An Examination of the Effectiveness of Teaching Nonverbal Sensitivity to Students in an Occupational Therapy Curriculum

Darla Kathleen Schurmeier
AN EXAMINATION OF THE EFFECTIVENESS OF TEACHING
NONVERBAL SENSITIVITY TO STUDENTS IN AN
OCCUPATIONAL THERAPY CURRICULUM

by

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AN EXAMINATION OF THE EFFECTIVENESS OF TEACHING NONVERBAL SENSITIVITY TO STUDENTS IN AN OCCUPATIONAL THERAPY CURRICULUM

Darla Kathleen Schurmeier, M.S.
Western Michigan University, 1990

The effectiveness of teaching nonverbal communication skills to undergraduate students in an occupational therapy curriculum at Western Michigan University was explored by testing students just entering the program and students leaving the campus for their fieldwork experiences. A control group was made up of undergraduate students from curricula that did not purposely teach sensitivity to nonverbal cues. The 50 subjects were tested using the Profile of Nonverbal Sensitivity (PONS; Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979). Comparisons were made between PONS scores and the subject's area of study, length of time in the program, gender and age. Results showed that specific area of study, length of time in program, and gender were not significant predictors of one's ability to decode nonverbal cues. Younger age (less than 25 years) was a significant predictor of higher PONS total scores. Results were discussed and implications for occupational therapy curricula were considered.
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Darla Kathleen Schurmeier
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CHAPTER I

INTRODUCTION

Statement of the Problem

Occupational therapists are interested in treatment to improve the physical, emotional, and mental state of the client (Reed & Sanderson, 1983). To expedite this process the occupational therapy profession emphasizes the importance of open facilitative communication between the therapist and client (Hemphill, 1988). Facilitative communication includes attending to both verbal and nonverbal cues, and makes it easier for the client "to discuss problems, to explore feelings, to gain understanding of the debilitating problem and to build a therapeutic relationship" (p. 25). Quality care can only be provided when this mutual relationship is reached (Corey, 1986; Hay & DiMatteo, 1984; Huss, 1977). Because of the current focus on quality assurance in the health field, more and more health care institutions are demanding that occupational therapists be proficient in these verbal and nonverbal communication skills (Punwar, 1988).

Compounding the need for proficiency in communication skills, in the past few years, there has been an emphasis on cost effectiveness because of the fluctuating reimbursement programs in the medical field (Bair & Gray, 1985). It has been reported that hospitals are making decisions based on cost factors rather than on quality care. For example, fewer services are being provided, and clients are being
discharged earlier (Punwar, 1988). Ultimately, this emphasis on cost effectiveness might affect the communication between the health care worker and the client. Harrigan and Rosenthal (1986) state that this is a dangerous circumstance in the medical field; for miscommunication can lead to error in diagnosis and/or treatment decisions, poor rapport, and frustration. An awareness of the client's nonverbal cues can give the health care worker more complete and important information about both the emotional and mental state of the client in a time effective manner. Hence, more emphasis should be placed on instructing and training students in the importance of nonverbal communication in today's health care curricula, so that health care workers including occupational therapists might become more thorough, proficient, and time effective in gathering information about a client.

There is uncertainty as to whether nonverbal communication skills are being taught to future health care workers. This is reflected in the statement by Moy (1981) that "Instruction concerning touch appears to be uncommon and inconsistent in the curricula of health professional schools" (p. 93). However, Moy contends that this does not have to be the case. "Instruction concerning touch and discussions of its value can be systematically incorporated into counseling and health curricula." (p. 93). It has been shown that training in interpersonal communication and empathy skills leads to a marked improvement in these areas in medical students (Engler, Saltzman, Walker & Wolf, 1981; Robbins et al., 1979). Rosenthal,
Hall, DiMatteo, Rogers and Archer (1979) studied the effectiveness of nonverbal sensitivity training sessions using the Profile of Nonverbal Sensitivity test (PONS). The PONS test measures an individual's ability to decode nonverbal cues in 220 visual and auditory scenarios. It was found that PONS scores could be improved through a single training session lasting ninety minutes. Surprisingly, the more experienced clinicians showed the greater benefits of this training. Hays and DiMatteo (1984), based on an overview of the research in interpersonal skills training, concluded that interpersonal skills can be taught and that interpersonal ability can be enhanced through appropriate training. Burgoon, Buller and Woodall (1989) stated that training and instruction in nonverbal cues do improve ability to understand these cues. Since effective communication skills are essential to the occupational therapist, knowledge of their level of nonverbal communication as well as the effect of teaching this skill is relevant to determine if the student therapist has the knowledge and skills needed to fulfill his/her future professional role.

Significance

Communication can be defined as the "dynamic and ongoing process whereby people create shared meaning through sending and receiving messages via commonly understood codes" (Burgoon et al., 1989, p. 12). Verbal communication involves messages that are conveyed through words, while nonverbal communication is defined as
the relaying of messages without words (Northouse & Northouse, 1985). These messages could be both vocal or nonvocal, and intentional or non-intentional (Burgoon et al., 1989; Northouse & Northouse, 1985). Moreover, nonverbal communication utilizes channels or codes such as body movement, space, time, sounds, and touch to relay these messages (Burgoon et al., 1989). Nonverbal communication is believed to have five primary functions namely, "redundancy (duplicating the verbal message), substitution (replacing the verbal message), complementation (amplifying or elaborating on the verbal message), emphasis (highlighting the verbal message), and contradiction (sending signals opposite to the literal meaning of the verbal message)" (Burgoon et al., 1989, p. 22).

Communication can be both instrumental (functional) or expressive (communicative) in nature (Watson, 1975). If communication is used as a means to get something accomplished as in verbally instructing someone to do a task, or touching an individual to palpate his/her muscles, than communication is considered to be "instrumental" (functional). If on the other hand, communication is used to convey some feeling, such as deep caring that is not a part of the therapist's and client's institutional relationship (Watson, 1975), then it is labeled as "expressive" (communicative).

Nonverbal communication is especially crucial in medical settings today, because of the increasing complexity of medical care and the multidisciplinary approach to treatment (Friedman, 1979). In this kind of atmosphere where the individuals are under various
levels of stress, the ongoing and dynamic communicative interaction process can be examined by identifying both verbal and nonverbal messages. According to Daubenmire (1976), nonverbal messages can communicate the changing states of the participants.

