student teachers, on the day before. The suggested properly categorized statements totaled 284 and the highest number of categorizations by the student teachers was approximately 100 short of this number. This was an indication that difficulty was being experienced in estimating an elapsed time of three seconds or that the categories were not known sufficiently well for the student teacher to decide in what category the statement should be placed. A comparison by patterns indicated

No. 1 - When there is a choice of two or more acts within a three second period of time always choose the numerical designation most distant from five.

No. 2 - Always make category decisions in the light of the total social situation involved restricting or expanding.

No. 3 - Shift problems - Shift from five to three and vice versa sometimes difficult to recognize. Example - Teacher repeats what student has said. Is it category five or has teacher shifted to category three?

No. 4 - Teacher habit problems - Example - Teacher may have habit of responding to student talk with "right" or "good". Should it be category two or five?

No. 5 - In actual classroom situations the observer must distinguish between category eight or nine.

No. 6 - Student-to-student spontaneous communications.

No. 7 - Problem of the use of a question as criticism.

Figure 4. Caveats

that the first statement was more likely the case. The patterns recorded by student teachers followed generally the pattern suggested by Flanders except that there were fewer entries in the pattern cells. Further discussion followed on estimating an elapsed three second period of time and upon difficulties in determining shifts in "steady state" cells.

Eighth Seminar Period

During the eighth session a final film was shown. This film summarized the preceding film strips and developed the process of interaction analysis into an orderly procedure. The last twenty-five minutes of the film strip consisted of a recording of a ninth grade teacher-pupil planning session in a social studies class followed by a discussion of the matrix tabulation and interpretation. This served as a review of all the preceding portions of interaction analysis. Following the film strip the student teachers engaged in categorizing the second episode of the training aid tape. The categorizations were then tabulated into a matrix and patterns were compared between students. Emphasis during this session was placed upon interpretation of the goals that might have been established, by the teacher and the pupils, prior to the planning session.

Ninth Seminar Period

The final session was used for post testing both the experimental group and the control group.

Summary

The manner in which the experiment was conducted has been explained in this chapter by briefly describing the activity of each seminar period. The Minnesota System of Interaction Analysis is briefly discussed to provide the reader with a clearer idea of the seminar activities. The following chapter describes the instrumentation used in the analysis of the study.

CHAPTER IV

PROCEDURES

Introduction

This study reports the effects of teaching the Flanders Interaction Analysis system as a tool for developing self-evaluation techniques and procedures. The self-concept is the dependent variable, with changes in this variable being measured by the Tennessee Self-Concept Scale.[1] The Dogmatism Scale scores are used to test the prediction that changes in the self-concept relate to the open or closed mindedness of the individual belief system.[2]

Selection of Participants

Elementary education majors enrolled in the student teaching block during the fall semester of 1966-67 at Oklahoma State University were used in this study. For purposes of control and to preclude interruption of the regular training program the prospective teachers enrolled in the seminar course Education 450 sections 1 and 3 were used as an experimental group while prospective teachers enrolled in sections 2 and 4 were used as a control group. Both groups were considered equivalent to the extent that all had completed the requirements for admission to the teacher training program and had completed course requirements that permitted their enrollment in the student teaching block.

All participants had been admitted to the Teacher Education program. The average age was 22 years and 2 months with ages ranging from 20 years to 38 years. All participants in the experimental group were education majors and enrolled in the College of Education with the exception of two who were enrolled in Home Economics. All participants in the control group were education majors including 3 who were graduate students and 2 others who were enrolled in Home Economics. All participants except one were females and to equate the groups on the sex variable the one male participant was eliminated from the analysis. None of the participants had any prior teaching experience; all participants, regardless of age or classification of enrollment, were pursuing a course leading to certification in elementary education.

Instrumentation

The Tennessee Self-Concept Scale. The self-concept has become an important means for studying and analyzing human behavior. As a result of the increasing interest in this variable in studying human behavior a wide variety of instruments has been developed to measure this variable.[3] The Tennessee Self-Concept Scale consists of 100 descriptive type statements which portray the picture the individual has of himself. The last 10 statements were taken from the L-scale of the Minnesota Multiphasic Personality Inventory (1951) and is called the self-criticism scale. The 90 descriptive statements were derived from a large pool of written self descriptions. They were arranged in a two dimensional 3 x 5 scheme (3 horizontally aligned dimensions and 5 vertically aligned dimensions). One dimension identifies what the person says he is, arranged in horizontal form, relative to his

physical, moral, personal, family and social self (the five vertically aligned dimensions). The other two horizontal dimensions are (1) how he accepts self along the vertical dimensions and (2) how he acts (his behavior) along the vertical dimensions. The most important single score on the Self-Concept Scale is the total positive score. This score reflects the over-all level of self esteem. High scores reflect a liking for self; feelings of worth and value; indicate confidence in self. Low scores portray generally the opposite. The self-criticism items are mildly derogatory statements about self that most people admit as being true for them. Thus, high scores, except above the 99th percentile (above the 99th percentile indicates defensiveness), indicate a normal, healthy openness and capacity for self criticism.[4] The total positive score and the self-criticism score of the Self-Concept Scale are used in the present study.

Reliability of the scale was established by the test-retest method applied to 60 college students over a two week period. A reliability coefficient for the total positive score, which is the prime score of the scale, was established as .92. Fitts reports that in a study, made by Congdon in 1958, using psychiatric patients a reliability coefficient of .88 was obtained for the total positive score of the scale.[5]

Validity of the Self-Concept Scale is reported by Fitts by several separate validation procedures. Initially, the 90 items comprising the scale (excluding 10 self-criticism items) were classified into the 3 x 5 dimension scheme by seven clinical psychologists. The 90 items used in the scale represent unanimous agreement by the judges as to the proper classification of each item. This is content validity and reflects that the items are logically meaningful and publicly communicable.[6]

