8-1-1976

The Effects Upon Specific Nonverbal Behaviors of Focusing Student Clinician's Attention on These Behaviors Through Videotape Feedback and Instruction

Pamela Hagen Gudmundson

THE EFFECTS UPON SPECIFIC NONVERBAL BEHAVIORS OF FOCUSING STUDENT CLINICIAN'S ATTENTION ON THESE BEHAVIORS THROUGH VIDEOTAPE FEEDBACK AND INSTRUCTION

by
Pamela Hagen Gudmundson

Bachelor of Science, Moorhead State University, 1970

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Science

Grand Forks, North Dakota

August
1976

THE EFFECTS UPON SPECIFIC NONVERBAL BEHAVIORS OF FOCUSING STUDENT CLINICIAN'S ATTENTION ON THESE BEHAVIORS THROUGH VIDEOTAPE FEEDBACK AND INSTRUCTION

Pamela Hagen Gudmundson, M.S.

The University of North Dakota, 1976

Faculty Advisor: Professor George W. Schubert

The purpose of this study was to determine if a systematic approach to the study of nonverbal movements through the use of videotape playback and instruction provides a useful procedure for teaching nonverbal patterns and actions to student clinicians.

Thirty female student clinicians who had completed between ten and 400 hours of clinical practice were divided into three groups and matched according to the number of practicum hours completed by each student.

Group I received a one-hour training session which involved viewing of their videotapes accompanied by verbal instructions to attend to specific, defined, nonverbal behaviors. Group II received a one-hour training session in which the videotapes were not viewed, but the usage of the six nonverbal behaviors was defined and discussed. Group III received no training session, no videotape viewing, and no instruction.

Each clinician was videotaped for ten minutes of her regularly scheduled therapy session. After the subject had participated in her particular training session and completed at least two, but not more than ten additional therapy hours, she was videotaped for another arbitrarily selected ten-minute period with the same client that participated in the first videotaping. These videotapes were then viewed by the experimenter and the six nonverbal behaviors which were selected for this study were counted. The mean number of occurrences of each of the six nonverbal behaviors was calculated for the three groups.

Pretest and posttest data were analyzed using *t*-tests and analysis of covariance. Group I displayed significant increases from pretest to posttest in the nonverbal behaviors which served as social reinforcers and produced a significant decrease from pretest to posttest in the behavior of self-manipulation. Videotape playback viewing and instructions to attend to specific behaviors effected more change in the observed frequency of nonverbal behaviors than did instruction without videotape. There was a significant difference among the three groups on the nonverbal behaviors of eye contact and smile when controlling respectively on a pretest of the same behaviors. There was no significant difference among the three groups on the nonverbal behaviors of positive head nod, negative head nod, positive touch, and self-manipulation when controlling respectively on a pretest of the same behaviors.

This thesis submitted by Pamela Hagen Gudmundson in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota is hereby approved by the Faculty Advisory Committee under whom the work has been done.

George W. Schubert
(Chairman)

John D. Williams

Dean C Eyel

Alice J. Clark
Dean of the Graduate School

Permission

Title The Effects Upon Specific Nonverbal Behaviors of Focusing Student Clinician's Attention on these Behaviors Through Videotape Feedback and Instruction

Department Speech Pathology and Audiology

Degree Master of Science

In presenting this thesis in partial fulfillment of the requirements for a graduate degree from the University of North Dakota, I agree that the Library of this University shall make it freely available for inspection. I further agree that permission for extensive copying for scholarly purposes may be granted by the professor who supervised my thesis work or, in his absence, by the Chairman of the Department or the Dean of the Graduate School. It is understood that any copying or publication or other use of this thesis or part thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the University of North Dakota in any scholarly use which may be made of any material in my thesis.

Signature Pamela Edmundson

Date July 14, 1976

ACKNOWLEDGEMENTS

I would like to extend my thanks to my committee chairman, Dr. George Schubert, whose continuing support and suggestions facilitated the completion of this paper. I would also like to express my thanks for the advice and help given to me by my committee members, Dr. Dean Engel and Dr. John Williams. Many thanks are due to Mrs. Pat Nybo for typing and to the subjects for their cooperation. A special thank you is extended to my children, Lisa, Hayley, and Peter, and to my husband, Curtis, for the help and patience they have shown throughout this study.

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

The purpose of this study was to determine if a systematic approach to the study of nonverbal movements through the use of videotape playback and instruction provides a useful procedure for teaching nonverbal patterns and actions to student clinicians.

Thirty female student clinicians who had completed between ten and 400 hours of clinical practice were divided into three groups and matched according to the number of practicum hours completed by each student.

Group I received a one-hour training session which involved viewing of their videotapes accompanied by verbal instructions to attend to specific, defined, nonverbal behaviors. Group II received a one-hour training session in which the videotapes were not viewed, but the usage of the six nonverbal behaviors was defined and discussed. Group III received no training session, no videotape viewing, and no instruction.

Each clinician was videotaped for ten minutes of her regularly scheduled therapy session. After the subject had participated in her particular training session and completed at least two, but not more than ten additional therapy hours, she was videotaped for another arbitrarily selected ten-minute period with the same client that participated in the first videotaping. These videotapes were then viewed by the experimenter and the six nonverbal behaviors which were selected for this study were

counted. The mean number of occurrences of each of the six nonverbal behaviors was calculated for the three groups.

Pretest and posttest data were analyzed using *t*-tests and analysis of covariance. Group I displayed significant increases from pretest to posttest in the nonverbal behaviors which served as social reinforcers and produced a significant decrease from pretest to posttest in the behavior of self-manipulation. Videotape playback viewing and instructions to attend to specific behaviors effected more change in the observed frequency of nonverbal behaviors than did instruction without videotape. There was a significant difference among the three groups on the nonverbal behaviors of eye contact and smile when controlling respectively on a pretest of the same behaviors. There was no significant difference among the three groups on the nonverbal behaviors of positive head nod, negative head nod, positive touch, and self-manipulation when controlling respectively on a pretest of the same behaviors.

