THE EFFECT OF PERSONALITY FACTORS AND TRAINING ON
THE DEVELOPMENT OF INTERPERSONAL SKILLS
BY FRESHMAN MEDICAL STUDENTS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Barbara Kaye Boles, B.S., M.S.

The Ohio State University
1975

Reading Committee:  
Roy A. Larmee, Ph.D.
John M. Schneider, Ph.D.
Kathryn T. Schoen, Ph.D.
Gregory L. Trzebiatowski, Ph.D.

Approved By
Gregory L. Trzebiatowski, Ph.D.
Adviser
College of Education
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VITA

January 12, 1944 ... Born – Urbana, Illinois

1966 ... B.S., The Ohio State University, Columbus, Ohio

1966-1968 ... Medical Dietitian, Presbyterian-St. Luke's Hospital Chicago, Illinois

1969 ... M.S., The Ohio State University, Columbus, Ohio


1973-1974 ... Research Associate, College of Medicine, The Ohio State University, Columbus, Ohio

1974-1975 ... NIH Fellow, Office of Medical Education Research and Development, Michigan State University, East Lansing, Michigan

PUBLICATIONS


FIELDS OF STUDY

Major Field: Educational Development

Studies in Educational Planning and Development. Professor Gregory L. Trzebiatowski

Studies in Higher Educational Administration. Professors Roy A. Larmee and Ronald W. Richards

Studies in Health Professions Education. Professors Gregory L. Trzebiatowski and Kathryn T. Schoen, and The Faculty of The Office of Medical Education Research and Development
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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

INTRODUCTION

Once again the focus in health care is centering on the patient as humanistic medicine is being heralded by medical advocates and consumer advocates alike. Shifting emphasis from the impersonal, often cold professional orientation characteristic of an era valuing scientific advancement over progress in humaneness, this new trend promises a re-focusing by the medical profession on personalized, total patient care. This study can make a contribution to this current direction in that it proposes to investigate the effect of personality factors and training on the development of interpersonal skills by freshman medical students during a Patient Interaction course sequence.

BACKGROUND OF THE PROBLEM

Human Elements in Medicine

Humanistic aspects of medical care have been overshadowed by scientific advancement. Indeed, the scientific method has become an end in itself and has helped to
divert the practice of medicine from its original patient service to a doctor service. "It is easy to lose sight of the individual patient in a plethora of expensive and frequently unpleasant investigations which are considered necessary because they are 'objective'" (Little, 1973, p. 714). Feinstein (1972, p. 421) has stated:

We shall advance the progress of neither science nor humanity by obsequious adherence to scientific doctrines that provide quantitative glitter and 'statistical significance,' while dehumanizing our data, confusing our sensibility, and diverting our attention from the people who are the only proper subjects for the study of mankind.

Nevertheless, scientific medicine and compassionate medicine are not incompatible. Glick notes that a truly compassionate physician has no other choice but to offer his patients the very best care which is necessarily scientifically sound; however, compassion must be the primary motivating force of the health profession (Glick, 1973). Scientific advances could be made only with specialization, but this fragmentation of knowledge has too often meant fragmentation of patient care: The parts have run away with the whole (Knox, 1971). When asked by a resident whether it was to determine the temperature, moisture, or strength of the arm that Dr. Loeb shook hands with a patient, Bassuk and Nadelson (1972, p. 894) report that Dr. Robert Loeb responded, "Gentlemen, the thing I am doing is greeting another human being."
The 1960's witnessed the emergence and formation of scattered but significant educational explorations and programs relating humanistic disciplines and perspectives to the life and work of the medical student. Banks, et al. (1973) contend that the human being and his human context have been the common and singular focus of both medicine and humanistic studies. Both share one concern, man himself. Both have a vital role in the professional education of the physician.

The missing dimension in medical education has been proclaimed by Engel (1973, p. 130):

...leaders of modern day medical education... have overlooked one thing, the human element. Medical education, after all, is meant to prepare physicians to serve the health needs of human beings. But where in our present day educational programs, graduate or undergraduate, is there genuinely serious attention devoted to preparing the student to deal with the human elements of medicine?

Interpersonal skills development by health professionals is based on the need to again place the patient as the central focus of health care. But can these skills be taught?

The Effect of Training. There is growing evidence that changes can be demonstrated in performance of key interpersonal skills as a function of training. Kagan (1973) has reviewed several studies in which training in human interaction using interpersonal process recall (IPR)
a technique emphasizing self-exploration and awareness, evidenced significant improvement in several areas such as interviewing skills, counseling techniques, and exploration of feelings. The interviewer and interviewee play back their videotaped interaction and, by stopping the tape when either person recalls any reactions he was having at that moment, they are able to explore their thoughts and feelings in a non-threatening mode. An inquirer who helps the individuals clarify their recall of thoughts and feelings experienced during the interview often facilitates the interpersonal process recall. Using a modification of Kagan's IPR technique, an instructional program designed to teach effective interpersonal skills to medical students has been reported as successful by Werner and Schneider (1974). Five specific behavioral objectives of this course have been identified, directly examined, and evaluated to assess students' learning.

Furthermore, there is growing evidence that indicates interpersonal skills can be taught in a reliable manner. Kagan (1973) reports replication of several experimental treatments with IPR. People can be reliably trained to have an impact on counseling skills and interview behavior. The IPR has been used in a variety of settings as a reliable method in the teaching of interpersonal skills.

Scott, et al. (1973) validated a measure of interpersonal skills by using interaction analysis as a method
for evaluating students' effectiveness in the medical interview setting. Werner and Schneider (1974) used "The Affective Sensitivity Scale" which has been validated by Kagan and co-workers (1967, 1971) and a direct observation response rating scheme "Elements of Effective Communication" (Kagan, et al., 1967) to demonstrate that students can be taught to communicate and interact with patients more effectively.

This study will examine a course designed to go beyond the work previously done by Kagan, Werner and Schneider, et al. in testing the effects of training in interpersonal skills in a medical setting and in demonstrating the retention of these skills over time.

Previous studies have found considerable variability in the student's capacity to perform interpersonal skills. This section will address the role of individual differences in performance.

The Effect of Personality Variables. Recent research indicates that there are key personality differences which affect the individual's capacities for the learning and demonstrating of skills. Sher (1974) reported that the vast majority of instruments used in the Entry Profile for Michigan State University's College of Human Medicine, such as the MMPI and the Personality Research Form, failed to find significant interactions of personality differences with student performance. Other studies are more optimistic.
For example, Deckert and Schneider (1970) reported findings that indicate that significant differences in accuracy of observation were related to both the medical student's "locus of control" and to the particular learning situation.

The Myers-Briggs Type Indicator (MBTI) (Myers, 1962), which assesses psychological type based on Jung's theory of personality, is another instrument which has been used to predict personality type and performance. Specifically, the dimensions assessed are Extraversion-Introversion, Sensing-Intuition, Thinking-Feeling, and Judging-Perceiving. The MBTI suggests that, in medical education, personality variables have their greatest utility in predicting post-medical-school specialty choice. Longitudinal research (Myers and Davis, 1964) and recently reported data (McCaulley, 1974; Camiscioni, 1974; Myers and McCaulley, 1974) indicate the relevance in medical education of an individual medical student's personality type and his capacity for the learning and demonstrating of key interpersonal skills. This study will use the MBTI for determining personality type and its relationship to acquisition and retention of interpersonal skills.

The Interaction Effect of Personality Variables and Training. The literature shows that the impact of the available learning environments on performance is variable, depending on personality type (aptitude/treatment interaction, ATI). In the Deckert and Schneider (1970) study,
significant interaction between "locus of control" and different learning situations was found.

Snow (1971) suggests that such ATI effects be considered in attempting to show performance changes in the diversified learning environments of medical school. Hence, this study will also examine potential interaction effects between MBTI types and the particular learning environment for these key interpersonal skills.

PROBLEM STATEMENT

One of the major goals in attempting to humanize medicine is to help health professionals treat their patients as total persons. The ability to learn and change coupled with specific personality-attitudinal traits are important qualities for individuals who wish to provide total health care to patients. In fact, interpersonal skills, the ability to communicate, the capacity to establish effective working relationships, and the willingness of the health care provider to see the patient as a total person have already been identified as key factors in the development of a more humanized medical professional. Yet, although the importance of interpersonal skills in health care delivery is generally accepted, effective communication and understanding of health team members' roles, essential in providing quality care, often need improvement.
Medical educational programs, however, seldom include training in the acquisition of interpersonal skills, much less interdisciplinary learning experiences which could better prepare an individual to work with peers and care for patients.

Improving the interpersonal skills of health professionals through special training programs is frequently directed toward the development of increased trust and understanding of health care providers, facilitation of patient education and contribution to patient satisfaction and compliance. Presently, only limited course opportunities for health professions students to improve their interpersonal skills are provided in educational programs (Kagan, et al., 1967; Werner and Schneider, 1974; Engel, 1973). The effects of these interpersonal skills courses must be researched to determine areas for course improvement to increase learning.

Individuals have different learning styles and interact with people differently. Some persons are more effective in their communication than others. A training program to so teach interpersonal skills to medical students during a three-term course sequence was the setting of this study. And, the problem investigated was the effect of personality factors and training on the development of interpersonal skills by freshman medical students during a Patient Interaction course sequence.
PURPOSE OF THE STUDY

It is expected that interpersonal skills will be of particular benefit to those health professions students who will be involved in direct patient care. Thus, the purposes of this study were:

1. to investigate whether training in interpersonal skills during a course sequence effects a change in interpersonal skills performance of freshman medical students,
2. to determine whether or not such change can be differentiated by personality type,
3. to determine whether or not such change can be differentiated by learning environment and,
4. to ascertain the effect of personality type/learning environment interaction on measured changes in interpersonal skills.

It was hypothesized that significant differences would be found on three dependent variables, Exploratory/Non-Exploratory, Listening/Non-Listening, Affective/Cognitive dimensions of Kagan's "Elements of Effective Communication," (Kagan, et al., 1967) used in this study. These dimensions have been repeatedly validated as related to effective interpersonal communication, particularly therapeutic and counseling effectiveness. Hence, changes on these variables could be assumed to show significant changes in interpersonal skills.

This study also examined whether there would be personality types that would differ significantly and
consequently reach different maximums in the course sequence. Individual differences found in the demonstration of these interpersonal skills and in their capacity to utilize different types of learning situations measured by the Myers-Briggs Type Indicator could have considerable implications for the course development and need for flexibility in the learning situation.

SIGNIFICANCE OF THE STUDY

This study was a partial replication and extension of the research of Werner and Schneider. However, the study did differ in the following ways:

1. Interpersonal skills were taught during a three-term course sequence rather than a one-term course with nine total interviews instead of four.

2. Myers-Briggs Type Indicator personality variables of Sensing-Intuition and Judging-Perceiving were used to measure individual differences in performance of these skills. This was not done in the previous study.

3. The interaction of personality type with the learning environment was examined.

4. The three term sequence allowed examination of the retention of interpersonal skills emphasized each term.

The emphases of the current interpersonal skills course sequence referred to above are diagrammed in Figure 1. The components of the Patient Interaction course sequence are detailed in the section on Experimental Treatments in Chapter 3 as well as in the Course Syllabus (see Appendix A).
<table>
<thead>
<tr>
<th>TIME</th>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTERPERSONAL SKILL EMPHASIZED</strong></td>
<td>Exploratory/Non-Exploratory Skills</td>
<td>Listening/Non-Listening Skills</td>
<td>Affective/Cognitive; Inquiry Skills</td>
</tr>
<tr>
<td><strong>LEARNING ENVIRONMENT</strong></td>
<td>Focus on Self Awareness (No external evaluation: No direct peer or faculty teaching)</td>
<td>Focus on Other Awareness (No external evaluation; patient feedback; No direct peer or faculty feedback)</td>
<td>Focus on Interactive Skills (Mastery evaluation: Peer and faculty teaching and evaluation)</td>
</tr>
<tr>
<td><strong>NUMBER OF INTERVIEWS</strong></td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>STUDY SAMPLE</strong></td>
<td>Interview #1 (Pre) Interview #4</td>
<td>Interview #6</td>
<td>Interview #9 (Post)</td>
</tr>
</tbody>
</table>

Figure 1. Patient Interaction Course Sequence
RESEARCH QUESTIONS AND HYPOTHESES FOR THE STUDY

In order to carry out the study's purposes as listed above, the following research questions were designed for consideration:

1. Will there be changes in performance of key interpersonal skills demonstrated as a function of training?

2. Can individual differences in interpersonal skills be predicted by means of the MBTI?

3. Will interpersonal skills be demonstrated differentially over learning environments?

4. Will interpersonal skills demonstrated be a function of the interaction between these personality differences and learning environment differences?

And, in response to these questions, the study's hypotheses were developed as follows:

Training

1. The overall difference between the pretest and posttest interview on the Exploratory dimension of the "Elements of Effective Communication" for subjects in this study will not be significantly greater than 0.

2. The overall difference between the pretest and posttest interview on the Listening dimension of the "Elements of Effective Communication" for subjects in this study will not be significantly greater than 0.

3. The overall difference between the pretest and posttest interview on the Affective dimension of the "Elements of Effective Communication" for subjects in this study will not be significantly greater than 0.
Personality Variables

4. There will be no significant difference between four student treatment groups on the Exploratory dimension.

5. There will be no significant difference between four student treatment groups on the Listening dimension.

6. There will be no significant difference between four student treatment groups on the Affective dimension.

Learning Environments

7. There will be no significant difference between learning environments on the Exploratory dimension.

8. There will be no significant difference between learning environments on the Listening dimension.

9. There will be no significant difference between learning environments on the Affective dimension.

Aptitude/Treatment Interaction

10. There will be no significant interaction between MBTI personality classifications and the learning environment emphasizing the Exploratory dimension.

11. There will be no significant interaction between MBTI personality classifications and the learning environment emphasizing the Listening dimension.

12. There will be no significant interaction between MBTI personality classifications and the learning environment emphasizing the Affective dimension.
STUDY METHODOLOGY

Since interpersonal skills curricula are limited in health professions education, special arrangements had to be made to conduct the investigation. This research study became possible through participation in an Ohio State University—Michigan State University doctoral program sponsored by the Committee on Institutional Cooperation. This study was defined within the planned program for the Patient Interaction course sequence at Michigan State University's College of Human Medicine.

The sample for this study was fifty-three medical students who were enrolled in the Patient Interaction Course sequence. The subjects were chosen by a random stratification technique based on the population by personality type using the Myers-Briggs Type Indicator. Judges were trained to use the Kagan "Elements of Effective Communication" instrument to rate students' selected videotaped course interviews.

The hypotheses listed above concerning training, personality factors, learning environments, and the interaction between learning environment and personality type were tested and the data were analyzed using a one-way two-group design utilizing a t-test for dependent samples to test the training dimension of this study. In addition, a three-way analysis of variance—repeated measures design
on one factor was utilized to test the personality type and learning environment interaction.

The dimensions for this design relative to this study were: (1) the S-N (Sensing-Intuitive) dimension of the Myers-Briggs Type Indicator and (2) the J-P (Judging-Perceiving) dimension. Because of the nature of the Patient Interaction course sequence, each student was measured four times. This induced the additional dimension of Time which was the repeated measure in this study. The design in tableau form appears in Figure 2.

![Figure 2. Study Design](image)

DEFINITIONS OF THE STUDY

Affect—any kind of feeling or emotion attached to an idea/or idea complexes; the term includes inner feelings and their external manifestations.
Aptitude/Treatment Interaction (ATI)

"aptitude"—any kind of variation in cognitive abilities, styles, attitudes, and personality characteristics that can be shown to facilitate or inhibit learning in particular instructional treatments.

"treatment"—any kind of variation in instructional methods, media, or materials, including teacher characteristics and even college environments that can be shown to facilitate or inhibit learning in particular students.

Behavioral Science—any of the sciences, as sociology or psychology, that study human behavior.

Communication—a process by which information is exchanged between individuals through a common system of symbols, signs, or behavior; the medium through which relationships begin and develop.
Doctor-Patient Relationship-- the interpersonal relationship between the physician and his client which centers upon their common bond of being human and can extend to provision of and compliance with measures to maintain total health care.

Empathy-- intellectual or emotional identification with another; the capacity for participation in another's feelings or ideas.

Encounter--a meeting involving a personal inter-relationship with open exchange of feelings, etc.

Humanism--any system of thought based on the interests and ideals of man; a devotion to the humanities.

Interaction--mutual or reciprocal action or influence; the doing of something, i.e., relating, between, among, or involving individuals.

Interpersonal Skills--behaviors directed at enhancing cooperation, understanding, and communication between persons; the ability to produce desirable and valued outcomes to one's transactions with people.

Interview--a meeting at which information is exchanged between persons with a specific purpose and focus. In a clinical interview, the interviewer has the major responsibility for the outcome.

Myers-Briggs Type Indicator--the MBTI is a 166-item self-administering questionnaire published in 1962 by
the Educational Testing Service. It is concerned with the valuable differences in personality that result from the way people perceive and the way they judge.