A discrimination between-groups procedure was used for validation purposes. Personality theory and research suggest that groups which differ on psychological dimensions should also differ in self-concept. Several studies of different groups: patients and non-patients, delinquents and non-delinquents, indicate that the Self-Concept Scale does differentiate between these groups.[7] The validity of the Self-Concept Scale was also determined by examining the correlation between the scores on this scale and other measures for which a correlation should be expected. For example, by the nature of the purpose of the two instruments (Tennessee Self-Concept Scale - Minnesota Multiphasic Personality Inventory) a negative correlation might be expected between the total positive score of the Self-Concept Scale and the various scales on the Minnesota Multiphasic Personality Inventory. Most of the Self-Concept scores correlate with the Minnesota Multiphasic Personality Inventory in this direction.[8] Fitts supports the validity of the Self-Concept Scale in a study he conducted on changes in self-concept through psychotherapy. It is logical to expect, from psychotherapy and other positive experiences, an enhancement of self-concept while stress, tension or failure would produce a lowering of self esteem. In this study of 54 patients, in therapy (experimental group) and awaiting therapy (control group) test-retest scores using the Self-Concept Scale reflected changes in the expected direction on 18 of the 22 variables studied.[9]

The Dogmatism Scale. The main purpose of this scale is to measure individual differences in open or closed degree of belief systems.[10] This scale went through a series of revisions in efforts to refine and establish reliability until the final Form E composed of 40 items evolved. Reliability was established for this Form from several

different populations ranging from a reliability coefficient of .68 to .93. In arriving at these reliabilities a comparison was made of scores of the upper and lower quartile of the frequency distribution. The analyses show that high and low dogmatic subjects differ consistently and in a statistically significant manner.[11]

Validity of the Dogmatism Scale was determined by what is termed the "Method of Known Groups" in two separate studies.[12] In the first study college professors were asked to nominate graduate students whom they considered to be the most and least dogmatic. In a second study graduate students in psychology identified high and low dogmatic persons among their acquaintances. Those identified as highly dogmatic (closed minded) scored higher than those identified as low dogmatic (open minded). The differences were very significant, meaning that the differences could have arisen by chance one time in a hundred (probability = .01 or less).[13]

Form E was used in the present study. The Dogmatism Scale requires the subject to respond to the forty items by indicating a +1, +2, +3 or -1, -2, -3 according to whether he agrees, respectively, a little, on the whole or very much or whether he disagrees, respectively, a little, on the whole or very much. Each score was converted to a positive algebraic value by adding a constant (+4) to each score. The scoring range then was from 40 to 280. Dogmatism is rated along the continuum from a low score (open minded) to a high score (closed minded).

Statistical Design Used in the Study

The statistical design used to examine the data relating to the prediction that no significant differences exist between the Tennessee

Self-Concept Scale scores is the analysis of covariance method. Garrett states:

> Covariance analysis is especially useful ... when for various reasons it is impossible or quite difficult to equate control and experimental groups at the start: a situation which often obtains in actual experiments. Through analysis of covariance one is able to effect adjustments in final or terminal scores which allow for differences in some initial variable.[14]

The second null hypothesis was tested by the Mann-Whitney nonparametric U-test. This test was used because of the selection of the first and fourth quartiles of the dogmatism score distribution. Use of these quartiles makes the distribution skewed (leptokurtic) and is consistent with the findings of Rokeach.[15] The .05 level of significance was used to determine whether the hypotheses should be accepted or rejected.

Summary

This chapter describes the selection of participants for the study, the instruments used to analyze the data and the statistical design used in the analysis of data.

The major premise of this study is that improvement in teacher competence is set in the framework of reference of the teacher's self-perception. Training the student teacher in the use of interaction analysis of spontaneous verbal interaction in the classroom provides a tool for the student teacher to critically evaluate his own behavior. This will assist in the personal and professional growth of student teachers. The two hypotheses to be tested in this study are restated here:

(1) There will be no significant difference in the self-concept of student teachers as measured by the

Tennessee Self-Concept Scale, after undergoing a period of guidance and training in self-evaluation techniques using verbal interaction analysis procedures.

(2) There is no significant relation in the open or closed mindedness of the individual student teachers and their ability to self-criticize as measured by the self-criticism score of the Tennessee Self-Concept Scale and the Rokeach Dogmatism Scale.

The following chapter presents the analysis of the data and the results of the study.

FOOTNOTES

[1]See Appendix A.

[2]See Appendix B.

[3]Fitts, pp. 1-30.

[4]Ibid., p. 2.

[5]Ibid., p. 15.

[6]Ibid., p. 17.

[7]Ibid.

[8]Ibid., p. 24.

[9]Ibid., p. 28.

[10]Rokeach, p. 71.

[11]Ibid., p. 90.

[12]Ibid., p. 101.

[13]Ibid., p. 103.

[14]Henry E. Garrett, Statistics in Psychology and Education (New York, 1958), p. 295.

[15]Rokeach, p. 90.

CHAPTER V

ANALYSIS OF DATA

Introduction

This chapter will present the analysis of the data gathered during the study. The .05 level of confidence is used for all hypotheses in determining the significance of test results.

Data from the one experimental group and one control group were gathered by the investigator in the form of pre-test scores on the Tennessee Self-Concept Scale and the Dogmatism Scale and post-test scores on the Self-Concept Scale. The Self-Concept Scale contains a self-criticism score tabulated separately from the Self-Concept positive scores (P scores). Table I presents a tabulation of test scores.

Analysis of Covariance for the Two Groups on Self-Concept Scores

The analysis of covariance was employed with the pre- and post-test Self-Concept Scores to test Hypothesis Number 1.

Hypothesis 1. There will be no significant difference in the self-concept of student teachers as measured by the Tennessee Self-Concept Scale, after undergoing a period of guidance and training in self-evaluation techniques using verbal interaction analysis procedures.

TABLE I

TABULATION OF SCORES USED IN THE STUDY

Student Number	Dogmatism	Self-Concept Pre-Test	Self-Concept Post-Test	Self-Criticism
1	105	382	371	39
2	106	397	420	42
3	110	362	368	45
4	117	383	378	31
5	118	377	379	38
6	120	370	368	42
7	120	373	378	27
8	121	336	357	34
9	121	380	407	35
10	122	381	375	36
11	123	406	415	38
12	124	418	428	25
13	125	398	423	34
14	126	356	348	42
15	127	364	357	49
16	129	367	366	27
17	129	364	374	29
18	133	308	322	45
19	134	387	388	35
20	135	354	391	23
21	138	353	350	32
22	138	370	393	23
23	139	361	369	33
24	139	372	363	37
25	140	369	381	45
26	141	417	423	19
27	143	367	376	35
28	144	361	395	38
29	148	353	352	33
30	148	345	352	38
31	150	373	388	44
32	150	353	352	42
33	154	380	387	38
34	156	307	289	35
35	157	357	359	32
36	158	312	333	43
37	159	399	394	37
38	160	332	320	42
39	166	387	352	25
40	166	315	331	37
41	169	362	405	32
42	174	323	323	42