CHAPTER I

INTRODUCTION AND REVIEW OF LITERATURE

Introduction

Human communication is mediated by many channels and encoded in a variety of ways. Individuals employ differential amounts of intentionality, awareness, and feedback during the production of messages. Nonverbal communication is important because of the "role it plays in the total communication system, the tremendous quantity of informational cues it gives in any particular situation, and because of its use in fundamental areas of our daily life" (Knapp, 1972, p. 21). Nonverbal communication is the language of sensitivity. Nonverbal behavior exposes the truth to relationships.

> It is the age-old language of lovers, communication without words. It is the language of the content, a knowing smile, an exchanged glance that tells more than words can ever say. It is the frown that makes one feel guilty; the silent anger that emits a real tenseness. The nonverbal is so complicated that it can convey an entire attitude, yet so simple that when a head nods or shakes everyone understands (Galloway, 1974, p. 380).

The combined observations of verbal and nonverbal behavior will ultimately lead to improved understanding of human interaction. "Nonverbal behavior should be viewed with heightened sensitivity and awareness by those who are concerned with normal and pathological human interaction and communication" (Egolf and Chester, 1973, p. 511).

Mercer and Schubert (1974) demonstrated that high-rated student clinicians majoring in speech pathology use more nonverbal behavior that is socially reinforcing in the clinical therapy setting than do their low-rated counterparts.

When a speech clinician communicates to a client, he is not only making a statement, he is also asking something of the receiver and attempting to influence the receiver to give him what he wants (Sapir, 1971).

The present study investigated the observed frequency changes in the usage of selected nonverbal behaviors by three groups of female student clinicians majoring in speech pathology. All groups were videotaped during a therapy session. One group was given instructions pertaining to nonverbal cues while viewing the videotapes as they were played back. A second group received only verbal instructions on the definition and usage of certain nonverbal behaviors. A third group received no visual aids nor instruction of any kind. Pretest and posttest comparisons were made between the groups to determine which method brought about the greatest change in their usage of nonverbal behaviors.

Review of the Literature

In the area of nonverbal communication, observations by researchers have led to subjective opinions concerning the effects of nonverbal behaviors upon interpersonal communication. Galloway (1966) suggests that students rely on nonverbal expressions to validate the fidelity of verbal statements, that they read meanings associated with

nonverbal communication to reveal the authenticity, truth, and genuineness of a message communicated by a teacher.

According to Garner (1970), nonverbal language usually reinforces verbal communication. Nonverbal channels that can communicate information are manner of dress, body odor, physique or posture, body tension, facial expressions and degree of eye contact, hand and body movements, punctuality or lack of it, body position in relation to another person, and the vocal sounds accompanying verbal messages (McCrosky, Larson, and Knapp, 1971).

The receiver of the message will attend more to the nonverbal behaviors than he will to the verbal behaviors of the message sender (Sapir, 1971). When conflicting information from verbal and nonverbal channels is received, decisions are often made by placing more credibility on the nonverbal message (McCrosky, Larson, and Knapp, 1971).

Long before a child learns to speak, he forms a picture of himself from how he is treated. The meaning of human contact is understood and later the child will understand the words that accompany these messages. When words are unclear, a search begins for the essence of what is meant. The language of sensitivity comes forth because words are inadequate expressions of our full meaning.

> Not only do words fail to carry the full intent and meaning of what we say, they aren't as effective as nonverbal expressions. A head nod gives assurance. A warm glance expresses love. Focused attention suggests that we are listening. A gesture qualifies a word. Eye contact closes interpersonal distance. Touching has its own meaning. Our actions speak so elegantly, words have to take a back seat (Galloway, 1974, p. 382).

Galloway (1974) believes that exact prescriptions of what a teacher should do are too stereotyped and static. Teachers must learn what their own expressions mean to them and to others. Nonverbal behaviors are extensions of the person. Artificial manners should not be created. A teacher should use a training procedure to maximize self-discovery and self-development. "An emphasis should not be placed on external moves which are disconnected from the internal realness one is. When nonverbal movements and expressions become artificial techniques for convincing others, then no one benefits" (Galloway, 1974, p. 382).

Delaney (1968) suggested a training program for increasing the sensitivity of trainees-in-counseling to nonverbal communications in five steps: 1) discussion of the professional literature in this area, 2) discussion of videotapes with and without audio, 3) use of the 1954 Scholsberg scales in an attempt to standardize ratings, 4) study of the roles of coaching and the gestures, body movements, and positions as aids in identifying emotion, and 5) evaluation of the training effort. He summarized what has been established through research in these areas as: 1) emotional meanings can be communicated accurately in a variety of nonverbal media; 2) neither anxiety, sex, intelligence, nor race seems to have any differential effect on the judgement of emotion from photographs; 3) emotional meaning can be transmitted by films or video almost as well as in real life; 4) individuals are able to express emotion when requested to do so, and these expressions are communicated to others beyond the $p < .05$ chance level of significance; 5) emotions are communicated by means other than verbal and can be detected in photographs; and 6) training for greater awareness and accuracy in the perception of nonverbal cues increases such sensitivity.

When considering the above statements, simplistic generalizations must be taken into account. A certain nonverbal movement or gesture takes on different interpretations when viewed in different contexts.

Little formal research has been reported on the effectiveness of training speech pathology students in relationship-building skills, although these skills are considered important aspects of effective speech therapy. Most therapeutic approaches assume that the clinician possesses the interpersonal skill and sensitivity necessary in order to relate effectively to the client and to family members (Van Riper, 1973).

Research done in the area of nonverbal communication has revealed that nonverbal behaviors are important aspects of interpersonal relationships. Most research is based on the premise that if words are not spoken or written, the communication involved is nonverbal.

