AN ANALYSIS OF THE RELATIONSHIP OF NONVERBAL

TO VERBAL INTERACTION OF SIX HOME

ECONOMICS STUDENT TEACHERS AT

OKLAHOMA STATE UNIVERSITY

By

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### SCHOOLS AND PERSONS PARTICIPATING IN THE STUDY

Schools:                              Bartlesville High School
                                      Erick High School
                                      Perkins-Tryon High School

Superintendents:                              Cecil Acuff

Richard Smally

Earl Hammon

Cooperating Teachers:               Julia Holmburg

Virginia Sassar

Sue Reynolds

Virginia Jackson

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CHAPTER I

INTRODUCTION

Teachers find themselves relying on words and verbalism when in
the classroom. Through the years the idea has been impressed upon them
that teaching is "telling." However, as the teacher teaches, she is
constantly reading the nonverbal expressions of her class. The point
that is so often overlooked is that the students are also interpreting
the nonverbal clues that the teacher is conveying. Halpin states that
training programs for school leaders

> . . . ignore the entire range of nonverbal communication, the
> muted language in which human beings speak to one another,
> more eloquently than words . . . . To avoid the narrow view
> we must start by recognizing that man communicates to his
> fellow man with his entire body and with all his behavior.
> (18)

Another writer in the same bulletin, Smith, goes into more detail to ex-
plain the behaviors mentioned by Halpin. He gives an account of the
function of expressive behavior in teaching: "The behaviors are illus-
trated in bodily posture, facial expression, tone of voice, expressions
of the eyes, and other ways." (18) This stems from the saying that
actions speak as loudly as words--perhaps, even louder. Also, there are
times when something that the teacher does not do can be as significant
as something she does do.

> In a study by Davidson and Lang, the implications were that

> Teachers seem to vary in their inclination and/or their capac-
> ity to communicate favorable feelings. It seems urgent that

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teachers be helped to recognize the significance of the feel-
ings which they express toward children, consciously or un-
consciously. (18)

This is one of the reasons that research was conducted on the Verbal

and Nonverbal Interaction Analysis.

"Communication is successful when the teacher and pupil agree on

the interpretation that should be put on the message," (18) Because

the teacher can hear herself when she talks, adjustment can be made in

the intent of her verbal speech. However, she cannot erase the facial

and body expressions seen only by the students. Above all, one should

remember, "If a difference exists between the two expressions, it is

the nonverbal that is believed and accepted by the pupil as representing

the authenic message." (41)

## Statement of Problem

This study was designed to determine if:

1. the nonverbal behaviors of student teachers replaced or sup-
plemented their verbal behavior and

2. video feedback could provide a means of teacher evaluation
in the classroom.

## Objectives

1. To review the literature pertaining to Verbal and Nonverbal
Interaction Analysis and equipment used in connection with it. Litera-
ture concerning student teachers and their supervision was also re-
viewed.

2. To develop skill in the use of both the Verbal and Nonverbal
Interaction Analysis System.

3. To develop skill in the use of video tape equipment which would be used to gather information from student teachers.

4. To observe and evaluate student teachers near the beginning and toward the end of the student teaching experience to determine if non-verbal behavior is used to replace or supplement the verbal behavior.

## Procedure

1. Literature was reviewed pertaining to Verbal and Nonverbal Interaction Analysis, the use of video tape equipment and the cassette tape recorder, and the supervision of student teachers.

2. A list was obtained of student teaching centers which own video tape equipment. Two methods were used:

    a. Reviewed the thesis--"A Feasibility Study in the Use of Video Tape and Television Conferences for the Supervision of Home Economics Student Teachers at Oklahoma State University," to see which home economics student teaching centers had been used for this previous research.

    b. Contacted school superintendents by telephone to determine if the video taping equipment was available and if the school could be used for research purposes.

3. Cooperating teachers were contacted and asked to participate in the research project.

4. Arrangements were made for the researcher's supervisory assignment in those schools which had video tape equipment and where co-operating teachers had agreed to participate in the study.

5. Proficiency was acquired in the use of the Verbal and Non-verbal Interaction Analysis System and video equipment through:

a. Pretraining in using video tape equipment and recording data. Use was made of the Interaction Analysis training tapes as well as actual recording of student teachers' performances in a Techniques and Materials class.

b. The Audio Visual Proficiency Test given to all student teachers in Home Economics Education was taken by the researcher. This included the use of audio visual equipment, especially the camera, monitor, playback system, and tape recorder.

c. Accuracy in recording the Verbal and Nonverbal Interaction Analysis System was checked by an instructor who taught Interaction Analysis for Home Economics Education classes.

6. During the spring semester class, the researcher met with all students enrolled in Student Teaching in Home Economics to:

a. explain Verbal and Nonverbal Interaction Analysis,

b. indicate the teaching centers that would participate in the study.

7. All student teachers were given an opportunity to select their centers on a volunteer basis, knowing the three schools that had audio visual equipment and would be used in the research project.

8. After the student teachers selected the centers, the researcher used every opportunity to become acquainted with the six student teachers. As supervisor, it was possible to "sit in" with the student teachers as they participated in Techniques and Materials class.

9. Each student teacher passed the Audio Visual Proficiency Test and had an opportunity to use video tape equipment before going to the teaching center.

10. The researcher obtained six, twenty-minute video tapes which were provided by the Stillwater Public School through Title III Funding. In exchange, the researcher agreed to supply copies of her completed thesis to the Stillwater Public School and the six schools that participated in the study. In addition, the student teachers were promised a final copy of the thesis.

11. Student teachers' presentations were video taped one week after they began actual teaching. Tapes were viewed and discussed by the student teachers, cooperating teachers, and researcher.

12. A second presentation of student teachers was taped three weeks later. Tapes were viewed and discussed.

13. The results of both tapings from each of the student teachers were evaluated by the Verbal and Nonverbal Interaction Analysis System and recorded in matrix tables.

14. Implications were drawn for the use of video tapes in the supervision of student teachers and for study of the Nonverbal Interaction Analysis System as part of a teacher education program.

## Limitations

1. This study was limited to six student teachers of home economics in the state of Oklahoma. These student teachers, in the department of Home Economics Education at Oklahoma State University, completed their student teaching in the spring semester, 1972.

2. Only those student teaching centers with video tape equipment and the consent of the student teachers, cooperating teacher, and superintendent were selected to participate in this study.

3. The Nonverbal Interaction Analysis System consists of four dimensions; I--Room Arrangement, II--Materials, III--The Nonverbal Behavior and IV--Activities. (3)   This study was limited to only one of the four dimensions--The Nonverbal Behavior.

## Definition of Terms

Interaction analysis is teacher behavior which is recorded as a series of acts over a certain period of time, and the reactions of the students to these acts are also recorded. (2)

1. Verbal behavior is the communication and interaction which goes on in the classroom through the choice of words, the tone of voice and the inflection of the voice. (24)

2. Nonverbal behavior is the dimension which is concerned with the use of nonverbal behavior to replace or accompany verbal communication. When nonverbal behavior was used to replace verbal behavior, it is meant that no spoken words were heard. For example, if a student asked where to find a book and the teacher pointed to the shelf on which it was located, this was nonverbal behavior. If the student teacher had answered by saying, "on the back shelf" plus used her hand to point out the direction, this would have been using nonverbal behavior to supplement verbal behavior.

The nonverbal behaviors are designated as gestures, facial expressions, position and physical movement. (3)

   a. A gesture is "visible expression that is any posture or movement of the head, face, body, limbs or hands, which aid the speaker in conveying his message by

appealing to the eye." (41)

    b. A _facial_ _expression_ is an expression utilizing the eyes and mouth to convey a message. (3)

    c. _Position_, as used in this study, indicates motionless stability in one location for an extended period of time. It usually indicates an activity in which a single individual is in a central position performing for an "audience."

    d. _Physical_ _movement_, indicates motion or a change in position such as a single individual changing positions or the teacher moving about the room to assist students.

_Nonverbal_ _communication_ is the "muted language in which human beings speak to one another, more eloquently than words . . . with their entire bodies and with all their behaviors." (18)

A _tally_ _sheet_ is a blank sheet of paper used to record the verbal category numbers every three seconds and the nonverbal category numbers every nine seconds in order to get a complete sequential picture of classroom interaction. For this study, a roll of office machine tape was used as the tally sheet.

An _Interaction_ _Matrix_ is the instrument used to record the category numbers taken from the tally sheets.

_Video_ _tape_ _equipment_ is hardware which records the audio and video portion of a sequence with a monitor used for playback.

_Video_ _tapes_ are used to record a sequence for later playback. The brands and sizes vary, but for this study Sony one-half-inch tapes were used.

Video feedback is the procedure used in the study which involved preparing video tape recordings of all participants' teaching sessions to provide an opportunity for the teacher educators and teachers to view a replay of the teaching session. (9)

A student teaching center is a school in Oklahoma where Vocational Home Economics is a part of the curriculum. This school has been chosen by the department of Home Economics Education at Oklahoma State University to be used as a student teaching center,

A student teacher is a senior student in Home Economics Education enrolled in HEED 4720, Student Teaching in Home Economics. This individual is involved in a program that meets the requirements of Home Economics certification. This experience takes place in an off-campus high school.

A cooperating teacher, as used in this study, is the Vocational Home Economics teacher in the public school. She is responsible for the guidance and evaluation of the student teacher during the seven weeks in that school.

A supervisor is an Oklahoma State University Home Economics Education faculty member or graduate assistant responsible for evaluating and supervising the student teacher while off-campus.

## Summary

Chapter I has included an explanation of the significance of the problem, along with the thesis statement, objectives, and procedures. Also included are the limitations and a definition of terms to help future readers. The following chapter will present the review of the literature.

CHAPTER II

REVIEW OF LITERATURE

The examination of literature is limited to four sections: super-
vision of student teaching, the Verbal Interaction Analysis, the Non-
verbal Interaction Analysis, and the use of audiovisual equipment in
teacher education.

## Supervision of Student Teaching

Most colleges and universities in the United States share a common
format in programs preparing future teachers. Both general education
and professional education, including subject matter and education
courses, are included in an undergraduate curriculum. Student teaching
is a part of the curriculum. It is a period of practice which ranges
in length from six weeks to one semester. The commonly held view of
student teaching today is that it is the most important factor in the
preservice preparation of teachers. (32) During this time the student
teachers have opportunities to try various methods and techniques of
teaching as well as discover their strengths and weaknesses.

Supervision was reported as early as 1823 when the first "teacher
seminary" in the United States was established by Hall in Concord,
Vermont. This seminary included a "model school" which provided oppor-
turnities for observation and teaching "model lessons" which the critic
teacher appraised. During the era of the normal school, practice

teaching constituted an important aspect of the last school term. Since this time, supervision of student teachers has been part of the teacher education programs in the United States. (38)

It would seem that the goal of supervision should be modification of behavior. In the case of supervision of student teachers, it could be expected that the college supervisor or cooperating teacher would motivate the novice "to do or say something differently than he did prior to supervision." (27)

## The Role of the Cooperating Teacher

The cooperating teacher is often seen by the student teacher as the most important single influence on the student teaching experience. This influence is possible because of the day-to-day relationship that develops between the student teacher and the cooperating teacher. A review of the tasks of the cooperating teacher may explain this relationship. Ideally, the cooperating teacher takes time to confer, both on a formal and informal basis, about the accomplishments of the student teacher. She gives specific help in planning, selecting classroom materials, developing teaching methods, and evaluating students' learning. It is the responsibility of the cooperating teacher to create an opportunity for the student teacher to carry the main responsibility for the guidance of her students. In the role of teacher educator, the cooperating teacher analyzes the accomplishments and needs of the student teacher. (39)

During the student teaching experience, the cooperating teacher performs two major functions: guidance and evaluation. The tasks

include:

1. appraising the strengths and weaknesses of the student teacher.