TABLE I (Continued)

Student Number	Dogmatism	Self-Concept Pre-Test	Post-Test	Self-Criticism
43	175	345	348	25
44	177	359	350	34
45	200	353	365	33
N = 45	6334	16,388	16,663	1590
	M = 140.755	M = 364.18	M = 370.36	M = 33.11

above + below -

The analysis of covariance statistical design calculates the variance ratio, referred to as F, between the "Among Means" variance and "Within Groups" variance of the two groups. The pre-test score served as the covariable. Table II gives a summary of the data obtained in the pre and post-test Self-Concept scores. The sums of squares and the sums of crossproducts are reflected in this table. This table demonstrates the significance of the difference in the means after equations have been calculated and adjustments made in the sums of squares. The F ratio of variance value of 4.29 with one and forty-two degrees of freedom is significant beyond the .05 level of significance. For a significant difference to prevail at the .05 level of confidence there must be a differential of 4.07 at the one and forty-two degree freedom value.[1] When the F ratio is found to be significant by the application of analysis of covariance a t-test is appropriate to further verify and evaluate the differences in the group means.[2] The application of the t-test is also reflected in Table II. A t value of 2.02 at forty-two degrees of freedom indicates that five times out of 100 trials a t value of 2.02 or less will result by chance. The t value obtained in this study (2.07) indicates that the result is significant beyond the .05 level of confidence. Therefore, the null hypothesis is untenable and must be rejected. The method of teaching self-evaluation techniques by use of the verbal interaction analysis procedures has influenced changes in the self concept scores.

Correlation of Self-Criticism Scores With Dogmatism Scores

The Mann-Whitney U-test was employed in calculating the correlation

TABLE II

SUMMARY OF ANALYSIS OF COVARIANCE PRE- AND POST-TEST TENNESSEE SELF-CONCEPT SCORES

Source of Variation	df	Adjusted Sum of Squares	Variance	F
Among Means	1	999.677	999.677	
Within Groups	42	9,780.407	232.866	4.29
Total	43	10,780.084	1,232.563	4.29

$F = \frac{999.677}{232.866}$

$F = 4.29$

Probability at .05 = 4.07

$t = \sqrt{F}$

$t = \sqrt{4.29}$

$t = 2.07$

Probability at .05 = 202

between the dogmatism scores and the self-criticism scores. The formula for this analysis can be found in Seigel (1956).

Hypothesis 2. There is no significant relation in the open or closed mindedness of the student teachers and their ability to self-criticize as measured by the self-criticism score of the Tennessee Self-Concept Scale and the Rokeach Dogmatism Scale.

By dichotomizing the scores on self-criticism with the first and fourth quartile scores of the Dogmatism Scale the normal distribution is disrupted. Use of a parametric statistical design is based upon the assumption that scores are normally distributed around the mean. Therefore, the use of a non-parametric statistical design is employed to analyze the data relating to Hypothesis Number 2.

Rokeach indicates that there is a differential effect of dogmatism upon the degree that a person's belief-disbelief system is open or closed.[3] The more dogmatic person is more likely to remain unchanged in his views when compared to a person with a lesser degree of dogmatism. Open and closed mindedness are identified on the Dogmatism Scale by low and high scores, respectively. Therefore, scores in the top and bottom quartiles of scores on the Dogmatism Scale were correlated with the subjects comparable score on the self-criticism scale of the Self-Concept Scale. Self-criticism is defined by Fitts as portraying the degree of healthy openness and a capacity for self criticism.[4]

Table III presents the sums used and employed in calculating the correlation. The resulting U (46.5) indicates that the data do not present evidence sufficient to warrant rejection of the null hypothesis and it is concluded that the hypothesis is tenable.

TABLE III

SUMMARY OF SCORES USED IN MANN-WHITNEY U-TEST

Source	Sum of Ranks	U	Critical Value of U
1st Quartile	140.5	46.5	34
4th Quartile	112.5		

Summary

The hypotheses of the study were subjected to statistical tests. Hypothesis 1 was rejected as test results reflect significance at the .05 level of confidence and verified by an acceptable *t* test as significant at the .05 level of confidence. Hypothesis 2 cannot be rejected as the data are insufficient to indicate that there is a correlation between the variables of dogmatism and self-criticism.

The following chapter contains the conclusions and summary of the present study.

FOOTNOTES

[1]J. E. Wert, Charles O. Neidt, J. Stanley Ahmann, Statistical Methods in Educational and Psychological Research (New York, 1954), p. 421.

[2]Ibid., p. 183.

[3]Rokeach, p. 90.

[4]Fitts, p. 2.

CHAPTER VI

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The principal purpose of this study was to determine whether guidance and training in self-evaluation techniques could have useful and meaningful purposes in the teacher education program at the Oklahoma State University. The Flanders System of Interaction Analysis was used as a self-evaluation tool. The system is designed to train the student in a method of observing, recording, tabulating and interpreting classroom verbal interaction. The procedure should provide a tool with which the teacher may review his own, and the student's verbal behavior in an effort to permit personal and professional growth. At the same time the procedure should provide for improvement of the learning situation.

The major premise of the study is that improvement in the teaching-learning process should be set in the frame of reference of the teacher's perception of self. The personality characteristic of self-concept is important in changing the behavior of the teacher. A change in behavior will be reflected in a change in self-concept. The change in self-concept would infer a relation between the variables of self-concept and the ability to look at self with an open mind. Two hypotheses were stated and the data gathered during the experiment were used in statistical tests to determine the significance of any differences found.

The experimental and control groups for the study were comprised of student teachers at the Oklahoma State University. These students were enrolled in the student teaching block during the fall semester of the 1966-1967 academic year. All students were pursuing a course of instruction leading to teacher certification.

The analysis of covariance statistical design was used in the analysis of the data gathered. The result indicates that a significant difference in means does exist and the null hypothesis is untenable. Analysis of the relation between dogmatism and self-criticism was made by use of the Mann-Whitney U-test. The resulting U value did not provide sufficient evidence to indicate that there was a significant relation between these variables. The null hypothesis cannot be rejected upon the basis of the analysis of the scores on self-criticism and dogmatism.