Reece and Whitman (1962) studied the effect of an investigator's warmth and coldness upon a subject's verbal output while the subject free-associated. Warmth of the experimenter was defined as more frequent smiling, the absence of finger tapping movements, more eye contact with the subject, and a greater degree of forward bodily lean toward the subject. The researchers found that the nonverbal variables assumed to indicate warmth or positive attitude did significantly affect the interaction. These behaviors were more reinforcing. A subject produced more words when the experimenter nonverbally indicated a more positive attitude toward him.

Krumboltz, Varenhorst, and Thoresen (1967) hypothesized that nonverbal activity called "attentiveness" would elicit more information-seeking behavior on the part of 56 high school juniors who observed

videotaped interviews between an attentive and inattentive counselor and a client. They stated that nonverbal communications such as facial expressions of interest, direction, and intensity of gaze, body postures, degree of apparent attentions, and number of distracting mannerisms may contribute to the success of counseling goals. The hypothesis of the impact of nonverbal attentiveness was not supported at the $p < .05$ level of significance, although trends of the results did favor the attentive counselor as a model. Subjects made twice the number of negative comments about the non-attentive model over the attentive model, and differences in nonverbal behavior exhibited by the model counselor were clearly perceived. However, these perceptions did not significantly influence subsequent information-seeking behavior.

The emphasis on the applied discipline of nonverbal communication in counseling research is in part related to: 1) the interpretation of emotional state, mood, or hidden messages on the part of the client; 2) sensitization of the counselor to his own body motion communication as a reflection of his own receptivity of the client and his message; and 3) attempts to use kinesics and proxemics as means of reinforcement in shaping the counseling relationship.

A counselor's gestural, postural, and nonverbal movements are discerning factors on how he is perceived and described by clients. Strong et al. (1971) had 86 college coeds listen only or view and listen to two counselors who demonstrated two counseling modes: a high frequency of nonverbal movements mode and a restriction of movement mode during a ten-minute portion of a mock interview. Ratings were made by using a 100-item checklist, and results indicated that when

counselors were seen and heard they were described as more cold, bored, awkward, critical, persistent, unreasonable, uninterested, and vain than those counselors who were heard only. This finding suggests that those who judge a counseling tape without direct or video observation will probably gain a distorted view of the interview. Stereotypes of the "helper" are more potent during the audio-only versions, therefore, the counselor is imagined to be more warm, interested, uncritical, and reasonable than may appear to be when he is seen and heard. "Active" counselors were described as more casual, warm, agreeable, energetic, carefree, and impulsive than were counselors who restricted their movements. "Still" counselors were described as more logical, poised, and analytical than the active counselors. The active counselor was seen as possessing a higher degree of interpersonal attractiveness; while the still counselor conveyed an image of a more precise, thoughtful and reserved person. Nonverbal behavior was shown to have a high impact as to the manner in which a counselor is perceived by a client.

Emotional and psychosocial factors have much to do with the success of learning and communication. Morton (1971) conducted a study involving 231 students in a lecture situation. In the first set of lectures, the students and instructors encountered each other for the first time. A test was administered after the first series of lectures had been completed. A few days later, the same students were given another set of lectures by instructors with whom they had participated in counseling and social contacts. When tested after the second set of

lectures, students scored 21 percent higher on these tests than on the first set of tests.

Gerszewski (1972) found that one way of reinforcing nonverbal behaviors with psychology clinicians involved the use of instructional cues or a model. The clinician was shown that it is not only desirable to use nonverbal cues, but also how to do this by watching his own behaviors during videotape playback. The attention of the clinician was drawn to the specific behavioral feedback which related to the goals. His awareness of responses which ordinarily were not selected for attention was increased. The clinician may tend to his own nonverbal behaviors more accurately as he sees them repeated during playback than during recollection of them.

Truax et al. (1973) investigated the effects of large and small amounts of accurate empathy, nonpossessive warmth, and genuineness by child psychotherapists in nonverbal communications during therapy with mildly emotionally disturbed children. Support was given to the general findings that high therapeutic conditions of accurate empathy, nonpossessive warmth, and genuineness produce greater positive personality and behavioral change while low therapeutic conditions produce negative change. It was noted that depending on the psychotherapist's level of interpersonal skills, therapy with children can be beneficial or destructive.

Interpersonal behaviors are important aspects of communication for the speech pathologist in the therapy setting. Kaplan (1973) reported that undergraduate students in speech pathology who participated in short-term training experiences emphasizing self-awareness or

self-study subsequently demonstrated significantly more appropriate interpersonal behaviors in a helping relationship than did students in non-treatment control groups.

Kazdin (1975) conducted a study to determine the effects that nonverbal teacher approval would have on the attentive behavior of moderately retarded children. The results disclosed that providing contingent patting approval alone consistently increased the attentive behavior of the subjects.

As indicated by the research studies cited, the use of nonverbal behaviors are essential for more effective teaching and to the manipulation of desired behavior change in others.

Summary

Researchers in the area of nonverbal communication have formed subjective opinions concerning the effects of nonverbal behaviors upon interpersonal communication. There is general agreement that nonverbal expressions validate and reinforce verbal communication.

Nonverbal channels that can communicate information are manner of dress, body odor, physique or posture, body tension, facial expressions and degree of eye contact, hand and body movements, punctuality or lack of it, body position in relation to another person, and the vocal sounds accompanying verbal messages (McCrosky, Larson, and Knapp, 1971).

Little formal research has been reported on the effectiveness of training speech pathology students in relationship building skills, although these skills are considered important aspects of effective speech therapy.

Cited research studies in the areas of counseling, psychology, and speech pathology support the hypothesis that nonverbal behaviors are essential components to effective interpersonal communication.

Purpose

It was hypothesized that there would be a significant pretest-posttest change in the observed frequency of each of six selected nonverbal behaviors by a group of student speech pathology clinicians who were videotaped during a therapy session and then instructed to view the videotape playback and attend to the defined nonverbal cues.