The nursing profession has long recognized the importance of paying attention to nonverbal cues in a therapeutic relationship. "When the patient is approached humanistically, significant therapeutic progress can be made. Nonverbal communication, intelligently understood can be the most effective tool for reaching that goal" (Blondis & Jackson, 1982, p. 1).

Although relatively little research has been done in this area, nonverbal communication is an essential component of occupational therapy. This is reflected in the Fidler and Fidler (1963) statements about occupational therapy as a communication process. They stated that "occupational therapy is concerned with action, the meaning of action, its uses in communicating feelings and thoughts and the use of such nonverbal communications" (p. 19). The Fidlers advocate using activities to elicit a client's nonverbal communication. Furthermore, Fidler and Fidler (1983) feel that nonverbal behaviors are important clues for the therapist to aid in recognition and evaluation of how the client is reacting to a specific activity. For example, through certain body gestures or sounds the client might be indicating to the therapist that he/she is or is not feeling competent or in control of his/her environment.

In an Eleanor Clarke Slagle Lecture, Huss (1977) discussed
conveying caring through touch, one form of nonverbal communication, as a relevant and desired modality for occupational therapy theory and practice. Occupational therapists have established the importance of developing good rapport with clients. This enables the therapist to more accurately assess the client's needs, and determine if occupational therapy services can meet these needs. Through the listening and observing of the client's nonverbal as well as verbal messages, the therapist can cultivate a climate for communication thereby facilitating the growth of the therapeutic relationship (Hemphill, 1988).

From a more "instrumental" (functional) communication perspective, occupational therapists are already experienced in manipulating their own nonverbal cues to promote certain responses in the client. When using proprioceptive neuromuscular facilitation (PNF) approach, Myers (1989) contends that a therapist through changing the tone and pitch of a vocal command can directly influence how the client will react. Myers suggests that by lowering the pitch and tone of his/her voice the therapist can elicit a calming, slowed reaction in a client. This example illustrates that therapists are currently using nonverbal cues to control and affect client reactions in a more "instrumental" manner.

However, we must not neglect the importance of using nonverbal cues in a more "expressive" fashion to facilitate the growth of a more therapeutic relationship between the therapist and the client. Nonverbal communication is essential in assessing clients; for it may
provide clues to a more holistic and accurate understanding of the physical and mental condition of the client. Assessments include both "instrumental" and "expressive" aspects of nonverbal communication. Sensitivity to nonverbal cues can give the therapist information that the client is unaware of, may not wish to share, or simply does not know how to express to the clinician (Friedman, 1979).

In the American Occupational Therapy Association's (AOTA) Standards of Practice for Occupational Therapy (1983), it is stated that observation and communication are imperative to the therapist's role in providing quality care. Awareness to nonverbal cues is valuable in making observations about the client, and in facilitating communication between the therapist and the client. Therefore it is crucial that therapists understand the role of nonverbal cues in their services.

Occupational therapists work under the philosophy that they must assess and treat clients holistically by taking into consideration their minds as well as their bodies (Mosey, 1981; Reed & Sanderson, 1983). Information on the client's emotional state is believed to be more clearly revealed through nonverbal than verbal means (Burgoon et al., 1989). Therefore, assessment and treatment of clients through awareness and understanding of both verbal and nonverbal communication skills, complements and is relevant to current theory and practice.
Purpose of the Study

The purpose of this study is to identify the level of function and the effect of instruction of nonverbal decoding skills in an occupational therapy curriculum. This will be accomplished through assessing occupational therapy students' sensitivity to nonverbal cues at different levels in the occupational therapy curriculum. Instruction or training in this case refers to the student having an awareness of techniques used to enhance one's sensitivity to nonverbal cues through classroom experiences or clinical settings provided in the curriculum. In the occupational therapy curriculum at Western Michigan University (WMU), teaching objectives include the identification, use, and interpretation of nonverbal cues. Curriculum objectives include content on communication skills in two required occupational therapy courses: The Professional Language and Interactions course OT 203, and Level II Occupational Therapy Practicum course OT 453. In the Professional Language and Interactions course (see Appendix A for course objectives), Gazda, Childers and Walters' *Interpersonal Communication: A Handbook for Health Professionals* is used as the class textbook. Through this book and course lecture a basic communication model with eight dimensions (empathy, respect, warmth, respect, concreteness, confrontation, immediacy and self disclosure) is presented. The negative and positive effects of nonverbal communication are explored relative to conveyance of warmth, respect and empathy in a helping relationship (Doris Smith, personal communication, April 17, 1990).
In the Level II Occupational Therapy Practicum course (see Appendix B for course objectives) the development of efficient communication skills through actual client contact in a community setting is stressed. The occupational therapy student is responsible for building good rapport, assessing current level of functioning, and planning and implementing treatment plans for the clients in a clinical setting. Although not formally written in the course objectives, practice in the understanding of nonverbal cues is possible in the Level I Occupational Therapy Practicum course. The goals are similar to those expressed in the Level II Occupational Therapy Practicum objectives, but the Level I Occupational Therapy Practicum students are developing skills in a more structured and supervised setting.

This study is based on the assumptions that (a) nonverbal decoding techniques can in fact be taught (Hays & DiMatteo, 1984; Robbins et al., 1979), and (b) that the understanding of nonverbal cues is an essential component in a therapeutic relationship and environment (Corey, 1986; Hemphill, 1988).
CHAPTER II

REVIEW OF THE LITERATURE

Nonverbal Communication

Channels of Communication

In order to study nonverbal communication it is essential for one to understand the different components of nonverbal communication. Nonverbal communication includes both the sending and receiving of messages through various channels. The "sending" of messages has been referred to as an individual's ability to encode messages or present messages to others, while the "receiving" of messages refers to one's ability to decode or understand and interpret the sent message. Some channels through which messages can be sent are kinesic (body movement and facial expressions), vocalic, haptic (touch), proxemic (space), and chronemic (time) channels. Those focused on in this paper will be the kinesics and vocalic channels, because of their potential impact in a therapeutic relationship and their correspondence to the areas tested using the PONS (Rosenthal et al., 1979). Although not included as a variable in this research, the haptic channel is one of great importance and relevance to the occupational therapist and should not be neglected when planning training sessions in nonverbal communication.
Kinesic

Kinesic movement includes both the condition of the physical body (example, condition of the eyes [sparkling, watery etc.], skin [condition/color]), as well as the various postures, expressions (facial), gestures (hand/arm), or behaviors (self inflicting, repetitive) in which the body engages (Gazda et al., 1982). Movements are believed to be the most powerful channels of nonverbal communication because of cues available, and the ability of people to perform and receive these cues. Movements are observed consciously and subconsciously during most communication processes, because of a person's innate desire to attend to others' overtly noticeable and conspicuous behaviors (Burgoon et al., 1989).