**Specialization**—concentration on a special branch of study, work; in the profession of medicine, surgery, primary care, etc.

**STUDY LIMITATIONS**

The interviews available for analysis were selected from on-going Patient-Interaction class experiences. Because of the non-evaluative nature of the course and the open environment desired for development of interpersonal skills, a designated control group was not possible for this study. The subjects served as their own controls by means of the personality factors, and gains from Interview #1 (Pre) through Interview #9 (Post) were assessed. To facilitate a balanced design with a minimum of nine subjects per cell, the procedure of oversampling cells was aimed at avoiding additional limitations such as absence of students and accidental breakage of tapes.

Delineation of this study resulted in conscious exclusion of areas which might be researched in future studies. The comparison of personality types as indicated by the Myers-Briggs Type Indicator of various individuals assisting
in the course, i.e., graduate assistants, trained mothers, simulated patients, with MBTI personality types of the medical students with whom they interacted or interviewed would indicate whether or not communication was more effective between similar types than opposites. If interview settings were in clinical areas, patient satisfaction ratings might also permit assessment of the actual impact of the interpersonal skills on patient care.

OVERVIEW OF THE STUDY

Chapter I deals with the identification and background of the problem, statement of purpose, and research questions and hypotheses. Study definitions and limitations are also presented in this chapter. Chapter II reviews the literature on health professionals and communication, the doctor-patient relationship, behavioral sciences and interviewing, educational programs, personality variables, aptitude/treatment interaction, and interpersonal skills assessment. Chapter III discusses the research design, procedure, and instrumentation. Chapter IV presents the analysis of the data. Chapter V discusses and interprets the study findings. Chapter VI summarizes the results of the study and relates study implications and conclusions.
CHAPTER II

REVIEW OF THE LITERATURE

INTRODUCTION

In line with the present study's focus on improving encounters between persons through development of interpersonal skills, the relevant literature will now be examined. In this review of literature, the work that has been done in the areas of health professionals and communication, the doctor-patient relationship, behavioral sciences and interviewing, educational programs, personality variables, aptitude/treatment interaction, and interpersonal skills assessment will be dealt with. The literature in these areas will be summarized and related to indicate how educators might develop curricula which would enhance the learning of interpersonal skills and encourage patient-centered health care.

HEALTH PROFESSIONALS AND COMMUNICATION

The health professional cannot contribute productively to health care without internalizing elements of effective communication, and the need to so improve communication skills has been stressed in several articles.
Educators, representing several health professions, have already been examining health care roles and curricular needs. For example, occupational therapy students, participating in a workshop, explored interactional difficulties, gave and received feedback, and learned the process of two-way communication (Delworth, 1972). The dentist's demonstrated level of interpersonal functioning significantly affected his ability to perform people-related tasks (Deneen, et al. 1973). Weinstein, et al. (1970) described the dental personnel-patient relationship as a dynamic professional interaction in which fears and anxieties must not only be recognized but dealt with appropriately. In the same vein, in the nursing profession, which was originally based on a human being meeting human needs, Holder (1973) thinks this concept has lost emphasis as people have become more absorbed with the tasks they had to perform rather than the person for whom they had to care.

Kalisch (1971) has defined empathy as the ability to perceive accurately the feelings of another person and to communicate this understanding to him. Yet, the traditional way of training helping professionals, by focusing on intellectual learnings to the exclusion of learning how to relate to the actual person, has resulted in a learner who is often unclear as to the effects of his language, feeling tone, and content of communication on the patient.
(Kalisch, 1971). Hence, the dual emphasis on content and the communicative process is necessary for effective communication and empathy.

Such a relationship to the patient is one of five factors which Greene (1972) proposes for evaluating clinical performance of students in the health professions. This factor is concerned with the student's effectiveness in communicating and working with his patients. Greene's illustration (Greene, 1972, p. 25) refers to dental students:

1. The effective (dental) student demonstrates a personal interest in the patient's well-being ...
2. He communicates clearly with the patient about his (dental) problems and how he proposes to deal with them.
3. He monitors the patient's reactions and considers his comfort throughout the procedure.
4. His general manner elicits confidence and cooperation from the patients ...

On the other hand, Turner, et al. (1972) express that a constant element of clinical competence is an adequate history and physical exam obtained by a listener who is skilled in communicating with the patient(s) and/or family members. Because oral communication is the primary mode the physician uses in his interaction with the patient, the effectiveness of communication has a strong bearing on the physician's overall performance (Barro, 1973). Yet although people are becoming aware of the importance of communication skills, as these skills contribute to diagnostic outcomes, patient compliance, and patient satisfaction, in
Barro's (1973) estimation, the state of the art of assessing quality of physician communication is not highly developed. "First, in seeking to successfully deal with a persistent health care problem, we must come to grips with communication as a significant variable. Second, although we know something about communication in the physician-patient relationship, we need to know much more" (Walker, 1973, p. 359).

Meadow and Hewitt (1972) have described a regular communication course for University of Leeds' medical students. One aim of the course has been to encourage thought, discussion and better understanding of doctor-patient relationships and communication problems within medicine. "In the medical and helping professions, communication generally is, or should be given its full meaning as an exchange of information between two or more people" (Waldron, 1973, p. 579).

In summary, then, the importance of communication in helping professions is receiving greater recognition, and curricula are reflecting efforts and interests in teaching these skills.

**DOCTOR-PATIENT RELATIONSHIP**

Attention is being directed, too, in the literature to understanding components of the relationship of doctor and patients. Indeed, the doctor/patient relationship is
complex. Nemiah (1970, p. 100) states that all of us, each from his own experience, think we know what the doctor/patient relationship is, but it becomes clear from reported conference presentations that it has a "thousand faces." Nevertheless, that the doctor/patient relationship stems from an interest in and focus on the individual human being is the one aspect on which we all can probably agree. Crisp (1970) notes that the doctor/patient relationship has cultural, interpersonal and psychological determinants, and he reviews the doctor/patient research literature in three components: sociological, communicative, and personality/personal.

"The practice of medicine in its broadest sense includes the whole relationship of the physician with his patient" (Morgan, et al., 1972, p. 556). And the statement of Turner, et al. (1972, p. 959) regarding pediatrics is generalizable: "Good patient care...requires, in addition to medical knowledge, a constellation of attitudes and actions which engenders a doctor-patient relationship in which the parent...feels the physician genuinely cares for her and her child." Medical practice, then, as these articles describe, revolves around relationships between persons providing and receiving care.
Behavioral sciences and the skills of interviewing are receiving course attention in medical education alongside traditional basic science subjects. Kimball (1973) relates that Pellegrino, among others, has proposed that if humanities are important in the development of the physician, they may need to be offered in conjunction with the medical curriculum and in a way in which their relevance to the practice of medicine and, specifically, the interaction with patients is made clear. Knox (1971) says behavioral science supporters can assist the medical school to develop students' understanding and attitudes that will promote a holistic approach to medicine and contribute towards the fuller acquisition of skills, notably in interviewing people, needed by all doctors. "Understanding the principles and issues involved in initiating a doctor-patient relationship and in properly conducting an interview warrant the highest priority in the education of the physician" (Engel, 1973, p. 131).

In spite of the vital importance of the clinical interview in initiating patient management in all branches, little attention has been given to it, either in terms of teaching time or research interest (Jarrett, et al. 1972). But forces within our society that require more training directed to the skill of interviewing have influenced the
focus on family practice and comprehensive medicine as the consumer has begun to demand that he be effectively inter- viewed and be made to feel that the physician is interested in him (Cline and Gerrard, 1973). In fact, Mai (1972) states that no diagnosis can be made, and no adequate treatment administered without some personal interchange between the doctor and his patient. "The clinical interview," he says, "is a cornerstone in the management of all patients... The term 'interview' is preferred to 'history', as it emphasizes the interactional and interpersonal aspects of the process" (Mai, 1972, p. 1314). Moreover, he suggests three reasons why the technique and content of the clinical interview are fundamental to proper diagnosis and treatment (1972, p. 1314):

1) The clinical interview contributes evidence about disease processes which are available by no other method.

2) During the interview an atmosphere of trust and confidence is developed; without this, competent treatment is limited, difficult, or impossible.

3) Adequate training in interview technique develops in the student his faculties of observation, description, analysis and synthesis, as well as his overall evaluation of verbal and non-verbal data ...

Thurnblad, et al. (1973) report the observational difficulties freshman students experience when conducting diagnostic interviews. The concern of these preclinical students about the mechanics of data gathering and their
uneasiness over the role of data gatherer influence their observing capacities to the extent that their ability to see behavioral data is quite limited. It is unfortunate, then, that interviewing skills in most medical schools have been relegated to the "art of medicine" or to "experience" and have not been the subject of systematic instruction (Morgan, et al. 1972, p. 562).

Interviewing as a decision-making process in selection of medical students has recently been reviewed at The Ohio State University. Hines (1974) has studied the role of interviewing in admissions at The Ohio State University College of Medicine. The 1973 videotape "Medical Admissions Interviewing" is aimed at more effective use of the interviewing process.

All authors stress the essential role of the clinical interview in health care delivery and suggest greater curricular emphasis for this area. Specifically stressed is the importance of the clinical interview in facilitating the health professional in data gathering, establishing a working relationship, and in developing skills of observation.

EDUCATIONAL PROGRAMS

The previously cited literature suggests that interpersonal skills are valued in the health professions. Hence, the opportunity to learn these skills must be provided in
curricula. "If one of our teaching aims is to produce a graduate who can enlist the cooperation of his patient in history-taking, physical examination and investigation, a graduate who is alert to all the verbal and nonverbal cues germane to a comprehensive diagnosis, then it is time we began to teach and examine for this" (Comments, 1973, p. 824). Yet, despite such awareness, there has been little attempt, apart from the field of psychiatry, to teach and assess these skills (clinical interview and physical examination) either at the undergraduate or postgraduate level (Newble, 1973). McNamara (1971) notes the need to provide explicit training in interpersonal skills for medical students. "In learning which involves interpersonal relationships, academic proficiency is no substitute for firsthand experience and the personal growth which makes this possible" (McNamara, 1971, p. 925).

Several attempts at teaching interpersonal skills have been noted in the literature. Burra (1972) has demonstrated with role-playing sessions that there is a set of observational and interpersonal skills which can be brought to use in the encounter between doctor and patient, and also that these skills can be learned. An experimental program, reported by Scott, et al., (1973) at Wayne State University's School of Medicine was designed to help students develop more effective interpersonal skills in working with patients. In addition, Bassuk and Nadelson
(1972) describe a Harvard program in which students learn to interview and relate to patients and to consider the total context of the patient's disease. The student gradually becomes more comfortable and observant. Another program reported by Bassuk and Nadelson (1972), conducted at Beth Israel Hospital, attempts to produce a physician who can be competent, skilled, and also compassionate.

The interviewing modules of the Southern Illinois University School of Medicine are well integrated components of the curriculum. The program, coordinated by Adler, emphasizes interpersonal skills during Introduction to Clinical Medicine and the Family Practice Ambulatory Clerkship. To provide immediate feedback following students' clinical encounters, an evaluative system, DYAD (Dyad Interaction Analysis and Description), has been designed (Ware, et al., 1974), incorporating the Psychotherapy Interaction Scale (PIA) developed by Adler and Enelow (1966). The DYAD and the SIU educational programs are highly developed attempts to improve interpersonal skills in the provider-patient relationship.

Maddock (1973) reports that many medical schools have been forced to acquire a social conscience in the past few years. Yet much more needs to be done, particularly at the level of interpersonal contact between professional and patient. Some medical schools are now emphasizing the interaction of clinician with patients, training
students to function more effectively as interviewers, sympathetic listeners, and even counselors. Maddock (1973) states that such training innovations should certainly be extended.

Efforts to develop affective skills through educational programs have been reported in these selected articles. In summary, then, curricula must provide opportunities for experiential learning in interviewing, listening, and counseling to improve the interaction between health professional and patient and, thus, improve health care.

PERSONALITY VARIABLES

While some differences in observed performance of health professionals can be due to differential aptitude, many of them can be expected to be caused by distinctions in personality characteristics and attitudes: persons vary in their approaches to learning and life choices, and resultant patterns of behavior are individually different. In focusing on the relationship between students' bases of attraction to medicine and learning style preferences, Olmsted (1973) concludes that the individual variables probably persist and influence both specialty choice and medical practice style.

Rothman (1973) compared personality variables of high and low achievers throughout their undergraduate medical education and found differences related to learning-
associated traits and power-and status-associated traits.

Specifically, he found that in the first year of medical school the conventional learning-associated traits such as Need-Achievement, Need Endurance, and Need of Introversion were the most effective differentiators from among the personality variables between the high and low achievement groups, whereas in the last two years differentiation was exclusively in terms of power-and status-associated traits: Need for Dominance, Need for Social Recognition, and Exhibition.

Haley, et al., (1971), demonstrate that Medical College Admissions Test scores are affected by personality and biographical variables such as age entered medical school, undergraduate major, specialty interest, and personality variables including independence, benevolence, and dogmatism, while Underwood (1975) has reviewed the development of individual differences theory and has identified process variables as critical in making individual differences variables central in theory construction. Little or no correlation was found by Wingard and Williamson (1973) between undergraduate grades and physicians' career performance, though a profile of a student's characteristics, i.e., interests and values, attitudes, etc. might identify the person with prerequisites for successful physician performance and result in more meaningful measurement.
Sher (1974) reports the Entry Profile at Michigan State University which attempted to find significant interactions of personality differences with student performance. Personal communication (Sher, 1975) with her, however, indicates that, over a period of several years, her research attempting to relate personality variables to performance has been unsuccessful.

Deckert and Schneider (1970), however, have found significant differences in accuracy of observation as related to the person's "locus of control" of reinforcement, i.e., the degree to which a person believes that a given reinforcement is causally related to his behavior and to the particular learning situation. The main effects discovered were that the "external" control group, i.e. those who felt they could have little control over what happened to them, showed greater responsiveness to the lecture-discussion condition; that the "internal" control group demonstrated only an increment in performance following the interview which equalled the total change in both conditions for the externals; and that the "neutral" group profited from both conditions and showed the greatest overall change.

There is evidence that the Myers-Briggs Type Indicator (Myers, 1962) demonstrates relevance of personality type to medical education in respect to such areas as admissions to medical school, clinical competence, and
interest in primary care. The MBTI is based on C. G. Jung's theory of psychological types. Jung's types differ in two variables of critical importance in medical education, perception and judgment. Sensing types are more uncommon among medical students due to the often higher Medical College Admissions Test (MCAT) score attained by the opposite intuitive type (Myers and McCauley, 1974). Moreover, research conducted by Isabel Myers Briggs (1964) has shown that physicians in general practice have personality behavior preferences of sensing as indicated by the Myers-Briggs Type Indicator (MBTI) (Myers, 1962).

Data reported by Camiscioni (1974) at the research in medical education (RIME) symposium at the Association of American Medical Colleges (AAMC) in November 1974 indicate that sensing types are equal if not more competent than intuitive types when evaluated in clinical clerkships. The sensing individual has been reported (McCaulley, 1974) to have an affinity for primary care. Since the medical school admission process tends to select the intuitive types, then, we might well be neglecting an untapped human resource for medical education and general practice.

In summary, these articles direct attention to the necessity of focusing on relationships of nonintellectual student characteristics such as personality, interest and attitudes, and criteria of academic and clinical performance.
The variations in personality among medical students will likely interact with educational environments. Attempts to determine which instructional situation most adequately meets each individual's needs are discussed by Snow (1971) who traces the derivation of aptitude/treatment interaction (ATI) thinking in psychology to Cronbach's work. By reviewing ATI studies from educational research areas, Snow states a case for ATI studies on medical education. "The pursuit of ATI with improved hypotheses and methodology may ultimately reveal the nature of aptitude for learning and provide a new key to instructional improvement" (Snow, 1973, p. 271).

Cronbach (1975) provides a progress report on ATI studies and extends his original hypothesis beyond the first order to examine the complex interactions involving dimensions of the situation and of the person. Then, too, one example of ATI was found by Deckert and Schneider (1970) who noted a significant interaction between "locus of control" and the learning situation. Internals appeared to profit most from the applied setting (interview), externals from the "authoritarian" setting (lecture), while the middle group was able to demonstrate change in both directions. Further investigation is indicated between personality types and the learning environment in medical education.
There is no doubt that as medical educators progress toward agreement on the entire spectrum of goals and standards for medical training, they will be increasingly concerned with the assessment of noncognitive performance dimensions (Geertsma and Chapman, 1967). Recognizing the value of improving interpersonal skills, then, is only the initial step authors indicate toward the attainment of progress in the evaluation of skills. Barro (1973) states that there are two important reasons for assigning a more important role to the physician's interpersonal skills in an evaluation model of performance: a) interpersonal skills contribute, along with technical skills, to diagnosing disease problems and b) interpersonal skills are needed in treatment of nondisease problems.