The purpose of this study was to determine if a systematic approach to the study of nonverbal movements through the use of videotape playback and instruction provides a useful procedure for teaching nonverbal patterns and actions to student clinicians.

Research Questions

The research questions to be answered by the study were:

1. Is there a significant pretest-posttest difference in the observed frequency of each of six selected nonverbal behaviors of ten female student clinicians after receiving a one-hour training session that utilized videotape playback accompanied by instructions to attend to the six specific nonverbal behaviors?
2. Is there a significant pretest-posttest difference in the observed frequency of each of six selected nonverbal behaviors of ten female student clinicians after receiving

a one-hour training session that utilized verbal instruction concerning the usage of the six specific nonverbal behaviors, but no videotape playback?

3. Is there a significant pretest-posttest difference in the observed frequency of each of six selected nonverbal behaviors of ten female student clinicians who have received no videotape playback and no instruction concerning the usage of the six specific nonverbal behaviors?
4. Are there significant differences among the previously mentioned three groups of clinicians on each of the six specific nonverbal behaviors when controlling respectively on a pretest of the same six nonverbal behaviors through the analysis of covariance?

CHAPTER II

PROCEDURE

Subjects

The subjects were 30 female student clinicians who had completed between ten and 400 hours of clinical practice in speech pathology and audiology at the University of North Dakota in Grand Forks, North Dakota. Only female subjects were used for the study due to the small number of male subjects available. The subjects were divided into three groups, matched according to the number of practicum hours completed by each student (Appendix A).

The groups were differently treated as follows:

Group I

Group I received a one-hour training session which involved viewing of the subjects' videotapes accompanied by verbal instructions to attend to specific, defined, nonverbal behaviors.

Group II

Group II received a one-hour training session in which the videotapes were not utilized, but the usage of the nonverbal behaviors was defined and discussed.

Group III

Group III received no training session, no videotape viewing and no instruction.

Each subject was videotaped while doing therapy with the client assigned to the clinician in the practicum program of the Speech Pathology and Audiology Department. The group members were informed that they would not be identified or evaluated, but that they were going to be videotaped during therapy sessions in order that data for a thesis could be collected.

Apparatus and Environment

The videotaping equipment used for the collection of data allowed for a medium-close upper-body shot of the clinician. The following equipment was used for the collection of data:

1. Samson Camera Model 7201
2. Panasonic Recorder Model NV-3020
3. Shibaden Monitor Model VM-903
4. One-half inch Scotch Videotapes (10)

A therapy room and an adjacent observation room, equipped with a one-way mirror, was used during the collection of data. The videotape equipment was placed in the observation room. A table and two chairs were placed in the therapy room. Videotaping was done at the regularly scheduled therapy time.

Explanation of System

The six nonverbal behaviors which were selected for study occurred regularly in pre-experimental observations and were stated in the literature as being important elements in the process of communication. Mercer and Schubert (1974) have shown that high-rated clinicians used significantly more of these nonverbal behaviors which

serve as social reinforcers and as signals in social interaction than did low-rated clinicians. Ratings of clinicians by supervisors may be influenced by clinicians' use of or nonuse of nonverbal behaviors.

Following is a list and definitions of the six nonverbal behaviors analyzed in this study:

1. Eye contact--defined as the clinician looking in the direction of the face of the client and then away. The client was not required to establish mutual eye contact with the clinician.
2. Smile--defined as the upward bilateral extension of the lateral aspects of the lip region from a position of rest with a pleasant connotation.
3. Positive head nod--defined as a distinct bidirectional movement of the head on the vertical plane, or a continuous sequence of such movements with eye position held constant.
4. Negative head nod--defined as a distinct bidirectional movement of the head on the horizontal plane or a continuous sequence of such movements with eye position held constant.
5. Positive touch--defined as bodily contact between clinician and client other than to restrain or punish.
6. Self Manipulation--defined as a response that involved motion of a part of the body in contact with another part of the body, either directly or mediated by an instrument.

The tallying of behaviors was based on the frequency with which each behavior occurred within the ten-minute segment of therapy that was videotaped. Cyclical movements were scored as one behavior.

Continuing behaviors, such as eye contact and positive touch, were recorded as an additional behavior after five seconds.

Videotaping

Each subject was videotaped during an arbitrarily selected ten-minute period of her regularly scheduled therapy session. After the subject had participated in her particular training procedure and completed at least two, but not more than ten additional therapy hours, she was videotaped for another arbitrarily selected ten-minute period with the same client as participated in the first videotaping.

Procedures

Each clinician was videotaped during a 45-minute therapy session for one arbitrarily selected ten-minute period. These ten-minute videotapings were viewed by the experimenter and each of the six nonverbal behaviors was counted. The videotape was replayed as many times as necessary in order to count each nonverbal behavior. A tally counter was used to enable the viewer to watch the screen continually while counting nonverbal behaviors.

Reliability

Intra-observer reliability was examined when the experimenter viewed and counted behaviors from four sample videotaped sessions. After 24 hours, the same segments were viewed and the behaviors were counted again. The percentage of agreement was calculated. Results indicated that intra-observer reliability was 99 percent.

Inter-observer reliability was determined by having a trained graduate student score behaviors from the same four tapes as the experimenter. The reliability score was determined to be 99 percent.

Training Sessions

A one-hour training session for Group I involved a five-minute period in which the six nonverbal behaviors, to which the subjects were to attend, were defined and the significance of their use by high-rated speech pathologists was discussed (Mercer and Schubert, 1974). A typewritten form defining the six nonverbal behaviors was given to the subjects for the duration of the training session (Appendix B). Four-minute segments of each subject's pretest videotape were presented to this group. While each videotape was playing, the experimenter pointed out and named selected nonverbal behaviors as they occurred. The experimenter explained to the group which nonverbal behaviors were or were not being used by each subject. The manners in which the specific nonverbal behavior could be effective or distracting were discussed between the experimenter and the subjects. The final 15-minute period was used as a question and answer session.