Conclusions and Recommendations

Student teachers in this study did not have the opportunity to observe, record, tabulate and interpret an actual classroom situation of verbal interaction. Their experiences during the study consisted of recording, tabulating and interpreting taped classroom sessions. Studies conducted by Amidon (1965) and Kirk (1964) report that 8 to 12 hours of instruction, while not producing experts, are sufficient for developing an understanding and an ability in using the procedure. The implication of the study is that student teachers at the Oklahoma State University can benefit from a method of guidance and instruction in self-evaluation techniques using the verbal interaction analysis procedure. This finding could possibly be reinforced and strengthened by

utilization of actual classroom experiences. Even though a significant difference was obtained in this study the lack of the actual classroom experience may have limited the results.

An additional limitation that could conceivably affect the results of this study is the unavoidably small sample size. The reader should be aware of the sample size in the review and analysis of the study.

Skill in techniques of self-evaluation is a major factor in continued teaching success and professional growth. Choosing methods to be employed in developing this skill is a matter of concern to all personnel in the teaching profession. A review of the analysis of data in the preceding chapter and the summary portion of this chapter reveals a statistically significant finding in the difference of means of the Tennessee Self-Concept Scale pre and post-test scores. Although the difference between dogmatism scores and self-criticism scores was not significant, a larger N might produce a more definite relation between these variables.

Based upon the analysis of the data and the review above, the following recommendations are made.

1. That the use of interaction analysis procedures as a tool for developing self-evaluation techniques be incorporated in the program of teacher education at the Oklahoma State University.
2. That further study be conducted which would cover the entire period of the student teaching semester. This study could involve a larger group of student teachers, either elementary or secondary. Introducing interaction

analysis procedures to the cooperating teachers (which might be necessary in a prolonged study) might produce fruitful results.

A SELECTED BIBLIOGRAPHY

Ackerman, Walter. "Teacher Competence and Pupil Change," Harvard Educational Review, XXIV (1954), 273-289.

Amidon, E. "Interaction Analysis and Its Application to Student Teaching," The Association for Student Teaching Yearbook, 1965. Dubuque: Wm. C. Brown Co., Inc., (1966), 71-92.

Amidon, E., and Ned A. Flanders. "The Effects of Direct and Indirect Teacher Influence on Dependent-Prone Students Learning Geometry," Journal of Educational Psychology, LII (1961), 286-291.

Amidon, E., and M. Giammatteo. "The Verbal Behavior of Superior Teachers," Elementary School Journal, LXV (1965), 283-285.

Amidon, E., and E. Powell. "Interactional Analysis as a Feedback System in Teacher Preparation." A paper given at the ASCD Curriculum Research Institute in Washington, D. C., November 1965 (Mimeograph).

Anderson, Harold H. "The Measurement of Domination and Socially Integrative Behavior in Teacher's Contacts With Children," Child Development, X (1939), 72-89.

Anderson, Harold H., and Helen Brewer. "Studies of Teachers' Classroom Personalities, I," Applied Psychological Monographs, No. 6 (1945), 1-157.

Anderson, Harold H., and J. E. Brewer. "Studies of Teachers' Classroom Personalities, II," Applied Psychological Monographs, No. 8 (1946), 1-127.

Anderson, Harold H., J. E. Brewer, and M. F. Reed. "Studies of Teachers' Classroom Personalities," Applied Psychological Monographs, No. 11 (1946), 1-157.

Andrews, L. O. Student Teaching. New York: The Center for Applied Research in Education, Inc., 1964.

Bales, Robert. Interaction Analysis Process. Cambridge: Addison-Wesley Press, Inc., 1951.

Biddle, Bruce J., and William J. Ellena (editors). Contemporary Research on Teacher Effectiveness. New York: Holt, Rinehart and Winston, 1964.

Bowers, Norman D., and Robert S. Soar. "The Influence of Teacher Personality on Classroom Interaction," Journal of Experimental Education, XXX (1962), 309-311.

Cogan, Morris L. "Research on the Behavior of Teachers: A New Phase," Journal of Teacher Education, XIV (1963), 238-243.

Cogan, Morris L. "The Behavior of Teachers and the Productive Behavior of Their Pupils: I Perception Analysis," Journal of Experimental Education, XXVII (1958), 89-105.

Combs, A. W. "The Personal Approach to Good Teaching," Educational Leadership, XXI (1964), 369-378.

Combs, A. W., and Donald Snygg. Individual Behavior: A Perceptual Approach. New York: Harper and Brothers, 1957.

Combs, A. W. "New Horizons in Field Research: The Self-Concept," Educational Leadership, XV (1958), 315-319.

Combs, A. W. The Professional Education of Teachers. Boston: Allyn and Bacon, Inc., 1965.

Conant, James B. The Education of American Teachers. New York: McGraw-Hill Book Company, Inc., 1964.

Domas, Simeon J., and J. W. Tiedeman. "Teacher Competence: An Annotated Bibliography," Journal of Experimental Education, XIX (1950), 101-218.

Edwards, Allen L. "The Relationship Between the Judged Desirability of a Trait and the Probability That the Trait Will be Endorsed," The Journal of Applied Psychology, XXXVII (1953), 90-93.

Festinger, Leon. "A Theory of Social Comparison Processes," Human Relations, VII (1954), 117-140.

Fitts, W. H. Manual for Tennessee Self-Concept Scale. Nashville: Counselor Recordings and Tests, 1965.

Fisher, R. A. Statistical Methods for Research Workers. New York: Hofner Publishing Company, Inc., 1958.

Flanders, Ned A. "Interaction Analysis and Inservice-Training." A pre-publication manuscript. Personal communication, 1966.

Flanders, Ned A. "Personal-Social Anxiety as a Factor in Experimental Learning Situations," Journal of Educational Research, XLV (1951), 100-110.

Flanders, Ned A. "Teacher Influence, Pupil Attitudes and Achievement," Cooperative Research Monograph No. 12. Washington: United States Office of Education, 1965.

Flanders, Ned A. Interaction Analysis in the Classroom: A Manual for Observers. Minneapolis: University of Minnesota Press, 1960.

Flanders, Ned A. "Some Relationships Between Teacher Influence, Pupil Attitudes and Achievement." A pre-publication manuscript. Personal communication, 1966.

Garrett, Henry E. Statistics in Psychology and Education. New York: David McKay Company, Inc., 1958.

Getzels, J. W., and P. W. Jackson. "The Teacher's Personality and Characteristics," in N. L. Gage (ed.), Handbook of Research on Teaching. Chicago: Rand McNally and Co., 1963.