2. reviewing the unit and lesson plans to make sure the student teacher is prepared before each class.

3. conferring with the student teacher concerning any specific problems.

4. providing feedback from frequent evaluations and to convey perceptions of his teaching to him. (42)

## The Role of the College Supervisor

Colleges and universities in the United States are faced with larger numbers of student teachers and longer periods of student teaching. The impossibility of providing one or two visits to the centers under the present system of university supervision has been recognized.

Dirks suggests that further research is needed to determine ways to maximize university supervisory contributions to further responsibility of cooperating teachers and to explore the feasibility of using non-visit methods to supervise student teachers. (11)

The basic purpose of a classroom visit by a supervisor is the improvement of instruction. The traditional method of supervision includes various systems, but generally a visit is made to the school in which the student teacher has been teaching for a period of time.

To question the traditional method of supervision is to suggest possible alternative methods of achieving the desired goal--communication between the student teacher, cooperating teacher, and university supervisor to produce a well-qualified, self-confident, and capable teacher. When the college supervisor visits the student teacher, one of her main functions is that of evaluation.

New developments in data collection have been used in teacher evaluation, some of which include Galloway's Nonverbal Communication in Teaching; Bellack's The Language of the Classroom; Withall's Measurement of the Social-Emotional Climate; Flander's Interaction Analysis; and Taba's Teaching Strategies and Thought Processes. The Verbal and Nonverbal Interaction Analysis System involving the use of video tape to record student teacher behavior has been used as a supervisory technique.

<center>Verbal Interaction Analysis</center>

Much of the research relating to teacher behavior today has been built upon early research done by H. H. Anderson in 1939, 1945, and 1946. These studies were based on the observation of "dominative" and "integrative" behavior of teachers. By dominative behavior, he meant the ways in which a teacher controls the classroom situation; by integrative behavior, he meant the ways in which a teacher tried to get students to synthesize, and to integrate what they learn. He and his colleagues carried out a series of projects with preschool, primary school and elementary school children. (4)

Withall (1949), following Anderson, developed an observational technique to measure social-emotional climate in the classroom. Withall's system categorized teacher statements into seven groups which are considered learner-centered (related to indirect influence) or teacher-centered (related to direct influence). The instrument was not designed for direct observation in the classroom. Instead, statements are coded from typewritten transcripts of tape recordings. Modifications of this system have since been used for "live" recording. (44)

In 1958, Medley and Mitzel developed the Observational Schedule Record (OScAR) System which was partially based on Withall's technique. It was designed as a method of both observing and evaluating. It is a somewhat complex system which has been found to be reliable for measuring social-emotional climate in the classroom, the amount of emphasis on verbal learning, and the degree to which social structure is teacher-centered.

The Interaction Analysis System has been used with increasing frequency for categorizing classroom behavior. It was developed by Flanders in the late 1950's. As Interaction Analysis is the basic system used in this research, it is described in detail in the following chapter.

Amidon and Flanders (1963) have reported that Interaction Analysis was designed as a feedback system in which the teacher can evaluate his own classroom behavior. Its main premise is that verbal behavior is an indicator of total classroom behavior. (2)

Interaction Analysis has gained wide acceptance as a research tool as it does bridge the gap between theory and practice. One of the most important advantages of this technique as a research tool is the availability of materials for training observers. Tapes, visuals, and manuals have been prepared for this purpose. Another major advantage of the system is the wide availability of results from numerous studies. These results can be used to compare teacher behavior in a research study with the behavior of teachers as observed in other studies, giving a common reference so that objective comparisons can be made.

As teachers guide the learning experience of students, they interact with the students both as individuals and as a group. In the

process of this interaction he influences the students, sometimes intentionally with planned behavior, sometimes consciously without planning, but often without awareness of his behavior and the effect of this behavior on the learning process. (2)

Many teachers lack knowledge about the ways in which they are influencing the students. By studying his own behavior, the teacher may gain further insight into his own pattern of influence. As he gains insight into his behavior, he may decide that he wants to change his behavior because either he is not achieving what he thought he was achieving, or he is not achieving what he has now decided he wants to achieve. Only the teacher can make changes in his classroom behavior. Others may help in the process of change, but they cannot do so unless the teacher himself desires a change. (2)

The Interaction Analysis System is divided into small categories to help the teacher to see if the behavior in the classroom is primarily teacher talk or student talk. The first seven categories dealing with teacher talk are designated as Accepts Feelings, Praises or Encourages, Accepts or Uses Ideas of Students, Asks Questions, Lecturing, Giving Directions and Criticizing or Justifying Authority. The two categories following are student talk listed as Student Talk-Response and Student Talk-Initiation. The tenth category is used for recording periods of confusion in communication when it is difficult to determine who is talking. This last category is also used to record silence.

The Flanders system of Interaction Analysis was meant to be used as an in-service training device for teachers. It may be employed by a teacher either as he observes someone else teach or as he categorizes a tape recording of his own classroom behavior. In either case, the

method is the same.

Every three seconds the observer writes down the category number of the interaction he has just observed. The numbers are recorded in sequence in a column. He writes approximately twenty numbers per minute; thus, at the end of a period of time, he has several long columns of numbers. (2)

Recording the data on a matrix provides a method of analyzing the sequence of events in the classroom in such a way that patterns of teacher behavior become readily apparent. This method consists of entering the sequence of numbers into a 10-row by 10-column table, which is called a matrix. The generalized sequence of the teacher-pupil interaction can be examined readily in this matrix.

Tabulations are then made in the matrix to represent pairs of numbers. Each pair of numbers overlaps with the previous pair, and each number, except the first and the last, is used twice. It is for this reason that a 10 is entered as the first number and the last number in the record. This number is chosen as it is convenient to assume that each record began and ended with silence.

It is convenient to check the tabulations in the matrix for accuracy by noting that there should be one less tally in the matrix than there were numbers entered in the original observation record. (2)

A number of home economics studies on Interaction Analysis have been made. Research by Jorgenson used the Verbal Interaction Analysis System with beginning and second year home economic teachers. The findings showed that both first and second year teachers were within the average range in the categories of accepting the feelings of students, praising or encouraging student action or behavior, asking

questions about content or procedures, giving directions or commands, criticizing or justifying authority and in talk by students in response to the teacher. The teachers observed were below the average range in accepting and using student ideas and in encouraging student initiated participation. They were also quite low in the extending of student ideas. The researcher recommended from her study that an inservice education program in which interaction analysis was taught as a self-evaluation tool for home economics teachers would be valuable. (24)

"An Investigation of the Effects of Instruction in Interaction Analysis on the Verbal Behavior of Student Teachers in Home Economics," was an investigation of the effect of teaching Interaction Analysis to student teachers in home economics on their verbal behavior in the classroom. Both a control group and an experimental group were used in this study. Although differences were not significant, student teachers in home economics with instruction in Interaction Analysis used more acceptance of student feeling; less criticism and direction-giving behavior; had more indirect influence; and had more total pupil talk and self-initiated pupil talk in their classrooms than did student teachers in home economics without Interaction Analysis instruction. The investigator believed that the study of Interaction Analysis helped student teachers to view their behavior in a more objective manner than would have been possible without the instruction. It was also recommended that instruction in this area be retained as part of the pre-service preparation for student teachers in home economics at Oklahoma State University. (5)

A study by Moravek was designed to compare the self concept of beginning teachers of home economics at two stages in their professional

experience, to identify verbal behavior patterns observed in the class-
room, and to determine if a correlation between the verbal behavior
patterns and the self concept of the beginning teachers existed.

The Total Positive Score of the Tennessee (Department of Mental
Health) Self Concept Scale was given to the teachers two times. Each
of the fifteen teachers were observed in four 20-minute discussion
periods. During that time the verbal behavior was coded using the
Flanders System of Interaction Analysis.

Verbal behavior patterns of the beginning teacher group were com-
pared with averages from other studies which used Interaction Analysis.
The values computed for the correlation of self concept (Total Positive
Scores) of the beginning teachers with selected verbal behavior patterns
were not strong enough to indicate a significant relationship. How-
ever, there was a tendency toward a negative correlation between the
self concept and the percentage of teacher talk. There was also a
tendency toward a positive correlation between the self concept and the
percentage of student talk. From the findings of this study, it was
suggested that a more in-depth analysis of the dimensions of the self
concept and the categories of both nonverbal and verbal behavior be in-
vestigated. (30)

In all of these studies, only the Verbal Interaction was consid-
ered. No attempt was made to analyze the behavior of students or teach-
ers that would fall into the nonverbal area of gestures and expressions.

Nonverbal Interaction Analysis

The teaching-learning process is essentially a communication event.
Teachers and students alike are concerned with obtaining a desired

response and the measure of their success is whether they achieve it. Many researchers have investigated communication behavior in classroom settings. However, until recently, most research has been concerned with the spoken and written word. But there is another form of communication, the Nonverbal. Koch defined nonverbal communication as any message we send or receive outside of words. (26) Charles Galloway, Professor of Education, at the Ohio State University, states that nonverbal communication is behavior that conveys meaning without words. (17) These nonverbal behavior clues are evident in any situation where people are with other people. The tendency is to judge nonverbal in context, just as they would a word. For example, if a person nods, this usually indicates agreement with what is being said.

Koch reported that the study of nonverbal communication is new, yet it is very old. It was the first language even before grunts came into vogue. It really is not new to teachers. They use it all the time whether they realize it or not. (26) Too often the teacher does not realize that he is "reading" the students and they are also "reading" him at the same time. A teacher's effectiveness can be increased if he understands the messages he sends out verbally. Therefore, the first step in helping a teacher is to make him aware of the various forms of nonverbal communication and how to interpret them.

In the review of literature relating to this study, teachers in home economics and other subject matter areas either encouraged or discouraged pupil interaction. This would depend on a number of factors, one of which is the communicative skill of the teacher. In a study of classroom behavior, Balzer found that nonverbal behaviors were the most prominent form of teacher expression. Often nonverbal behaviors acted

to enhance the verbal communication and were seen as reinforcing verbal statements. (33)

Various studies have been made on nonverbal communication. As early as 1919, Mosher's The Essentials of Effective Gesture was published. The author defines gesture as "visible expression that is any posture or movement of the head, face, body, limbs or hands, which aid the speaker in conveying his message by appealing to the eye." (41)

In Nonverbal Communication, Ruesch and Kees state,

> Just as an object, an action, or a word may stand for something else, the human body or parts thereof have been considered to symbolize characteristics of the soul, the mind, or the temperament of the person. From the beginning of recorded history, men have been guided in their judgment by the observation of facial expressions. (37)

They go on to express "It is not what you say but how you say it." Your facial expressions may have as much to show as your tone of voice. Laughing and crying are common human expressions. They sometimes sound similar but are probably the most opposite in showing emotion. Laughing or smiling in every culture usually expresses pleasure. An agreement with what another person says may be answered with a smile. However, there are some smiles that are aversive. A grin may be a broad smile, or it may be a rather sarcastic look.

The same study explains that smiles may indicate pleasure, humor, friendliness, good manners or on the other hand indicate doubt, embarrassment or ridicule. Many times, smiling is related to other gestures. An acceptance of an unpleasant task or event, with a shrug of the shoulder, emphasizes the "well alright" attitude. So, it can be a deceptive facial expression.