Weinstein, et al. (1973) have reported the development of instruments to measure dental student-patient relationships. Hess (1969) reports that the use of interaction analysis with the videotape recorder holds promise as a useful approach for adding precision to the measurement of a type of highly important learning (a student physician's skill in relating to patients). In addition, patient-stimulated interview (PSI) observation schedule, developed by Morrison and Cameron-Jones (1972) to depict the doctor-patient interview as an interpersonal exchange in which both parties have the goals of eliciting and
emitting information, describes both dyadic events for which there is verbal evidence and interpersonal processes.

Role-playing sessions described by Burra (1972) allow the student opportunities to think about his own reactions as an involved person and to know a little more about how he affects other people. Tanner, et al. (1971) report that once a person has identified and recognized feelings as her own, then she can begin to deal with and resolve these feelings. Feelings can then be examined which makes them less intense; exploring how these feelings affect patient care is the next step.

When an individual is experiencing stress, his characteristic method of rotating and behaving may become exaggerated or distorted. The present structure of medical education may encourage selective reinforcement of those defensive maneuvers in the physician which, because they tend to diminish the importance of emotional aspects of a patient's illness, result in damage to his relationship with the patient and may also be injurious to his personal development (Bassuk and Nadelson, 1972, p. 894).

Approaches used in Lausanne, Switzerland, to teach aspects of the doctor-patient relationship, have been reported by Schneider and DePerrot (1970). Scattered teaching efforts aimed at the doctor-patient communication have also been attempted in France (Raimbault and Rappaport, 1973). And Kalisch's study (1971), which developed and assessed a short-term experience designed to increase empathy among nursing students, lends support to previous findings that empathy is teachable.
Kagan (1973) has reported several studies which demonstrate the effect of using Interpersonal Process Recall (IPR) as a training method for interpersonal skills development. Videotaped interviews are played back on a monitor to interview participants, and their expressions of feelings and reactions recalled regarding the interview are facilitated by a third person whose role is that of "inquirer." This method has been effective in interpersonal skills training of counselors, undergraduate students, court case workers, medical students and other groups. And using IPR to study human interactions has been applicable to counselor-client, doctor-patient, teacher-classroom, and undergraduate interpersonal relations. Further development and refinement of IPR by Kagan and co-workers are continually in process.

Using the interpersonal perception theory as a framework, Hawes (1974) examined the effects of question order on the interview process. Support has been evidenced for the hypotheses that (1) more information would be provided when nondirective questions preceded directive questions and that (2) the duration of the interview would be greater when nondirective questions preceded directive questions. These findings suggest that the initial question type influences the amount of information elicited throughout the interview.
Truax and Carkhuff (1967) have demonstrated counseling to have positive effects on influencing client change when related to therapist functioning variables and specific interpersonal behavior dimensions. They have developed numerous rating scales which can be used by trained, objective raters to reliably assess client and counselor therapeutic characteristics. Moreover, the revised scales formulated by Carkhuff (1969) to assess levels of interpersonal functioning include several measurements, the empathic understanding and facilitative genuineness scales being among the most frequently used in research and training. Bales (1950) and Flanders (1970) have also developed techniques known as interaction analysis which provide a means of recording the interaction between two or more individuals objectively.

Werner and Schneider (1974) assessed interactional skills of first-year medical students who participated in the ten-week doctor-patient relationship course. Students had four 10-12 minute video-taped interviews with simulated patients. The Affective Sensitivity Scale, which reflects personal growth in interpersonal sensitivity, was then employed to examine behavioral changes in student performance as a function of the course. This scale showed change attributed to course learning. The interviewer's first 20 responses from video-tapes were rated on dimensions of "Elements of Effective Communication," and significant
increases were noted in the number of exploratory and affective responses between the first and fourth interview, but not for listening responses.

SUMMARY

The humanistic aspects of health care, less prominent during times of scientific dominance, are again being emphasized by the public, the patient, and health professionals. As a skill integral to providing total health care, effective communication is recognized as essential for the establishment and maintenance of an effective practitioner-client relationship.

Health professions students are now given opportunities to study behavioral sciences and interviewing skills in experiential settings. Indeed, educational programs are emphasizing interpersonal skills development and conceptualizing this learning on a continuum. Awareness of individual differences in curriculum planning will enhance the student's growth and ability to understand and appreciate his own as well as other's unique capacities. In addition, greater attention to the variables of personality as they interact with distinctive settings can improve educational programs and better meet the student's needs. As interpersonal skills are learned, particular aspects might require individualized experience for further
development. Assessment of interpersonal skills learned can then assist educators in curricular planning and career specialty counseling. Indeed, the development of interpersonal skills and more effective communication will help health professionals treat their patients as total persons and rehumanize medicine.
CHAPTER III

STUDY METHODOLOGY AND PROCEDURE

INTRODUCTION

This chapter will present the research procedure by which were assessed the effect of personality factors and training on the development of interpersonal skills by freshman medical students during a Patient Interaction course sequence. This presentation will encompass:

(1) a description of the population sample and of the sample selection procedure;

(2) a description of the study set-up, including the choice of experimental treatments and the selection and training of judges;

(3) a statement of study hypotheses;

(4) a description of the study's instrumentation;

(5) a delineation of data collection techniques;

(6) a description of data analysis techniques.

POPULATION AND SAMPLE

Population

The 1974 entering class of medical students at Michigan State University numbered 112. During September 1974, the Myers-Briggs Type Indicator (MBTI) was administered to
109 of these freshman students who were enrolled in a Patient Interaction course sequence. The population was stratified by the bivariate classifications of the Myers-Briggs Type Indicator: Sensing - Intuitive (S-N) and Judging - Perceiving (J-P). The resultant population frequencies are shown in Figure 3.

\[
\begin{array}{ccc}
S & N & \text{Total} \\
J & 22 & 32 & 54 \\
P & 12 & 43 & 55 \\
34 & 75 & 109 \\
\end{array}
\]

Figure 3. Total Study Population Stratified by Myers-Briggs S-N, J-P Classifications

Of the 109 students who took the MBTI and were enrolled in Patient Interaction, eleven individuals were participating in an interdisciplinary pilot project, and ten additional class members were continuing their education at a regional campus. These twenty-one students were thus not included in the population from which the study sample was selected. Consequently, the population frequencies potentially available for this study are shown in Figure 4.
Sample Selection

The study sample was to be selected from the potential population according to Myers-Briggs type. The Myers-Briggs Type Indicator was one among several tests administered to freshman medical students in September 1974 as an Entry Profile battery by the Office of Student Affairs, College of Human Medicine, Michigan State University. The initial request to use Myers-Briggs types to determine this study's sample occurred in December 1974, though the selection of the study sample was delayed until the actual formulation of a data access policy in April 1975.

The policy developed required that each individual researcher planning a study involving enrolled students obtain written permission from each student for access, via a double code to protect the student's identity, to specified Entry Profile records. Once a student had graduated, only the permission of the Dean of the College of Human Medicine would be required for use of Entry Profile records for research purposes.
Since the population of interest for this study comprised freshman students, the data access policy was compiled with, and explanatory letters (see Appendix B) with enclosed permission forms (see Appendix C) requesting use of Myers-Briggs types for the study, assuring the protection of anonymity, were sent to all Year I students. In order to avoid a Hawthorne Effect, permission was requested from the interdisciplinary pilot project group and regional campus students as well as the potential study population.

A follow-up letter (see Appendix D) was sent one week following the initial inquiry, and those who had not yet responded were contacted by telephone or met personally in the classroom building to offer further explanation of the study. The results of the solicitation for permission to anonymously use students' Myers-Briggs types for this study appear in Figure 5.

<table>
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<td>N=10</td>
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<tr>
<td>Potential Study</td>
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<td>5</td>
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<tr>
<td>Population N=88</td>
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Figure 5. Students' Response to Request for Use of Myers–Briggs Types
The overall response from the Year I class was 88%, and the response from the potential study population totaled a 94% return. Based on permission granted by the potential study population, then, the population frequencies ultimately available for this study are shown in Figure 6.

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<td></td>
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<td>81</td>
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Figure 6. Population Permitting Use of Myers-Briggs Type Stratified by S-N, J-P Classifications

Eighty-one freshmen medical students comprised the study population. In order to gain statistical power for the tests used to process the data for this investigation, the larger cells (NJ and NP) were randomly decreased to 15 students each. The sample frequencies available for this study are shown in Figure 7.

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Figure 7. Study Sample Stratified by Myers-Briggs S-N, J-P Classifications
Experimental Treatments

The treatment under consideration was interview performance in a required three-term interpersonal skills development course sequence titled "Patient Interaction and Clinical Sciences." Interviewing and observational experiences were planned to emphasize the student's self-awareness during the first term, to emphasize the student's awareness of others during the second term, and to emphasize the student's improvement in medical interviewing skills during the third term. Exploratory skills, listening skills, and affective skills, consecutively, were specific goals for terms one, two, and three.

The student experiences in Patient Interaction during Fall Term 1974 provided opportunities for four videotaped interviews (Interviews #1, #2, #3, #4) with trained student models to discuss topics of increasing medical emphasis. Permission forms were signed by students at the outset of each term allowing identified researchers to view the videotaped interviews to collect data for curriculum research (see Appendix E). These interviews and the student's awareness of personal interaction were integrated into the physical examination setting. Weekly small group discussions were a forum for students to share their Patient Interaction experiences.
During Winter Term 1975, students had two experiences in interviewing on videotape a mother regarding her pregnancy and delivery (Interviews #5, #6). Each mother was trained to provide feedback to the student about his listening skills. Two additional opportunities to interview a mother were provided in a hospital setting as well as a newborn examination.

Students interacted with simulated patients in three videotaped interviews (Interviews #7, #8, #9) during Spring Term 1975. Groups of six students were assigned physician preceptors. A schedule was planned whereby four group members would meet weekly for two hours with the preceptor while two students, on a rotating basis, participated in an assignment with pre-school children. While the student scheduled to interview a simulated patient conducted a twenty-minute interview in a videotaping studio, the preceptor and three peers viewed a videotape monitor in a recall room and discussed the interaction.

Following the interview, the student joined the group in the recall room, and the process of data elicitation was discussed with peer observer groups facilitated by the preceptor. Portions of the videotaped interview were sometimes played back on the monitor for review, and simulated patients were often invited to participate in the group discussion. The interview and discussion encompassed one hour which allowed two students per preceptor
to interview during each weekly session.

This study concentrated on only Interviews #1 (Pre), #4, #6, and #9 (Post) for assessing the effect of personality factors and training on the development of interpersonal skills by freshman medical students during this Patient Interaction course sequence.

Selection and Training of Judges

A list of potential judges was compiled by a counseling psychologist who had personally rated videotaped interviews for the Werner and Schneider study using Kagan's scale. The names of persons who were familiar with psychological terminology such as affective and cognitive and who had some prior experience rating videotaped interviews were provided. Two individuals meeting these qualifications were selected because they were acquainted with one another and already communicative which would facilitate the training process; in addition, they could make a concentrated time commitment to the tape rating aspect of the study. Of primary importance, however, they were known to be conscientious in their endeavors, and it was felt that this attribute would positively contribute to the quality of the research.

In preparation for the judges' training session, sample videotapes were selected from interviews of Year I students not included in the study sample. The tapes were
representative of Interviews #1, #4, #6, and #9 which were to be rated, in random order, by the trained judges. A cardex system, identifying interviewer and interviewee, devised and maintained by the Manager of the Videotape Control Center greatly assisted the interview identification process.

From the previous tape rating experience of the counseling psychologist, training was seen to be potentially facilitated by having ready access to a written copy of the verbal responses communicated by the interviewer during the videotape. Thus, a verbatim script of the interviewer's responses was prepared for six sample interviews. Using the control center videotape equipment enabled the trainer to easily rewind the cartridge tape when a response was not clearly heard. This scripting process averaged one hour per fifteen-minute interview.

An initial three-hour evening training session was planned with the counseling psychologist who contributed her past videotape rating experience, the two judges, and the trainer. A brief introduction was given regarding the topic of study and course sequence; details were omitted to avoid possible contamination and bias of the judges. Then, copies of Kagan's "Elements of Effective Communication" with examples of ratings on dimensions of Exploratory/Non-Exploratory, Listening/Non-Listening, and Affective/Cognitive were distributed and discussed. The counseling
psychologist shared rating derivations and clarified areas of confusion.

The use of rating forms (see Appendix F) designed for response ratings was explained next. The first twenty responses were to be rated, and each response would be rated on all three of Kagan's dimensions. An individual response would be Exploratory or Non-Exploratory, Listening or Non-Listening, and Affective or Cognitive. Thus, three scores would be obtained for each of twenty responses.

A sample videotaped interview was shown on a monitor, and judges used a stop-start remote manual control to pause for contemplation before rating each response. The typed script was available for reference since the monitor did not have a rewind capability. At the completion of the twentieth response, the judges compared their ratings. The same tape was played again for context discussions in instances of discrepancy.

When the judges had identified areas of differing ratings, they were able, with the assistance of the counseling psychologist and trainer, to better understand the application of an existing rating rule or to add another rating example to the original list. The judges thus began to feel comfortable with the rating scale and were ready to continue their training with the trainer.

The training session was moved from the monitor room to the control center where actual rating would take
place. With the rewind capability of the control room equipment, typed scripts were no longer needed for reference. Two more videotaped interviews were rated and discussed. Then the two judges and trainer agreed to assess the inter-rater reliability.

"A Coefficient of Agreement for Nominal Scales" (Cohen, 1960) was used to determine inter-rater reliability for the Exploratory, Listening, and Affective dimensions of Kagan's "Elements of Effective Communication." The two trained judges achieved an inter-rater reliability of .86 and .88 on the first and second assessed ratings respectively.

This initial training session, scheduled for three hours, lasted five hours. Judges were given three typed scripts with rating sheets to rate at home for interim training practice. Prior commitments of the judges caused the evening training to reconvene for three hours one week later. As the judges began to rate a videotaped interview, the trainer calculated the inter-rater reliability on the three typed scripts rated at home. The Listening/Non-Listening dimension could not be rated without the benefit of the videotaped context. Ratings were compared for the Exploratory/Non-Exploratory and Affective/Cognitive dimensions, and the agreement averaged .99.

The inter-rater reliability on the first actual videotape rating during that second training session was
above .88 on all three dimensions, while the second tape rating resulted in an inter-rater reliability averaging .97. At this point, the training was determined successful, and the judges proceeded to separately rate the videotaped interviews of the study sample. Cross-check assessment of inter-rater reliability by having judges periodically rate the same interview remained above .93.

EXPERIMENTAL HYPOTHESES

In stating the experimental hypotheses, the following terms will be abbreviated for the reader's convenience:

The Exploratory/Non-Exploratory interpersonal skill dimension of the "Elements of Effective Communication" as developed by Kagan, et al. (1967) will be referred to as the E Scale.

The Listening/Non-Listening dimension will be referred to as the L Scale.

The Affective/Cognitive dimension will be referred to as the A Scale.

The group formed by the bivariate classification of the Judging/Perceiving and Sensing/Intuitive dichotomy of the Myers-Briggs Type Indicator will be referred to as follows:

Sensing/Perceiving will be abbreviated to read SP
Sensing/Judging will be abbreviated to read SJ
Intuitive/Perceiving will be abbreviated to read NP
Intuitive/Judging will be abbreviated to read NJ
The pretest and posttest will be the initial Interview #1 of the students during Fall Term 1974 and terminal Interview #9 during Spring Term 1975 respectively. The alpha level for testing the experimental hypotheses will be .05.

The experimental hypotheses to be tested are as follows:

1. The overall difference between the pretest and posttest interview on the E Scale for subjects in this study will not be significantly greater than 0.

2. The overall difference between the pretest and posttest interview on the L Scale for subjects in this study will not be significantly greater than 0.

3. The overall difference between the pretest and posttest interview on the A Scale for subjects in this study will not be significantly greater than 0.

4. There will be no significant difference between the treatment groups SP, SJ, NP, NJ on the E Scale.

5. There will be no significant difference between the treatment groups SP, SJ, NP, NJ on the L Scale.

6. There will be no significant difference between the treatment groups SP, SJ, NP, NJ on the A Scale.

7. There will be no significant difference between learning environments on the E Scale.

8. There will be no significant difference between learning environments on the L Scale.

9. There will be no significant difference learning environments on the A Scale.
10. There will be no significant interaction between personality classifications and the learning environment emphasizing the E Scale.

11. There will be no significant interaction between personality classifications and the learning environment emphasizing the L Scale.

12. There will be no significant interaction between personality classifications and the learning environment emphasizing the A Scale.