Numerous research studies have documented the encoding and decoding of messages through body movements in therapeutic relationships. Bellet (1979) looked at the absence or presence of eye contact, trunk lean, and direction of body orientation as it related to messages being sent by counselors to their clients. It was found that counselors who demonstrated high levels of eye contact, leaning forward and direct body orientation were described as being more friendly, trusting, attentive, caring and concerned than counselors who did not engage in these movements. Similarly, Smith-Hanen (1977) found that counselors who are active are perceived as warmer than less active counselors. Certain arm and leg positions (crossed or closed positions) may connote feelings of a cold, unempathic counselor or by the clients. These crossed arm and closed leg positions were
felt to communicate defensiveness in later studies (Hardin & Halaris, 1983). Evaluations of counselors by clients in the studies cited here, included both the client's ability to decode messages as well as the counselor's ability to encode those same messages.

Along with research in body movements, much research has been generated on facial expressions as a communicator in a therapeutic situation. Williams and Tolch (1965) felt that facial expression functions as a visual code available to humans for decoding and encoding purposeful messages, especially that of emotion. For example, Boucher and Ekman (1975) found that disgust is best conveyed through the mouth and cheeks region, while happiness is best conveyed through the positioning of the mouth, cheeks, eyes and eyelids.

Facial expression and combinations of facial expression and body cues were found to more accurately indicate the emotional state of a client in an interview than the body cues alone (Ekman, 1964). Facial expression has been found to play an integral role in the encoding and decoding of emotion, often proving more valuable than body cues alone.

**Vocalics**

Vocalics or paralanguage includes any vocal-auditory behavior except the spoken word and is believed to be one of the most powerful nonverbal channels, second only to that of kinesic movement (Burgoon et al., 1989). This channel utilizes behaviors such as the use of silences, tone of voice, rate of speech, loudness of voice and
diction to convey messages to others (Gazda et al., 1982). It has been suggested that vocalics exhibit great communication potential "because of the primacy, frequency of manipulation, number of cues, and range of information" (Burgoon et al., 1989, p. 71) available to the communicator.

In a study which looked at speech and tone of voice, it was discovered that a mother's tone of voice is directly related to her son's or daughter's behavior. For example, daughters of mothers with "anxious" voices tended to be more attentive and cautious than boys and girls of mothers with warm and pleasant voices (Milmoe, Novey, Kagan, & Rosenthal, 1974). Furthermore, in a health care setting it was found that through manipulation of certain paralinguistic qualities, a doctor's rate of success in referring patients on for further treatment was affected. It was found that the doctor was able to communicate the need for further treatment more effectively if the voice was judged as being "anxious" or at a faster pace and higher pitch (Milmoe, Rosenthal, Blane, Chafetz, & Wolf, 1974).

In summary, both kinesic (body gestures and facial expressions) and vocalic nonverbal cues have proven to be powerful means of communicating one's feelings to another and building a therapeutic relationship. Thus, health care workers should be instructed in the decoding of these body movements to facilitate mutual understanding and growth.
Encoding and Decoding Abilities

Because nonverbal communication includes both the sending and receiving of messages through various channels, two people have a role in a single message exchange. These processes are not mutually exclusive, but are simultaneously occurring and ongoing throughout the exchange (Burgoon et al., 1989). Hence, a single message exchange is dependent upon the encoding and decoding skills of both the participants.

It has been shown that individuals skilled at encoding will most likely be skilled in decoding as well (DePaulo & Rosenthal, 1979). Moreover, if an individual can accurately encode messages through one channel (such as kinesic), it is more likely they can accurately encode through other channels (such as haptic, and vocalics) as well (Burgoon et al., 1989). This is also true for decoding ability (Burgoon et al., 1989).

Nonverbal cues are considered to be more reliable than verbal cues as far as the message content (Burgoon et al., 1989). Also, it has been documented that women have a slight but generalizable advantage over their male counterparts in both the encoding and decoding of nonverbal cues (Burgoon et al., 1989; Hall, 1978; Rosenthal et al., 1979). Studies researching cultural differences in nonverbal sensitivity found that subjects who were from nations more similar linguistically and culturally to the United States performed better on the PONS test (Blanck, Buck & Rosenthal, 1986). Research which has examined the development of nonverbal sensitivity has found
that performance improves linearly with age leveling off at around twenty five years of age (Rosenthal et al., 1979). Besides gender, culture and age, other factors such as state of health, personality traits, environment, and time context can prove to influence the decoding and encoding ability of an individual in terms of nonverbal communication (Burgoon et al., 1989; Hall. Friedman & Harris, 1986; Rosenthal et al., 1979).

Friedman (1979) addresses these same concepts under the headings of sensitivity (decoding) and expressiveness (encoding), and stresses the importance of both processes especially in the medical setting. To further understand the roles involved in a single communication exchange between a health care worker and a patient, a discussion will follow that describes the issues affecting patient and therapist nonverbal decoding as well as patient and therapist nonverbal encoding.

Patient Nonverbal Decoding

Patients are more likely to be "especially observant and sensitive to the nonverbal communication of health practitioners" (Friedman, 1979, p. 83). It is hypothesized that this decoding behavior evolves because of the clients' fear and uncertainty about their condition as well as the unfamiliarity of the environment. Furthermore, the clients may not completely understand the verbal explanations of their condition by the health care worker and are seeking more information from nonverbal messages, for clarification.
Similarly, the patients might feel that they are in a position of weakness, causing them to be more observant of nonverbal cues displayed by their "all knowing, superior" health practitioner (Burgoon et al., 1989; Friedman, 1979). Finally, the clients might be hampered by communication problems due to their medical condition that interfere with questioning the practitioner to their satisfaction. Hence, it is important for health care workers to be aware of the type of nonverbal messages they are sending (or encoding); for their clients are extremely sensitive at this time. The practitioner who is aware of the importance of nonverbal cues may be able to alter their cues in order to facilitate the rehabilitation process.