The one-hour training session for Group II did not involve videotape playback, but was designed to verbally instruct the subjects on the effectiveness and application of the six nonverbal behaviors as applied to speech pathology. The first 15 minutes were used to explain nonverbal communication and the place of the specific nonverbal behaviors in the interpersonal interactions of high-rated clinicians (Mercer and Schubert, 1974). A typewritten form defining the six

nonverbal behaviors was given to each subject for the duration of the training session (Appendix B). The experimenter discussed the six nonverbal behaviors for approximately four minutes each. During this time, the specific nonverbal behavior was defined according to the definitions used in this study. Procedures for effectively using nonverbal behaviors were discussed. The subjects thought of reasons why the selected behaviors would or would not be helpful in producing an operative therapeutic situation. The experimenter presented verbal examples of each nonverbal behavior being used advantageously in a therapy setting. The distracting consequences of the nonverbal behavior of self-manipulation were discussed and exemplified. The illustrations were descriptions of situations taken from actual therapeutic events. The last 15-minute segment was used as a question and answer period.

Group III served as the control group. This group was not involved in any training session.

CHAPTER III

RESULTS AND DISCUSSION

The total number of occurrences of each nonverbal behavior was counted for each clinician's ten-minute pretest therapy session. The same procedure was employed to determine the number of occurrences of each nonverbal behavior used by each clinician during the ten-minute posttest therapy session. Pretest and posttest mean scores were established from the tallied occurrences of the six specific nonverbal behaviors exhibited by the subjects in each group.

The questions to be answered by this study were:

1. Is there a significant pretest-posttest difference in the observed frequency of each of six selected nonverbal behaviors of ten female student clinicians after receiving a one-hour training session that utilized videotape playback accompanied by instructions to attend to the six specific nonverbal behaviors?
2. Is there a significant pretest-posttest difference in the observed frequency of each of six selected nonverbal behaviors of ten female student clinicians after receiving a one-hour training session that utilized verbal instruction concerning the usage of the six specific nonverbal behaviors, but no videotape playback?

3. Is there a significant pretest-posttest difference in the observed frequency of each of six selected nonverbal behaviors of ten female student clinicians who have received no videotape playback and no instruction concerning the usage of the six specific nonverbal behaviors?
4. Are there significant differences among the previously mentioned three groups of clinicians on each of the six specific nonverbal behaviors when controlling respectively on a pretest of the same six nonverbal behaviors through the analysis of covariance?

In reference to question one, Table 1 shows the pretest and posttest mean scores for each of the six nonverbal behaviors for Group I. The results of the pretest and posttest mean scores revealed that Group I increased in their mean usage of the following nonverbal behaviors: eye contact (75.20 to 99.40), smile (17.30 to 30.90), positive head nod (41.90 to 44.10), negative head nod (5.60 to 10.80). The nonverbal behaviors which were noted in this group to decrease in mean usage were: positive touch (.30 to .20) and self-manipulation (17.80 to 4.40). According to the literature, the decrease in the use of self-manipulation is a desirable change as it tends to reflect discomfort (Rosenfeld, 1966). It is reasonable to assume that if a clinician is using more self-manipulating behaviors, he has less time to use the more reinforcing types of nonverbal behaviors. Expected changes for Group I occurred in five of the six specified nonverbal behaviors. The unexpected change was seen in the nonverbal behavior of positive touch, which decreased only slightly.

TABLE 1

PRETEST AND POSTTEST MEANS OF SIX NONVERBAL BEHAVIORS FOR GROUP I

Category	Pretest Means	Posttest Means
1. Eye Contact	75.20	99.40
2. Smile	17.30	30.90
3. + Head Nod	41.90	44.10
4. - Head Nod	5.60	10.80
5. + Touch	.30	.20
6. Self-Manipulation	17.80	4.40

Table 2 reports the t-test scores for Group I. The nonverbal behaviors which showed significant pretest-posttest increases in the observed frequency of each of six selected nonverbal behaviors were: eye contact ($p < .01$), smile ($p < .05$), and negative head nod ($p < .05$). The significant decrease in the nonverbal behavior of self-manipulation ($p < .05$) was an anticipated change.

The data pertaining to research question two is considered in Table 3, which depicts the pretest and posttest mean scores for each of the six nonverbal behaviors for Group II. A decrease was observed in the use of the following behaviors: eye contact (113.80 to 95.30), smile (22.20 to 17.30), positive head nod (47.40 to 36.20), positive touch (.90 to .60), and self-manipulation (17.00 to 11.80). The only increase between the pretest and posttest mean scores for Group II was

in the behavior of negative head nod (6.40 to 8.00). The expected result was an increase in the posttest mean scores for all of the nonverbal behaviors except self-manipulation, which was expected to decrease.

TABLE 2

t-TEST SCORES OF SIX NONVERBAL BEHAVIORS FOR GROUP I

Category	df	t-value
1. Eye Contact	9	4.75[a]
2. Smile	9	3.23[b]
3. + Head Nod	9	.30
4. - Head Nod	9	2.49[b]
5. + Touch	9	.36
6. Self-Manipulation	9	-2.26[b]

[a]Significant at $p < .01$

[b]Significant at $p < .05$

The t-test scores for Group II are shown in Table 4. A significant decrease in the use of eye contact ($p < .05$) by Group II was determined by the results of the t-test analysis. Although not reaching the $p < .05$ level of significance, decreases were also noted in the nonverbal behaviors of: smile, positive head nod, positive touch, and self-manipulation. Negative head nod did increase, but the t-test result on this behavior was not significant at $p < .05$.