A further comment by Ruesch and Kees suggests that the same meaning

is not always conveyed to people through gestures or body motion. For example, a body may be bowed over in grief, laughter, humility, embarrassment or in readiness of defense. As in other events in nature, no body movement or expression is without meaning. In contrast to emotional expressions and implemented actions, gestures differ in that they are consciously intended for communicative exchanges and are addressed to particular individuals. (37)

Different parts of the country or nation may more or less dictate the readiness of a smile. As indicated by Birdwhistell,

> Gestures are hard to classify, and it is difficult to make a
> conscious separation between that in which gesture is of
> merely individual origin and that which is referable to the
> habits of the group as a whole . . . we respond to gestures
> with an extreme alertness and, one might also say, in accord-
> ance with an elaborate and secret code that is written no-
> where, known by none, and understood by all. (6)

Koch explains in "Nonverbal Observables" that thirty-five nonverbal cues were observed in randomly selected classrooms. Some of these included gestures--hand movements and foot movements; voice variations; silences; facial expressions, eye-language, head movements, nose movements, lip movements; postures; skin--pallor-flushing-sweating; handwriting, art-drawing-doodling; laughter; breathing; clothes; hair; jewelry; use of time; room appearance and arrangement; toying with objects and hesitation. Other than classifying a nonverbal signal as positive or negative, no meaning was assigned to the items above. However, one would automatically assign judgments; otherwise, the nonverbal data are meaningless. (25)

All expressions of teachers and students alike must be interpreted if they are to be understood. So in the daily classroom, emotional expression, gestures and ordinary actions are all important in the

evaluation of group interaction.

Historically, many studies of nonverbal communication have concentrated on facial expression, seeking a relationship between facial expression and the conveyance of emotion. The results of Darwin's study, reported in 1856 (The Expression of the Emotions in Men and Animals), has served as a bench mark from which other formulations later developed. This study by Darwin and others who followed kept research on nonverbal communication largely focused on facial affect. (12)

A new approach to the study of facial expression was proposed by Schlosberg. Using the Woodworth (1938) affect categories of happiness, surprise, fear, anger, disgust and contempt, Schlosberg proposed two dimensions of facial expressions, pleasantness-unpleasantness and attention-rejection. Two years later he added a third dimension, the level of activation. (12)

Also building on Schlosberg's formulation, Ekman (1965) addressed experiments to the issue of unitary emission of affect cues by obvious units of human communication (face, body, hands) arbitrarily divided for purposes of measurement. An expanded study by Ekman and Friesen (1967) proposed four body areas for nonverbal cue interpretation (body acts, body position, facial expression, and head orientation) and two types of information about affect (nature and intensity). Ekman and his co-workers have constructed the Facial Affects Scoring Technique (FAST) for the measurement of facial expression. The FAST technique utilizes three facial areas: brows-forehead, eyes-lids-bridge of nose, and lower face. Appraisal is by a description of the position of the features, and wrinkles, tension and relaxation in specific features. The FAST techniques seem promising since the criteria for scoring are specific

enough to minimize inter-judge error as judges gain experience. (12)

As a result of several years of research in extralinguistic inter-view behavior, Mahl (1966) developed a scoring system based on three broad categories of nonverbal behavior: general postural changes, com-municative gestures, and autistic (escape from reality) actions. Serv-ing as the observer and recorder while patients were interviewed in a room especially designed for the observation and recording of psychi-atric interviews Mahl compiled data on well over a dozen specific ges-tures or movements, noting both frequency and duration. One advantage of his method was that he observed and scored nonverbal without hearing the accompanying verbal content of the interview, an approach this writer has found effective in teaching novice observers to be attentive to nonverbal signals. (12)

On the assumption that the teacher is the dominant influence in the classroom, major emphasis has been placed on the analysis of teach-er behavior. Observation systems have been designed to focus on spe-cific elements of the teaching act. Perhaps the best known and most widely used is the Flanders Interaction Analysis System which has been previously discussed. French and Galloway (1968) have expanded the Flanders system to include nonverbal behaviors of teachers and thus in-corporates more facets of the teaching act. (34)

In 1971, Peggy Amidon authored a book entitled Nonverbal Interac-tion Analysis. This book was designed primarily for use by educators (teachers, supervisors, researchers) interested in classroom interac-tion or an observational system such as Interaction Analysis. Because the content is arranged to parallel verbal interaction, the researcher has chosen this method for recording and analyzing the nonverbal data

used in this research project.

There are four nonverbal dimensions of the teacher's behavior as indicated in Amidon's report. These four dimensions are important in observing and describing the total teaching-learning situation. Each dimension contains certain observable items that provide clues or cues to their communications function. The following four aspects of the classroom comprise certain "nonverbal" factors that affect the teacher-pupil interaction in the classroom.

> The first and second dimensions are concerned with the class-room setting. The physical arrangement of such items as desks, tables, chalkboards (Dimension I) and the presence of certain materials and supplies (Dimension II) provide clues to the type of interaction that might occur prior to the arrival of the teacher and pupils.

> The third and fourth dimensions are concerned with the class-room behavior. The nonverbal behaviors (Dimension III) and the activities (Dimension IV) provide cues to the verbal communication. (3)

The items found in each of the four dimensions are indicated by symbols that are categorized according to the ten categories of Interaction Analysis. Dimensions I and II include items that provide clues to the future interaction and types of activities that are likely to occur in a particular setting. Dimensions III and IV include items that provide cues about the present interaction and types of activities that are occurring. Such action cues may indicate teaching styles, classroom climate, the teacher's and/or pupils' interests.

Although there are four possible dimensions in this report, the researcher has chosen only Dimension III--Nonverbal Behaviors to use in the study of nonverbal communications. "This dimension is concerned with the use of nonverbal behavior to replace or accompany verbal communication." (3) The nonverbal behaviors used in this study include

gestures, facial expressions, position and physical movement.

To record the nonverbal behavior, symbols have been designated to represent certain behaviors. For example, a hand is the symbol used to represent movements or manipulations of the hand. The symbol used to represent the facial expressions is a round circle with two dots for the eyes and a curve for the mouth. An X is the symbol used to represent position. It indicates motionless stability in one location for an extended period of time. The vertical arrow is the symbol to represent movement. It indicates motion or a change in position. (3) See Appendix A for examples of combined code components that identify a gesture, facial expression, posture or movement. The procedure for recording the nonverbal behaviors will be discussed in the following chapter.

Feedback is one of the primary functions of Nonverbal Interaction Analysis. The use of playback equipment, such as audio and/or videotape recordings, provide exact replications of the original behavior in the classroom. There are five reasons why Nonverbal Interaction Analysis is a satisfactory tool for studying the classroom behavior. These include:

1. Nonverbal Interaction Analysis (NVIA) is based on an already researched observational instrument--Interaction Analysis.

2. NVIA procedures are easily acquired (especially if the observer is already familiar with Interaction Analysis).

3. The system provides a quite complete picture of the classroom (verbal plus nonverbal dimensions).

4. NVIA is flexible enough to suit the demands of a number of different situations (research, pre-and-in-service teacher training, behavioral studies programs).

5. The system can be used with videotape equipment and other hardware. (3)

The methods of observation described by Amidon are basically of two types. The most common is "immediate" (or live) observation. The second type is "delayed" (or taped) observation. The choice of which method to use will depend on several factors. The most important factor to consider is the availability of observational equipment and the availability of trained observers. Since immediate observation necessitates the use of live observers, the accuracy of the descriptive data is dependent upon their skill. Furthermore, the live observer must be able to collect the data during a single observational session, whereas taped observations can be replayed many times, thus increasing the reliability of the descriptive data. (3) For this study, the "delayed" observation was used as schools with video tape equipment were available and the researcher was already familiar with the Verbal Interaction Analysis.

Since both methods have their advantages and disadvantages, the following considerations are offered as to the use of the delayed observation method.

1. Advantages

    a. Increases reliability and objectivity of data collection.

    b. Provides a tool for training observers.

    c. Provides a reusable research record; allows for comparisons with future observations.

    d. Replay increases the number of possible observers.

    e. Replay allows for concentration on specific dimensions; the elimination of audio provides strictly visual (nonverbal) data.

    f. Exact replication of behavior allows for self-observation and self-analysis.

g. Provides basis for (nonevaluative) supervisory con-
ference.

2. Disadvantages

a. Requires specialized equipment, operator, and per-
haps facilities (room); scheduling problems for
equipment, etc.

b. The camera is not able to pick up everything at once;
tends to focus on teacher at expense of students and
vice versa.

c. Replay may be threatening, especially if the video-
tape is accessible to persons in authority positions
(e.g., principal, supervisor, etc.).

d. Analysis process is time consuming since it neces-
sitates replay. (3)

### Video Tape Recordings in Teacher Education

Video taping equipment consists of a video recorder, TV camera,
microphone, TV monitor and tapes. (21) Most schools that own this type
of equipment place all of it on an audiovisual cart. The cart is then
rolled from room to room as needed.

Video tape recordings have become a valuable education tool. How-
ever, like all technological tools, they can only be as effective as the
educators utilizing their potential. (7) The advent of the video tape
recorder has opened an observational doorway to samples of teaching-
learning situations to analyze and to:

1. develop teachers' insights into classroom behaviors.

2. effect changes in teaching strategies.

3. gather data in retrievable form for the development of
sound programs in teacher education.

4. move toward a workable theory of instruction. (31)

The research literature of video tape recordings related to teacher

education are continuing to increase, and reports of practice are rela-

tively common. A report completed by the staff of the Department of

Education at Temple University had two important conclusions. First,

many of the research studies revealed that teachers can learn to change

their classroom behaviors. Second, certain teacher behaviors increase

the probabilities that certain pupil behaviors will occur. (31) As more

teachers-of-teachers learn how to transmit this information, then more

teachers will be willing to accept help in improving their own teaching.

A more thorough analysis of current uses show that video tape re-

cordings provide:

1. observation material for a class or for an individual stu-
   dent.

2. immediate private feedback for a student teacher or coun-
   sellor trainee concerning this performance.

3. evaluation of performance by a supervisor, or a super-
   visor and a trainee.

4. specific preplanned recorded lessons as a basis for
   methods course instruction.

5. situational materials to be used with simulation proce-
   dures or case study analysis.

6. feedback and supervisory analysis prior to immediate rep-
   lication of performance.

7. both demonstration and feedback in developing specific
   teaching behaviors.

8. evaluation of teaching performance on a before-and-after
   or time lapse basis.

9. research analysis of teacher behavior, pupil behavior, or
   teacher-pupil interaction.

10. instructor-prepared materials for use with CCTV, dial ac-
    cess or film loop independent study activity. (10)

## Mechanical Aspects of Video Tapes

The operation of the video tape equipment is not a difficult task.
For some, the operation is only slightly more complicated than that of
an audio tape recorder. In a short learning session on the operation of
the recorder, most people can become proficient. Because each piece of
equipment will vary, the operator may need to refer to the step-by-step
instructions on the equipment. This would also help to refresh the
operator on procedures if time has elapsed between the training period
and actual use.