Therapist Nonverbal Decoding

From the therapist's perspective, sensitivity to nonverbal messages and ability to decode, is believed to be closely related to one's ability to empathize (DiMatteo, 1979; Friedman, 1979; Harrigan & Rosenthal, 1986;). Empathy involves an individual's ability to maintain "close communication with another as well as a deeper fuller appreciation of the other as an individual" (Hardin & Halaris, 1983, p. 14). In his person-centered therapy, Carl Rogers contends that accurate empathic understanding provided by the therapist is the core of the therapeutic relationship (Corey, 1986). Hence, the therapist's nonverbal decoding ability is directly related to the establishment of a therapeutic relationship.

A therapeutic relationship offers the most conducive
environment for observation and assessment of the client's abilities/disabilities by the therapist, as well as for self actualization by the client. This teamwork therapeutic approach enables the two individuals to work together for the client's and therapist's betterment (Corey, 1986).

Not only is nonverbal sensitivity by the therapist related to client improvement, but to client satisfaction as well. Physicians' sensitivity to nonverbal cues was researched by DiMatteo (1979) using the PONS. She found that physicians who were more efficient in decoding nonverbal cues on the PONS test received significantly higher ratings of satisfaction from their patients. In a later study by DiMatteo, Hays and Prince (1986), decoding ability was also significantly correlated to patient compliance to scheduled appointments.

Other studies using the PONS test have shown that "clinicians rated as more effective by their supervisors scored significantly higher than those rated as less effective by their supervisors" (Rosenthal et al., 1979, p. 227). Individuals with higher PONS scores have also been characterized as being more adjusted, encouraging, democratic, and extroverted than those with lower scores.

**Patient Nonverbal Encoding**

Patient expressiveness, or encoding behavior, is also considered to be functioning at its peak during a medical crisis. At this time, numerous emotions such as fear and anxiety surface within the
patient because of the uncertainty of his physical and/or mental state. It is believed that emotions and feelings are more clearly revealed through nonverbal means than verbal means (Burgoon et al., 1989). One can assume that patients will be manifesting their feelings in a time of crisis through their actions and other nonverbal cues. Also, because of the newness of the situation, patients may not have had much practice in hiding and controlling these types of feelings, thus allowing these emotions to readily surface. Moreover, verbal communication is inhibited in situations in which the context is difficult to discuss, such as death, embarrassing disabilities, or the desire for additional services (Friedman, 1979). Nonverbal, or a less deliberate form of communication, may be the form of expression for the client in such situations. Furthermore, "illness might affect a patient's movements, odors, facial expressions and other nonverbal signals in ways not fully recognized by the patient" (Friedman, 1979, p. 85). Through nonverbal channels the health care worker can make pertinent observations which might provide clues to assessing the client's condition. Patients might experience limitations in their verbal communication ability because of their medical condition or interfering devices used in treatment such as drugs, gastrointestinal tubes (etc.). Therefore, these patients can make their feelings apparent only through nonverbal means (Friedman, 1979).
**Therapist Nonverbal Encoding**

Therapists, through encoding or expressing their feelings through nonverbal means, can relay to the client their genuineness, caring, and overall concern for the client's well-being. Numerous studies have been documented on the manipulation of such cues in order to generate positive feelings in the client (Aguilera, 1967; Bellet, 1979; DiMatteo & Prince, 1986; Haase & Tepper, 1972; Lacrosse, 1975; McCorkle, 1974; Seay & Altekruse, 1979; Smith-Hanen, 1977; Watson, 1975; Whitcher & Fisher, 1979).

For example, a study by Haase and Tepper (1972) found that the combination of eye contact, forward trunk lean, a medium empathic verbal message and a far distance between the dyad, communicate empathy in the therapeutic situation.

In conclusion, both nonverbal decoding and encoding skills are thought to be crucial elements in the therapeutic process (Burgoon et al., 1989; Rosenthal et al., 1979). In this study nonverbal decoding ability of students at different levels of the occupational therapy curriculum will be examined.
CHAPTER III

HYPOTHESES

Four hypotheses have been proposed for study:

1. Second semester seniors who have had experiences and content relative to nonverbal communication in two years of the occupational therapy curriculum, will be significantly more accurate in their abilities to decode nonverbal cues than first semester juniors who are beginning the occupational therapy program.

2. Students who are in the occupational therapy curriculum, which includes teaching and discussion of nonverbal communication, will be significantly more accurate in their abilities to decode nonverbal cues than students in curricula that do not purposely teach or discuss the concept or nature of nonverbal skills.

3. Female students in all fields of study will perform significantly better on the PONS test than will male students. This hypothesis is based on the findings that female students have a slight but generalizable advantage over male students in both encoding and decoding nonverbal cues.

4. Older subjects (greater than 25 years) will perform significantly better on the PONS test than their younger (less than 25 years) classmates. This hypothesis is based on the theory that development of nonverbal skills improves with age.
CHAPTER IV

METHOD

Subjects

There were 64 undergraduate students from Western Michigan University (WMU) in this study. Demographic data on gender, age, area of study, semester in the program, and previous communication coursework was collected (see Appendix C for demographic questionnaire). Because 14 subjects had had previous courses in nonverbal communication, they were omitted from further statistical analysis. Forty-one of the subjects were currently enrolled in the occupational therapy (OT) program. The remaining nine students were enrolled in biology (n=4), physics (n=1), engineering (n=1), and mathematics (n=3). The non-occupational therapy students served as a control group, because in these areas of study the concept or nature of nonverbal skills is not purposely taught or discussed. The students in curricula with no nonverbal instruction were recruited by the researcher through short presentations in selected courses with faculty permission (see Appendix D for faculty consent form).

The 41 subjects in the occupational therapy curriculum consisted of two groups, those who were just entering the occupational therapy curriculum as first semester juniors (n=16), and those who were completing their on-campus requirements to prepare for six months of off-campus fieldwork experiences (second semester seniors,
Students at the beginning of the occupational therapy program were tested in the Professional Language and Interactions course (OT 203), while those leaving the campus for their fieldwork placements were tested in the Level II Occupational Therapy Practicum course (OT 453). Although the PONS test was administrated within two classes, the students' participation in the study was on a volunteer basis.