TABLE 3

PRETEST AND POSTTEST MEANS OF SIX NONVERBAL BEHAVIORS FOR GROUP II

Category	Pretest Means	Posttest Means
1. Eye Contact	113.80	95.30
2. Smile	22.20	17.30
3. + Head Nod	47.40	36.20
4. - Head Nod	6.40	8.00
5. + Touch	.90	.60
6. Self-Manipulation	17.00	11.80

TABLE 4

t-TEST SCORES OF SIX NONVERBAL BEHAVIORS FOR GROUP II

Category	df	*t*-value
1. Eye Contact	9	-2.57[a]
2. Smile	9	-.93
3. + Head Nod	9	-1.39
4. - Head Nod	9	.98
5. + Touch	9	-1.00
6. Self-Manipulation	9	-.70

[a]Significant at $p < .05$

It was hypothesized that verbal instruction would result in desirable changes in the six specific nonverbal behaviors. The results which occurred are unexpected and are difficult to explain. The noted decrease in the posttest mean scores for the specific nonverbal behaviors observed in Group II could be attributed to the unusually high pretest mean scores displayed by this group. The training method of verbal instruction apparently could not effectively maintain or increase these already high scores.

In response to question three, the pretest-postest mean scores for each of the six nonverbal behaviors for Group III are shown on Table 5. Slight decreases were noted in the pretest-posttest mean scores of: eye contact (101.10 to 98.60), smile (17.90 to 16.50), and positive head nod (37.10 to 36.80). The nonverbal behaviors which showed minor increases were: negative head nod (5.80 to 6.90), positive touch (.40 to .50), and self-manipulation (7.30 to 7.60).

TABLE 5

PRETEST AND POSTTEST MEANS OF SIX NONVERBAL BEHAVIORS FOR GROUP III

Category	Pretest Means	Posttest Means
1. Eye Contact	101.10	98.60
2. Smile	17.90	16.50
3. + Head Nod	37.10	36.80
4. - Head Nod	5.80	6.90
5. + Touch	.40	.50
6. Self-Manipulation	7.30	7.60

Consistent with the small changes in the pretest and posttest mean score results for Group III, the t-test results found in Table 6 displays no significant changes. Group III was used as a control group for the study, thereby yielding expected results in its exhibition of nonsignificant change.

TABLE 6

t-TEST SCORES OF SIX NONVERBAL BEHAVIORS FOR GROUP III

Category	df	t-value
1. Eye Contact	9	-.59
2. Smile	9	-.57
3. + Head Nod	9	-.14
4. - Head Nod	9	1.34
5. + Touch	9	1.00
6. Self-Manipulation	9	.18

Question four inquires about the significant differences among the three groups when controlling respectively on a pretest of the same six nonverbal behaviors through the analysis of covariance.

The analysis discerns if there is a significant difference between the three groups after the effect of the pretest has been removed.

Results from Table 7 show that there is a significant difference ($p < .05$) between the groups for the nonverbal behavior of eye contact.

TABLE 7

ANALYSIS OF COVARIANCE FOR THE NONVERBAL BEHAVIOR OF EYE CONTACT

Source of Variance	df	SS	MS	F
Pretest	1	4552.69		
Groups	2	2385.43	1192.72	4.42[a]
Within	26	7009.20	269.58	
Total	29	14847.32		

[a]Significant at $p < .05$

To remove the effect of the pretest, an adjusted mean score was calculated. This process treats the pretest mean scores as equal for the three groups, thereby producing the resulting posttest relationships between the groups.

As shown in Table 8, the adjusted mean scores for the nonverbal behavior of eye contact were as follows: Group I (114.35), Group II (83.41), and Group III (95.54). By comparing these adjusted mean scores for the three groups, the significant difference noted in the analysis of covariance was associated with Group I.

Table 9 shows that a significant difference ($p < .01$) occurred among the three groups for the nonverbal behavior of smile.

As depicted on Table 10, the effects of adjusting the mean scores for the behavior of smile were as follows: Group I (32.95), Group II (15.54), and Group III (17.20).

TABLE 8

ADJUSTED MEANS FOR THE NONVERBAL BEHAVIOR OF EYE CONTACT FOR GROUPS I, II, AND III

Group	Adjusted Mean
I	114.35
II	83.41
III	95.54

TABLE 9

ANALYSIS OF COVARIANCE FOR THE NONVERBAL BEHAVIOR OF SMILE

Source of Variance	df	SS	MS	F
Pretest	1	1737.82		
Groups	2	1615.54	807.77	6.04[a]
Within	26	3471.97	133.54	
Total	29	6825.33		

[a]Significant at $p < .01$

When analyzing the adjusted mean scores for the three groups, the one which revealed significant difference among the groups for the nonverbal behavior of smile was Group I.

Table 11 presents the information on the analysis of covariance for the nonverbal behavior of positive head nod. The difference among

the three groups for positive head nod did not reach the $p < .05$ level of significance.

TABLE 10

ADJUSTED MEANS FOR THE NONVERBAL BEHAVIOR OF SMILE FOR GROUPS I, II, AND III

Group	Adjusted Mean
I	32.95
II	15.54
III	17.20

TABLE 11

ANALYSIS OF COVARIANCE FOR THE NONVERBAL BEHAVIOR OF POSITIVE HEAD NOD

Source of Variance	df	SS	MS	F
Pretest	1	4495.98		
Groups	2	579.19	289.59	1.06
Within	26	7127.85	274.15	
Total	29	12202.92		

The adjusted mean scores for the nonverbal behavior of positive head nod, as shown in Table 12, are as follows: Group I (44.22), Group II (33.43), and Group III (39.45).

TABLE 12

ADJUSTED MEANS OF THE NONVERBAL BEHAVIOR OF POSITIVE HEAD NOD FOR GROUPS I, II, AND III

Group	Adjusted Mean
I	44.22
II	33.43
III	39.45

Although Group I reveals the highest adjusted mean score of the three groups, little change was noted among the groups.

On Table 13, the results of the analysis of covariance show that the nonverbal behavior of negative head nod was not different among the groups at a $p < .05$ level of significance.