INSTRUMENTATION

Myers-Briggs Type Indicator

The educational Testing Service published the Myers-Briggs Type Indicator in 1962 following twenty years of development of the instrument by Isabel Briggs Myers and her mother, Katherine C. Briggs. The remarkable persistence Isabel Myers has demonstrated in continuing to research the MBTI after formal publication has been praised by Dr. Junius A. Davis (Myers and Davis, 1964): "Mrs. Myers has joined us in the best tradition of Strong or Terman. Her demonstrated concern for a continuing and carefully conceived program of research involving ultimate criteria sets a pace that one would hope more test authors would emulate."
The Myers-Briggs Type Indicator, used as a basis for sample selection in this study, is a self-report inventory which was developed specifically to make possible the implementation of Carl Jung's theory of psychological type (June, 1923). Jung's theory assumes that "much apparently random variation in human behavior is actually quite orderly and consistent, being due to certain basic differences in the way people prefer to use perception and judgment" (Myers, 1962, p. 1).

Myers-Briggs type refers to a descriptor of people's preferences as to the use of perception and judgment. Four pairs of preferences (see Appendix G) are scored in a dichotomous manner consistent with Jung's theory. The forced choice method is utilized to determine a subject's four-letter personality type (McCaulley, 1971), i.e., ENFP, according to the following categories (the test allows for sixteen personality types--see Appendix H):

Extraversion (E) - Introversion (I): The Direction of Interest. Does the subject's interest flow mainly to the outer world of actions, objects, and persons (E) or to the inner world of concepts and ideas (I)?

Sensing (S) - Intuition (N): Perception. Does the subject attach more importance to the immediate realities of direct experience (S) or to the inferred meanings, relationships, and possibilities of experience (N)?

Thinking (T) - Feeling (F): Judgment. In making judgments, does the subject rely more on logical order and cause and effect (T) or on priorities based on personal importance and values (F)?
Judging (J) - Perception (P): Life Style. Does the subject prefer to live in the judging attitude, systematically, planfully, deciding what needs to be done and attempting to control events (J) or in the perceptive attitude, spontaneously, curiously, awaiting events and adapting to them (P)?

The independent variables used in this study were the Myers-Briggs Type Indicator classifications of S-N (Sensing - Intuitive) and J-P (Judging - Perceiving). The effects of the S-N and J-P preferences in work situations are described in the MBTI manual (Myers, 1962, p. 80a) as follows:

**SENSING TYPES**

- Dislike new problems unless there are standard ways to solve them.
- Like an established routine
- Enjoy using skills already learned more than learning new ones.
- Work more steadily, with realistic idea of how long it will take.
- Must usually work all the way through to reach a conclusion.
- Are impatient when the details get complicated.
- Are patient with routine details.
- Rarely trust inspirations, and don't usually get inspired.
- Seldom make errors of fact.
- Tend to be good at precise work.

**INTUITIVES**

- Like solving new problems.
- Dislike doing the same thing over and over again.
- Enjoy learning a new skill more than using it.
- Work in bursts of energy powered by enthusiasm, with slack periods in between.
- Frequently jump to conclusions.
- Are patient with complicated situations.
- Are impatient with routine details.
- Follow their inspirations good or bad.
- Often tend to make errors of fact.
- Dislike taking time for precision.
JUDGING TYPES

Best when they can plan their work and follow the plan.

Like to get things settled and wrapped up.

May decide things too quickly.

May dislike to interrupt the project they are on for a more urgent one.

May not notice new things that need to be done.

Want only the essentials needed to get on with it.

Tend to be satisfied once they reach a judgment on a thing, situation or person.

Reliability: Myers states in the MBTI manual that reliability studies show that the sample character seems to make a difference in the reliability coefficients obtained. In fact, reliabilities of a number of reported samples using the Spearman-Brown Split-Half Prophecy Formula found that age, intellectual ability, socioeconomic status made a difference. The general range for all samples reported was from .60 to .94.

Gerald Mendelsohn states in his Buros Mental Measurement Yearbook - 1964 review of the Myers-Briggs Type Indicator that an unusual amount of reliability and validity data is available since the instrument has been

PERCEPTIVES

Tend to be good at adapting to changing situations.

Don't mind leaving things open for alterations.

May have trouble making decisions.

May start too many projects and have difficulty in finishing them.

May postpone unpleasant jobs.

Want to know all about a new job.

Tend to be curious and welcome new light on a thing, situation or person.
in existence for more than twenty years. The manual summarizes a great deal of this data. Mendelsohn points out the limited data on the stability of MBTI scores and expresses concern for inference of basic personality differences "when the omission or change of a single item could alter a subject's classification." Nevertheless, the reviewer considers the instrument to have considerable potential utility for "personality research and, given its relationships to measures of interest, value, aptitude, and achievement, for academic counseling."

Validity: The Myers-Briggs manual presents correlational data showing the strong relationship of the Myers-Briggs Type Indicator and the Gray-Wheelwright Psychological Type Questionnaire which was constructed by two Jungian analysts. The instruments were developed concurrently and independently. The correlations between EI, SN, and TF with the corresponding Grey-Wheelwright scales are .79, .58, and .60, respectively. Although the JP scale is not included on the Gray-Wheelwright Questionnaire, the two instruments might be considered parallel forms since their mutual purpose is to identify Jungian types by determining the subject's EI, SN, and TF preferences.
Other results presented in the manual correlate the MBTI with the Strong Vocational Interest Blank and show significant results beyond the .01 level for 103 of 180 correlations. Data showing correlations between certain preferences on the MBTI and the Allport-Vernon-Lindzey Study of Values, Edwards Personal Preference Schedule, job turnover, IQ, scholastic performance, and a number of other measures are described. Details of these studies are extensively reported in the manual.

"Elements of Effective Communication"

The dependent variables in this study were the Exploratory/Non-Exploratory, Listening/Non-Listening, and Affective/Cognitive dimensions of "The Elements of Effective Communication" (see Appendix I). The "Elements of Effective Communication" Counselor Verbal Response Scale (CVRS) was developed by Kagan, et al. (1967) to obtain an adequate criterion measure for evaluating counselor growth. Kagan, et al. (1967, p. 83) describe the development of the "Elements of Effective Communication" scale for evaluating counselor behavior as follows:

Before any new studies in counselor education were undertaken it seemed essential that we devise or find a scale which would have adequate interjudge reliability, validity and sensitivity to differences in levels of counselor ability. Implicit in these requirements is that the instrument or procedure would (1) measure behaviors or attributes which are specific enough to foster objectivity and minimize the potential for rater bias, (2) measure
dimensions that are also important counselor behaviors so that the specificity of the behavior or attribute does not result in the very objective measurement of that which is really insignificant, and (3) the scale must tap dimensions which are affected by counselor education programs and/or differentiate between the more and less experienced and competent counselor.

As reported in Studies in Human Interaction: Interpersonal Process Recall Stimulated by Videotape (Kagan, et al., 1967, p. 27), the CVRS differs from other rating scales on an important aspect: the scale focuses on a series of individual client/counselor units (client statement-counselor response) during the course of the interview rather than on global ratings of entire interviews or of longer interview segments. Thus, the judge is required to describe every counselor response to each client statement on each dimension of the scale. Typically, twenty-consecutive counselor responses have been rated. Inter-rater reliability coefficients for each dimension of the CVRS range from .59 to .90 in several studies involving sixty-four tapes. The CVRS was found to distinguish among doctoral degree and masters degree level counselors as well as among counselors reputed to be competent and those reputed to be less competent.

In the present study, judges were trained to rate, using Kagan's "Elements of Effective Communication," the first twenty student responses of each designated videotaped interview.
Instrument Assumption: The dimensions of Kagan's instrument "Elements of Effective Communication," E, L, and A, were tested during the process of this study and found independent of one another at the .05 level. Thus, the underlying assumption that the different dimensions of the scale are orthogonal appears valid as previously noted by Kagan. The skills gained on the E dimension, the L dimension, and the A dimension during this course sequence were separable.

DATA COLLECTION TECHNIQUES

During January, arrangements were made with the Office of Curriculum Implementation, through financial support from the Office of Medical Education Research and Development, to preserve all videotaped student interviews from the Patient Interaction and Clinical Sciences course sequence interviews designated for research, I #1, I #4, I #6, and I #9, until which time the study sample could be selected (see Appendix J). The Manager of the Audio Visual Control Center agreed to separate these designated videotapes and store them until further notice.

After a policy was developed in mid-April outlining procedures for Entry Profile access and the data was in the Office of Student Affairs, evidence of permission granted by students was presented. A procedure for determining the
sample was planned with the Acting Director of the Office of Student Affairs and his secretary.

The selection of the study sample, determined by Myers-Briggs types as previously described, allowed coding and continued preservation of those specific students' videotaped interviews and release of the videotapes of students not included in the study sample. The Manager of the Videotape Control Center agreed to maintain the study tapes until the completion of tape ratings by trained judges.

The two trained judges rated fifty-three hours of randomly-ordered video-taped interviews in one week. They recorded their ratings of the first twenty responses of each designated interview on rating sheets which were collected daily by the trainer so that the data could be compiled.

The time spent by the two judges on the videotaped interview rating aspect of this research study totaled 81 hours, which included eight hours of training for each judge. The financial support for the judges was provided by the Office of Medical Education Research and Development.

The Data Collection Techniques are summarized below:

**Experimental Steps**

1. Administer the Myers-Briggs Type Indicator
2. Plan the videotaping sessions
3. Select and preserve key videotapes
4. Plan an intensive workshop to train judges
to rate the videotaped student interviews
5. Judges rate the videotapes
Data Sources

1. Participant data
   a. Myers-Briggs Type Indicator types
   b. Videotaped student interviews
      First (I #1) and fourth (I #4) Fall Term interviews
      Second interview Winter Term (I #6)
      Final (third) Spring Term interview (I #9)

2. Judging data
   a. Develop training response sheets to assess inter-rater reliability
   b. Judges' ratings of videotaped student interviews relative to
      Exploratory/Non-Exploratory
      Listening/Non-Listening
      Affective/Cognitive dimensions of Kagan's
      "Elements of Effective Communication"

DATA ANALYSIS TECHNIQUES

The research questions posited on Page 12 require two statistical designs. The first research question translates into Experimental Hypotheses 1, 2, and 3. These hypotheses can be answered by analyzing the data using a one-way, two-group design. The statistic used was a t-test for dependent samples (Glass and Stanley, 1970, p. 297).

The second, third, and fourth research questions translate into Hypotheses 4, 5, 6, 7, 8, 9, 10, 11, and 12. These hypotheses can be answered by analyzing the data using a three-way analysis of variance—repeated measures design on one factor (Winer, 1962, pp. 559-571).

The dimensions for this design relative to this study were: (1) the S-N dimension of the MBTI and (2) the J-P
dimension. Because of the nature of the Patient Interaction course sequence, each student was measured four times. This induced the additional dimension of Time into the study, which is the repeated measure in this study. This design in tableau form appears in Figure 8.

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T = Time
I = Interview
V = the dependent variables
Exploratory—Non—Exploratory
Listening/Non—Listening
Affective/Cognitive
J = Judging
P = Perceiving
S = Sensing
N = Intuitive

Figure 8. Study Design

SUMMARY

The sample for this study used 53 freshman medical students who were enrolled in a Patient Interaction course sequence and were chosen randomly after stratifying the population by personality type using the MBTI. Judges were trained to use the Kagan "Elements of Effective Communication" instrument in assessing the students' development of interpersonal skills; these judges achieved an inter-rater
reliability of .97.

Hypotheses concerning training, personality factors, learning environments, and the interaction between learning environment and personality type were arrived at and tested. The resultant data was analyzed using a one-way, two-group design, with a t-test for dependent samples to test the training dimension of this study, and a three-way analysis of variance--repeated measures design on one factor to test the personality type and learning environment interaction.
INTRODUCTION

The data collected and analyzed included a number of statistical and descriptive procedures, and the computations performed in the study were primarily done on the CDC 6500 computer. The first procedure used was a one-way, two-group design utilizing a t-test for dependent samples to test the training dimension of this study. A three-way analysis of variance—a repeated measures design on one factor used to utilize to test the personality type and learning environment interaction.

ANALYSES OF DATA

The analyses of the data are organized in the following manner:

First, the experimental hypothesis under consideration will be stated.

Second, the necessary statistical analysis will be presented.

Third, the adjudication of the experimental hypothesis will be stated.
Hypothesis 1.

The overall difference between the pretest and posttest interview on the E Scale for subjects in this study will not be significantly greater than 0.

Symbolically, this can be represented as:

\[ H_0 : \overline{X}_d = 0 \]
\[ H_1 : \overline{X}_d \neq 0 \]

where \( \overline{X}_d \) represents the difference between the pretest interview score and the posttest interview score.

The mean scores and variances for the subjects in this study on the pretest and posttest are shown in Figure 9.

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<thead>
<tr>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \overline{X} ) = 3.06</td>
<td>( \overline{X} ) = 5.11</td>
</tr>
<tr>
<td>( S^2 ) = 2.82</td>
<td>( S^2 ) = 3.95</td>
</tr>
</tbody>
</table>

\[ t = -5.68^{**} \]

**significant beyond the .01 level with 52 df.

Figure 9. Mean and Variance of E Scale Scores in Pre and Post Testing Periods

Since the computed value of the t statistic was \(-5.68\), which was greater than the critical value of 1.67, the test was statistically significant and the null hypothesis was rejected. Because the value of t was negative and was formed by subtracting the post from the pretest, it was concluded that the students gained in the E dimension of this study.
Hypothesis 2.

The overall difference between the pretest and posttest interview on the L Scale for subjects in this study will not be significantly greater than 0.

Symbolically, this can be represented as:

\[ H_0 : \overline{X}_d = 0 \]

\[ H_1 : \overline{X}_d \neq 0 \]

where \( \overline{X}_d \) represents the difference between the pretest interview score and the posttest interview score.

The mean scores and variances for the subjects in this study on the pretest and posttest are shown in Figure 10.

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \overline{X} )</td>
<td>12.45</td>
<td>14.15</td>
</tr>
<tr>
<td>( S^2 )</td>
<td>12.64</td>
<td>18.71</td>
</tr>
</tbody>
</table>

\[ t = -2.26^{*} \]

*significant beyond the .05 level for 52 df.

Since the computed value of the t statistic was -2.26, which was greater than the critical value of 1.67, the test was statistically significant and the null hypothesis was rejected. Because the value of t was negative and was formed by subtracting the post from the pretest, it was concluded that the students gained in the L dimension of this study.
Hypothesis 3.

The overall difference between the pretest and posttest interview on the A Scale for subjects in this study will not be significantly greater than 0.

Symbolically, this can be represented as:

\[ H_0 : \bar{X}_d = 0 \]
\[ H_1 : \bar{X}_d \neq 0 \]

where \( \bar{X}_d \) represents the difference between the pretest interview score and the posttest interview score.

The mean scores and variances for the subjects in this study on the pretest and posttest are shown in Figure 11.

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \bar{X} )</td>
<td>.906</td>
<td>.887</td>
</tr>
<tr>
<td>( s^2 )</td>
<td>1.20</td>
<td>1.25</td>
</tr>
</tbody>
</table>

\[ t = .088 \]

Figure 11. Mean and Variance of A Scale Scores in Pre and Post Testing Periods.

Since the computed value of the t statistic is .088, which was less than the critical value of 1.67, the null hypothesis cannot be rejected. As a result of this finding, it was concluded that there was insufficient evidence to substantiate the claim that the A dimension of Kagan's
"Elements of Effective Communication" was successfully acquired as a result of the formal training program.

Analysis of Hypotheses 4, 5, 6, 7, 8, 9, 10, 11, and 12 used the Multivariance Computer program written by Finn (1968) and modified for Michigan State University by Schieffley and Schmidt (1973).

**Hypothesis 4.**

There will be no significant difference between the treatment groups SP, SJ, NP, NJ on the E Scale.

Symbolically, this can be represented as:

\[ H_0 : \bar{X}_g = 0 \]
\[ H_1 : X_g \neq 0 \]

where \( \bar{X}_g \) represents the mean of each group.

The statistical analysis for Hypothesis 4 can be found in Figure 12.

By inspecting the group source variation, one detected no statistically significant differences. Therefore groups did not differ on the E Scale rating. One can conclude, then, that performance on E cannot be predicted from personality type.
Figure 12. Results of Statistical Analyses for Exploratory Responses (E)

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>df</th>
<th>Multivariate F</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUPS (Myers—Briggs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S—N (Sensing, Intuitive)</td>
<td>1, 49</td>
<td>1.4652</td>
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<tr>
<td>J—P (Judging, Perceiving)</td>
<td>1, 49</td>
<td>.0697</td>
</tr>
<tr>
<td>(S—N) X (J—P)</td>
<td>1, 49</td>
<td>.0649</td>
</tr>
<tr>
<td>Learning ENVIRONMENTS (LE)</td>
<td>3, 47</td>
<td>14.7115***</td>
</tr>
<tr>
<td>GROUPS X Learning ENVIRONMENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(S—N) X LE</td>
<td>3, 47</td>
<td>.4569</td>
</tr>
<tr>
<td>(J—P) X LE</td>
<td>3, 47</td>
<td>1.5866</td>
</tr>
<tr>
<td>(S—N) X (J—P) X LE</td>
<td>3, 47</td>
<td>.3972</td>
</tr>
</tbody>
</table>

*** p > .0001
Hypothesis 7.

There will be no significant difference between learning environments on the E Scale.