Instrumentation

The PONS test developed by Rosenthal et al. (1979) was used in this study. The PONS has been extensively tested on over 200 samples of subjects, approximately 4,500 people, in the United States as well as in 20 other countries (Rosenthal et al., 1979). The PONS consists of a 45 minute black and white 16 mm film with 220 numbered auditory and visual segments. This film was converted to a video tape for use in this study. Eleven different channels of communication are represented in the 220 two to three second segments portrayed by a young woman in a black background. Five of these channels are considered to be "pure" channels: (1) face alone, no voice; (2) body from neck to knees, no voice; (3) face and body, no voice; (4) content-filtered voice (the words have been electronically filtered from the statement leaving only the tone of voice in which something was said), no picture; and (5) randomized spliced voice (the words have been removed from the statement, and then placed back into the recording but not in the original order), no picture. The other six channels are labeled as "mixed channels" and are simply combinations
of the pure channels (Rosenthal et al., 1979): (6) face plus randomized spliced speech, (7) face plus content-filtered speech, (8) body plus randomized spliced speech, (9) body plus content-filtered speech, (10) figure plus randomized spliced speech, (11) figure plus content-filtered speech.

The response sheet contained 220 two-choice descriptions that corresponded with the video (see Appendix C for PONS response sheets). Along with obtaining scores in eleven different channels, scores were acquired in four different dimensions of affect, namely combinations of positive/negative, and submissive/dominant orientations:

1. The positive-submissive affect included emotions in such scenes as helping a customer, or ordering food in a restaurant.

2. The positive-dominant affect included emotions in such scenes as talking about one's wedding, or leaving on a trip.

3. The negative-submissive category included emotions in such scenes as talking about a death of a friend, or talking about one's divorce.

4. The negative-dominant affect included emotions in such scenes as criticizing someone for being late, or expressing strong dislike.

In scoring, a "0" was given for every wrong answer, a "1" for correct answers, and ".5" for all omitted items. High scores on the PONS test are said to indicate a high sensitivity to nonverbal cues (Rosenthal et al., 1979). In the normative group of 480 senior high
school students the average total score was 170.05. Reliability scores ranged from .86 to .92 for internal consistency with a median retest reliability of .69 (Blanck et al., 1986).

Procedure

Two sessions were offered to the control group subjects who agreed to participate in the study. At the specified times the control subjects convened in a room on the WMU campus. The control group subjects were tested in groups of five. The junior and senior occupational therapy students were tested in groups of 22 and 32 respectively, and at the regularly scheduled class times with faculty permission (see Appendix E for occupational therapy faculty consent form). The participants were given the questionnaire along with the PONS response sheets (see Appendix C for PONS response sheets). After a short introduction by the researcher the subjects were asked to fill out only the questionnaire and await further instructions. When the group had completed this task, the researcher read the instructions for the PONS test (see Appendix F) and answered any questions that the subjects had. At this point, the 45-minute video was started. At its completion, the response sheets were collected and the researcher again answered any questions. Finally, the groups were told when and how they might obtain their scores and interpretations of those scores in a confidential fashion.
CHAPTER V

DATA ANALYSIS

Independent t-tests were performed on the variables of the total score (0-220), the eleven channels (0-20), the four affects (0-55), gender, age, and area of study. The t-test was used to determine the differences in decoding ability of the first semester junior occupational therapy students who were just entering the occupational therapy program and the second semester senior occupational therapy students who were just leaving the campus for their fieldwork placements. T-test comparisons were also made between the first semester juniors and the second semester seniors in curricula which do not purposely teach nonverbal communication (control group). The control group was used to determine the effects of maturation in terms of decoding ability in undergraduate students, and their scores were compared to the scores of occupational therapy students.
CHAPTER VI

RESULTS

In 64 comparisons of the senior students to the junior students in both the control group and the occupational therapy group, using 15 subcategories (11 channels, 4 affects) and the PONS total score, only four comparisons were significantly different. These were content filtered speech, face, randomized spliced speech, and body "plus" content filtered speech channels. Table 1 presents the results related to the PONS total score hypotheses. Since the number of significant differences was so minute and seemingly inconsistent, between the groups, these findings were disregarded and the null hypotheses relating to curriculum and length of time in specific curriculums could not be rejected.

In the comparison of males (n=12) to females (n=38) in 15 subcategories (11 channels, 4 affects) and the PONS total score (a total of 16 comparisons), only one significant difference was found (channel: content-filtered speech, $t=2.28$, $p=.014$).

In the comparison of all older students (greater than 25 years; n=11) to all younger students (less than 25 years; n=39) in 15 subcategories (11 channels, 4 affects) and the PONS total score (total of 16 comparisons) 3 significant differences were discovered including the PONS total score.
### Table 1
Factors Related to the PONS Total Score of Undergraduate Students: \( t \)-Test Values

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
<th>df</th>
<th>p value</th>
</tr>
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<tbody>
<tr>
<td>OT Senior</td>
<td>25</td>
<td>171.60</td>
<td>8.92</td>
<td>.17</td>
<td>40</td>
<td>.433</td>
</tr>
<tr>
<td>OT Junior</td>
<td>16</td>
<td>171.09</td>
<td>9.97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OT Senior</td>
<td>25</td>
<td>171.60</td>
<td>8.92</td>
<td>-.64</td>
<td>29</td>
<td>.213</td>
</tr>
<tr>
<td>Non OT Senior</td>
<td>5</td>
<td>174.40</td>
<td>8.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>OT Junior</td>
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<td>9.97</td>
<td>-.54</td>
<td>19</td>
<td>.296</td>
</tr>
<tr>
<td>Non OT Junior</td>
<td>4</td>
<td>174.00</td>
<td>7.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td>Female</td>
<td>38</td>
<td>172.70</td>
<td>1.30</td>
<td>1.11</td>
<td>49</td>
<td>.136</td>
</tr>
<tr>
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<td>12</td>
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<td>3.32</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Age &lt; 25</td>
<td>39</td>
<td>173.23</td>
<td>8.39</td>
<td>2.03</td>
<td>49</td>
<td>.024*</td>
</tr>
<tr>
<td>Age &gt; 25</td>
<td>11</td>
<td>167.23</td>
<td>9.69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level.
CHAPTER VII
DISCUSSION

This study was designed to examine the efficiency of teaching nonverbal communication skills to individuals in an occupational program. Since the number of significant differences was so minimal and seemingly inconsistent, between the groups, these findings were disregarded and the null hypotheses relating to curriculum, length of time in specific curricula, and gender could not be rejected. The directional hypothesis relating to age was not supported, but a significant difference was found in the PONS total scores of older and younger individuals. Individuals less than 25 years of age were significantly more accurate in decoding nonverbal cues than individuals older than 25 years of age. The implications of these findings, along with possible reasons for this outcome, are discussed in the following paragraphs.