In some high schools, the students themselves are trained in the
operation and use of video tape equipment. These students act as tech-
nicians when filming the session. Experience has shown that the student
technician's presence in the classroom with the equipment is not a dis-
rupting factor. (7)

An important consideration when using video tape equipment is the
amount of time to tape for a usable sample of behavior. Experience has
revealed that it is not necessary to tape an entire class. A 15- or 20-
minute segment done on several different occasions has proved most in-
formative. (21)

Once the video tape has been made, it should be viewed as soon as
possible. The student teacher can either view the tape alone or view
and discuss it with the cooperating teacher or supervisor. The video
tape is useful in dealing with problems in teaching, and it is a power-
ful tool for reinforcing the strengths in a teacher's performance. (7)

It is the opinion of some that the most important part of the pro-
cedures was the playback when the teacher viewed the tape, asked

questions and discussed the teacher's classroom behavior. Frequently,
teachers spot behavioral patterns which need modification. The tone of
the conference, therefore, is usually pleasant. (20)

## Video Tapings As a Means of Evaluation

Observation is a method of data collection, and the use of video
tape helps improve the reliability of the information gathered. Evalu-
ation is placing a value judgment on the resulting data collected. One
of the main advantages of video tape is that it permits teachers to
view their own teaching performance and to become personally involved in
the evaluation process. Self-analysis becomes a reality and no longer
depends on the subjective reaction of an observer. (20)

In some instances, it is difficult for the cooperating teacher or
supervisor to explain effectively just what the student teacher is doing
or not doing and to bring about the desired improvement. The "im-
partial" camera can help the student teacher recognize his inadequacies
and personality traits by accurately recording his behavior.

Self-confrontation studies suggest self-evaluation as a most effec-
tive means of producing change in behavior. (20) It is one thing to
tell someone what he is or is not doing. It is something quite differ-
ent for him to personally view himself in the actual teaching situation.

Most teachers watching their first playback, tend to comment on
their own personal characteristics, tone of voice, posture, mannerisms,
and facial expressions. (20) The above are examples of nonverbal ges-
tures and expressions used by the teacher.

Adel Riegal did a study in 1968 which experimented with the video
tape recorder for self-evaluation of student teachers in home economics.

She found that the data supported the hypothesis that student teachers would add to their evaluation of the lesson taught after they viewed a video taped record of the lesson. In support of a second hypothesis, she concluded that with each lesson, the student teachers did note new factors which had not been noted in the previous evaluations and by the end of the study each of the student teachers had mentioned more of the factors in teaching behavior suggested on the supervisor evaluation form at the beginning of the study. The use of video taped sequences can have a positive effect on the student teacher. More items on the evaluation sheet were noted after viewing the playback than before and new factors in teaching behavior were noted with each evaluation of teaching sequence. (35)

## Summary

In summary, the researcher reviewed information on supervision of student teaching and the roles played by both the cooperating teacher and supervising teacher. Studies indicated a need for new methods of supervising student teachers.

Also reviewed were studies concerning Verbal Interaction Analysis as a means of evaluation. Because verbal interaction or behavior is usually accompanied by nonverbal behavior, the latter was explored. Studies revealed that nonverbal gestures and expressions are often more meaningful than the spoken word. Students do attend to teachers' nonverbal expressive behaviors to determine the accuracy of the verbal message.

Video taping has become a valuable technique in teacher education. It has been used in various studies as a means of self-evaluation by

teachers. The video tapes could be incorporated with supervision of student teachers using the Verbal and Nonverbal Interaction Analysis Systems. This could be a way of providing more meaningful evaluation of student teaching experiences.

The review of literature provided the researcher with the necessary background information to plan the procedure for an analysis of the Verbal and Nonverbal Interaction using the video tape as a means of collecting the data. The procedure will be discussed in Chapter III.

# CHAPTER III

## PROCEDURE AND METHOD

The present study was designed to determine if the nonverbal be-
haviors of student teachers replaced or supplemented their verbal be-
havior and if video feedback could provide a means of teacher evaluation
in the classroom. The method of obtaining the data will include a dis-
cussion of the sample, description and use of the instrument, and the
use of video tape equipment.

### Selection of Sample

To conduct this study, it was necessary for the researcher to ob-
tain a list of student teaching centers which owned video tape equip-
ment. "A Feasibility Study in the Use of Video Tape and Telephone Con-
ferences for the Supervision of Home Economics Student Teachers at
Oklahoma State University," was reviewed to see which schools had been
used in this previous research study. Of the four schools used in the
above study, one was selected as a research school for this research
project. Two other schools with video tape equipment were selected from
the list of student teaching centers. Superintendents of these three
schools were then contacted by telephone to determine whether the video
taping equipment was available and if the school could be used for re-
search purposes. The home economic cooperating teachers were also con-
tacted and asked to participate in the research project.

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Because the researcher was supervising student teachers, permission was sought from the coordinator of home economics student teaching for assignment in those schools which had video tape equipment and where administrators and cooperating teachers had agreed to participate in the study.

Early in the spring semester class entitled "Student Teaching in Home Economics," the researcher met with all the students to explain the Verbal and Nonverbal Interaction Analysis System. The student teaching centers that would participate in the study were also indicated. All student teachers were given an opportunity to select centers on a volunteer basis, knowing the three schools that had audio visual equipment and would be used in the research project. Six student teachers who chose these three centers (two student teachers are assigned to each center) comprised the group studied.

## Description of Instrument

As was indicated in the previous chapter, the Verbal and Nonverbal Interaction Analysis Systems chosen for this study are interdependent. Therefore, the categories are the same for both the verbal and nonverbal behaviors. (See Appendix B.)

The researcher used category one, Accepts Feelings, when the student teacher was accepting and clarifying the feeling tone of the students. These could be interpreted as either positive or negative feelings.

Category two, Praises or Encourages, was used when the student teacher praised or encouraged the student action or behavior. Praise could be a single word such as "good," "fine," "O.K.," or "uh huh."

Encouragement could include statements similar to "go ahead, you have the right idea," or "continue."

Accepts or Uses Ideas of Students, category three, was used by the researcher when the student teacher was clarifying, building upon, or developing ideas or suggestions given by a student. This category was used only when the idea originated with the student.

If the student teacher was asking a question about content or procedure and was expecting a student to give an answer, category four, Asks Questions, was used. Questions could be either narrow and restrict the student in his answering, or they could be very broad and give the student much freedom in answering.

When the student teacher was giving facts or opinions about content or procedure, or expressing her own ideas, category five, Lectures, was used by the researcher.

Gives Direction, category six, was used when the student teacher was giving direction which she expected the students to follow. This category was also used when the student teacher was giving a command or an order to the students.

Statements intended to change student behavior from nonacceptable to acceptable were recorded as category seven, Criticizes or Justifies Authority. This category was also used if the student teacher was using herself as an authority or if she was defending herself against a student, or if she was justifying her behavior. This category was used when the student teacher criticized a student for not knowing what to do as a result of not paying attention.

The next two categories are related to student talk and are referred to as one in the following chapter. Category eight, Student

Talk-Response, was used by the researcher when the student teacher asked a question to which the student was responding. Anything the student said which was a response to something the teacher had asked was recorded as category eight.

Student Talk-Initiation, category nine, was used if the student raised his hand to make a statement or ask a question which had not been prompted by the teacher. In deciding whether to use category eight or nine, the researcher used eight if the student teacher called upon a particular individual to respond and category nine if the student responded on his own without being called upon.

Category ten, Silence or Confusion, included everything else which did not fit into any of the other categories (2).

### Gaining Proficiency in the Use of the Instruments

Pretraining, as an undergraduate senior in Home Economics Education, aided the researcher in the use of video tape equipment and in the Verbal Interaction Analysis System. The Interaction Analysis training tapes were used for further developing the skills in recording verbal interaction. Actual recordings of student teachers, verbal and nonverbal behaviors, in a Home Economics Education class where techniques and materials were taught, increased skill in the use of both techniques. The researcher also took the Audio Visual Proficiency Test given to all student teachers in Home Economics Education. It tested for accuracy in the use of audio visual equipment, especially the camera, monitor, playback system, and tape recorder. In addition, the researcher was checked for accuracy in recording Verbal Interaction Analysis by an instructor who taught this system in the Home Economics

Education Department at Oklahoma State University.

## Use of the Video Tape

At the same time that the researcher observed the student teachers as a supervisor, she video taped their performances for future analysis using the Interaction Analysis technique. Their performances were video taped one week after they began their actual teaching and again three weeks later.

Before the student teachers left the campus, they had passed an Audio Visual Proficiency Test and had had opportunities to use video tape equipment. They were, therefore, given the responsibility of getting the video equipment ready each time. The camera was placed in the best position for the student teacher to be seen and heard. It was not possible to video tape all the students and get the student teacher at the same time. The audio sound recorded the student teacher and student interaction as it occurred in the class. Since this study was mainly about the gestures and expressions of the student teachers, the camera was focused on them. Each student teacher's performance was video taped for a period of fifteen minutes.

The tapes were played back for the student teachers, cooperating teachers and researcher to view and discuss during the conference period following each taping.

Upon returning to the Oklahoma State University campus, the researcher viewed the tapes of each student teacher's performance. The verbal interaction was recorded first and then the nonverbal interaction. The researcher used the ten categories described on page 33.

When recording the Verbal Interaction by Flanders, the researcher
decided at the end of each three-second period which category best
represented the communication events which had just taken place. A
number representing the approximate category was written down on paper.
This pattern was continued for fifteen minutes or a total of 300 sec-
onds. When recording every three seconds, a total of 100, three-second
intervals resulted. Because of the long column of numbers, the re-
searcher used a roll of office machine tape for recording purposes.

To record the Nonverbal Interaction the same category numbers were
used plus the recording of a symbol at the end of each nine-second
interval. Nine-second intervals, as recommended, were used in recording
since nonverbal gestures and expressions change less often than the
verbal.

To increase the accuracy of recording, the researcher used an audio
tape that beeped every three seconds to record the verbal interaction
and one for the video tape that beeped every nine seconds for recording
the nonverbal interaction. The beeps were added to the tape by the
Audio-Visual Center, Oklahoma State University, at the request of the
researcher.

After each tape was viewed and the verbal data recorded, a ruler
was used to divide the column of verbal numbers at every third interval.
This line represented every nine seconds and the place for recording
the nonverbal behavior. This made it easier to see if the nonverbal re-
placed or supplemented the verbal interaction. Once this was done, the
tapes were viewed for the second time and recorded the nonverbal ges-
tures and/or expressions used by the student teachers. (See Appendix
A.)

The numbers on the left side of Figure 1 represent verbal category numbers. The nonverbal symbols are on the right. A number 9 indicated that a student was answering a question. The nonverbal expression seen at that time was a smile by the student teacher to reinforce the student as she responded. As the student teacher lectured, number 5, she used her hands to help illustrate a particular point.

10

4

9

9

2

5

10
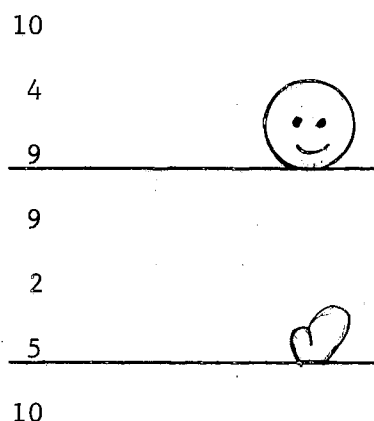
Figure 1. Sample of
Tally
Sheet

After the tapes were viewed and both the verbal and nonverbal interaction recorded, they were then tabulated separately on a 10 by 10 matrix. A matrix (see Figure 2) is made up of rows, columns, and cells. A row is made up of numbers which go across the matrix from the left to right. A column consists of the vertical numbers within the matrix. A cell is a small box within the matrix where the numbers are recorded.