Hatfield, Agnes B. "An Experimental Study of the Self-Concept of Student Teachers," The Journal of Educational Research, LV (1961), 87-89.

Hoy, W. K. "Dogmatism and the Pupil Control Ideology of Public School Professional Staff Members." Unpub. Ed.D. dissertation, The Pennsylvania State University, 1965.

Kirk, Jeffrey. "Effects of Teaching the Minnesota System of Interaction Analysis to Intermediate Grade Student Teachers." Unpub. Ed.D. dissertation, Temple University, 1964.

Lecky, Prescott. Self-Consistency: A Theory of Personality. New York: Island Press, 1946.

Medley, Donald, and Harold Mitzel. "Measuring Classroom Behavior by Systematic Observation," in N. L. Gage (ed.), Handbook of Research on Teaching. Chicago: Rand McNally and Co., 1963.

Medley, Donald, and Harold Mitzel. "A Technique for Measuring Classroom Behavior," Journal of Educational Psychology, XLIX (1958), 86-92.

Medley, Donald, and Harold Mitzel. "A Tentative Framework for the Study of Effective Teacher Behavior," Journal of Experimental Education, XXX (1962), 317-320.

Merriam, Pearl, and Gladys M. Fair. Helping Student Teachers Through Evaluation. Lock Haven: The Association for Student Teaching, 1953.

Meyers, Robert, and Taft Botner. "Self-Evaluation: A Significant Force in the Evaluation of Student Teachers," The Thirty-Ninth Yearbook of the Association for Student Teaching. Dubuque: Wm. C. Brown Co., Inc., 1960.

Raimy, Victor C. "Self Reference in Counseling Interviews," Journal of Consulting Psychology, XII (1948), 153-163.

Rogers, Carl R. "Some Observations on the Organization of Personality," American Psychologist, II (1947), 355-368.

Rokeach, Milton. The Open and Closed Mind. New York: Basic Books, Inc., 1960.

Roth, Robert M. "The Role of Self-Concept in Achievement," Journal of Experimental Education, XXVII (1959), 265-281.

Seigel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill Book Company, Inc., 1956.

Smith, B. O. "Conceptual Framework for Analysis of Classroom Social Interaction," Journal of Experimental Education, XXX (1962), 325-326.

Simeon, Anita (ed.). Classroom Interaction Newsletter, I. Philadelphia: Published at Temple University, 1965. Received by personal communication.

Simeon, Anita. Classroom Interaction Newsletter, II. Philadelphia: Published at Temple University, 1966. Received by personal communication.

Troisi, Nicholas. "A Brief Historical Look at Evaluation of Student Teaching," The Thirty-Ninth Yearbook of the Association for Student Teaching. Dubuque: Wm. C. Brown Co., Inc., 1960.

Wert, J. E., Charles O. Neidt, and J. Stanley Ahmann. Statistical Methods in Educational and Psychological Research. New York: Appleton-Century-Crofts, Inc., 1954.

Withal, John. "The Development of a Technique for the Measurement of Socio-Emotional Climate in Classrooms," Journal of Experimental Education, XVII (1949), 347-361.

APPENDIX A

FALL (1966-67) SEMINAR SCHEDULE

EDUCATION 450

September 20, 1966	Pre-Test Experimental Group
September 22, 1966	Pre-Test Control Group
September 27, 1966	Film - "You, Yourself- Incorporated".
October 4, 1966	Film Strip and Discussion on Interaction Analysis.
October 11, 1966	Discussion - Indirect and Direct Teacher Influence and Dependent-Independent Proneness.
October 18, 1966	Film Strip on Categorization of Verbal Statements.
October 25, 1966	Film Strip on Matrix Tabulation and Third Episode of Classroom Session Categorized.
November 1, 1966	Discussion of Matrices Interpretation and First Episode of Classroom Session Categorized.
November 8, 1966	Film Summarizing Interaction Analysis Procedures and Categorization of Taped Classroom Sessions.
November 15, 1966	Post-Test - Both Groups.

APPENDIX B

TENNESSEE SELF CONCEPT SCALE

Mark each answer on the score sheet in the block corresponding to the question numbers on the page. Responses are to be marked on the 1-5 scale below.

Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

1. I have a healthy body 1
3. I am an attractive person 3
5. I consider myself a sloppy person 5
19. I am a decent sort of person 19
21. I am an honest person 21
23. I am a bad person 23
37. I am a cheerful person 37
39. I am a calm and easy going person 39
41. I am a nobody 41
55. I have a family that would always help me in any kind of trouble 55
57. I am a member of a happy family 57
59. My friends have no confidence in me 59
73. I am a friendly person 73
75. I am popular with men 75
77. I am not interested in what other people do 77
91. I do not always tell the truth 91
93. I get angry sometimes 93
2. I like to look nice and neat all the time 2
4. I am full of aches and pains 4
6. I am a sick person 6