Symbolically, this can be represented as:

\[ H_0 : \beta_j = 0 \]
\[ H_1 : \beta_j \neq 0 \]

where \( \beta_j \) represents the learning environments.

By inspecting the learning environments source of variation in Figure 12, one detected a statistically significant difference between learning environments (\( F = 14.7115, p. < .0001 \)). This implied that students have acquired E skills differentially over learning environments.

The mean E skill scores at each learning environment are shown in Figure 13.

Hypothesis 10.

There will be no significant interaction between personality classifications and the learning environment emphasizing the E Scale.

Symbolically, this can be represented as:

\[ H_0 : \gamma_{ij} = 0 \]
\[ H_1 : \gamma_{ij} \neq 0 \]

where \( i \) represents personality classifications (SP, SJ, NP, NJ), \( j \) represents learning environment \( T_2 \).
Figure 13. E Scale Composite Group Scores (SP, SJ, NP, NJ)
The statistical analysis for Hypothesis 10 can be found in Figure 12.

By inspecting the groups by LE interaction in Figure 12, one detected no statistically significant results. This meant that the individual groups did not gain differently depending on the term's emphasis. Therefore, the performance on the E Scale was not a function of the interaction between LE and personality type. The null hypothesis cannot be rejected.

Hypothesis 5.

There will be no significant difference between the treatment groups SP, SJ, NP, NJ on the L Scale.

Symbolically, this can be represented as:

\[ H_0 : \bar{X}_g = 0 \]

\[ H_1 : \bar{X}_g \neq 0 \]

where \( \bar{X}_g \) represents the mean of each group.

By inspecting the group source of variation, one detected no statistically significant differences. Therefore, groups did not differ on the L Scale rating. One can conclude that performance on L cannot be predicted from personality type.
The statistical analysis for Hypothesis 5 can be found in Figure 14.

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>df</th>
<th>Multivariate F</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUPS (Myers—Briggs)</td>
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<tr>
<td>S—N (Sensing, Intuitive)</td>
<td>1, 49</td>
<td>.0104</td>
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<tr>
<td>J—P (Judging, Perceiving)</td>
<td>1, 49</td>
<td>.6363</td>
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<tr>
<td>(S—N) X (J—P)</td>
<td>1, 49</td>
<td>.8129</td>
</tr>
<tr>
<td>Learning ENVIRONMENTS (LE)</td>
<td>3, 47</td>
<td>4.3460**</td>
</tr>
<tr>
<td>GROUPS X Learning ENVIRONMENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(S—N) X LE</td>
<td>3, 47</td>
<td>.1861</td>
</tr>
<tr>
<td>(J—P) X LE</td>
<td>3, 47</td>
<td>1.6723</td>
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<td>(S—N) X (J—P) X LE</td>
<td>3, 47</td>
<td>.1960</td>
</tr>
</tbody>
</table>

** p < .01

Figure 14. Results of Statistical Analyses for Listening Responses (L)
Hypothesis 8.

There will be no significant difference between learning environments on the L Scale.

Symbolically, this can be represented as:

\[ H_0 : \beta_j = 0 \]
\[ H_1 : \beta_j \neq 0 \]

where \( \beta_j \) represents the learning environments.

By inspecting the learning environments source of variation in Figure 14, one detected a statistically significant difference between learning environments (\( F = 4.346, p < .01 \)). This implied that students acquired L skills differentially over learning environments.

The mean L skill scores at each learning environment are shown in Figure 15.

Hypothesis 11.

There will be no significant interaction between personality classifications and learning environment emphasizing the L Scale.

Symbolically, this can be represented as:

\[ H_0 : \gamma_{ij} = 0 \]
\[ H_1 : \gamma_{ij} \neq 0 \]
Figure 15. L Scale Composite Group Scores (SP, SJ, NP, NJ)
where \( i \) represents personality classifications (SP, SJ, NP, NJ), \( j \) represents learning environment \( T_j \).

The statistical analysis for Hypothesis 11 can be found in Figure 14.

By inspecting the groups by LE interaction in Figure 14, one detected no statistically significant results. This meant that the individual groups did not gain differently depending on the term's emphasis. Therefore, the performance on the L Scale was not a function of the interaction between LE and personality type. The null hypothesis cannot be rejected.

**Hypothesis 6.**

There will be no significant difference between the treatment groups SP, SJ, NP, NJ on the A Scale.

Symbolically, this can be represented as:

\[
H_0 : \bar{X}_g = 0
\]

\[
H_1 : \bar{X}_g \neq 0
\]

where \( \bar{X}_g \) represents the mean of each group.

By inspecting the group source of variation, one detected no statistically significant differences. Therefore, groups did not differ on the A Scale rating. One can conclude that performance on A cannot be predicted from personality type.
The statistical analysis for Hypothesis 6 can be found in Figure 16.

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>df</th>
<th>Multivariate F</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUPS (Myers—Briggs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S—N (Sensing, Intuitive)</td>
<td>1, 49</td>
<td>3.3067</td>
</tr>
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<td>J—P (Judging, Perceiving)</td>
<td>1, 49</td>
<td>2.8311</td>
</tr>
<tr>
<td>(S—N) X (J—P)</td>
<td>1, 49</td>
<td>.3482</td>
</tr>
<tr>
<td>Learning ENVIRONMENTS (LE)</td>
<td>3, 47</td>
<td>12.1032***</td>
</tr>
<tr>
<td>GROUPS X Learning ENVIRONMENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(S—N) X LE</td>
<td>3, 47</td>
<td>1.1441</td>
</tr>
<tr>
<td>(J—P) X LE</td>
<td>3, 47</td>
<td>3.2370*</td>
</tr>
<tr>
<td>(S—N) X (J—P) X LE</td>
<td>3, 47</td>
<td>.7631</td>
</tr>
</tbody>
</table>

*p < .05
***p < .0001

Figure 16. Results of Statistical Analyses for Affective Responses (A)
Hypothesis 9.

There will be no significant difference between learning environments on the A Scale.

Symbolically, this can be represented as:

\[ H_0 : \beta_j = 0 \]
\[ H_1 : \beta_j \neq 0 \]

where \( \beta_j \) represents the learning environments.

By inspecting the learning environments source of variation in Figure 16, one detected a statistically significant difference between learning environments (\( F = 12.1032, p < .0001 \)). This implied that students acquired A skills differentially over learning environments.

The mean A skill scores at each learning environment are shown in Figure 17.

![Figure 17. A Scale Composite Group Scores (SP, SJ, NP, NJ)]
Hypothesis 12.

There will be no significant interaction between personality classifications and the learning environment emphasizing the A Scale.

Symbolically, this can be represented as:

\[
H_0 : \gamma_{ij} = 0 \\
H_1 : \gamma_{ij} \neq 0
\]

where \( i \) represents personality classifications (SP, SJ, NP, NJ), \( j \) represents learning environment \( T_4 \).

The statistical analysis for Hypothesis 12 can be found in Figure 16.

By inspecting the S-N X LE interaction in Figure 16, one detected no statistically significant results. Therefore, the performance on the A Scale was not a function of the interaction between LE and the S-N personality classification.

The J-P LE interaction showed a statistically significant interaction \((F = 3.2370, p < .05)\). This meant that the "Judgers" acquired different A Scale interpersonal skills depending on the environment than "Perceivers" in those same environments, but that this was not a uniform difference.

The graph for the mean A skill scores for the J-P personality classification can be found in Figure 18.

The P group did not differ from J at environment \#1 on their affective skills. However, at the end of the first
Figure 18. A Scale Scores for J–P Personality Classification
term the "Perceivers" had acquired their maximum affective skills. This is a point of interest since it was not emphasized in that term. At the end of the second term, the "Perceivers" and "Judgers" retained the affective skills to approximately the same level of proficiency. However, at the end of the course, there was no difference between the groups on their affective skills retention. This finding can be interpreted to mean that although the groups acquired affective skills differentially through the course, upon exiting, there was no difference between the groups on their performance.

RETENTION OF INTERPERSONAL SKILLS

Implicit in these hypotheses is the concept of retention. It is of educational import to determine the pattern of learning over the nine months' instruction and to see if these patterns differ for personality groups.

The first interview in Term I was the pretest for all variables. The fourth interview in Term I was the final test of amount gained on the E Scale. The third point of measurement was the sixth interview in Term II which served to compute the amount of gain on the L Scale and also showed the retention of the E Scale.

The last point of measurement was the ninth interview at the end of Term III. This helped compute the amount of gain on on the A Scale from interview 1, Term I and also
demonstrated the amount of retention of the L Scale, and, furthermore, an additional point by which to check the retention of the E Scale. Because of the structure of the course and timing of this study, the Affective/Cognitive skill rating could not be examined for this part of the study.

To test the retention dimension of this study, the trend of the rating of each skill with the exception of the A Scale over the three terms of the course will be displayed in the following figures:

Figure 19. Composite Group Scores (SP, SJ, NP, NJ) for Exploratory (E) Skills
SUMMARY OF FINDINGS

The stated problem, the effect of personality factors and training on the development of interpersonal skills by freshman medical students during a Patient Interaction course sequence, was investigated. The findings of the study were related to purposes of the study, the research questions initially posed, and the generated research hypotheses which were tested.
Data for the purposes of this study were analyzed by using a one-way, two-group analysis of variance design utilizing a t-test for dependent samples, a three-way analysis of variance—repeated measures design on one factor, and the Multivariance computer program written by Finn and modified by Schiefly and Schmidt.

The purposes of the study were achieved:

**Purpose 1.** Training in interpersonal skills during a course sequence does effect a change in interpersonal skills performance of freshman medical students.

**Results of Hypotheses Tested**

**Training**

1. The overall difference between the pretest and posttest interview on the E Scale for subjects in this study will not be significantly greater than 0. **Rejected.**

2. The overall difference between the pretest and posttest interview on the L Scale for subjects in this study will not be significantly greater than 0. **Rejected.**

3. The overall difference between the pretest and posttest interview on the A Scale for subjects in this study will not be significantly greater than 0. **Accepted.**

**Purpose 2.** Change in interpersonal skills performance could not be differentiated by personality type.

**Results of Hypotheses Tested**

**Personality Variables**

4. There will be no significant difference between the treatment groups SP, SJ, NP, NJ on the E Scale. **Accepted.**
5. There will be no significant difference between the treatment groups SP, SJ, NP, NJ on the L Scale. Accepted.

6. There will be no significant difference between the treatment groups SP, SJ, NP, NJ on the A Scale. Accepted.

Purpose 3. Change in interpersonal skills performance could be differentiated by learning environment.

Results of Hypotheses Tested

Learning Environments

7. There will be no significant differences between learning environments on the E Scale. Rejected.

8. There will be no significant differences between learning environments on the L Scale. Rejected.

9. There will be no significant differences between learning environments on the A Scale. Rejected.

Purpose 4. The effect of personality type/learning environment interaction on measured changes in interpersonal skills was ascertained.

Results of Hypotheses Tested

Aptitude/Treatment Interaction

10. There will be no significant interaction between personality classifications and the learning environment emphasizing the E Scale. Accepted.

11. There will be no significant interaction between personality classifications and the learning environment emphasizing the L Scale. Accepted.

12. There will be no significant interaction between personality classifications and the learning environment emphasizing the A Scale. Rejected.
CHAPTER V

DISCUSSION AND INTERPRETATIONS OF THE STUDY

COURSE RESULTS

Training Hypotheses

Two of the Hypotheses of the study relating to Training were supported by the analysis of the data. The results indicated that, from the beginning to the end of the training program, there were significant increases on the Exploratory (E) dimension and Listening (L) dimension at the .05 level of significance. No significant differences were found between the training program and performance on the A dimension. These findings confirm the previous studies by Kagan and his co-workers on the first two dimensions (Kagan, et al., 1967). Differences were found from Werner and Schneider's research (1974) with medical students from the same school two and three years previously. These authors found significant differences on E and A, but not on L. Reanalysis of their data for the next year's class, using a definition of L closer to the one used in this study, yielded significant results. Hence, this study supports two of the previous three findings.
In comparison with the means of the Werner and Schneider study, students at the end of the three-term sequence evidenced greater gains on the Exploratory skill (pre-posttest mean difference of 2.23 as compared to 1.62) and greater gains on the Listening skill (pre-posttest mean difference of 1.70 as compared to -.31). However, the Werner and Schneider study resulted in gains (pre-posttest mean difference of 1.62) on the Affective dimension as compared to Affective skill losses (pre-posttest mean difference of -.019) shown by this study. Base rate differences show the initial Exploratory skill rating in this study to be 3.06 as compared to 7.63 in the Werner and Schneider study. Affective skills in this study were initially .91 (1.05 reported by Werner and Schneider), and Listening skills were initially 12.45 for students in this study (18.18 Werner and Schneider base rate).

Reconsideration of the Affective scoring scale defined for this study might result in a clearer indication of students' Affective skills. Often an expression of affect which was included in a complex or elongated response was unable to be scored due to a predetermined rule for rating only the last response of a series.

The Learning Environments for this study differed from the one-term course studied by Werner and Schneider. The Patient Interaction course sequence of three terms which
evidenced greater gains on the Exploratory and Listening dimensions may provide a more effective context for teaching these E and L interpersonal skills. On the other hand, the one-term course significantly increased Affective skills as reported in the Werner and Schneider study. However, these Affective skills assessed following one term of instruction might also have decreased at the end of three terms. Since data was unavailable at the end of the third term for these students, this assumption cannot be tested.

Despite the lack of an overall effect for three terms substantial gains were made by students on the A dimension during the Fall Term, and the A skill was retained during the Winter Term, neither time at which the skill was emphasized. This raises questions as to the attainment and retention of the Affective skill in this course sequence.

Lack of affective gain was also reported by Adler et al. (1970) in a comparative study which tested the effectiveness of a programmed instruction approach to medical interviewing. Their programmed interview group changed significantly for interviewing principles under investigation with the exception of the principle dealing with interview use of positive affect.

The findings resulting from this study's investigation did indicate that the training program was effective for improving students' performance on Exploratory and Listening interpersonal skills. Students with the skills
to use the Exploratory response mode during the clinical interview will gain, as suggested by Hawes (1974), a broader concept of not only the patient's physical condition but, more importantly, the individual's life circumstance which affects his well-being.

As a person becomes aware that someone else is valuing his uniqueness as a human being enough to carefully listen to what he has to say, an atmosphere of trust and empathy develops. The medical professional who can employ the skills of Listening as he relates to patients will be better able to establish a basis for an effective care plan. The patient will be more comfortable with the care plan because of his understanding facilitated by the positive doctor-patient relationship, and he will more readily comply with the plan because his physician has taken steps, which include listening, to treat the "total patient."

Patients often state that the doctor is "too busy" to listen; thus, they withhold important and/or emotionally sensitive data. If the physician conveys a willingness to listen, the kind of data obtained might change.

Another important dimension in treating the total patient involves the Affective interpersonal skill. Since Affective skill gains were not evidenced in this study assessing the effects of interpersonal skills training, course revision to more successfully develop students' Affective skills is indicated. Affect may be a more difficult skill
to attain. For example, advanced medical students often refrain from attempting an affective response because they feel they do not know how to use this response mode (Dr. Schneider, personal communication).

Greater attention could be directed to emphasis of affective aspects of the primarily content-based training program, and the programming of simulated patients could include more affective material. Instructors who effectively demonstrate affect could facilitate students' learning and serve as role models to foster use of Affective interpersonal skills in the delivery of total patient care.

MYERS-BRIGGS PERSONALITY TYPES AND PERFORMANCE

Personality Variables and Learning Environments Hypotheses

The three hypotheses relating to Personality Variables were not supported by the analysis of the data. The results indicated that no significant differences at the .05 level of significance existed between treatment groups SP, SJ, NP, NJ and performance on the E Scale, on the L Scale, and on the A Scale. It should also be noted that from examining the results no trends were evident which would suggest that these personality variables are not a factor in influencing the learning of interpersonal skills. A Spring Term course preceptor's written comment indicates a similar observation: "The students in this course varied in terms of maturity, competence, motivation; yet all seemed to meet the objectives
by a wide margin."

One conclusion could be to join Sher's (1974) pessimism regarding correlation between personality variables and student performance. Personality variables were not shown in this study to be a factor in students' development of interpersonal skills. Perhaps the Myers-Briggs Type Indicator does not differentiate personality types in this setting.

However, the Myers-Briggs Type Indicator, used differently in the course setting might result in more significant effects. Sample selection utilizing Thinking (T) and Feeling (F) MBTI classifications might provide greater insight to students' communication patterns and interpersonal skills development.