Results from this study did not show significance in the length of time in the curriculum and the student's ability to more accurately decode nonverbal cues. This lack of improvement in nonverbal ability throughout the curriculum suggests that the curriculum is not teaching what it proposes to teach in the area of nonverbal communication. Perhaps students have already attained nonverbal skills or are unable to understand or incorporate this information into other situations, such as the test situation used here. Looking at results
from past research, medical students improved their communication skills significantly through intense training in this area. An examination of the occupational therapy training procedures and objectives relating to nonverbal skills is warranted to determine possible limitations of the current program in this area.

Although statements concerning nonverbal communication skills are contained in the occupational therapy department’s objectives (see Appendices A and B for course objectives), the degree to which they are covered and the outcomes of learning have not been measured statistically. In the present occupational therapy program, time for intense training and concentration on skill building in the area of nonverbal communication is not allocated unlike the instruction requirements in the other medical programs reviewed (Engler et al., 1981; Robbins et al., 1979). Perhaps a higher degree of intensity of the instruction is needed to significantly improve nonverbal communication skills. Since nonverbal communication skills are important for occupational therapists, more attention and time should be spent in the training of nonverbal communication skills to be used in assessing both normal and handicapped populations.

A possibility exists that the occupational therapy group tested was unique in that either the junior group was especially skilled in decoding nonverbal cues or that the senior group was atypically inadequate in their ability to decode nonverbal cues.

A comparison of the PONS total score of occupational therapy students (average total score = 171.3) to the normative group of 480
senior high school students (average total score= 170.05) (Rosenthal et al., 1979), suggests that occupational therapy students may come into the program with slightly elevated scores. In other studies, the PONS total scores of North American adults (average total score= 173.58) and to commonwealth college students (average total score= 173.36) were examined. The PONS total scores for U.S. college students (average total score= 177.76) and psychologists/clinicians (average total score= 177.1) were higher than the occupational therapy students' PONS total scores (average total score= 171.3) in this study.

It should be noted that the subjects just entering the occupational therapy curriculum were first semester juniors (average age=22.4) while those leaving the program were second semester seniors (average age=25.3). This year and a half (or three semesters) difference may be too short a time for change and unless the training is more intense in nature, noticeable differences may not occur. No significance was found in the comparison between the senior control group and the junior control group, which suggests that maturation was not an issue.

It was puzzling that students enrolled in the occupational therapy curriculum, where nonverbal communication instruction is provided, did not prove to be significantly more accurate in decoding nonverbal cues than students in other curricula. It is possible that the different methods of obtaining volunteers in this study could have created this effect. In a study by Rosenthal et al., (1979), it
was shown that volunteering for behavioral research was positively correlated with high PONS scores. In this study, the researcher made presentations in courses in non-occupational therapy curricula seeking volunteers to give up an hour of their time outside of class. However, the researcher made presentations in courses in the occupational therapy curriculum seeking volunteers to participate within the regularly scheduled course time. Thus the control group was a "true" volunteer situation while the occupational therapy groups volunteered, but not beyond their typical course time. Hence, the "true" volunteers (control group) would likely be more accurate in decoding nonverbal cues than the occupational therapy students.

It has also been suggested that the size of the group in the testing situation might affect the subjects' PONS scores. The occupational therapy groups were shown the video in large numbers which increased their distance from the monitor and the number of distractions in the room. The control group was tested in small numbers allowing for close up viewing and a limited number of distractions.

There was no significant difference between males (n=12) and females (n=38) in nonverbal decoding ability. Thus, the hypothesis concerning gender differences was not confirmed. This finding conflicts with past research using the PONS (Rosenthal et al., 1979). For in the normative group of 480 senior high school students, the mean total score for females (172.19) exceeds the mean total score for males (166.18). However, this study's findings of equality in
nonverbal decoding ability between the sexes is supported by Levy's (1964) work on identifying and expressing others' and one's own feelings through vocal messages. In that study, subjects recorded messages which were presented to a group of judges. Levy (1964) found that there was no difference between men and women in their ability to convey or understand nonverbal emotional meaning. Similar results were also found in a study by Beldoch (1964) which looked at emotional sensitivity in men and women in interpreting music, art and speech.

Levy (1964) also found that age was not a significant factor in an individual's ability to identify one's own expressions, or expressing feelings to others. However, a significant inverse relationship was obtained between identifying (decoding) the expressions of feelings of others and an individual's age. This inverse relationship also emerged in this study, for the younger students (less than 25 years) proved to be significantly more accurate in decoding nonverbal cues (PONS total score) than the older students (greater than 25 years) using the PONS test. It was puzzling that such a pronounced difference in nonverbal decoding ability surfaced between individuals close in age (younger group 18-24, older group 26-43). Another study which looked at older adults in comparison with younger adults, reported similar findings (Wish, Deutsch & Kaplan, 1976). However, the age range of the subjects was considerably larger than that represented in this research study.

It should also be noted that the control (n=9), males (n=12),
and older students groups (n=11) were small in comparison with the
occupational therapy (n=41), females (n=38), and younger students
groups (n=39).

Several possible limitations exist in this study. It is
conceivable that because little demographic information was acquired
from the four different samples, there was little control on the
individual differences within the four groups. Additional informa­
tion could have been gathered on personality characteristics of the
participants, grade point average, and self assessments on ability to
decode nonverbal cues. Also, the small sample size of the control
group, and males could have contributed to not being able to reject
the null hypothesis in the first three hypotheses. Future research
could be developed that longitudinally tests the students at various
points in their occupational therapy academic training. This would
measure small individual differences within the groups by testing and
'retesting the same students, and would more clearly demonstrate any
changes or improvements in nonverbal decoding ability. Also, the
number of presentations and the method of testing volunteers (includ­
ing the testing environment) should be changed to obtain a larger
sample in the control, male, and older student groups, and a more
consistent means of testing students in occupational therapy and
other curriculums.
Conclusion

Literature shows that sensitivity to nonverbal cues is important to the health professional with regard to openly communicating with clients, developing a therapeutic relationship, and accurately, and quickly assessing clients. More specifically nonverbal communication skills are important to the occupational therapist because of the profession's stress on observing and assessing the client's abilities and disabilities while they are engaged in activities. Nonverbal communication channels such as body movement, facial expressions, and vocalics, provide valuable clues to the therapist on the physical, mental and emotional state of the client (Burgoon et al., 1989; Friedman, 1979). Since occupational therapists should be proficient in these skills it seems natural to consider the role of education in teaching and improving sensitivity to nonverbal communication in occupational therapy students.