20. I am a religious person 20

22. I am a moral failure 22

24. I am a morally weak person 24

38. I have a lot of self-control 38

40. I am a hateful person 40

42. I am losing my mind 42

56. I am an important person to my friends and family 56

58. I am not loved by my family 58

60. I feel that my family doesn't trust me 60

74. I am popular with women 74

76. I am mad at the whole world 76

78. I am hard to be friendly with 78

92. Once in a while I think of things too bad to talk about 92

94. Sometimes, when I am not feeling well, I am cross 94

7. I am neither too fat nor too thin 7

9. I like my looks just the way they are 9

11. I would like to change some parts of my body 11

25. I am satisfied with my moral behavior 25

27. I am satisfied with my relationship to God 27

29. I ought to go to church more 29

43. I am satisfied to be just what I am 43

45. I am just as nice as I should be 45

47. I despise myself 47

61. I am satisfied with my family relationships 61

63. I understand my family as well as I should 63

65. I should trust my family more 65

79. I am as sociable as I want to be 79

81. I try to please others, but I don't overdo it 81

83. I am no good at all from a social standpoint 83

95. I do not like everyone I know 95

97. Once in a while, I laugh at a dirty joke 97

8. I am neither too tall nor too short 8

10. I don't feel as well as I should 10

12. I should have more sex appeal 12

26. I am as religious as I want to be 26

28. I wish I could be more trustworthy 28

30. I shouldn't tell so many lies 30

44. I am as smart as I want to be 44

46. I am not the person I would like to be 46

48. I wish I didn't give up as easily as I do 48

62. I treat my parents as well as I should (Use past tense if parents are not living). 62

64. I am too sensitive to things my family say 64

66. I should love my family more 66

80. I am satisfied with the way I treat other people 80

82. I should be more polite to others 82

84. I ought to get along better with other people 84

96. I gossip a little at times 96

98. At times I feel like swearing 98

13. I take good care of myself physically 13

15. I try to be careful about my appearance 15

17. I often act like I am "all thumbs" 17

31. I am true to my religion in my everyday life 31

33. I try to change when I know I'm doing things that are wrong . . 33

35. I sometimes do very bad things 35

49. I can always take care of myself in any situation 49

51. I take the blame for things without getting mad 51

53. I do things without thinking about them first 53

67. I try to play fair with my friends and family 67

69. I take a real interest in my family 69

71. I give in to my parents (Use past tense if parents are not living) 71

85. I try to understand the other fellow's point of view 85

87. I get along well with other people 87

89. I do not forgive others easily 89

99. I would rather win than lose in a game 99

14. I feel good most of the time 14

16. I do poorly in sports and games 16

18. I am a poor sleeper 18

32. I do what is right most of the time 32

34. I sometimes use unfair means to get ahead 34

36. I have trouble doing the things that are right 36

50. I solve my problems quite easily 50

52. I change my mind a lot 52

54. I try to run away from my problems 54

68. I do my share of work at home 68

70. I quarrel with my family 70

72. I do not act like my family thinks I should 72

86. I see good points in all the people I meet 86

88. I do not feel at ease with other people 88

90. I find it hard to talk with strangers 90

100. Once in a while I put off until tomorrow what I ought to do today 100

APPENDIX C

ROKEACH DOGMATISM SCALE

The following statements represent what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement is your personal opinion. There are many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3, or -1, -2, -3, depending how you feel in each case.

+1 I agree a little	-1 I disagree a little.
+2 I agree on the whole.	-2 I disagree on the whole.
+3 I agree very much	-3 I disagree very much.

____ 1.* The United States and Russia have just about nothing in common.

____ 2.* Once I get wound up in a heated discussion, I just can't stop.

____ 3. Most people are failures and it is the system which is responsible for this.

____ 4.* In times like these, a person must be pretty selfish if he considers primarily his own happiness.

____ 5. It is by returning to our glorious and forgotten past that real social progress can be achieved.

____ 6.* The highest form of government is a democracy, and the highest form of democracy is a government run by those who are most intelligent.

____ 7.* Fundamentally, the world we live in is a pretty lonesome place.

____ 8.* There is so much to be done and so little time to do it in.

____ 9. While the use of force is wrong by and large, it is sometimes the only way possible to advance a noble ideal.

____ 10.* In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

____ 11.* A man who does not believe in some great cause has not really lived.

____ 12. If I had to choose between happiness and greatness, I'd choose greatness.

____ 13. It is only natural for a person to have a guilty conscious.

____ 14. There is nothing new under the sun.

____ 15.* In this complicated world of ours, the only way we can know what's going on is to rely on leaders and experts who can be trusted.

____ 16. Young people should not have too easy access to books which are likely to confuse them.

____ 17. Communism and Catholicism have nothing in common.

____ 18.* Most people just don't give a "damn" for others.

____ 19.* It is only when a person devotes himself to an ideal or cause that life becomes meaningful.

____ 20.* It is better to be a dead hero than a live coward.

____ 21.* In the long run, the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.

____ 22.* The worst crime a person could commit is to attack publicly the people who believe in the same thing he does.

____ 23.* I'd like it if I could find someone who could tell me how to solve my personal problems.

____ 24.* In the history of mankind, there have probably been just a handful of really great thinkers.

____ 25. My hardest battles are with myself.

____ 26.* When it comes to differences of opinion in religion, we must be careful not to compromise with those who believe differently from the way we do.

____ 27.* A person who thinks primarily of his own happiness is beneath contempt.

____ 28.* The present is all too often full of unhappiness. It is only the future that counts.

____ 29.* Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.

____ 30.* My blood boils whenever a person stubbornly refuses to admit that he is wrong.

____ 31.* If a man is to accomplish his mission in life, it is sometimes necessary to gamble "all or nothing at all."

____ 32. In a heated discussion people have a way of bringing up irrelevant issues rather than sticking to the main issue.

____ 33.* Man on his own is a helpless and miserable creature.

____ 34.* The main thing in life is for a person to want to do something important.

____ 35. There is no use in wasting your money on newspapers which you know in advance are just plain propaganda.

____ 36.* Most people just don't know what's good for them.

____ 37. There are certain "isms" which are really the same even though those who believe in these "isms" try to tell you they are different.

____ 38.* It is only natural for a person to be rather fearful of the future.

____ 39.* In a heated discussion, I generally become so absorbed in what I am going to say that I forget to listen to what others are saying.

____ 40.* Of all the different philosophies which exist in this world, there is probably only one which is correct.

____ 41. At times I think that I'm no good at all.

____ 42. I'm sure I'm being talked about.

____ 43.* There are a number of people I have come to hate because of the things they stand for.

____ 44.* Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what's going on.

____ 45. It is sometimes necessary to resort to force to advance an ideal one strongly believes in.

____ 46.* A person who gets enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of person.

____ 47.* It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.

____ 48.* To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.

____ 49. It's all too true that people just won't practice what they preach.

____ 50.* If given the chance, I'd do something of great benefit to the world.

____ 51.* In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than those in the opposing camps.

____ 52. I have often felt that strangers were looking at me critically.

____ 53.* There are two kinds of people in this world: (1) those who are for the truth, or (2) those who are against the truth.

____ 54.* A group which tolerates too much differences of opinion among its own members cannot exist for long.

____ 55. I sometimes have a tendency to be too critical of the ideas of others.

____ 56. To compromise with our political opponents is to be guilty of appeasement.

____ 57.* While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespeare.

____ 58.* Most of the ideas which get printed nowadays aren't worth the paper they are printed on.

____ 59. Even though I have a lot of faith in the intelligence and wisdom of the common man I must say that the masses behave stupidly at times.

____ 60.* It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes.

*Denotes the original 40 statements of the Rokeach Dogmatism Scale.

APPENDIX D

WITHAL'S SEVEN CATEGORIES

(1) Learner supportive statements that have the intent of reassuring or commending the pupil.