The unreplicated findings of Deckert and Schneider (1970) could be applied to the Patient Interaction course sequence setting and determine the relationship of "locus of control" in the development of interpersonal skills. To investigate alternative approaches to assessing the effect of personality factors, scales of Truax and Carkhuff (1967), Bales (1950) and others could be employed to analyze the interaction during course sequence learning experiences.

Projections regarding the lack of support for personality variables hypotheses could relate to the level of course difficulty. If the course had been too easy or too hard, the range of scores would not vary enough to detect
individual differences. Thus, the course level might not have allowed for real differences to be perceived.

The existence of differences in interpersonal skills course performance by students with varying personality types could be further investigated by assessing differences in behavior during recall sessions when the videotaped interview is replayed and discussed. The student's self-observational skills regarding his interview and his receptivity to feedback could be determined and correlated with his interpersonal skills course satisfaction and course performance to detect individual personality differences.

Statistically significant support of each of the three hypotheses relating to Learning Environments was evidenced in this study. Students acquired E skills differentially over learning environments beyond .0001 level of significance, while L skills were acquired by students differentially, over learning environments at a .01 level of significance. Beyond .0001 level of significance, students acquired A skills differentially over learning environments. These results indicate the importance of the learning environment in the development of interpersonal skills.

As the Patient Interaction course sequence was conceptualized, each of the three terms would emphasize a different interpersonal skills dimension. The results which were expected are represented in Figure 21.
The actual results appeared as follows:

Figure 21. Expected Interpersonal Skills Development

Figure 22. Actual Interpersonal Skills Development
During the Fall Term, which emphasized the Exploratory mode, skills on all three dimensions, E, L, and A, were increased. In fact, almost all of the eventual increment was noted by the end of the Fall Term. Determining the interest level and desire to succeed of freshman medical students potentially would provide additional insight. The student's natural curiosity regarding the Fall Term experience would facilitate exploratory interviewing. Given the nature of Phase I at MSU, there are fewer distractions and competition from other courses upon entrance to medical school. The E skill was relatively comfortable, unthreatening, and could be used by students to encourage the interviewee to participate in the conversation. The Fall Term emphasis on self-awareness and the non-evaluative environment perhaps contributed to a variety of response modes involving ramifications of interpersonal skills beyond the E skill emphasized. Hence, as students became accustomed to relating more fully with another individual in the interview setting, their communication became more effective. Based solely on the data, however, one might assume the Fall Term learning environment to be the most effective of the three used to teach these basic skills. Such an assumption does not take into account other variables. Subsequent terms involved an increased emphasis on content acquisition in
the interview. This additional focus could have distracted the student from his focus on the elements of communication and patient programs.

The initial motivation of first-term medical students might have also influenced the Fall Term attainment of the L skill. The guidelines for interviewing were purposely limited to diminish structure and avoid student's formation of a set pattern. Since students were unfamiliar with the interview setting, they listened to cues from the interviewee to establish some procedural security and identify a format. Students were eager to hear the interviewee's understanding of their mutual task.

Another possible influence of the increased Fall Term performance on all three dimensions, E, L and A was that the Graduate Assistant instructors were Year II medical students who had previously studied all three dimensions simultaneously during the former one-term Doctor-Patient Relationship course. The instructors might have affected their students by associating and emphasizing several dimensions of a response. Students' identification with the Graduate Assistants and observation of the enthusiasm shown by these Year II students for Patient Interaction appeared to positively influence course involvement.
Winter Term

The L Scale indicates a decrease in skill attainment for all groups during Winter Term when the L dimension was supposedly emphasized. Hence, the main objective for the Winter Term appears not to have been attained. Several reasons for such a finding might exist. During the early part of Winter Term at MSU, the first term of Phase II, students were determining their medical program's curricular structure by selecting either lecture instruction or a more independent orientation. This first term of Phase II is comparable to the first term in most medical schools, with the anxieties about learning, competition and performance predominating. This decision process was difficult for students and caused them to carefully weigh the relevant aspects of current courses regarding their own learning style.

Concentrated course hours, predominantly in basic science study, had begun to require examination preparation, and personal communication with students indicated that they questioned time spent in interviewing Winter Term since the value of the course work was not as immediately apparent. Previous education can give the medical student the impression that there is a single definite answer for every question. A guideline distributed to students describing possible interview topics may have been a contributing
factor to the lowered L Scale ratings during Winter Term. Although the purpose of this guidance material was stressed, students used the topics as a checklist. When one subject had been introduced, the next topic area was raised. Listening skills were seldom employed due to content-based interview topics and the nature of this checklist approach. Indeed, Knight (1973) contends that much of the teaching in the first year or two of medical school tends to inculcate an expectation of certainty of knowledge and a phobic aversion for an intolerance of uncertainty. Therefore, unless students are provided an opportunity to experience the outcome of using alternative interviewing skills, they might only use the more certain but limited checklist approach to data elicitation.

Students' videotaped studio interviews with trained mothers during Winter Term were alternated with hospital interviews with mothers of newborn infants. Moreover, students were uncomfortable in and frustrated by the hospital setting and perceived a lack of hospital staff preparation for their visit. Students thought that they were intruding on the patients' time by talking with them when they had no skills to offer. In general, students saw little relevance between the settings and situations of interviews with trained and real mothers regarding pregnancy and delivery. The two key differences during the Winter Term course, (1) the
introduction of content and (2) the context of interviewing patients in the hospital or applied setting, might have preoccupied students and made utilization of already existing interpersonal skills more difficult.

Spring Term

The abrupt drop in the previous attainment level of the A dimension during the final Spring Term is noteworthy. A number of considerations should be evaluated. The conceptual planning of the interpersonal skills course sequence proposed the development of interpersonal skills with a particular skill emphasis each term. As intended, the E dimension was stressed as a correlation of self-awareness during Fall Term, and the L dimension was emphasized as a correlation of other awareness in the Winter Term. The increase in E and L Skill performance during Spring Term when neither skill was emphasized can be attributed to the students' interest in and intrigue by the medical problems presented by simulated patient interviewees. However, during the Spring Term, the goal of achieving technique and gaining inquiry skills predominated emphasis of the A dimension. Perhaps Exploratory and Listening skills were more compatible with inquiry skills than Affective skills.

Despite two terms of warning that Spring Term would be evaluated, the introduction of evaluation into the course during Spring Term was seen by students as
contradictory to the free expression and individual growth encouraged in the two previous terms as measured by their Spring Term final examination responses. Comments from students refer to the Spring Term evaluation of course objectives. A liberal acceptance of the interviewer's own style and infrequent criticism by preceptor and peers was seen to be an unfortunate result of the pressure of being graded. Following each student interview, a checklist rating was completed by a physician preceptor who facilitated, and in several instances directed, the student's Spring Term learning experience. Physicians were selected as preceptors for this final phase of Patient Interaction to "legitimize" the student's pursuance of study in the area of interpersonal skills.

'With the presence of a physician preceptor who, along with a peer group of three, monitored a group member's interview during videotaping, the atmosphere in the discussion period which followed was noticeably altered from that of the two previous terms. Even though the goals and intent of the Spring Term course had been carefully presented to both students and preceptors during separate orientation sessions and via course syllabi, the roles assumed and the expectations perceived may have affected the course results in unintended directions.
The personal qualities of the participating physicians and their desire to teach did not always combine to provide productive student learning experiences in interpersonal skills. Often several sessions passed before preceptors had a realistic understanding and acceptance of the Year I student's medically-underdeveloped repertoire. Preceptors were experienced interviewers and, although they supported the interaction orientation to the course, they could not exclude or even avoid the temptation to tease out a supposed diagnosis from the novice student after he had interviewed a simulated patient.

Until Spring Term, students had not discussed their videotaped interviews with faculty other than course coordinators. When placed in a situation with a "real doctor" seen as the authority figure, the student's medical expectation of self seemed to override his ability to interact with the interviewee as a person instead of a presenter of medical case history. Students felt inadequate regarding their emerging diagnostic skills. Possible association of diagnostic abilities as viewed by their preceptor and perceived personal and course rewards could have contributed to the decreased attention to and retention of affective interpersonal skills. ¹

¹ Students' Comments: The composite class response was "disagree with reservation" to the rating form course evaluation statement "We spent the majority of the time in
Corroborative Studies

In a study to objectively compare the pediatric interviewing skills of freshman and senior medical students, two findings of Helfer (1970) are particularly pertinent to this study: (1) freshmen asked more questions and obtained more information specifically relating to the interpersonal aspects of each child's problem than did the seniors and (2) seniors obtained more factual organic information than did the freshmen. Helfer speculated that freshman students' interpersonal skills become sublimated over time by their need for increasing factual knowledge regarding disease. As the interpersonal skills course sequence reported in the present study continued, the freshman student began to resemble the more experienced medical student in his decreased demonstration of affective interpersonal skills. Both

1 (Cont'd)

(group meetings talking about the presenting medical problem and its medical significance). However, written comments from students at the conclusion of the course sequence would support the observation that too much emphasis was placed on medical aspects Spring Term rather than the interactive process. The following comments are exemplary:

We spent too much time discussing specific medical diagnoses and professional anecdotes rather than interviewing techniques; "Some interviews degenerated into a game to try to figure out the diagnosis--this left no energy towards concentrating on the interview itself"; "I was a little shook up about having to interview patients with medical problems which I knew nothing about. This at times distracted me from interpersonal communication.

These statements substantiate some of the possible reasons for the abrupt drop during the Spring Term of the previous attainment level of the A dimension.
cognitive and affective awareness contribute to treatment of patients as Mechanic (1968) has described the conflicting goals of medical care. Becker and Geer (1958) also examined this conflict as they reported the fate of idealism in medical school.

Knight (1973) pointed out that great models who have a profound impact on students are usually not the authoritarian and dictatorial types. The comments from students in the Patient Interaction course make reference to the impact of their physician preceptors. Indeed, the course drawbacks and disappointments in some instances related to preceptors' assuming a domineering role, failing to recognize individuality, and not allowing students to take an active part in their own learning.²

These comments and course observations would seem to suggest, then, that persons participating in students' affective education, who are open and relate interpersonally

²Other comments were more positive:

"He responded with an increased awareness of where we were at in regard to our participation in interviewing and discussion. I think we all grew from the group"; "I felt very relaxed with her in a situation that could have produced a lot of anxiety with a different type of instructor"; "I felt he was very effective most of the time in dealing with medical, structural, and personal elements of an interview"; "He seemed to consider the course an important part of our training which certainly facilitated learning."
in their interactions with people - patients, students, and peers, can positively influence the development of students' interpersonal skills.

In summary, Fall Term was successful in increasing Exploratory skills while Winter and Spring Terms were not successful in evidencing gains on Listening skills and Affective skills, respectively. Questions of retention, generalizability, competing emphasis and the nature of the training bear further examination.

Aptitude/Treatment Interaction Hypotheses

Two study hypotheses relating to Aptitude/Treatment Interaction between Learning Environments and the MBTI were not supported by the analysis of the data. The results indicated that no significant interaction existed between the personality classifications and the learning environment emphasizing the E Scale and the learning environment emphasizing the L Scale.

An interaction, statistically significant at the .05 level, did result, however, between the J-P personality classifications and the learning environment on the A Scale as depicted in Figure 18.

The Patient Interaction course sequence was designed to be experiential in nature. Particularly during Fall Term no pattern of interviewing procedure was outlined, and only the use of Exploratory skills was emphasized. This limited
course structure evidenced different reactions and performance responses for Perceivers and Judgers. At the outset of the Patient Interaction course, the P group did not differ in affective skill performance from the J group on Interview #1. However, at the end of Term I the Perceivers had acquired their maximum affective skills.

The Myers-Briggs manual (1962) descriptions of Judging and Perceiving types provide a basis for interpreting the affective interpersonal skills performance of the J and P personality classifications in view of the experiential nature and limited structure of the course.

While Perceivers are spontaneous, flexible, and good at adapting to changing situations, Judgers are interested in order and organization and perform best when they can plan their work and follow the plan. Thus, Perceivers might be expected to respond more favorably than Judgers to the course format which tended to be experiential and limited in structure.

Based on previous research, Perceivers also want to know all about a new job or, in this instance, course involvement while Judgers want only the essentials needed to get on with a task. Hence, Perceivers would probably include several dimensions of interaction in their interviews, while Judgers would not be as interested in the periphery.

Welcoming a new light on a person or situation, the Perceivers' curiosity for change might have sustained during
Winter Term their previous attainment of affective skills. Judgers tend to be satisfied once they reach a judgment on a person or situation. Quite possibly, then, the potential worth of the Winter Term course interviews were predetermined by Judgers, and they did not choose to extend or expand their affective interpersonal skills.

Perceivers do not judge; rather they remain open to new developments. Judgers, on the other hand, like to get things wrapped up and settled. The openness of the Perceiver, in itself, then, as compared to the decisiveness of the Judger could evidence differing J-P course reactions and affective interpersonal skills responses.

The statistically significant ATI between the J-P personality classification and the learning environment emphasizing the A Scale should be again examined in other settings. One might find Judgers have more adequate interpersonal skills in eliciting affect in situations, such as in the Emergency Room, where quick, decisive judgment and decision-making are necessary, while Perceivers might perform better where comprehensive, longitudinal data collection is necessary.

In summary, the aptitude/treatment interaction evidenced by the J-P personality classification during the Spring Term learning environment emphasizing the A Scale was the only ATI resulting from this study. Further investigation of this interaction is indicated.
CHAPTER VI

SUMMARY, IMPLICATIONS, AND CONCLUSIONS

SUMMARY

Study Design

This study investigated the effect of personality factors and training on the development of interpersonal skills by freshman medical students during a Patient Interaction course sequence. The purpose of this study was four-fold:

1. to investigate whether training in interpersonal skills during a course sequence effects a change in interpersonal skills performance of freshman medical students,

2. to determine whether or not such changes can be differentiated by personality type,

3. to determine whether or not such change can be differentiated by learning environment and,

4. to ascertain the effect of personality type/learning environment interaction on measured changes in interpersonal skills.

The study subjects were fifty-three freshman medical students enrolled in a Patient Interaction course sequence which entailed three consecutive terms each of ten weeks duration. Of nine videotaped student course interviews, this study sampled from Interviews #1 (Pre), #4, #6, and #9 (Post). The Myers-Briggs Type Indicator was administered
to all freshman medical students at the beginning of medical school, and the subjects were chosen randomly after stratifying the population by MBTI classifications of Sensing - Intuitive (S-N) and Judging - Perceiving (J-P). Trained judges used Kagan's "Elements of Effective Communication" to rate the student interviewer's first twenty videotaped interview responses according to Exploratory/Non-Exploratory (E), Listening/Non-Listening (L), and Affective/Cognitive (A) scale dimensions.

Study Results

Of the twelve hypotheses relating to interpersonal skills training, personality variables, learning environment, and aptitude-treatment interaction, the statistical test results of six hypotheses were significant. The results of the study indicated significant increases at the .05 level of significance from pretest to posttest for students' gain on the Exploratory (E) dimension and on the Listening (L) dimension using a one-way two-group design with a t-test for dependent samples. With this design, however, the results showed no significant gain on the Affective (A) dimension at the .05 level of significance.

The personality variables were analyzed using a three-way analysis of variance--repeated measures design on one factor and the Multivariance computer program written by Finn and modified by Schiefly and Schmidt. No significant
main effects were found between treatment groups SP, SJ, NP, NJ on the E Scale, on the L Scale, and on the A Scale at the .05 level of significance.

The same design was used to analyze the learning environments and aptitude/treatment interaction. Significant differences were found between learning environments on the E Scale, on the L Scale, and on the A Scale. However, no interactions were found between personality classifications and the learning environment emphasizing the E Scale and the learning environment emphasizing the L Scale at the .05 level of significance.

These results suggest the curriculum was successful in increasing the Exploratory and Listening skills of the medical students. These gains appear to be independent of the personality types used in this study. The Aptitude/Treatment Interaction effects between skills and learning environments suggest that the learning environment provided did influence the demonstration of these interpersonal skills. Only on the Judging - Perceiving dimension for demonstrating affect was a significant interaction effect with learning environment evidenced. An examination of the expected change shows differences between the actual interpersonal skills performance with most of the change occurring during the initial Fall Term.
IMPLICATIONS OF THE STUDY

Introduction

The research of this study found that the training program was successful in increasing performance on the Exploratory Scale and the Listening Scale for all medical students and that these gains were independent of personality type. Moreover, the impact of the Learning Environment upon students' development of interpersonal skills shown by this study indicates that much greater attention could be directed to the external influences beyond the course plan which bear upon students' learning. Finally, the significant interaction between the Learning Environment emphasizing the Affective skill and the Judging - Perceiving personality classifications is a signal that further research needs to be conducted to determine if the present findings are replicated.

Implications for Research

Based upon the findings of this study and questions raised during the investigation of the stated problem, implications for research in the areas of Educational Planning and Development, Personality Factors, Individual Differences, Real-World Application, and Course Effects will be discussed. Educational Planning and Development:
Can educational planning of interpersonal skills courses realistically meet expected curricular outcomes?