<u>cell</u>

<u>column</u>

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ▨ | | | | | | | | | | |
| 2 | | | | | 1 | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | 1 | | |
| 5 | | | | | | | | | | 1 | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | 1 | | | | | | | 1 | | |
| 10 | | | | 1 | | | | | | | |
| column totals | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 6 matrix total |

row →

Figure 2.  Sample of a Matrix

Previous studies have shown that the entire series of numbers should start and end with the same number.  It was suggested that if the number ten did not start and end the series, it should be added.  (The numbers were taken from the series one pair at a time and recorded in a matrix.)  For example, numbers in a series could have been 10, 4, 9, 9, 2, 5, 10.  Since 10 means silence or confusion and 4 means asking a question, there was first a period of either silence or confusion followed by a question asked by the student teacher.  The 9's in the series indicated that a student answered the question asked by the student teacher and since it took six seconds, two 9's were recorded.  The number 2 was used to show that the student teacher used some type of praise or encouragement to reward the student's answer.  Number 5 was used when the student teacher was lecturing.

The first pair in the series of numbers was 10-4. The first num-
ber represents the "row" and the second number in the pair represents
the "column." Therefore, 10-4 was tallied in row 10 and column 4. The
second pair was 4-9 with 4 tallied in the "row" and 9 in the "column."
(See Figure 2 on previous page.) Each pair overlapped with the next
when being recorded in the matrix. This was continued until all of the
numbers from the fifteen-minute observation were recorded within the
matrix. Each column was then added to find the total tallies for that
column number. Then the totals of each column were added to get the
matrix total. The column percentages were also figured.

## Summary

In summary, the methodology used in this study included first the
procedure used to select the schools with video tape equipment. A
group of six home economics student teachers' presentations were video
taped in schools selected for research purposes. Each student teacher
was visited twice. During each visit, the student teachers' classroom
behavior was video taped. The tapes were later analyzed for both verbal
and nonverbal behavior which resulted in interaction between the student
teacher and her students. This data was recorded on matrices and pre-
pared for the analysis which will be discussed in the following chapter.

CHAPTER IV

ANALYSIS OF DATA

Classroom Situations Observed

This study was structured so that verbal and nonverbal behavior of

home economics student teachers could be observed and their performance

video taped in the classroom. The sample used in this study was limited

to six student teachers.

As the data is described, it would be well to keep in mind the

fact that each student teacher knew ahead of time that the researcher

was coming to observe. It was necessary to have some arrangements made

for the use of the video tape equipment. Lessons also had to be planned

that would allow for the kind of teacher-pupil interaction that could be

taped as well as analyzed.

The student teachers appeared to have good rapport with their

classes. Students seemed to respect the student teachers as persons

who knew what they were talking about. All six had pleasant voices, but

at times a few spoke too softly.

The classroom climate observed by the researcher seemed very posi-

tive. The majority of the students seemed to enjoy working with the

student teachers. There was a warmth expressed in their interaction

with one another.

Analysis of Matrices of the Student Teachers

As was described in Chapter III, the matrix is developed on the basis of ten categories arranged in rows and column of verbal and non-verbal interaction. (See Tables I through VI.) For this study, the cells have been divided with the numbers of nonverbal behaviors recorded over the verbal behavior. The numbers of both verbal and non-verbal interaction have been totaled. Since each taping period was for a total of 15 minutes and the interval for recording the nonverbal interaction was every nine seconds, a total of 100 types of interactions were shown for each taping. Similarly, the verbal interaction which was recorded every three seconds shows a total of 300. Because the number ten is added to each column at the beginning and end, the totals of each category on the tally sheet is 102 for nonverbal and 302 for the verbal behavior. However, due to the overlapping of pairs with one another, a total of only 101 behaviors for nonverbal and 301 behaviors for verbal appear on the matrix totals. One should keep in mind that the number of nonverbal behaviors will be smaller than the number of verbal behaviors even though the nonverbal supplements the verbal. The verbal behavior is recorded three times more often than the nonverbal behavior. The percentage column shows the comparison of the types of behavior each student teacher exhibited.

Each student teacher was video taped one week after she began teaching. Tapes were viewed and discussed by the student teachers, cooperating teacher and researcher. Three weeks later, the student teachers were again video taped. Tapes were viewed and discussed and a comparison drawn between the first and second visit.

The student teachers are identified by letter as they are referred to throughout this chapter and in the matrix tables.

## Student Teacher A

Two matrices for Student Teacher A showing the verbal and nonverbal interaction on the first and the second visit are shown in Table I. When looking at the matrices of the first and second visit, it is evident that category five, Lecturing, shows the greatest amount of verbal and nonverbal behaviors. Less time was spent Lecturing, category five, on the second visit than on the first. During the first taping, 184 instances of the student teacher lecturing were recorded but only 133 were noted on the second tape. Just as the verbal behavior decreased, there was a decrease of 58 to 45 nonverbal gestures used by the student teacher.

In category four, Asks Questions, the number of questions asked by the student teacher did not change greatly. There was an increase of 32 to 34 verbal questions, while the nonverbal gestures and expressions remained the same, 12 to 12.

A decrease in both categories four and five is offset by an increase in categories eight and nine, Student Talk. There was an increase in the nonverbal gestures 9 to 17, used by the student teachers, to reinforce the students as they responded verbally which also increased from 26 to 54.

A slight increase of Praises or Encourages, category two, was noted. During the first taping, no instances of either verbal or nonverbal behaviors were recorded. However, in the second taping, 2 verbal and 1 nonverbal forms of behavior for category two were recorded.

TABLE I

MATRIX FOR STUDENT TEACHER A*

First Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | 2 | 3 | 2 / 3 | | | | 1 | 1 | |
| 4 | | | 1 | 12 | 6 / 5 | | | | 5 / 11 | 4 | |
| 5 | | | 1 | 5 / 14 | 41 / 163 | 4 / 3 | | | 3 / 1 | 4 / 3 | |
| 6 | | | | 2 | 2 / 3 | 10 / 34 | | | | 1 | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | 1 / 7 | 4 / 2 | 3 / 5 | | | | 1 / 11 | 1 | |
| 10 | | | | 1 / 1 | 4 / 5 | 1 | | | 2 | 3 | |
| Total | 0 / 0 | 0 / 0 | 3 / 9 | 12 / 32 | 58 / 184 | 14 / 38 | 0 / 0 | 0 / 0 | 9 / 26 | 5 / 12 | 101 / 301 |
| % | 0 / 0 | 0 / 0 | 3 / 3 | 12 / 11 | 57.5 / 61 | 13.5 / 12.5 | 0 / 0 | 0 / 0 | 9 / 8.5 | 5 / 4 | |

*The number appearing above the dotted line in each cell represents nonverbal behavior, the number below the line the verbal behavior.

A cell in which no number appears indicates that neither nonverbal or verbal behavior was observed.

Second Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | | | | | | | | | | | |
| **2** | | | | 1 | 1 / 1 | | | | | | |
| **3** | | | 1 | | 1 | | | | 1 | 1 | |
| **4** | | 1 | | 4 / 8 | 4 / 3 | 2 | | 2 / 2 | 14 | 2 / 4 | |
| **5** | | 1 | | 5 / 12 | 26 / 98 | 1 | 2 | | 7 / 10 | 7 / 9 | |
| **6** | | | | | 1 / 2 | 1 / 5 | | | 1 / 1 | 4 | |
| **7** | | | | | 1 | | 1 | | 1 | 1 | |
| **8** | | 1 | | 3 | 1 / 1 | | | 2 / 7 | | | |
| **9** | | | 1 / 2 | 4 | 6 / 15 | 1 | | 3 | 3 / 14 | 2 / 5 | |
| **10** | | | | 3 / 6 | 6 / 11 | 1 / 4 | 1 | | 1 / 2 | 10 / 37 | |
| **Total** | 0 / 0 | 1 / 2 | 1 / 3 | 12 / 34 | 45 / 133 | 3 / 12 | 1 / 3 | 4 / 12 | 13 / 42 | 22 / 60 | 101 / 301 |
| **%** | 0 / 0 | 1 / 1 | 1 / 1 | 12 / 11 | 43.5 / 44 | 3 / 4 | 1 / 1 | 4 / 4 | 13 / 13.5 | 21.5 / 20.5 | |

As shown by the matrices, Student Teacher A used fewer <u>Ideas of</u> <u>Students</u>, category three on the second tape than on the first. Part of this could have been due to the type lesson being taught. The drop in verbal expressions went from 9 on the first tape to 3 on the second tape. Likewise, there was a drop from 3 to 1 in the nonverbal gestures or expressions.

The following nonverbal gestures and/or expressions were recorded on video tape and identified by the researcher from the first and second taping.

| Type of Nonverbal Behavior | First Tape | Second Tape |
|---|---|---|
| Smiles | 22 | 21 |
| Direct eye contact | 14 | 14 |
| Hand gestures | 56 | 49 |
| Motion | 4 | 8 |
| Stability | 0 | 7 |
| Nods | 4 | 0 |
| Frown | 0 | 1 |

In summary, Student Teacher A lectured less during the second taping than she did during the first taping. This gave the students an opportunity to talk more. Also, an increase in the teacher's use of praise and encouragement could have motivated the student to want to enter into the class discussion. There was a decrease in the use of this student teacher's hand gestures, which were excessive and at times distracting to the class. As the verbal behavior changed, the nonverbal behavior was also seen to shift, indicating that the nonverbal supplemented the verbal behavior.

Student Teacher B

In studying the matrices for Student Teacher B, Table II, an increase was shown in her praise and encouragement, category two, of students. During the first taping, no use of this category was observed in either her verbal or nonverbal behavior but during the second taping, praise was observed 2 times verbally and 1 time nonverbally.

In Using the Ideas of Students, category three, the verbal interaction of the student teacher decreased from 9 on the first visit to 2 on the second visit. Although the verbal interaction decreased, the nonverbal gestures remained the same, 2 to 2, on both tapings.

Use of Questions, category four, by the student teacher increased on the second tape from 21 to 33. There was also an increase in the number of nonverbal gestures, 4 to 13, used by the student teacher to supplement the verbal behavior.

While she was talking and asking more questions, less time was spent in category five, Lecturing. A drop of 169 to 123, instances of verbal interaction were recorded from the first to the second taping. The drop in nonverbal behavior was 56 to 38.

In categories eight and nine, Student Talk, a decrease was also seen from the first to the second taping. In the verbal area the decrease was from 52 to 45. Likewise, the nonverbal gestures recorded by the observer decreased from 20 to 16.

Data received from categories four, five, eight, and nine could indicate to the student teacher that the students were having difficulty in answering her questions as she was asking more questions but the students were responding less. The difference in subject matter could

TABLE II

MATRIX FOR STUDENT TEACHER B*

First Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | 1 | 1 / 1 | 1 / 3 | | | | / 2 | / 2 | |
| 4 | | | | / 1 | 1 / 1 | / 1 | | | 2 / 12 | 1 / 6 | |
| 5 | | | 1 / | 2 / 9 | 43 / 151 | 1 / 2 | | | 4 / 1 | 5 / 6 | |
| 6 | | | | | 2 / 3 | 2 / 8 | | | 1 / | | |
| 7 | | | | | / 1 | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | 1 / 5 | 1 / 4 | 5 / 1 | | / 1 | | 10 / 35 | 3 / 5 | |
| 10 | | | / 3 | / 6 | 4 / 9 | 2 / | | | 3 / 2 | 5 / 19 | |
| Total | 0 / 0 | 0 / 0 | 2 / 9 | 4 / 21 | 56 / 169 | 5 / 11 | 0 / 1 | 0 / 0 | 20 / 52 | 14 / 38 | 101 / 301 |
| % | 0 / 0 | 0 / 0 | 2 / 3 | 4 / 7 | 55.5 / 56 | 5 / 3.5 | 0 / .50 | 0 / 0 | 19.5 / 17.5 | 14 / 12.5 | |

*The number appearing above the dotted line in each cell represents nonverbal behavior, the number below the line the verbal behavior.