TABLE 13

ANALYSIS OF COVARIANCE FOR THE NONVERBAL BEHAVIOR OF NEGATIVE HEAD NOD

Source of Variance	df	SS	MS	F
Pretest	1	60.90		
Groups	2	88.70	44.35	1.91
Within	26	603.77	23.22	
Total	29	753.36		

Table 14 reflects the small differences among the three groups. The adjusted mean scores for the nonverbal behavior of negative head nod were as follows: Group I (10.95), Group II (7.78), and Group III (6.96). Although not treated as a significant difference, Group I displayed the most frequent use of this behavior.

TABLE 14

ADJUSTED MEANS OF THE NONVERBAL BEHAVIOR OF NEGATIVE HEAD NOD FOR GROUPS I, II, AND III

Group	Adjusted Mean
I	10.95
II	7.78
III	6.96

Table 15 exhibits the results of the analysis of covariance for the nonverbal behavior of positive touch. The use of this behavior by the three groups was not different at the $p < .05$ level of significance.

Consistent with the previous findings, Table 16 shows that the three groups varied only slightly. The adjusted mean scores for the nonverbal behavior of positive touch were as follows: Group I (.36), Group II (.34), and Group III (.59). As indicated, the nominal use of the nonverbal behavior of positive touch was in close agreement for the three groups.

The difference among the groups on their use of the nonverbal behavior of self-manipulation was not significant at the $p < .05$ level This is depicted by the analysis of covariance on Table 17.

TABLE 15

ANALYSIS OF COVARIANCE FOR THE NONVERBAL BEHAVIOR OF POSITIVE TOUCH

Source of Variance	df	SS	MS	F
Pretest	1	42.21		
Groups	2	.40	.20	.59
Within	26	8.76	.34	
Total	29	51.37		

TABLE 16

ADJUSTED MEANS OF THE NONVERBAL BEHAVIOR OF POSITIVE TOUCH FOR GROUPS I, II, AND III

Groups	Adjusted Mean
I	.36
II	.34
III	.59

The adjusted mean scores for the behavior of self-manipulation are displayed on Table 18 as follows: Group I (3.77), Group II (11.3), and Group III (8.73).

According to the adjusted mean scores, the undesirable behavior of self-manipulation was used less frequently on the posttest by Group I than by the other groups.

TABLE 17

ANALYSIS OF COVARIANCE FOR THE NONVERBAL BEHAVIOR OF SELF-MANIPULATION

Source of Variance	df	SS	MS	F
Pretest	1	238.64		
Groups	2	292.06	146.03	1.90
Within	26	1999.16	76.89	
Total	29	2529.86		

TABLE 18

ADJUSTED MEANS OF THE NONVERBAL BEHAVIOR OF SELF-MANIPULATION FOR GROUPS I, II, AND III

Group	Adjusted Mean
I	3.77
II	11.30
III	8.73

CHAPTER IV

SUMMARY AND CONCLUSION

The purpose of this study was to determine if a systematic approach to the study of nonverbal movements through the use of videotape playback and instruction provides a useful procedure for teaching nonverbal patterns and actions to student clinicians.

Thirty female student clinicians who had completed between ten and 400 hours of clinical practice were divided into three groups and matched according to the number of practicum hours completed by each student.

Group I received a one-hour training session which involved viewing of the subjects' videotapes accompanied by verbal instructions to attend to specific, defined, nonverbal behaviors. Group II received a one-hour training session in which the videotapes were not utilized, but the usage of the six nonverbal behaviors was defined and discussed. Group III received no training session, no videotape viewing, and no instruction. Group III served as the control group.

Each student clinician was videotaped for ten minutes of her regularly scheduled therapy session. After the subject had participated in her particular training session and completed at least two, but not more than ten additional therapy hours, she was videotaped for another arbitrarily selected ten-minute period using the same client as

participated in the first videotaping. These videotapes were then viewed and the six nonverbal behaviors which were selected for this study were counted. The mean number of occurrences of each of the six nonverbal behaviors was calculated for the three groups. A *t*-test analysis was completed on each of the pretest-posttest results for each nonverbal behavior in each group. An analysis of covariance was computed on each of the six nonverbal behaviors when controlling respectively on a pretest of the same six nonverbal behaviors to determine if there were significant differences among the three groups.

The following conclusions were drawn from the data:

1. A training session which utilized videotape playback viewing and instructions to attend to the specific behaviors produced a significant pretest-posttest increase in the frequency of the observed nonverbal behaviors of eye contact, smile, and negative head nod; while a significant decrease was seen in the nonverbal behavior of self-manipulation.
2. The training session which utilized videotape playback viewing and instructions to attend to specific behaviors effected more change in the observed frequency of the nonverbal behaviors than did the other experimental method designed by the study.
3. The training session which utilized only verbal instructions on the usage of the six specific nonverbal behaviors resulted in an unexpected pretest-posttest decrease at the $p < .05$ level of significance for the observed frequency of eye

contact. Although not reaching the $p < .05$ level of significance, decreases were also noted in the nonverbal behaviors of smile, positive head nod, and positive touch. These behaviors were hypothesized to increase with the instruction rather than decrease.

4. There was no significant pretest-posttest difference in the occurrence of the nonverbal behaviors of the control group (III).

5. By applying the analysis of covariance, a significant difference was noted among the groups for the nonverbal behaviors of eye contact ($p < .05$) and smile ($p < .01$). Adjusting the mean scores for each group revealed that Group I displayed the greatest difference among the groups for the two nonverbal behaviors which were found to be significant.

6. According to the analysis of covariance, the nonverbal behaviors of positive head nod, negative head nod, positive touch, and self-manipulation did not display a significant difference ($p < .05$) among the three groups. However, the adjusted mean scores for these behaviors indicated that Group I produced a greater difference in each nonverbal behavior, with the exception of positive touch, than did the other groups. Positive touch was used infrequently by all groups.