When interpersonal skills courses are carefully planned, as was the Patient Interaction course sequence, this study has shown that intervening variables such as adjunct learning experiences, associated course experiences in other settings, and teaching styles of various preceptors still affect course outcomes. With continuing assessment of course effects applied to curricular revisions, a realistic approach to effecting desired course goals could be accomplished.

What is the impact of external pressures on the effectiveness of the student's interpersonal skills development?

An example in this study of external pressures affecting students' interpersonal skills development may have occurred during Winter Term. The Listening skill emphasized decreased markedly during Winter Term when other courses began to compete for students' attention and when curricular pathway decisions took precedence. One needs to take into account external pressures from other courses in teaching interpersonal skills.

Personality Factors:

Would use of Myers-Briggs Thinking (T) and Feeling (F) personality classifications result in different study replication effects than those evidenced by Sensing (S) and Intuitive (N) types?
The T and F personality classifications of the Myers-Briggs Type Indicator relate to type descriptions of behavior preference involving impersonality - sociability; logical - sympathetic awareness of people, objectivity - insight into people. An investigation of the interpersonal skills development of T-F personality classifications could provide useful information for comparison with the results of this study.

Would alternative scales of interaction analysis used to assess students' interpersonal skills development during the Patient Interaction course sequence correlate with the findings of this study?

Using alternative scales of interaction analysis such as the instrument of Bales and the method developed by Truax and Carkhuff would provide a comparison of results for determining the intercorrelation of scales and appropriateness of particular instruments for use in the assessment of interpersonal skills developed in the setting of this study.

How do personality types of interviewer and interviewee affect the outcome of the encounter?

Relating to an interviewee with a personality type similar to that of the interviewer might result in more effective communication than an encounter between persons with opposite personality types. During a course such as Patient Interaction, the Myers-Briggs types of student models interviewed during Fall Term, trained mothers interviewed
during Winter Term, and simulated patients interviewed during Spring Term could be compared with the student interviewer's Myers-Briggs type to determine the effect of Interviewer-Interviewee personality type upon the outcome of the ensuing communication.

Individual Differences:

Can students with previous interviewing experience gain additional interactional skills?

Since knowledge of interpersonal skills brought by students to the Patient Interaction course could assist in individualizing the course learning experiences to the needs of each student, an entry level of interpersonal skills for each student would be highly desirable. A mastery learning course design could motivate students to expand their interviewing techniques and excel beyond course expectations. Thus, further study in assessing students' entry level of interpersonal skills is indicated.

What effect would the inclusion of more content material on interactional skills have on performance during the course sequence?

Some students commented that they felt more content would be helpful in their development of interpersonal skills while several other students requested additional experiential interviewing opportunities during the course sequence. Integration of cognitive information with the experiential
course might help students achieve greater gains on interpersonal skills performance. An investigation comparing a variety of learning modes and individual's felt needs could thus be useful for improvement of interpersonal skills learning experiences.

Would self-selected discussion groups attain greater interpersonal skills than assigned groups?

Students reacted to being assigned a peer observation-discussion group during Spring Term. Hence, the progress of self-selected versus assigned groups with similar personality types, opposite personality types, and a combination of various personality types could be followed and their development of interpersonal skills assessed to determine situations and group compositions most conducive to students' learning of these skills.

Real-World Application:

Are interpersonal skills demonstrated during a videotaped interview transferred into the actual clinical setting?

The transfer of interpersonal skills demonstrated as a result of training via videotaped interview experiences into the actual clinical setting has yet to be investigated. Transfer of training is the intended goal of interpersonal skills curricula; however, intensive research and longitudinal study are indicated to determine this application of
demonstrated interpersonal skills. This study has provided evidence on which to base continuing research.

Would student interviews videotaped with real patients in a physician's office effect greater changes in interpersonal skills performance than videotaped interviews with simulated patients?

An assessment of the effectiveness of interpersonal skills training with students' interviewing simulated instead of real patients would provide an indication of the effect of any perceived artificiality in the interpersonal skills learning experience. This study has indicated that the more relevant aspects of the interpersonal skills course were better accepted during times when interpersonal skills performance increased.

Would an interview evaluation by a simulated patient correlate with the patient satisfaction of a real patient?

A most relevant area for continued study of students' interpersonal skills development is the satisfaction of the interviewee regarding the students' utilization of interpersonal skills during the interview. A satisfaction correlation between simulated patients and real patients would assist the determination of transfer of interpersonal skills demonstrated by students during a course and continuation of their use in the clinical setting.
Course Effects:

Can the demonstration of effective interpersonal skills be enhanced and maintained over time?

The fact that effective interpersonal skills have traditionally decreased as medical students progressed throughout their medical education toward medical practice has continued to be evidenced by this study. Possible causes for the drop in effective interpersonal skill attainment have been interpreted for the findings in this study. Further investigations of effective interpersonal skills performance by students should be conducted. Over time these skills might become a more permanent part of physicians' interactive behavior who have experienced interpersonal skill training during undergraduate medical education programs. Longitudinal study would be necessary to determine the maintenance of these skills.

To what extent do role models in classroom and in medical clerkship experiences influence the student's interpersonal skills behavior?

Comments from students who participated in Patient Interaction indicated the important influence of physician-preceptor role models who facilitated their interpersonal skills development during Spring Term. The extent to which a teacher of medical students models effective use of interpersonal skills in his interactions with people can positively or negatively affect the students' own interpersonal skills development. Therefore, the demonstration of interpersonal
skills by role models in classroom and medical clerkship experiences, the influence of these role models' interpersonal skills behavior, and role models' feedback to students regarding their interactive behavior, need to be studied to identify additional areas for improving encounters.

What effect would an interpersonal skills continuum of courses have on students' interviewing performance?

A comparison of the results of this study of freshman medical students' interpersonal skills development during a three-term course sequence with previous research involving a one-term interpersonal skills course indicates that changes in students' performance occur over time. The attainment and retention of interpersonal skills are influenced by a variety of factors, several of which have been discussed in this study. The investigation of a continuum approach to interpersonal skills development by medical students is suggested by this study.

Recommended Topics For Further Study:

1. The Effect of Curricular Revision On Interpersonal Skills Course Outcomes

2. The Impact of External Pressures on the Effectiveness of Students' Interpersonal Skills Development

3. A Comparison of T-F and S-N Personality Classifications And the Development of Interpersonal Skills
4. A Comparative Study of Interaction Assessment Instruments and Interpersonal Skills Performance

5. Communication Effectiveness of Similar Versus Opposite Personality Types in the Interview Setting

6. The Development and Validation of an Assessment Instrument for Entry Level Interpersonal Skills

7. Interpersonal Skills Development of Self-Selected Versus Assigned Peer Groups

8. Assessment of Transfer to the Clinical Setting of Interpersonal Skills Acquired Through Training

9. Patient Satisfaction and the Demonstration of Interpersonal Skills by Medical Students

10. The Effect of Spaced Versus Continuous Training on the Utilization and Retention of Interpersonal Skills

11. The Effect of Role Models and Behavioral Feedback on the Development of Interpersonal Skills

12. The Effect of an Interpersonal Skills Continuum on Interviewing Skills in Medical School and Medical Practice

Implications for Educational Programs

The opportunities to obtain personalized care are limited...The expression of such emotional needs (by patients) is checked not only by the various pressures to conform to the patient role, but also by the fact that those patient-care activities which direct themselves to the emotional needs of the patient are not institutionalized as role obligations of personnel in the general hospital. Personal concern, support or other emotionally therapeutic efforts tend to be from the patient's point of view pleasant (often unexpected) attributes of otherwise task-oriented personnel. Such activities
are quickly praised and even 'ideally' seen as the major attributes of the 'good' nurse and of the 'good' physician...)Jaco: Tagliacozzo and Mauksch, 1972, p. 173).

Introducing the importance of interpersonal skills in interactions with people and in care of patients to medical students early in their medical education appears to be essential. Indeed, providing learning experiences for medical students to practice their interpersonal skills and develop these skills beginning at the outset of their medical school program can only initiate the concept of total patient care. It is quite likely that students cannot be expected to emphasize interpersonal skills behavior in their medical practice unless interpersonal skills are consciously integrated into their medical curricula in a continuum educational plan.

Yet, medical education programs seldom include interpersonal skills courses providing learning experiences which could better prepare an individual to work with peers and care for patients. This study suggests the investigation of a continuum approach to interpersonal skills development by medical students. Moreover, the findings of this study also demonstrate that greater attention must be given to the impact of the medical student's interpersonal skills learning environment. Indeed, although students in this study did not demonstrate interpersonal skills differentially by personality type, they did evidence differences in interpersonal
skills performance during the emphases of the learning environments. The study presents data revealing that these skills may disappear if not carefully examined and nurtured.

Conclusions

As measured by the variables used in this study, the Patient Interaction course sequence was moderately successful, particularly in the Fall Term. Unless the reasons for decrease or maintenance levels are carefully studied, there may be no advantage as far as these Exploratory, Listening, and Affective skills are concerned in teaching a three-term course sequence. However, there may be additional reasons for providing continuous interpersonal skills learning experiences.

Interpersonal skills need to be emphasized throughout the medical student's educational program and practice to prevent the learning of other skills from preempting his use of interpersonal skills in providing humanistic health care to patients. Integration of interpersonal skills with content material, although often resulting in a temporary skills performance decrease, could ultimately result in attainment of greater gains and more effective maintenance. By stressing the importance of interpersonal skills in interactions with a variety of persons and in different settings accompanied by meaningful feedback regarding the student's interpersonal skills development, medical educators could
plan and implement educational programs to provide the individual with alternative modes of interactive behavior and prepare him to generalize his interpersonal skills training to the encounters he will experience throughout his life.

Care of the total patient, a desired goal of health care, requires use of interpersonal skills and the teaching of interpersonal skills must be given more than lip service to evidence desired outcomes for students' course performance and medical practice. Thus, curricular attention to students' interpersonal skills development and cognizance of intervening variables which influence attainment and retention of these skills must be continually assessed and accounted for in program evaluation and in course revisions. Greater awareness of individual differences in entry level interpersonal skills of students is also recommended for course planners to provide learning experiences to meet the needs of more advanced students as well as those of students conducting initial interviews.

Preceptors participating in the Patient Interaction course sequence, which was the focus for this study, have strongly supported the continuation of the course sequence. One physician felt that the experience was a good one for the students' education and would be of considerable help as they approached patients. "Not only did the group deal
with the cognitive interview skills but also with their own personalities with a willingness to evaluate their own personality structure with a view toward change in order to become more effective, caring people." Another preceptor stated, "The course was ideal for first-year students before they have a basic knowledge of medicine for it leads to a humanizing process." Finally, a student's comment is representative of the Year I class who, like the preceptors, evaluated the course sequence as an enjoyable and valuable learning experience: "A very worthwhile experience. I'm sure it will help me in the future both as a professional and as a person."

Providing learning experiences to better prepare individuals in health professions education to work with peers and care for patients is in accord with a broadening concept of educational goals. Richard E. Farson (Dunstan and Garlan, 1970) proposes a new Bill of Rights for 1984 guaranteeing human liberty. Included is the right to education. And, leading educationalists have broadened their concept of education so that they now talk about it in terms of experiences that develop the total person:

The concept of 'learning will be broadened to include the affective, emotional, interpersonal dimensions as well as the cognitive, intellectual aspects of development.' We are beginning to realize that learning must encompass all these dimensions if people are to live fully human lives in a world of machines, to cope with unceasing change and enjoy it, to meet the human
and social problems of such a world. We will be educating for awareness, for honesty, intimacy, and interpersonal competence — and people will continue to develop these skills, too, throughout their lives (Dunstan and Garlan, 1970, p. 365).
APPENDICES
APPENDIX A

COURSE SYLLABUS
The reorganization of the clinical sciences sequence for Year I medical students has been an ambitious, time-consuming and expensive process which has involved a large number of faculty and students in a collaborative effort. This effort has been directed solely to improving the educational program for our students. Certain basic principles of education have been utilized to integrate a series of previously independent and, at times, isolated experiences. These principles include the following:

1. Learning should take place in an experiential setting, which allows the student to be involved as an active participant in his education.

2. Learning should, to the extent possible, involve acquisition of process skills and understanding as well as the acquisition of specific techniques and knowledge.

3. Learning is an evolutionary process and therefore each stage should build upon what has come before and prepare for what will follow.

The following diagram represents a very schematic view of the focus of clinical science as it has been designed for Year I students.
The specific content of the experiences is explained in the following sections. These experiences are intended to occur in parallel with acquisition of basic sciences knowledge and to prepare for future clinical science experiences which will increasingly emphasize diagnosis and treatment. Finally, an important outcome of the experiences should be recognition of the need for continual self and patient education in medical care.

Patient Interaction - Clinical Sciences

I. Patient Interaction: Phase I

A. Goals

1. Primary Goal: To increase the student's self-awareness about his thoughts, feelings and actions in a medically related series of experiences.

2. Secondary Goals:
   a. To introduce the student to techniques of self-observation, including the recall procedure and receiving feedback from models, in a non-judgmental setting.
   b. To introduce the student to basic anatomical principles.

B. Experiences:

1) Four interviews in real situations with recall of videotape of these experiences.
   a) Meeting of model who will be examined in anatomy section.
   b) Discussion with same model of feelings about a medically-related experience.
   c) Discussion of a personal concern with a different model.
   d) Inquiry into the effects of a chronic disease on a person's life.

2) Four physical examinations of a live model with emphasis on anatomical principles and basic interactive procedures (e.g., draping; initial exposure to skills of examination). Preparation for the physical examinations includes syllabus materials and a self-instructional laboratory.

3) Small-group discussions of experiences led by physician faculty members.
C. Instructors
1) Wayne Smith, Coordinator
   John Schneider
   Terry Stein
2) Cadre of eighteen graduate assistant tutors, who facilitated laboratory and interviewing experiences.
3) Small group leaders.

D. Evaluation
1) Required attendance in all experiences except small groups.
2) Written reports on one interview and one physical examination.
3) Phase I evaluation.
4) Evaluation of course by students.

II. Clinical Science, Phase II, Winter Term
A. Goals
1. Primary Goal: To increase the student's awareness of how he observes others in a series of experiences involving interviewing and physical examination.
2. Secondary Goals:
   a. To provide the student with an opportunity to examine how he "listens" to a specially trained mother of a newborn.
   b. To introduce the student to observation in the hospital setting through examination of a newborn and interviewing of the newborn's mother.

B. Experiences (each experience repeated)
1. Interview of mother about her own pregnancy, delivery and experiences with newborn. Mother is trained to provide feedback to student about how he listens.
2. Examination of a newborn in the hospital nursery.
3. Interview of a mother in the hospital.

C. Instructors
1. Pay Wohler, Coordinator
   Terry Stein
   John Schneider
2. Hospital faculty

D. Evaluation
1. Required attendance
2. Written reports:
   a) Discussion questions of examination of newborn.
   b) Written report of second hospital interview of mother.
III. Clinical Science, Phase II, Spring Term

A. Goals:

1. Primary Goal: To increase the student's skills of medical interviewing.

2. Secondary Goals:
   a. To improve and clarify the student's use of the basic elements of communication in the medical interview.
   b. To elicit affective data in a structured interview.
   c. To elicit factual data about a physical problem in a structured interview.
   d. To observe children in a classroom setting.

B. Experiences:

1. Interviews with simulated patients

   a. Interview 1:
      1) Objective: The student will practice the following types of interactions:
         a) Exploratory - non-exploratory
         b) Affective - cognitive
         c) Listening - ignoring
         d) Confronting - avoiding
      2) Objective: The student will be aware of his feelings and overt reactions to the patient during the interview.

   b. Interview 2:
      1) Objective: The student will elicit affective material from the patient.
      2) Objective: The student will identify the structure of the interview in terms of sequence of questions, timing, and closure.
      3) Objective: The student will be able to state the chief complaint and list the data presented by the patient which is relevant to this complaint.

   c. Interview 3:
      1) Objective: The student will elicit factual data from the patient.
      2) Objective: The student will identify the structure of the interview in terms of sequence of questions, timing and closure.
      3) Objective: The student will be able to state the chief complaint and list the data presented by the patient which is relevant to this complaint.
2. Group observations of interviews by students and discussions with faculty members.

3. Reading of syllabus materials and of selected references.

4. Observations of children in pre-school and elementary school settings.

5. Individual review of tapes by students.

C. Faculty:

1. Terry Stein, Coordinator
   Elizabeth Seagull, school experiences
   John Schneider

2. 23 faculty members leading two-hour groups of six students for nine weeks. Role of faculty:
   a. To provide direct evaluation and feedback to students about performance of objectives.
   b. To model desired skills in group sessions.