A cell in which no number appears indicates that neither nonverbal or verbal behavior was observed.

Second Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | 1 | | 1 | | | | 1 | | | |
| 3 | | | 1 | 1 | 1 | | | | | | |
| 4 | | | | 5 / 10 | 2 / 9 | 2 | | 6 | 2 / 3 | 2 / 5 | |
| 5 | | 1 | | 3 / 6 | 22 / 95 | 3 / 8 | | 2 | 3 / 4 | 5 / 8 | |
| 6 | | | | 1 / 1 | 5 / 7 | 5 / 32 | | | | 2 / 2 | |
| 7 | | | | | 1 | | | | | | |
| 8 | | | 2 / 1 | 2 / 5 | | | | 5 / 22 | | | |
| 9 | | 1 | | 1 / 4 | 3 / 2 | | 1 | | 3 / 8 | 2 | |
| 10 | | | | 1 / 5 | 5 / 9 | 3 / 1 | | | 2 | 9 / 37 | |
| Total | 0 / 0 | 1 / 2 | 2 / 2 | 13 / 33 | 38 / 123 | 13 / 41 | 0 / 1 | 8 / 28 | 8 / 17 | 18 / 54 | 101 / 301 |
| % | 0 / 0 | 1 / .50 | 2 / .50 | 13 / 11 | 37.5 / 41 | 13 / 13.5 | 0 / .50 | 8 / 9.5 | 8 / 5.5 | 17.5 / 18 | |

also have affected the interaction that took place.

Listed below are the nonverbal expressions and/or gestures recorded from the first and second tapings.

| Type of Nonverbal Behavior | First Tape | Second Tape |
|---|---|---|
| Smiles | 5 | 26 |
| Direct eye contact | 29 | 34 |
| Hand gestures | 56 | 28 |
| Motion | 5 | 5 |
| Stability | 4 | 0 |
| Nods | 1 | 5 |
| Frown | 0 | 1 |

In conclusion, Student Teacher B spent more time asking questions for the class to discuss than she spent in lecturing and an increase in student talk was evident. As the student teacher became more relaxed and at ease in the classroom, her use of smiles increased greatly. A decrease in hand gestures could have been due to a difference in subject matter which did not require as much use of her hands to help illustrate a point. The verbal behavior supplemented the nonverbal behavior as in matrices when the verbal behavior changed, the nonverbal behavior also changed.

Student Teacher C

The matrices for Student Teacher C, Table III, indicated less use of several categories on the second taping than on the first. In category four, Asks Questions, the student teacher used fewer questions, 21 to 7, when talking with the class. Also, the nonverbal gestures, 8 to

## TABLE III

## MATRIX FOR STUDENT TEACHER C[*]

### First Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | | | | 2 | 1 | | | 1 | | |
| 3 | | | 4 | | 2 / 2 | | | | 3 | 1 | |
| 4 | | 1 | | 1 / 5 | 2 / 3 | 1 / 1 | | 1 / 1 | 3 / 7 | 3 | |
| 5 | | 2 | 2 / 3 | 2 / 5 | 37 / 142 | 1 / 1 | | | 9 / 8 | 6 / 7 | |
| 6 | | | | | 2 / 2 | 10 | | | 2 / 2 | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | 1 / 1 | | | 2 | | | |
| 9 | | 1 | 3 | 3 / 7 | 9 / 9 | 2 / 1 | | | 7 / 32 | 4 | |
| 10 | | | | 2 / 4 | 4 / 7 | | | | 4 | 2 / 9 | |
| Total | 0 / 0 | 0 / 4 | 2 / 10 | 8 / 21 | 57 / 168 | 4 / 14 | 0 / 0 | 1 / 3 | 21 / 57 | 8 / 24 | 101 / 301 |
| % | 0 / 0 | 0 / 1 | 2 / 3 | 8 / 7 | 56.5 / 56.5 | 4 / 4.5 | 0 / 0 | 1 / 1 | 20.5 / 19 | 8 / 8 | |

[*] The number appearing above the dotted line in each cell represents nonverbal behavior, the number below the line the verbal behavior.

A cell in which no number appears indicates that neither nonverbal or verbal behavior was observed.

Second Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | 1 | | | | | |
| 4 | | | | 3 | 1 / 1 | | | | 2 | 1 |
| 5 | | | | 1 / 2 | 35 / 144 | 2 / 2 | | | 11 / 17 | 11 / 13 |
| 6 | | | | | 2 / 2 | 1 / 9 | | | | 2 |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | 1 | | 11 / 17 | | | | 2 / 19 | 2 / 4 |
| 10 | | | | 2 | 11 / 13 | 2 | | | 2 / 3 | 9 / 41 |
| Total | 0 / 0 | 0 / 0 | 0 / 1 | 1 / 7 | 60 / 178 | 3 / 13 | 0 / 0 | 0 / 0 | 15 / 41 | 22 / 61 | 101 / 301 |
| % | 0 / 0 | 0 / 0 | 0 / .50 | 1 / 2.5 | 59.5 / 59 | 3 / 4 | 0 / 0 | 0 / 0 | 15 / 13.5 | 21.5 / 20.5 |

52

1, expressed by the student teacher decreased.

Just as fewer questions were asked in category four, the matrices also pointed out that less Student Talk, categories eight and nine, resulted. On the first tape, 60 instances of student talking were recorded as opposed to only 41 on the second tape. The subject matter discussed during the first tape was such that the students entered more freely into the conversation.

There were no nonverbal gestures on the first or second taping used by the student teacher in category two, Praises or Encourages. The verbal form of this category also decreased from 4 on the first tape to 0 on the second tape.

Uses Ideas of Students, category three, was another area in which Student Teacher C showed a decrease. During the first taping, the researcher recorded 10 verbal instances reduced to 1 on the second tape. Likewise, tne nonverbal gestures or expressions reduced from 2 on the first tape to 0 on the second tape.

With a decrease in Student Talk, there had to be an increase somewhere. The matrices showed a verbal increase, 168 to 178, in category five, Lecturing. Along with this, there was an increase of nonverbal gestures and expressions such as smiles or laughter as she talked, or the use of her hands to help illustrate what she was saying. A change in subject matter content being discussed may have had something to do with an increase in lecturing and less opportunity for the students to interact.

The following nonverbal gestures and/or expressions were taken from the video tapes and identified by the researcher.

| Type of Nonverbal Behavior | First Tape | Second Tape |
|---|---|---|
| Smiles | 10 | 28 |
| Direct eye contact | 54 | 29 |
| Hand gestures | 10 | 32 |
| Motion | 7 | 7 |
| Stability | 2 | 1 |
| Nods | 17 | 3 |

Summarizing the behaviors of Student Teacher C, it is evident that fewer questions were asked and therefore less student interaction. The subject matter being taught called for more lecturing from the student teacher and less student discussion. Also, the subject matter on the second taping required more hand gestures to help explain the drawing of house plans and showing of fabric samples. Direct eye contact decreased when the students talked less. The student teacher was probably not rewarding them as much with her eyes as when the students were talking. Likewise, there was a decrease in nods used by the student teacher to show her agreement with what the students were saying. Again, the nonverbal behavior supplemented the verbal behavior in the classroom.

Student Teacher D

Analysis of the matrices for Student Teacher D, Table IV, showed that fewer Questions, category four, were asked by the student teacher during the second taping than on the first taping. Eighty-six were recorded on the first taping compared to 73 on the second. Accordingly, there was a decrease of 28 to 16 nonverbal gestures used. Even though fewer questions were asked, there was an increase in Student Talk,

TABLE IV

MATRIX FOR STUDENT TEACHER D*

First Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | 1 / 2 | | 1 / 3 | / 2 | 1 / | | / 1 | / 1 | 3 / 6 | |
| 3 | | / 1 | / 1 | / 2 | 2 / 2 | | | 1 / | | / 1 | |
| 4 | | 3 / 1 | 1 / | 10 / 57 | 2 / 2 | | | 7 / 13 | 2 / 5 | 3 / 8 | |
| 5 | | 2 / 1 | | 8 / 13 | 11 / 45 | 1 / 2 | | | 1 / | / 3 | |
| 6 | | | | 1 / | 1 / 2 | / 7 | | | | 1 / 1 | |
| 7 | | | | | | | | | | | |
| 8 | | / 6 | 1 / 2 | 3 / 8 | | | | 7 / 28 | 1 / | 4 / 2 | |
| 9 | | / 4 | / 2 | 1 / | / 2 | | | 1 / | / 5 | 2 / 1 | |
| 10 | | | 1 / 2 | 4 / 3 | 7 / 9 | 1 / 1 | | / 4 | / 3 | 5 / 37 | |
| Total | 0 / 0 | 6 / 15 | 3 / 7 | 28 / 86 | 23 / 64 | 3 / 10 | 0 / 0 | 16 / 46 | 4 / 14 | 18 / 59 | 101 / 301 |
| % | 0 / 0 | 6 / 5 | 3 / 25 | 27.5 / 29 | 22.5 / 21.5 | 3 / 3.5 | 0 / 0 | 16 / 15 | 4 / 4.5 | 18 / 19 | |

*The number appearing above the dotted line in each cell represents nonverbal behavior, the number below the line the verbal behavior.

A cell in which no number appears indicates that neither nonverbal or verbal behavior was observed.

Second Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | | 3 | 5 | | | | 3 | | 1 | |
| 3 | | 2 | 1 13 | 2 3 | 2 2 | | | | 2 | 2 5 | |
| 4 | | 1 | 3 | 1 30 | 3 2 | | 1 | 4 18 | 2 11 | 1 12 | |
| 5 | | | | 2 5 | 7 30 | | | 2 | 1 | 4 9 | |
| 6 | | | | 1 | | 1 | | | | | |
| 7 | | | | | 1 | | | | | 1 | |
| 8 | | 1 3 | 4 5 | 1 9 | 2 2 | | 1 | 7 31 | 3 1 | 4 7 | |
| 9 | | 1 3 | 1 4 | 5 4 | 1 1 | | | 2 1 | 2 19 | 1 1 | |
| 10 | | 1 | | 5 16 | 1 6 | 1 | | 4 9 | 3 2 | 6 22 | |
| Total | 0 0 | 4 8 | 9 25 | 16 73 | 16 44 | 0 2 | 1 1 | 22 59 | 13 33 | 20 56 | 101 |
| % | 0 0 | 4 3 | 9 8 | 16 24 | 16 14.5 | 0 1 | 1 .50 | 21.5 19.5 | 13 11 | 19.5 18.5 | |

categories eight and nine. The total categories show 60 instances of student talk on the first visit as opposed to 92 on the second taping. The researcher observed that the questions asked on the second taping required longer and more detailed answers from the students. Just as the verbal interaction of the students increased, the nonverbal expressions and gestures of the student teacher increased from 20 to 35. Student Teacher D rewarded the students with a smile, laughter, direct eye contact and hand gestures as they responded.

As Student Talk, categories eight and nine, increased, Lecturing, category five, decreased from 64 to 44. This meant that the student teacher was doing less lecturing and that her students were talking more. When she lectured less, there was a shift of nonverbal gestures to gestures directed to the students as they talked with the student teacher.