(2) Acceptance and clarifying statements having an intent to convey to the pupil the feeling that he was understood and help him elucidate his ideas and feelings.

(3) Problem structuring statements or questions which proffer information or raise questions about the problem in an objective manner with intent to facilitate learner's problem solving.

(4) Neutral statements which comprise polite formalities, administrative comments, verbatim repetition of something that has already been said. No intent inferrable.

(5) Directive or hortative statements with intent to have pupil follow a recommended course of action.

(6) Reproving or deprecating remarks intended to defer pupil from continued indulgence in present "unacceptable" behavior.

(7) Teacher self supporting remarks intended to sustain or justify teacher's position or course of action.

APPENDIX E

THIRD EPISODE

(Two other classroom episodes were used in this study. They are similar to the third episode except for the fact that the third episode was conducted in a sound proof classroom for recording purposes, thus eliminating extraneous classroom noise.)

The third episode is a first grade arithmetic class that will be concerned with what a number is and what it means.

T -- Well, this morning we're going to do some arithmetic. (1) Who can tell me something about arithmetic? (2) What do I mean when I say arithmetic? Do you know? (3) Anybody? What (4) do I mean when I say numbers? (5) (6) What are numbers? (7) Do you know? Any (8) number?

S -- Yes. (many answers)

T -- All right, what (9) tell me one James.

S -- Ten

T -- Ten's a (10) number. Robert?

S -- Twenty.

T -- Gail? (11)

S -- 100

T -- Yes. Karen do you know a number? (12)

S -- Nine.

T -- Yes. Terry?

S -- 101 (13)

T -- Well what, how many (14) are ten? (15) Anybody know?

S -- Ten.

T -- Ten what? (16)

S -- Things

T -- Ten things. All (17) right, how many are eight?

S -- Eight (18) things.

T -- Eight things. How many are two? (19)

S -- Two things.

T -- Well that's what we're going to do today. We're (20) going to talk about just one number. (21) And we're going to tell how many things are in that number. (22) Take a look at our reading group and see if (23) you can tell me how many are in our (24) reading group. (25)

S -- (whispering) One, two, three, four, five, six, seven, eight. Eight! (26)

T -- Let's count and be sure. One, two, (27) three, four, five, six, (28) seven, eight! All right, I only (29) have circles, I don't have children (30) to put up on the flannel board, but (31) let's pretend that these circles are the children (32) in our reading groups. So let's count eight of them out. (33) (in unison with the children) One, (34) two, three, (35) four, five (36) six, (37) seven, (38) eight. All right, (39).

S -- Can't we have nine? (40)

T -- Now if Mrs. Kelina wanted to make (41) two separate reading groups. (42) This is all one reading group, if I wanted (43) to make two separate ones, one (44) here and one here, how could we do (45) that?

S -- Four each. (46)

S -- Take it out of there and have four. (47)

T -- Take it out of where?

S -- In our, (48) um, class.

T -- Take it

S -- You take four out of (49) there and have two groups and you have another left. (50)

T -- All right, you want me to take and put four in each (51) group. Is that what you want me to do? All right, let's try (52) that and see if that works? (53) How many do I have there?

S -- (In unison) four. (54)(55)

T -- How many do I have here?

S -- (In unison) four. (56)

T -- How many did we put (57) in each group now Robert?

When different speakers can be clearly recognized and the classification is simple, tallies are sometimes made at faster rates than one every 3 seconds for short periods of time.

S -- Four. (58)

T -- Four. All right, I got mixed up on the Roberts, didn't I? (59)* All right, four is how (60) much of our reading group?

S -- Eight. (61)

S -- Half.

T -- It's half, isn't it James? (62) We just took our group and cut it right in half, didn't we? (63) And we put four on one side and four on the other (64) side. Well today we're just going to work with the one (65) number four. With just the one (66) number. Did it make any difference (67) how Mrs. Kelina put the circles up there?

S -- (in unison) No. (68)

T -- No. She had some on top and some (69) on the bottom. But they all made how many together? (70)

S -- Four.

T -- Four. All right, I've got some pencils (71) here, (72) and I wonder if Eileen if (73) you can take up four pencils for me. (74) (75) All right, let's see if she took up four. Let's (76) count them.

S -- One, two, (77) three, four.

T -- Were there (78) four?

S -- Yes

T -- Yes there were. All right, (79) I've got some apples here (80) James. Can you see if you can take out four apples for (81) me. (82) Let's count and see?

S -- One, (83) two, (84) three, four.

T -- Did he take out (85) four, Karen?

S -- Yes.

T -- He certainly did. He knows his (86) number four, doesn't he? Now we're going to try something (87) with the circles. And let's see if I can get you (88) just a little bit mixed up. Let's leave all of the circles (89) pink this morning and then we can try (90) something with them. All right, (91) how many do I have now?

---

*(59) The seven is used for self justification.

S -- Three.

T -- How (92) many do I have now?

S -- Four.

T -- How many do I (93) have now?

S -- Four. (94)

T -- This time?

S -- Four, four, (95) four. (96)

T -- Did it make any difference where I (97) put the circles?

S -- No.

T -- We still had (98) how many. Robert Walker?

S -- Four.

T -- Four. (99) This time I'm going to try to catch you. (100) Are you ready?

S -- Yes.

T -- All set? All (101) right, how many arms do you have Robert (102) Walker?

S -- Two.

T -- Two (103) arms. How many boys are you?

S -- One (104)

T -- One boy has two arms. All right (105) how many arms will two boys (106) have Robert?

S -- Four.

T -- Good for you. (107) How many legs do you have Gail? (108)

S -- Two.

T -- How many will, legs will two (109) girls have?

S -- Four

T -- Kathy, how many legs (110) does a chair have?

S -- Four. (111)

T -- How do you know? (112) How do you know that a chair has four? (113)

S -- So, so it could stand. (114)

T -- It has to have the legs where? (115)

S -- Underneath.

T -- Yes, where else? (116)

S -- I know

T -- Robert? (117)

S -- On each side.

T -- On each side doesn't it? (118) And there's another name for that side, it's not (119) a side but it's what? Where is it that (120) the legs are?

S -- In the back. (121)

T -- Well, I'm thinking of another word that starts like come. (122) (123)

S -- Corner.

T -- Corner, they're on the corner. How many (124) corners does a chair have?