D. Evaluation:

1. Evaluation forms on student performance of objectives on each interview.

2. Continual process evaluation of students by faculty.

3. Self-evaluation and course evaluation by students.

E. Needs:

1. Course cannot be conducted without 23 faculty members.

2. Training sessions:
   a. Training of faculty - March, 1975
   b. Training of simulated patients - February and March, 1975
   c. Orientation for students.
APPENDIX B

EXPLANATORY LETTER TO STUDENTS
I am requesting your permission to let me use your Myers-Briggs Type from the Year I Entry Profile 1974 in my study of the Patient Interaction/Clinical Sciences course sequence. I am aware that you participated in taking the Myers-Briggs Type Indicator with the assumption that these data would not be used prior to your graduation unless specific requests were made of you. For that reason, I am now asking your permission to use your Myers-Briggs Type.

Your identity will be completely protected by coding your name with a random number. Only Dr. Tom Johnson, Acting Associate Dean for Admissions and Student Affairs, would have access to whose name corresponds with these coded numbers. A permission form for Myers-Briggs Type Indicator Data for my Patient Interaction/Clinical Sciences course sequence study is attached. For me to have access to the group data, I must have a permission form from each of you. We would like to have a permission form response from each Year I student returned to the Office of Admissions and Student Affairs, A-234 Life Sciences, c/o Kaye Boles, by April 30, 1975.

During my clinical practice as a Registered Dietitian in team settings, I have seen the quality of patient care suffer due to ineffective interpersonal relationships. I want to improve this situation through educational programs, and I need your help. Dr. John Schneider and I have designed a study which will address the development of interpersonal skills during the Patient Interaction/Clinical Sciences course sequence in which you have been participating. The results of this study will enable the course coordinators and the College of Human Medicine to plan next year's interpersonal skills curriculum with the assistance of relevant data.

Using the Myers-Briggs Type Indicator as the basis of the study design, the course areas which were most effective for various personalities can be assessed as well as the definition of segments for which a student might plan individual sessions or proficiency. Therefore, course scheduling for personality types could be planned using individual differences as a base. It is felt that the Patient Interaction/Clinical Sciences sequence has been an integral part of the Phase I and Phase II experiences. He would like to try and evaluate the course in such a way that the results of the evaluation can be used for program development.
The Patient Interaction/Clinical Sciences course sequence study which is supported by the College of Human Medicine is my doctoral dissertation research in health professions education. I will be happy to answer any questions you might have and share the research findings with your class this summer. I am often in my office by the elevators in East Fee Hall, A-221, and I shall plan to be in April 28, 29, and 30. Come by or call me at 353-9329.

Thank you for considering our request for your Myers-Briggs Type which will enable us to complete the Patient Interaction/Clinical Sciences course sequence study and begin planning for next year. We wish to again assure you that:

1. Your identification will be completely protected
2. None of this information will be used in any judgments regarding your course work.

Very sincerely,

Kaye Boles, M.S., R.D.
OMERAD Fellow

John Schneider, Ph.D.
Consultant, Patient Interaction and Clinical Sciences
APPENDIX C

MYERS-BRIGGS TYPE INDICATOR DATA PERMISSION FORM
Michigan State University
College of Human Medicine

Myers-Briggs Type Indicator Data
Permission Form

I, __________________________, give my permission for my Myers-Briggs Type from the Year I Entry Profile 1974 to be used in a study of the Patient Interaction/Clinical Sciences course sequence.

I agree to this use of data only under the following conditions:

1. This Myers-Briggs Type will not be shown to anyone other than the identified researchers without my explicit permission.

2. Any research done with this type will not involve identifying me as an individual. My anonymity will be protected.

3. Only the administrative staff of the Office of Student Affairs will access and code my Myers-Briggs Type for this study.

4. None of this information will be used in any judgments regarding my course work.

The explicit purpose for this study is to analyze data to enhance future learning experiences.

Signed _______________________

Date _______________________

Witness _____________________

Date _______________________
APPENDIX D

FOLLOW-UP LETTER TO STUDENTS
May 1, 1975

Dear,

Last Friday you received a request for your permission to use your Myers-Briggs Type in a study of the Patient Interaction/Clinical Sciences course sequence directed by Kaye Boles and Dr. John Schneider. The request was sent to all Year I students, and the response of each student is crucial to the success of this study.

As of yet, we have not received your permission form. This form is our only record of your permission needed for the study. In view of the importance of your participation, your cooperation is again requested. Kaye Boles can be contacted at 353-9329, A-221 E. Fee Hall, to answer any questions you may have concerning this study. A box has been placed in A-234 Life Sciences, Office of Student Affairs, for completed forms. If you need another copy, one is attached.

Thank you,

Kaye Boles, M.S., R.D.
OPERAD Fellow

John Schneider, Ph.D.
Consultant, Patient Interaction and Clinical Sciences
Michigan State University
College of Human Medicine
Videotape Permission Form

I, __________________________________________ give my permission for my individual interview sessions to be videotaped. I agree to this videotaping only under the following conditions:

1. These tapes will not be shown to anyone other than my instructors and the identified researchers without my explicit permission.

2. Any research done with these tapes will not involve identifying me as an individual or characterizing me as an individual. My anonymity will be protected.

The explicit purpose for these videotapes is to develop data to enhance future learning experiences.

Signed ______________________

Date ______________________

Witness _____________________

Date ______________________
APPENDIX F

INTERVIEW RATING FORM
<table>
<thead>
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<th>RESPONSE #</th>
<th>EXPLORATORY</th>
<th>NON-EXPLORATORY</th>
<th>LISTENING</th>
<th>NON-LISTENING</th>
<th>EFFECTIVE</th>
<th>COGNITIVE</th>
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</table>
MYERS-BRIGGS TYPE INDICATOR

FOUR PREFERENCES ARE SCORED TO ARRIVE AT A PERSON'S TYPE

---

DOES THE PERSON'S INTEREST FLOW MAINLY TO THE

E - EXTRAVERSION - OUTER WORLD
OF ACTIONS, OBJECTS AND PERSONS

I - INTROVERSION - INNER WORLD OF CONCEPTS AND IDEAS

---

DOES THE PERSON PREFER TO PERCEIVE

S - SENSING - THE IMMEDIATE, REAL
SOLID FACTS OF EXPERIENCE

N - INTUITION - THE POSSIBILITIES,
MEANINGS AND RELATIONSHIPS OF
EXPERIENCE

---

DOES THE PERSON PREFER TO MAKE JUDGMENTS OR DECISIONS

T - THINKING - OBJECTIVELY AND
IMPERSONALLY, ANALYZING FACTS
AND ORDERING THEM IN TERMS OF
CAUSE AND EFFECT

F - FEELING - SUBJECTIVELY AND
PERSONALLY, WEIGHING VALUES AND
THE IMPORTANCE OF CHOICES FOR
ONESELF AND OTHER PEOPLE

---

DOES THE PERSON PREFER TO LIVE

J - JUDGING - IN A PLANNED, ORDERLY
WAY, AIMING TO REGULATE AND
CONTROL EVENTS

P - PERCEIVING - IN A FLEXIBLE,
SPONTANEOUS WAY, AIMING TO
UNDERSTAND AND ADAPT TO EVENTS

---

Typology Laboratory, University of Florida
November 5, 1974
APPENDIX H

MYERS-BRIGGS PERSONALITY TYPE DESCRIPTIONS
CONTRIBUTION MADE BY EACH PREFERENCE TO EACH TYPE

<table>
<thead>
<tr>
<th>SENSING TYPES</th>
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<th>WITH FEELING</th>
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<td>ESTJ</td>
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### SENSING TYPES

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<tr>
<td>T</td>
<td>Realism, [analysis], [logic], critical faculty</td>
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<tr>
<td>J</td>
<td>Organization</td>
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<td>T</td>
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<tr>
<td>S</td>
<td>Observation, realism, enjoyment, reliance on experience</td>
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<tr>
<td>T</td>
<td>[Impersonality] with structural, mechanical and some analytical ability</td>
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<td>P</td>
<td>Adaptability</td>
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<td>F</td>
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<td>S</td>
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<td>T</td>
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<tr>
<td>S</td>
<td>Reliance on experience, observation, no analysis</td>
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<tr>
<td>F</td>
<td>Sympathetic awareness of people, grasp of group feeling</td>
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<td>J</td>
<td>Organization</td>
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### Contribution Made by Each Preference to Each Type

#### Intuitives

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<td>I \ Depth and concentration</td>
<td>I \ Depth and concentration</td>
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<tr>
<td></td>
<td>N \ Insight and penetration, originality, grasp of the complicated</td>
<td>N \ Insight and penetration, originality, grasp of the complicated</td>
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<tr>
<td></td>
<td>F \ Sympathetic understanding and handling of people</td>
<td>T \ Analytical, logical, impersonal, critical faculty</td>
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<td>J \ Organization</td>
<td>J \ Organization</td>
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<tr>
<td><strong>INFP</strong></td>
<td>I \ Depth and concentration</td>
<td>I \ Depth and concentration</td>
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<tr>
<td></td>
<td>N \ Insight, ingenuity, grasp of the complicated</td>
<td>N \ Insight, ingenuity, grasp of the complicated</td>
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<td></td>
<td>F \ Capacity for devotion and sympathy</td>
<td>T \ Capacity for analysis and logic</td>
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<td>P \ Adaptability</td>
<td>P \ Adaptability</td>
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<tr>
<td><strong>ENFP</strong></td>
<td>E \ Ease with environment</td>
<td>E \ Ease with environment</td>
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<td></td>
<td>H \ Drive for projects, initiative, versatility, ingenuity, invention</td>
<td>N \ Drive for projects, initiative, versatility, ingenuity, invention</td>
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<tr>
<td></td>
<td>F \ Enthusiasm, insight into people, persuasiveness, charm</td>
<td>T \ Objectivity, analysis, some executive ability</td>
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<td></td>
<td>P \ Adaptability</td>
<td>P \ Adaptability</td>
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<tr>
<td><strong>ENFJ</strong></td>
<td>E \ Ease with environment</td>
<td>E \ Ease with environment</td>
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<tr>
<td></td>
<td>N \ Interest in possibilities, facility with language, insight</td>
<td>N \ Awareness of possibilities, insight, ingenuity, bent for experiment</td>
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<tr>
<td></td>
<td>F \ Sympathetic awareness of people, grasp of group feeling</td>
<td>T \ Logical, executive, decisive, critical, demands efficiency</td>
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#### Introverts

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<td>N \ Insight and penetration, originality, grasp of the complicated</td>
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<td>F \ Analytical, logical, impersonal, critical faculty</td>
<td>F \ Analytical, logical, impersonal, critical faculty</td>
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<td>N \ Insight, ingenuity, grasp of the complicated</td>
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<td>P \ Adaptability</td>
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<td>N \ Drive for projects, initiative, versatility, ingenuity, invention</td>
<td>N \ Drive for projects, initiative, versatility, ingenuity, invention</td>
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<td>T \ Logical, executive, decisive, critical, demands efficiency</td>
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<td>N \ Awareness of possibilities, insight, ingenuity, bent for experiment</td>
<td>N \ Awareness of possibilities, insight, ingenuity, bent for experiment</td>
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<td>T \ Logical, executive, decisive, critical, demands efficiency</td>
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APPENDIX I

"ELEMENTS OF EFFECTIVE COMMUNICATION"
"Elements of Effective Communication"

Exploratory/Non-Exploratory

Exploratory responses encourage and permit the client latitude and involvement in his response. They may focus on relevant aspects of the client's affective or cognitive concerns but clearly attempt to encourage further exploration by the client. Such responses are often open-ended and/or delivered in a manner permitting the client freedom and flexibility in response.

Non-exploratory responses either indicate no understanding of the client's basic communication, or so structure and limit the client's responses that they inhibit the exploratory process. These responses give the client little opportunity to explore, expand, or express himself freely. Agreement kinds of responses are non-exploratory as are summaries.

1. A question requiring a very short answer usually is categorized as non-exploratory.

Examples: "how long", "where", "when", "how often", multiple-choice, and yes-no questions.

Exception: Questions which have more than two parts divided by "or", although they may be answered by "yes" or "no" are categorized as exploratory.

Example: "Are you feeling sad or guilty or terrified?"

2. A question usually requiring an answer of more than a few words is categorized as exploratory.

Examples: "why", "How did this happen?"

3. Counselor responses ending in a period are categorized as exploratory.

Examples: "I was wondering about..."
"Tell me more about..."
Restatement or reflection of the client's statement.

Exceptions: Advice responses from the counselor are categorized as non-exploratory.

Example: "If I were you, I'd..."
Counselor responses which merely provide information are categorized as non-exploratory.

Example: "Headaches may have many causes including tension."

4. A question ending with or??? where it obviously means or not??? are categorized as non-exploratory.

Example: Do you have constant pain or???
Listening/Non-Listening

Interviewers who use listening responses do more than concentrate on client communication. They do more than tune in on the affect or strain to hear what the other person is saying and what it means to him. They actively and deliberately communicate to the other person that they do hear and that they are listening or trying to listen. They want to hear and they do not assume that they have heard; they do not fake it. When they haven't heard, they say so; they ask for clarification. Periodically they "check out" with the client their understanding of what they think the client is saying. Listening responses indicate that an interviewer is attempting to communicate to the client that he is trying to understand the client's basic communication. Such responses tend to encourage the client to reflect on his own statements--to begin listening at least as closely to his own concerns as the interviewer is.

All listening responses must:

1. Attempt to communicate back to the client that the interviewer is trying to hear.

2. Be in the spirit of listening.

When the interviewer provided information, reassurance or justification to the client, it is very difficult for the client to disagree or disconfirm what the interviewer has said. Such responses are categorized, therefore, as non-listening.

Listening responses: opening statements, smooth return to previous information, following train of thought of conversation, statements of agreement, summing-up responses.

Non-listening responses: student's opinions of statement, abrupt return to previous information, switching conversation from client to themselves, medical inventory checklist questions.

General Set: Could student have asked the question if he had not listened?

NOTE: In the case of a lengthy compound student response, rate the last response component.
Affective/Cognitive

Affective responses generally make reference to emotions, feelings, fears, etc. The judge's rating is solely by the content and/or intent of the counselor's response, regardless of whether it be reflection, clarification, or interpretation. These responses attempt to maintain the focus on the affective component of a client's communication.

Cognitive responses deal primarily with the cognitive element of a client's communication. Frequently, such responses seek information of a factual matter. They generally maintain the interaction on the cognitive level.

1. Counselor statements or questions which either reflect or are intended to elicit a client's feeling state are categorized as affective. These focus upon emotions.

   Example: "Tell me how it is you feel when you're 'down in the dumps'."

2. Counselor statements or questions which either reflect or are intended to elicit cognitive material are categorized as cognitive. These focus upon thought processes or factual data.

   Example: "How many brothers and sisters do you have?"

3. Special Rules:
   a. Questions eliciting information about a person's other than the client's affect is categorized as cognitive.

      Example: "How did you husband feel when you told him about it?"
      "I (student) feel anxious when I am in that situation."

   b. Three words which are frequently mentioned in a counselor-client interaction are "dependent", "bothered", and "depressed". These three words are categorized as affective if they relate to the client.

      Example: "You feel dependent upon your roommate."

   c. The general question "How are you?" is categorized as cognitive.

   d. Use of the word "feeling" in a response does not necessarily make it an affective response.

      Example: "What's your feeling about how the election will turn out?"
      "I feel that you are a very intelligent person."
      "How does your injured arm feel?"
APPENDIX J

LETTER FOR PRESERVATION OF RESEARCH VIDEOTAPES
December 13, 1974

Robert M. Daugherty, M.D., Ph.D.
Director
Office of Curriculum Implementation
College of Human Medicine
Campus

Dear Bob:

Throughout fall term 1974 Kaye Boles, an Omerad Fellow, has been participating as an observer in the Patient Interaction course. Her doctoral dissertation research, which I am guiding, involves interpersonal skills development and behavioral changes evidenced during the three-term course sequence of Patient Interaction.

The research design will include ratings of videotaped student interviews by trained judges using Kagan's "Elements of Effective Communication" and other selected instruments. This procedure will entail a review of forty students' first and fourth fall term interviews, their second interview winter term, and their final spring term interview. To avoid contaminating the research data, judges' ratings of the videotaped interviews should be conducted at the completion of the course sequence.

Preservation of the eighty videotaped interviews from fall term, the forty interviews from winter term, and the forty spring term interviews will be required through summer 1975 in order for trained judges to review the one hundred and sixty interviews. The preservation or possible replacement of the videotapes necessary for research on the Patient Interaction course sequence will require coordination with the ongoing program with respect to the availability of tapes.

This research need for the videotaped interviews has been discussed by Ms. Boles with Roberta Carpenter and Ed Titus. A meeting is being arranged by Dale Lefever to assemble persons involved to meet regarding the preservation of the videotapes.

If you wish to discuss this with me prior to any further planning, please contact me at your convenience.

Sincerely,

John M. Schneider, Ph.D.
Associate Professor

cc: Dale Lefever
    Joel Lanphear
REFERENCES CITED


Myers, I.B., and Davis, J.A. (1964). Relation of medical students' psychological type to their specialties twelve years later. Presented at APA.