Limitations of the Study

Generalizations of the study are limited by the following factors:

1. The complexity of nonverbal communications limits generalizations of a study which looks at only an aspect of the total nonverbal process.
2. Only female subjects were used for the study because of the small number of male subjects available.
3. Limitations are imposed by separating verbal and nonverbal communication since both are seen as parts of the entire communication process.

Suggestions For Further Research

The results of this study suggested the following as areas of additional investigation:

1. Repeat the study using both male and female subjects.
2. Investigate the effects of videotape playback training sessions on the nonverbal behaviors when the feedback is presented to each subject immediately following each therapy session.
3. Investigate the results of training sessions for the improvement of the use of nonverbal behaviors on a longitudinal basis.
4. Investigate the influence of teaching nonverbal communication skills to student clinicians by examining the progress of their clients.
5. Investigate the influence of teaching nonverbal communication skills to student clinicians by utilizing effectiveness ratings.

6. Investigate the influence of teaching nonverbal communication skills to student clinicians by utilizing covert probes.

APPENDIX A

NUMBER OF PRACTICUM HOURS COMPLETED BY EACH SUBJECT IN GROUPS I, II, AND III

TABLE 19

NUMBER OF PRACTICUM HOURS COMPLETED BY EACH SUBJECT IN GROUP I

Subject	Hours
A	350
B	124
C	113
D	110
E	99
F	92
G	50
H	45
I	30
J	25
Total	1038

TABLE 20

NUMBER OF PRACTICUM HOURS COMPLETED BY EACH SUBJECT IN GROUP II

Subjects	Hours
A	340
B	195
C	130
D	97
E	87
F	73
G	40
H	33
I	31
J	20
Total	1046

TABLE 21

NUMBER OF PRACTICUM HOURS COMPLETED BY EACH SUBJECT IN GROUP III

Subjects	Hours
A	355
B	116
C	112
D	106
E	85
F	76
G	71
H	50
I	48
J	25
Total	1044

APPENDIX B

NONVERBAL DEFINITION FORM

NONVERBAL DEFINITION FORM

1. Eye contact--defined as the clinician looking in the direction of the face of the client and then away. The client was not required to establish mutual eye contact with the clinician.
2. Smile--defined as the upward bilateral extension of the lateral aspects of the lip region from a position of rest with a pleasant connotation.
3. Positive head nod--defined as a distinct bidirectional movement of the head on the vertical plane, or a continuous sequence of such movements with eye position held constant.
4. Negative head nod--defined as a distinct bidirectional movement of the head on the horizontal plane or a continuous sequence of such movements with eye position held constant.
5. Positive touch--defined as bodily contact between clinician and client other than to restrain or punish.
6. Self-manipulation--defined as a response that involved motion of a part of the body in contact with another part of the body, either directly or mediated by an instrument.

SELECTED REFERENCES

Delaney, O. "Sensitization to Non-verbal Communications." Counselor Education and Supervision 7 (1968), 315-16.

Egolf, B., and Chester, S. "Nonverbal Communication and the Disorders of Speech and Language." Asha 15 (September, 1973), 511.

Galloway, C. "Nonverbal Communication." Theory Into Practice 10 (October, 1966), 227-230.

_____. "Nonverbal: The Language of Sensitivity." Theory Into Practice 13 (December, 1974), 380-382.

Garner, C. "Nonverbal Communication and the Teacher." School and Society 98 (October, 1970), 363-364.

Gerszewski, M. "The Effect of Focused Videotape Feedback Upon Group Expression of Warmth, Hostility, and Flight." Doctoral dissertation, University of North Dakota microfilms No. T1972 G327, 1972.

Kaplan, N. "An Investigation of the Influence of Self-Awareness Training on Variables Pertinent to the Student Speech Pathologist-Client Relationships." Dissertation Abstracts International 34 (1973).

Kazdin, A.; Silverman, N.; and Sittler, J. "The Use of Prompts to Enhance Vicarious Effects of Nonverbal Approval." Journal of Applied Behavioral Analysis 3 (Fall, 1975), 279-286.

Knapp, M. Nonverbal Communication in Human Interaction. New York: Holt, Rinehart and Winston, 1972.

Krumboltz, J.; Varenhorst, B.; and Thoresen, C. "Nonverbal Factors in the Effectiveness of Models in Counseling." Journal of Counseling Psychology 18 (1967) 26-30.

McCrosky, J.; Larson, C.; and Knapp, M. Introduction to Interpersonal Communication. Englewood Cliffs, N.J.: Prentice-Hall, 1971.

Mercer, A., and Schubert, G. "Nonverbal Behavior of Speech Pathologists in the Therapy Setting." Paper distributed at the International Communications Convention, New Orleans, La., 1974.

Morton, R. "Learning as Communication." Improving College and University Teaching 19 (Spring, 1971), 143-145.

Reece, M. M., and Whitman, R. N. "Expressive Movements, Warmth and Verbal Reinforcement." Journal of Abnormal and Social Psychology 64 (1962), 234-236.

Rosenfeld, H. M. "Instrumental Affiliative Functions of Facial and Gestural Expressions." Journal of Personality and Social Psychology, 4 (1966), 65-72.

Sapir, V. Basic Readings in Interpersonal Communication. Griffin, K. and Patton, B., eds. New York: Harper and Row, 1971.

Strong, S. R.; Taylor, R. G.; Bratton, J. C.; and Loper, R. A. "Non-Verbal Behavior and Perceived Counselor Characteristics." Journal of Counseling Psychology 19 (1971), 554-561.

Truax, C.; Altman, H.; Mitchell, K.; and Wright, L. "Effects of Therapeutic Conditions in Child Therapy." Community Psychology 3 (July, 1973), 313-317.

Van Riper, C. The Treatment of Stuttering. Englewood Cliffs, N.J.: Prentice-Hall, 1973.