In this study, no significant differences in ability to decode nonverbal cues related to body movement, facial expressions, or vocalics were found in occupational therapy students and students in programs which do not teach nonverbal communication skills. Also, length of time in the programs, or gender were not related to the ability to decode nonverbal cues as measured by the PONS test. This could be due to the lack of intensity of nonverbal communication training courses, methods of recruiting and testing subjects, individual differences in the groups and the small sample size in the control, male, and older student groups. However, significance was
found in the relationship between younger age and a higher total score on the PONS test. Further research is warranted in the area of instructing occupational therapy students in nonverbal communication skills to support and more specifically identify the issues which surfaced in this study.
Appendix A

OT 203 Course Objectives
O.T. 203 - Professional Language and Interactions

Fall 1989

Instructor: Shirley Luhens
Office: Room 124, Wood Hall
Office Phone: 7-3661
Home Phone: 382-6571

Course Description: A basic course which includes medical terminology, techniques of information gathering, and professional interpersonal communications.

Prerequisites: O.T. Major (Pre-O.T. students are not eligible to take course)

Learning Goals:

1. The student communicates clearly and accurately.
   a. The student will be able to define medical terms.
   b. Given factors relevant to communication, the student will be able to identify those components essential to verbal, non-verbal, and written communication.
   c. The student will be able to demonstrate the effective use of verbal, non-verbal, and written communication.
   d. The student will demonstrate in writing the ability to:
      1. Analyze, synthesize, and evaluate.
      2. Sustain the development of a concept or idea over a span of at 500 words.
      3. Use organized paragraphs and transitional devices.
      4. Correctly capitalize and punctuate.
      5. Use correct spelling, grammar and syntax.

2. The student utilizes the methodologies of inquiry in approaching issues relevant to the content areas of O.T.
   a. Given a list of methods or strategies of inquiry, the student will identify appropriate method according to instructor's standards.
   b. Given a specific area of O.T., the student will demonstrate the appropriate methods of inquiry in approaching the area according to instructor's standards.
   c. Given a specific issue in O.T., the student will determine (select) the appropriate method of inquiry to use according to instructor's standards.

3. The student values the concepts of health - the student is able to identify institutional, cultural, and personal definitions of health.

4. The student understands the principles of scientific inquiry - the student lists in hierarchical order the steps in scientific inquiry.

5. The student identifies resources to assist in the conduct of research.
   a. The student will list resources to assist in the conduct of research.
   b. Given a list of resources, the student will describe how to use resources.
   c. When given a researchable problem, the student will identify appropriate resources to be used.

Required Materials:

Interpersonal Communication - A Handbook for Health Professionals

Medical Terminology, 5th ed.


Handout Booklet - purchase from The Copy Desk at Bernhard Student Center

*These objectives were taken from the O.T. 203 course manual stored in the occupational therapy office at Western Michigan University.
Appendix B

OT 453 Course Objectives
Coordinator and Lecturer: Shirley Lukens  Phone: 387-1861 (office), 382-6371 (home)

Faculty Supervisors: Barbara Hemphill, Barbara Rider, Carol Scharfenberger, Tina Schroeder

Course Description:
This course is designed to provide clinical experience in community agencies in order to develop skill in the utilization of assessments, the development of treatment plans, the implementation of treatment plans, and the evaluation of the client's growth related to the treatment plan. Emphasis is directly related to the content of O.T. 453. In addition, the course is designed to increase the student's awareness of community agencies and the role of occupational therapy within these agencies.

Course Objectives:
The student is required to meet the behavioral objectives specified for the course and to successfully meet the criteria on the Student Performance Evaluation.

Course Requirements:
Each student will be assigned to a specific agency for a minimum of 72 contact (on-site) hours. THESE HOURS SHOULD BE SPREAD OUT OVER THE SEMESTER. The student will be expected to function within the guidelines established by the agency for all staff associated with said agency. The student will assume the role of an occupational therapist in training and will be expected to carry out the responsibility of client care as assigned by the on-site agency supervisor. The student will participate in individual therapy sessions, therapeutic groups, or both depending on the agency program. In addition, each student is responsible for lecture and lab assignments as determined by the lecturer and faculty supervisor.

Components of Course Grade:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
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<tr>
<td>Agency Practice</td>
<td>64%</td>
</tr>
<tr>
<td>Lecture</td>
<td>18%</td>
</tr>
<tr>
<td>Faculty Supervisor Requiretments</td>
<td>18%</td>
</tr>
</tbody>
</table>

A PASSING GRADE MUST BE RECEIVED IN ALL THREE COMPONENTS OF THE COURSE IN ORDER TO PASS THE COURSE.

The agency practicum grade is determined by the on-site supervisor. However, on occasion and with documented justification, the faculty supervisor may adjust (raise or lower) the agency final practicum grade.

Remediation Policy for Practicum I and II:
1. Successful completion of O.T. 353 or equivalent is prerequisite for O.T. 453.
2. Successful completion of O.T. 453 or equivalent is prerequisite for O.T. 450.
3. Students who withdraw from O.T. 353 and 453 with passing performance before midterm will receive a "W". He/she must have written permission from the clinic supervisor or course coordinator before being rescheduled.

These objectives were taken from the OT 453 course manual stored in the occupational therapy office at Western Michigan University.
A. The student communicates clearly and accurately.
   1. The student will be able to demonstrate appropriate nonverbal communication.
   2. The student will be able to demonstrate the effective use of listening skills.

B. The student participates in the delivery of health services to a client.
   1. Within an agency setting, the student will assist in the delivery of health services.

C. The student demonstrates problem solving ability.
   1. When presented with a situation, the student will identify the possible problems within that situation.
   2. Having identified the problems, the student will list the possible components of that problem.
   3. Having identified the components of a problem situation, the student will suggest the cause of the problem and describe its effect on the client.
   4. When presented with a list of solutions to a problem, the student will rationalize the effectiveness of each solution.
   5. When presented with a list of solutions to the problem, the student will prioritize the solutions and offer rationale for their prioritization.
   6. After being presented with a list of solutions, the student will propose at least one additional solution to the problem.
   7. Given a client, the student will identify potential problems and provide prioritized solution to those problems.

D. The student recognizes the importance of activity to the practice of OT.
   1. When given a client with identified problems, the student will modify activities to remediate the problem/s according to instructor standards.
   2. When given a client with problem/s, the student will defend (support) the choice of activities selected to remediate designated problem/s according to instructor standards.