Student Teacher D showed a drop in category two, Praises or Encourages, both verbally and nonverbally when the tape was made during the second visit. The drop in verbal interaction was 15 down to 8 and the nonverbal drop was 6 to 4. This decrease in category two could have been due to the type of subject matter taught. On the first taping she used a "question-short answer puzzle" which adapted itself nicely to the use of praise when the students answered the questions correctly. Closely related to category two is category three, Uses Ideas of Students. For this, there was an increase, 3 to 9, in the nonverbal gestures used to supplement the verbal behavior that also increased from 7 to 25 from the first to second taping.

Listed on the following page are the nonverbal expressions and/or gestures recorded on video tape and identified by the researcher from

the first and second taping.

| Type of Nonverbal Behavior | First Tape | Second Tape |
|---|---|---|
| Smiles | 32 | 47 |
| Direct eye contact | 37 | 42 |
| Hand gestures | 9 | 3 |
| Motion | 11 | 1 |
| Stability | 7 | 0 |
| Nods | 4 | 6 |
| Frown | 0 | 1 |

The data for Student Teacher D shows that the student interaction increased from the first and second tapings even though fewer questions were asked by the student teacher. A drop in praise and encouragement could have been due to the type of subject matter taught. This student teacher increased her use of smiles and direct eye contact to help reward the students as they responded in class. When the verbal interaction changed, the nonverbal changed accordingly showing that the nonverbal supplemented the verbal.

Student Teacher E

When interpreting the data for Student Teacher E, Table V, an increased use of Praises or Encourages, category three, from 1 on the first taping to 3 on the second taping was noted. The nonverbal gestures or expressions remained the same, 1 to 1 on both tapes.

In category three, Uses Ideas of Students, the verbal acceptance by the student teacher decreased slightly from 26 to 24. Although the verbal behavior decreased, there was a small increase, 5 to 8, in the

TABLE V

MATRIX FOR STUDENT TEACHER E[*]

First Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | | 1 | 1 | | | | | 1 | | |
| 3 | | | 12 | 3 / 7 | | | | 1 / 2 | 1 / 3 | 1 | |
| 4 | | | 1 | 5 / 25 | 1 | | | 9 / 13 | 10 / 11 | 3 | |
| 5 | | | | 2 | 1 / 6 | | | | 3 / 5 | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | 4 / 7 | 3 / 6 | 1 | | | 16 / 68 | 3 / 4 | 1 | |
| 9 | | 1 / 1 | 1 / 4 | 11 / 13 | 2 / 4 | | | 1 | 21 / 92 | 1 / 1 | |
| 10 | | | 1 | 1 / 1 | 1 / 1 | | | | 2 | 1 | |
| Total | 0 / 0 | 1 / 1 | 5 / 26 | 24 / 54 | 4 / 13 | 0 / 0 | 0 / 0 | 27 / 83 | 38 / 118 | 2 / 6 | 101. / 301 |
| % | 0 / 0 | 1 / .50 | 5 / 8.5 | 24 / 18 | 4 / 4.5 | 0 / 0 | 0 / 0 | 26.5 / 27.5 | 37.5 / 39 | 2 / 2 | |

[*] The number appearing above the dotted line in each cell represents nonverbal behavior, the number below the line the verbal behavior.

A cell in which no number appears indicates that neither nonverbal or verbal behavior was observed.

Second Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | | | | | | | | | | | |
| **2** | | | 2 | | | | | 1 / 1 | | | |
| **3** | | | 1 / 12 | 2 / 5 | 1 / 2 | | | 1 | 3 / 3 | 1 | |
| **4** | | | | 1 / 18 | 1 / 1 | | | 5 / 6 | 7 / 10 | 3 | |
| **5** | | | | 2 | 6 / 21 | | | 3 | 4 / 7 | | |
| **6** | | | | | | | | | | | |
| **7** | | | | | | | | | | | |
| **8** | | 1 | 3 / 2 | 1 / 1 | 2 / 3 | | | 12 / 53 | 3 / 3 | 1 / 1 | |
| **9** | | 1 / 2 | 4 / 8 | 9 / 9 | 2 / 3 | | | 1 / 2 | 25 / 113 | | |
| **10** | | | | 1 / 3 | | | | 1 | 1 | | |
| **Total** | 0 / 0 | 1 / 3 | 8 / 24 | 14 / 38 | 12 / 30 | 0 / 0 | 0 / 0 | 23 / 64 | 42 / 137 | 1 / 5 | 101 / 301 |
| **%** | 0 / 0 | 1 / 1 | 8 / 8 | 14 / 12.5 | 12 / 10 | 0 / 0 | 0 / 0 | 22.5 / 21 | 41.5 / 45.5 | 1 / 2 | |

number of nonverbal expressions or gestures used by the student teacher to help clarify or develop the ideas suggested by students.

On category four, Asks Questions, there was a decrease from 24 non-verbal gestures or expressions on the first tape to 14 on the second tape. There was likewise a decrease from 54 to 38 verbal questions asked by the student teacher.

An increase was observed in Lecturing, category five, by the re-searcher, in the second video taping. During the first taping, the verbal behavior was 13 which increased to 30 on the second taping. Also, the nonverbal behaviors recorded increased from 4 to 12.

Even though Student Teacher E lectured more and asked fewer ques-tions on the second tape, Student Talk, remained the same, 201 to 201 on both tapes. Also remaining the same were the nonverbal reinforce-ments, 65 to 65, used by the student teacher as the students responded.

Listed below are the nonverbal gestures and/or expressions re-corded from the first and second tapings.

| Type of Nonverbal Behavior | First Tape | Second Tape |
|---|---|---|
| Smiles | 34 | 40 |
| Direct eye contact | 54 | 46 |
| Hand gestures | 8 | 14 |
| Motion | 1 | 0 |
| Stability | 2 | 0 |
| Nods | 1 | 0 |

In summary, Student Teacher E asked fewer questions and lectured more on the first than on the second taping, but the student interaction remained high for both tapings. This student teacher used many smiles

and hand gestures. She "talks" a great deal with her eyes, so a decrease in this expression was probably not harmful. A shift within the verbal categories also resulted in a nonverbal change which illustrated that the nonverbal does help supplement the verbal interaction.

## Student Teacher F

The matrices for Student Teacher F, Table VI, showed an increase of categories eight and nine, Student Talk, from the first to the second taping. The number of instances of students talking increased from 58 to 83. At the same time, the verbal behavior increased, the nonverbal gestures or expressions of the student teacher increased from 16 to 31.

There was an increase in student talking on the second taping, thus the data indicated that the student teacher was talking less. Category five, Lecturing, dropped from 162 to 140 instances. As the verbal behavior dropped, the nonverbal area also decreased from 54 to 42.

Category four, Asks Questions, was another area where the student teacher talked less during the second taping. On the first tape, the student teacher asked 45 questions which decreased to 34 on the second tape. There was a slight decrease, 14 to 11, nonverbal expressions or gestures used by the student teacher to help clarify the questions she expected the students to answer.

Student Teacher F decreased in her use of category two, Praises or Encourages, from the first to the second taping. The verbal behavior decreased from 9 to 4, and the nonverbal forms of praise decreased from 7 to 1.

## TABLE VI

## MATRIX FOR STUDENT TEACHER 3 [*]

First Taping

Each cell shows nonverbal behavior (above the dotted line) over verbal behavior (below the dotted line), here written as *nonverbal / verbal*.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | 1 | / 2 | 1 / 5 | 1 / 1 | 1 | | 1 | 1 / 1 | 1 | |
| 3 | | | / 7 | | 5 / 6 | | | | / 1 | | |
| 4 | | 3 / 2 | | / 13 | 6 / 9 | | | 4 / 11 | / 2 | 1 / 8 | |
| 5 | | | | 11 / 19 | 39 / 140 | / 1 | | 2 | / 1 | 2 / 1 | |
| 6 | | | | 1 | / 1 | / 1 | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | 2 / 7 | 1 / 1 | / 1 | 1 / 1 | | | 2 / 24 | 3 / 2 | | |
| 9 | | | 3 / 4 | 1 / 2 | 1 / 2 | | | | 2 / 14 | 2 | |
| 10 | | 1 | 1 | / 5 | 1 / 2 | | | / 1 | 1 / 1 | / 2 | |
| Total | 0 / 0 | 7 / 9 | 5 / 14 | 14 / 45 | 54 / 162 | 1 / 2 | 0 / 0 | 9 / 36 | 7 / 22 | 4 / 11 | 101 / 301 |
| % | 0 / 0 | 7 / 3 | 5 / 4.5 | 14 / 15 | 53 / 54 | 1 / .50 | 0 / 0 | 9 / 12.5 | 7 / 7 | 4 / 3.5 | |

[*] The number appearing above the dotted line in each cell represents nonverbal behavior, the number below the line the verbal behavior.

A cell in which no number appears indicates that neither nonverbal or verbal behavior was observed.

Second Taping

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | | | 2 | | 2 | | | | 1 / 1 | |
| 3 | | 1 | 12 | 2 / 3 | 5 / 4 | | | | 1 / 7 | 1 |
| 4 | | 1 | | 12 | 1 / 6 | | | 2 / 2 | 4 / 7 | 3 / 7 |
| 5 | | | | 7 / 16 | 27 / 115 | | | 1 | 4 / 6 | 3 / 3 |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | 2 | | | 1 / 1 | | | 4 | 2 | |
| 9 | | 1 | 8 / 15 | 1 | 4 / 7 | | | | 14 / 52 | 2 |
| 10 | | | | 2 / 2 | 4 / 5 | | | 1 | 2 / 3 | |
| Total | 0 / 0 | 1 / 4 | 8 / 29 | 11 / 34 | 42 / 140 | 0 / 0 | 0 / 0 | 3 / 7 | 28 / 76 | 8 / 11 | 101 / 301 |
| % | 0 / 0 | 1 / 1 | 8 / 10 | 11 / 11 | 41.5 / 47 | 0 / 0 | 0 / 0 | 3 / 2.5 | 27.5 / 25 | 8 / 3.5 |

Closely related to category two is category three, <u>Uses Ideas of</u>

<u>Students</u>, which increased according to the matrix figures. The verbal

behavior increased from 14 to 29 on the second tape. The number of non-

verbal expressions also increased, 5 to 8, from the first to the second

taping.

The following nonverbal gestures and/or expressions were recorded

on video tape and identified by the researcher from the first and second

taping of Student Teacher F.

| Type of Nonverbal Behavior | First Tape | Second Tape |
|---|---|---|
| Smiles | 24 | 30 |
| Direct eye contact | 29 | 32 |
| Hand gestures | 32 | 38 |
| Motion | 2 | 0 |
| Stability | 12 | 0 |
| Nods | 1 | 0 |

In conclusion, Student Teacher F talked less, which allowed the

students to participate in the class discussion. An increased use of

the students' ideas was also evident. The data showed an increase in

several of the nonverbal categories from the first to the second taping.

The nonverbal gestures and expressions used by Student Teacher F supple-

mented the verbal as was shown by the data received.

## Summary of the Six Student Teachers

The use of video tape on the first visit helped make the six stu-

dent teachers aware of their solemn facial expressions which changed to

smiles on the second taping. Improvement was seen on the second taping,

with more gestures and expressions not only as they talked but also to

reward the responses of the class. The student teachers also appeared

more relaxed and confident of themselves. Because of video taping, it

made self evaluation and supervision of the student teachers more ac-

curate and more effective.

In general, the student teachers did less Lecturing, category five,

and asked more Questions, category four, which encouraged more Student

Talk, categories eight and nine. Also, the use of Student Ideas, cate-

gory three, and Praises or Encourages, category two, motivated the stu-

dents to talk more freely in the classroom.