S -- Four. (125)

T -- Four corners, and that's where the legs have to be. (126) All right, how many noses (127) do you have? Terry? (128)

S -- One.

T -- One nose. How (129) many noses, or how many children's noses would you (130) have to have to make four?

S -- Four children. (131)

T -- Four children. All right, how (132) many are in your family Robert Walker, ah, Rocky? (133)

S -- Nine

T -- Nine in your family. Is that (134) more or less than four?

S -- More. (135)

T -- It's more than four. Do you know how many more than (136) four? (137)

S -- Five.

T -- Good (138) for you. Five more than four. How (139) many are in your family Eileen?

S -- Four, (140) and two downstairs.

T -- And how many would that (141) make all together?

S -- Six. (142)

T -- Is that more or less than four?

S -- More. (143)

T -- More than four. James, how many do you . . .

S -- I can't count (144) all in my family.

T -- You can't. Well, let's start right now. (145)

S -- (child counting slowly up to twelve) (146)(147)(148) Twelve.

T -- Good, (149) twelve. Is that more or less than four?

S -- More, (150) I know.

T -- More than four. (151) How many more?

S -- Eight. (152)

T -- Eight more than four. Isn't that something. (153) That's a pretty big family. Karen how many (154) do you have in your family?

S -- Four.

T -- You have (155) four. Is that more or less than four or (156) the same?

S -- The same.

T -- It's the same, isn't it? (157) Terry did I ask you how many you have in your family? (158) How many do you have? (159)(160)

S -- Eight.

T -- Eight. Is (161) that more or less than four?

S -- More.

T -- And how (162) many more? (163)(164)(165) How many children did (166) we have in our reading group? Do you remember?

S -- Eight. (167)

T -- And what did we do with that reading group? We (168) split it in . .

S -- Half.

T -- And how many did we put (169) on each side?

S -- Four.

T -- How many (170) more than four then do you have? We've got (171) your family here with four and how many more? (172) You had eight didn't you? We've got (173) half of them here, how many more? (174)(175) Who can help her? (176) Robert?

S -- Four.

T -- Four more. (177) All right, Kathy did I ask you how (178) many you have in your family?

S -- No.

T -- How many do you have? (179)

S -- Six.

T -- Is that more or less than four? (180)

S -- No, (181) no.

T -- More or (182) less than four, do you know? Let's (183) count, how many do we see up here?

S -- One, two . . . (184)

T -- And you (185) said you had how many?

S -- Six.

T -- Six, (186) all right, let's go on and see if we can get six, how many (187) do we have up here now?

S -- Four (188)

T -- What will this make? (189)

S -- Five.

T -- Five.

S -- Six.

T -- All right, (190) is that more or less than four? (191)(192)(193)

S -- No.

T -- Well, let's take (194) this in another way. (195) How many did you say we had here Kathy? (196)

S -- Four.

T -- Four, all right, that's (197) the number that we're looking for, isn't it? If I (198) took one away how many would we have?

S -- Three. (199)

T -- That would mean we had less than four because (200) I took one away. All right, (201) how many do I have now?

S -- Four.

T -- But (202) I'm putting on some more to make six. (203) Is that more than (204) four? (205)(206)(207) Did we take any away Kathy? (208) This time, did we take any away? (209) No we didn't. (210) We put some more on didn't we. (211) So that makes what?

S -- Six. (212)

T -- It makes more than four, because we put (213) some more on. If we take them (214) away that means we have less (215) than four, but if we put (216) more on that means we (217) have more than four. Let's try it (218) again Kathy. How many do we have now? (219)

S -- Four.

T -- All right, how many now? (220)

S -- Two.

T -- Is that more or less (221) than four? (222)

S -- Less.

T -- All right, because what did we do?

S -- We took some away.

T -- We took some away. (223) How many do we have now?

S -- Four.

T -- All right. (224) We're going to, what did we do this (225) time?

S -- Put some more on.

T -- Do we have more (226) or less than four? (227)

S -- More.

T -- We have more because what did (228) we do?

S -- We put them on.

T -- All right, how many (229) do we have here now?

S -- Six.

T -- Is that more (230) or less than four? (231)(232)(233) If you have four pencils (234) over here (235)(236) and six pencils (237) over here, which one's (238) more, four or six?

S -- Six. (239)

T -- Six is that more than four? (240) All right, do you have more or less than four (241) here?

S -- More. (242)

T -- More, we had to put them on didn't we? (243) Good for you Kathy. All right (244) is there anybody I missed? Didn't I get your family (245) Robert? Oh, how many do you have?

S -- Six. (246)

T -- You have six too. Is that more or less (247) than four?

S -- More.

T -- That's more. (248) All right, now I've got something else. Listen carefully. (249) Is four cents (250) more or less than a nickel? (251)

S -- I don't know.

S -- I don't know. (252)

T -- Eileen?

S -- Less. (253)

T -- How much less?

S -- One penny. (254)

T -- One penny. All right, does (255) school close before or after (256) four o'clock? (257) Gail?

S -- Before. (258)

T -- Before four o'clock. All right, what time is your (259) favorite T.V. show? (260) Who can tell me? Can you think? (261) Eileen?

S -- Twelve O'clock, (262) Noon.

T -- Twleve O'clock, Noon. Is that before (263) or after four o'clock? (264)

S -- After

T -- Twelve (265) O'clock noon. Well, ha, ha, ha, we can (266) kind of take that two ways if we're talking about four (267) o'clock in the morning or four o'clock in the afternoon. (268) I'm talking about four o'clock in the afternoon now. (269) Would twelve noon (270) be before or after four (271) o'clock in the afternoon? (272)

T -- Figure that one out. (273)(274)(275) Twelve Noon comes when? (276)

S -- At noon.

T -- At noon. When you have what? (277)

S -- Lunch.

T -- Lunch. All right (278) now I'm talking about four o'clock in the afternoon. (279) When did you say school closed? Before (280) or after four o'clock?

S -- Before.

T -- Before. (281) All right, when is twelve o'clock noon. (282) Is that before or after four o'clock?

S -- Before. (283)

T -- Before. Good for you. (284)

THAT'S THE END OF THE THIRD EPISODE.

VITA

Ralph Austin Brann

Candidate for the Degree of

Doctor of Education

Thesis: A STUDY OF THE EFFECT OF TEACHING SELF-EVALUATION PROCEDURES ON SELF-CONCEPT OF STUDENT TEACHERS

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