E. The student knows the history of OT and its role in health care.
   1. The student will be able to justify the scope of OT and its role in health care to client and other allied health personnel.

F. The student (begins to) identifies with the profession of OT.
   1. When called upon, the student will be able to explain the practice of OT to others in a confident, and convincing manner.

*These objectives were taken from a list of all objectives developed for the undergraduate occupational therapy curriculum in 1981, and are placed in the OT 453 manual stored in the occupational therapy office.
Appendix C

Questionnaire/Response Sheets for the PONS
PLEASE NOTE

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

43-46, Appendix C

University Microfilms International
Appendix D

Faculty Consent Form
Faculty Consent Form

To whom it may concern:

I am an occupational therapy graduate student and am currently involved in planning my master's thesis. I intend to investigate whether sensitivity to nonverbal cues increases following experience and completion of specific courses within the occupational therapy curriculum. I am asking for your assistance in reaching students in their junior or senior year of study in an area that includes no formal instruction or discussion of nonverbal communication skills. These students will formulate the control group for my study.

I plan to study this topic by using the Profile of Nonverbal Sensitivity (the PONS test) along with a 4 item questionnaire. For additional information about the instruments, please see the attached information sheet.

I would very much appreciate the opportunity to come into your classroom for a 2 to 4 minute period and seek volunteers for this study. Administration of the questionnaire and the PONS test will take place during January and February of 1990. I will be making my classroom visits at the beginning of the 1990 winter semester. If you are willing to help me by allowing me access to your students please complete the form at the bottom of this letter. Thank you very much for your consideration.

Darla Schurmeier

I am willing to allow Darla Schurmeier to seek volunteers for her research study in the class period described below.

Date: ____________

Time: ____________

Classroom: ____________

Building: ____________
Appendix E

Occupational Therapy Faculty Consent Form
Occupational Therapy Faculty Consent Form

To whom it may concern,

I am an occupational therapy graduate student and am currently involved in planning my master's thesis. I intend to investigate whether sensitivity to nonverbal cues increases following experience and completion of specific courses within the occupational therapy curriculum. It has been theorized that accurate interpretation of nonverbal cues is an integral part of establishing and maintaining a therapeutic relationship between the health care worker and his/her client. Therefore the study of decoding nonverbal cues has merit for any student in the occupational therapy (OT) curriculum. Your OT 203/OT 453 course has been selected because of its placement within the curriculum. I am interested in studying those students just entering the OT curriculum, and those OT students leaving Western Michigan University for their fieldwork experiences.

I plan to study this topic by using the Profile of Nonverbal Sensitivity (the PONS test) along with a 4 item questionnaire. For additional information about the instruments, please see the attached information sheet.

In order to obtain data for the study I am asking for your assistance in allowing me to administer the questionnaire and the PONS test during one OT 203/OT 453 class period for approximately 55 minutes. No scores will be personally connected to any subject except through the last five digits of the student's social security number protecting his/her anonymity. All information gained by your students' participation will be kept strictly confidential. Furthermore, the students if interested will be able to receive their scores on the PONS test after data collection is completed. This feedback will be beneficial to the student's awareness, and understanding of self and nonverbal skills. At your request, I would be willing to conduct a brief follow up discussion to explain the PONS test, my research project or to answer any questions that the students might have.

Administration of the questionnaire and PONS test will take place during January and February of 1990. If you are willing to help me by having your class participate in this study please complete the form at the bottom of this letter. I am looking forward to hearing from you. Thank you very much for your consideration.

Darla Schurmeier, OTS

I am willing to grant my OT 203/OT 453 students the opportunity to participate in this study in the class period described below.

Date: ____________________  
Time: ____________________  
Classroom: ____________________
Appendix P

Instructions for PONS
Instructions Read by Test Administrator for the PONS

"I would like to remind you at this time that your participation in this study is voluntary. You may at any time leave the testing room or discontinue your participation in this project without penalization from myself or your course instructor. Furthermore, you may leave any items on the response sheet blank if you so desire.

The film and sound track you are about to witness was designed so that we may learn how well people can match facial expressions, body movements, and tones of voice to the actual situation in which the expression, movements, and tones originally occurred.

You will see and hear a series of audio and video segments, and for each one you are to judge which of two real-life situations is represented by the segment you have just seen or heard. After each segment you will have a short period of time in which to record your judgment.

Some of the visual segments will have no sound track. Some of the visual segments will have a sound track, but you will not be able to understand the words. Instead, you will hear speech that has been changed in various ways, so that you will be able to judge only the tone of voice in which something was said. Some of the segments will be made up of only these speech-altered portions of the sound track, and for these there will be no film to watch at all. In fact, the very first segment is like this.

Each segment you will see and/or hear has been numbered on the
screen, and this number corresponds to a number on your answer sheet. Your answer sheet lists two brief descriptions of everyday life situations for each segment. One of these descriptions correctly describes the actual situation you will see and/or hear, while the other description does not describe the situation accurately. For each numbered segment, please circle the letter A or B next to the situation you believe to correspond to the segment you have just seen and/or heard.

When you see a number appear on the screen, please find the corresponding number on you answer sheet and place your finger just in front of the number, to keep your place. Watch and/or listen to the segment that follows the number, and as soon as the segment ends circle the letter A or B corresponding to the situation you believe the segment to have been based upon. Then look to the screen again promptly to find the next number flashed on the screen.

Many of the choices will be difficult, but you should choose one of the descriptions even though you may feel quite uncertain about the correct answer. Choose the more likely description for each segment even if you feel you might be guessing. Your guesses may be much more accurate than you would imagine. In fact, we request that you do not change any answers once you have made a choice. For every segment, then, do the best you can to judge accurately the situations upon which each segment is based. Your answer sheet contains a sample answer, which you should look at now. All ready to start? Now we will begin."
Appendix G

Approval Letter from the Human Subjects
Institutional Review Board
Date: November 13, 1969

To: Darla Schurmeier

From: Mary Anne Bunce, Chair

This letter will serve as confirmation that your research protocol, "The Status of Teaching Nonverbal Sensitivity to Students in an Occupational Therapy Curriculum", has been approved as expedited by the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application. You must seek reapproval for any change in this design.

The Board wishes you success in the pursuit of your research goals.

cc: S. Edwards, Occupational Therapy

HSIRB Project Number: 89-10-23

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