The matrix tables showed an increased use of category ten, Silence

or Confusion, for five out of the six student teachers. The student

teachers expressed the feeling that they must be busy talking at all

times. To them, a few seconds of silence seems forever. However, as

they became more confident, silence did not appear to bother them as

much.

Category seven, Criticizing, showed very few times in the total

student teachers' matrices. This category is usually expected to be

low in number, as the student teachers were taught in Methods Class that

it is better to praise than to criticize the students.

It was evident from the total data that nonverbal gestures supple-

mented verbal behavior. The total number of nonverbal behaviors did not

change between the first and second taping. However, the important

point was the shift in emphasis within the matrix from category to cate-

gory. For example, fewer instances in Lecturing coincided in an in-

crease in Student Talk. Thus, the nonverbal gestures and expressions of

the student teachers were used to reward the students as they responded

in class.

## Summary

Analysis of the verbal and nonverbal behaviors of the six student teachers were presented as individual cases. The data appears as a comparison within categories, numbers and types of nonverbal gestures observed, and a matrix table for each student teacher showing the verbal and nonverbal behaviors on the first and second tapings.

In making a comparison of the six student teachers, it was evident from the data that there were some student teachers who increased, some decreased, and others remained the same in their use of nonverbal behavior in each of the ten categories. This was also true for the analysis of verbal behavior. The overall findings indicated that the nonverbal behavior supplemented the verbal behavior used by the student teachers. No instances were observed in this study where the nonverbal replaced the verbal behavior of the student teachers.

# CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The main purpose of this study was to determine if the nonverbal behaviors of student teachers replaced or supplemented their verbal behaviors and if video feedback could provide a means of teacher evaluation in the classroom.

The performance of six student teachers was video taped and analyzed, using the Verbal and Nonverbal Interaction Analysis System to determine if the nonverbal replaced or supplemented the verbal behavior in the classroom.

The researcher increased her skill in the use of the Verbal and Nonverbal Interaction Analysis System through pretraining. This included recording verbal interaction as an undergraduate, recording from the Interaction Analysis training tapes, and actual recording of student teacher behavior in a Home Economics Education class.

The centers were selected on the basis of the availability of video tape equipment and the interest of both the administrators and co-operating teachers. The student teachers who participated were volunteers.

Data was collected by video taping the student teacher's verbal and nonverbal behavior one week after they began teaching and again three weeks later. Each taping consisted of fifteen minutes.

The tapes were viewed by the researcher for both verbal and non-verbal interaction and categorized by using the Interaction Analysis System. After analyzing the tapes, the data was recorded in matrix tables for further comparison between the verbal and nonverbal behaviors.

## Conclusions

The overall findings of this study showed that the nonverbal gestures and expressions were used by the six student teachers to supplement the verbal behavior in the classroom. No instances were observed where the nonverbal replaced the verbal behavior of the student teachers.

In summarizing the data for the six student teachers, it was indicated that some increased, some decreased, and others remained the same in their use of verbal and nonverbal behavior.

The use of video tape on the first visit helped make the six student teachers aware of their solemn facial expressions. An improvement was seen during the second taping with more smiles and laughter used by the student teachers not only as they talked but to reward the students as they responded. The student teachers also appeared more relaxed and confident of themselves.

The following conclusions were drawn by the researcher:

1. Use of Interaction Analysis to make a comparison between the verbal and nonverbal behaviors of student teachers provided an objective means for supervision of student teachers.

2. Although no data was collected to assess the actual affect of video tape playback as a means of self-evaluation, comments from the

student teachers indicated that:

     a. Video taping helped them become aware of undesirable verbal expressions used in the classroom.

     b. Because they were able to see themselves on video playback, the positive as well as the negative nonverbal gestures and expressions were evident.

     c. Video tape playback was valuable in helping student teachers improve their teaching techniques early in the teaching experience.

3. Video taping for a period of fifteen minutes provided the desirable information needed for Interaction Analysis in this study. The usual period of time recommended by Flanders was twenty minutes.

4. Viewing and discussing the video tapes with the student teachers and cooperating teachers helped to bring out the strengths and weaknesses of the student teachers which were further evidenced in the matrix tables.

## Recommendations

The following recommendations are made as a result of the research findings. Since this study was made when the researcher was supervising student teachers at Oklahoma State University, the recommendations are particularly applicable to that institution.

1. Recommendations concerning the use of Verbal and Nonverbal Interaction Analysis are as follows:

     a. Because this study included only one of the four dimensions in the Nonverbal Interaction Analysis technique, it is recommended that studies including the other three

dimensions--Room Arrangement, Materials, and Activities-- as well as The Nonverbal Behavior be used.

b. Research focusing on the nonverbal gestures and expressions of the students in the classroom of Home Economics Education courses would be helpful for the student teachers.

c. The directions for Amidon and Flanders' Interaction Analysis System is for a twenty-minute period; however, the use of fifteen minutes made computations much easier and was considered to provide sufficient amount of data. Therefore, it is recommended that fifteen minutes be used.

d. Research would be helpful in identifying the number or types of nonverbal gestures and expressions in addition to or different from those used in this study.

e. The Verbal and Nonverbal Interaction Analysis System would be of value to experienced teachers as a means of self-evaluation.

2. Suggestions for the use of video tape equipment in teacher education classes and in the supervision of student teaching are:

a. The use of video tape is recommended for Departments of Home Economics Education not only in teacher education classes preceding student teaching but also in the supervision of student teachers.

b. Since an increasing number of high school home economics teachers have video tape equipment available to them, an inservice education or graduate course utilizing video equipment would be beneficial.

c.  Subject matter on the day of taping should be planned in order that the students and the teacher can be satisfactorily observed and taped, for instance, laboratory work would be difficult to tape.

d.  When recording the verbal or nonverbal behaviors, the continued use of an audio tape with three and/or nine second beeps would help the individual recording the data and increase the reliability.

e.  It would be halpful to use an audio tape recorder in addition to the video tape to aid in hearing the students as they respond in class. Also as a safety feature in case the video equipment failed to operate, the observer could view the nonverbal behavior "live" at the time of the visit and later record the verbal behavior from the audio tape recorder.

f.  Use of the video tape equipment by cooperating teachers could provide a means of evaluating the progress of student teachers from the beginning of student teaching to the end of the experience.

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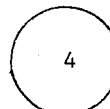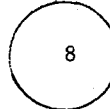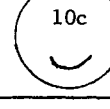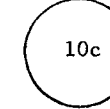
APPENDIX A

FACIAL EXPRESSIONS

$\begin{pmatrix} \bullet & \bullet \end{pmatrix}$ Represents the eyes

$\begin{pmatrix} \smile \end{pmatrix}$ Represents the mouth

| SYMBOL | CATEGORY | EXAMPLE |
|---|---|---|
| 1 | (1) Acceptance of Student Feelings | Represents the use of the eyes to communicate acceptance of feelings; to express empathy, understanding, sympathy, to communicate listening with attention, interest, and concentration. |
| 2 | (2) Praise and Encouragement | Represents the use of the mouth to communicate praise; to express approval, liking, friendship, pleasure, joy. |
| 3 | (3) Acceptance of Students' Ideas  Uses Students' Ideas | Represents the use of the eyes to communicate acceptance of ideas; to communicate listening with interest, acknowledgment of a student's verbal contribution; glances directed toward a student's concrete contribution. |
| 4 | (4) Asks Questions | Represents use of the head to solicit student response, such as nodding head toward student to indicate an answer is expected. |
| 8 | (8) Answers  Student Talk-Response | Represents use of head by a student to respond, such as nodding "yes," shaking head "no," in answer to a narrow question.  *talk by students in response to teacher. |
| 7 | (7) Criticism | Represents use of mouth to communicate criticism, disapproval, such as frowning, pouting, sneering; blank face communicates turning away, ignoring. |
| 9 | (9) Answers  Student Talk-Initiation | Represents use of mouth for student-initiated expression, such as fear, anger, gasp of surprise.  *talk by students, which they initiate. |
| 10c | (10) Silence  Confusion | Represents use of mouth to indicate cause of confusion, such as an abundance of chatter, verbal commotion. |
| 10c | (10) Silence  Confusion | Although 10c usually represents verbal confusion such as is caused by excessive noise, this category has been extended to include quiet confusion as identified by facial expression of perplexity, inattention as looking away, looking around, wrinkling forehead, raising eyebrows. |

GESTURES  is the symbol used to represent movement or manipulations of the hand.

| SYMBOL | CATEGORY | EXAMPLE |
|---|---|---|
|  | (1) Acceptance of Student Feelings | Represents use of hands to comfort, relay such feelings as sympathy, tenderness. |
|  | (2) Praise and Encouragement | Represents use of hands to compliment, praise, show affection, approval, by applauding, slapping on back, hand shaking, waving, etc. |
|  | (3) Acceptance of Students' Ideas Uses Students' Ideas | Represents use of hands to acknowledge students' contributions, ideas, by pointing to, holding up concrete contributions, gesturing toward. |
|  | (6) Giving Directions | Represents use of hands to give directions, such as pointing toward, directing movement, indicating next speaker. |
|  | (7) Criticism | Represents use of hands in a critical manner such as shaking fist, physical contact such as slapping, restraining pupil's movements. |
|  | (8) Answers Student Talk-Response | Represents pupil's use of hands, such as raising hand to respond to a question. *talk by students in response to teacher. |
|  | (9) Answers Student Talk-Initiation | Represents pupil's use of hands to initiate contact such as holding up hand to attract teacher's attention, interrupting. |

POSITION AND
PHYSICAL MOVEMENT

$\times$   Indicates motionless stability in one location

$\uparrow$   Represents movement, motion or change in position

| SYMBOL | CATEGORY | EXAMPLE |
|---|---|---|
| $\uparrow$ 1 | (1) Acceptance of Student Feelings | Represents a teacher moving toward a student to acknowledge an emotion, such as to comfort, express sympathy, understanding. |
| $\uparrow$ 2 | (2) Praise or Encouragement | Represents the teacher's use of movement toward student to express approval, give praise. |
| $\uparrow$ 5 | (5) Lecture | Represents a teacher moving toward a student to assist him with a cognitive task, such as to answer questions, supply information. |
| $\uparrow$ 6 | (6) Giving Directions | Represents the teacher's use of movement to provide directions, such as demonstrating physical motions to be duplicated. |
| $\uparrow$ 7 | (7) Criticism | Represents a teacher moving toward a student in a critical manner, such as to administer punishment, register disapproval. |
| $\uparrow$ 8 | (8) Answers Student Talk-Response | Represents a student moving to the front of the room to respond to a question; in response to a direction; to recite. *talk by students in response to teacher. |
| $\uparrow$ 10 | (10) Silence Confusion | Represents movement indicating commotion or confusion, such as mass movement in lining up for recess; dismissal; regrouping. |

APPENDIX B

CATEGORIES FOR INTERACTION ANALYSIS

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

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

3. ACCEPTS OR USES IDEAS OF STUDENT: clarifying, building, or developing ideas or suggestions 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 procedure; expressing his own idea; asking rhetorical questions.

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

7. CRITICIZING OR JUSTIFYING AUTHORITY: statements intended to change student behavior from nonacceptable 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 observer.

APPENDIX C

INTERACTION MATRIX

Teacher's Name _____ Observer's Name _____

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| Total | | | | | | | | | | |
| % | | | | | | | | | | |

Matrix Total

VITA

Elizabeth Louise Jones

Candidate for the Degree of

Master of Science

Thesis:  AN ANALYSIS OF THE RELATIONSHIP OF NONVERBAL TO VERBAL INTER-
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