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A STUDY OF OPENNESS AS A FACTOR
IN THE HUMAN RELATIONS TRAINING
OF PRESERVICE TEACHERS

DISSERTATION

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

By

Wilma Walker Bidwell, B.A., M.A.

The Ohio State University 1966

Approved by

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ACKNOWLEDGMENTS

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An understanding husband and two sons stood by during my graduate program and lived with the daily problems while the research and treatment of data were in progress. Elizabeth H. Cott is deserving of a special tribute.
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I. NATURE OF THE STUDY

Introduction

Three fundamental ideas furnish the basis for this study. The first idea is that human relations skills are a primary factor in setting a favorable climate for learning in the classroom; therefore, training in human relations skills should be included in the learning experiences of preservice teachers. The nature of effective human relations training should be determined.

The second idea concerns the factor of openness to experience. One's degree of openness will probably influence his relationships with others and his receptiveness to training. If this is true, both the degree and the direction of change which result from human relations training should be ascertained.

The third idea centers around the theoretical orientations which underlie the various constructs of openness which are described in the literature today. Measuring instruments which reflect these theoretical orientations have been developed. If the underlying motivations tapped by these instruments are similar, comparison of responses to the instruments should show significant correlations.

The Purpose of the Study

The purpose of this study is threefold: (1) to provide an opportunity to determine which of five different instructional patterns is
most effective in providing human relations training, (2) to ascertain the growth in human relations skills and the degree and direction of change in openness for the participants who are more open and participants who are less open, and (3) to examine two different theoretical constructs of openness by comparing the performance of prospective teachers on measuring instruments based on each of the theories to see whether those participants identified as open on the measurement of one construct of openness will also be identified as open on the measurement of the other construct.

Background of the Problem

Human relations training.—There seems to be general agreement among educators that the climate for learning created in a classroom is an important factor in learning. As the instructional leader, the teacher has the responsibility for developing and preserving a favorable environment for the accomplishment of the educational tasks.

As students from different educational and cultural backgrounds come together in today's schools, human relations skills of the teacher assume great importance. The ability of teachers to relate positively and constructively to children regardless of their background and characteristics contributes to effective learning.

Rogers has found certain human relations skills in client-centered therapy to be related to significant learning.¹ These human relations skills of the therapist include the ability to relate

positively to the client, to reflect empathic understanding, and to create a relationship based upon sincere respect. Rogers has suggested that these skills are important for those who will facilitate significant learning in others.

If these human relations skills are identified as being important in providing an environment for learning, it seems appropriate that prospective teachers be provided with learning experiences which will enable them to develop and improve these skills. The first area of concern for this study, therefore, is centered around the identification of learning experiences which will most effectively develop in preservice teachers the human relations skills identified by Rogers: the ability to show positive level of regard, to show conditions of empathic understanding, to be congruent in human relationships with students, to have unconditional positive regard for students, and to be willing to be known by students.

Openness to experience.—Relating to others so as to facilitate significant learning is dependent upon the teacher's own level of adjustment. Rogers has characterized optimal level of adjustment in terms of the "fully functioning person." The fully functioning person is open to experience. He can meet new experiences without the need for defensiveness because he has no conditions for accepting his own worth. He is able to act in terms of his own self-actualizing tendencies. Since he has accepted himself as being in a state of becoming,

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he deals with the data from each new experience without confusing it with data from past experience which does not belong with the present situation. From his studies of the process of change in personality, Rogers has identified seven stages of change on a continuum running from stasis, or fixity, toward process, or flow, which is openness. As the person approaches the process end of the continuum, he comes to accept himself and to feel himself as being in a state of continuing change. Rogers has identified this as the "process of becoming." The person who is in process is said to be more open to experience.3

It seems reasonable to assume that as a prospective teacher becomes more able to accept himself without imposing conditions of worth for this acceptance, he should then also be able to accept others without imposing conditions for acceptance on them. In other words, he should be more able to employ human relations skills which provide the conditions for significant learning in others.

A different construct of openness is developed in the findings of Rokeach. As he describes it, openness relates to individual differences on the belief-disbelief continuum. On the basis of his research, Rokeach has suggested that

. . . we tend to categorize people and groups of people in terms of the extent to which their beliefs are congruent or incongruent with our own. We generally seem to prefer, to one degree or another, those with belief systems that are more congruent with our own.4

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This research suggests that there may be differences in acceptance of other individuals and that certain beliefs held by either of the individuals might become primary conditions for acceptance.\(^5\)

This study will provide an opportunity to see whether participants in the study who are considered to be more open will show more change in human relations skills than will those participants who are less open.

**Two constructs of openness.**—The two constructs of openness to be studied in this research are those of Rogers and Rokeach. In each of the theories, the open person can evaluate stimuli in the present experience without reliance on irrelevant internal or external pressures. In each theory the less open person tends to evaluate stimuli on the basis of judgments and authority of others. The theory of Rogers is derived from studies of changes in personality in client-centered therapy. Rokeach has studied the organization of the belief-disbelief system.

Although the origin and content of the research upon which these two constructs are based are quite different, the similarities in description of the open and of the closed persons raise some question about possible further relationships between the constructs.

The purpose of this study is to examine the data from participants in the study to see whether the scores on measurements based upon instruments employing Rogers’ construct and upon an instrument employing the Rokeach construct will identify participants as having the same degree of openness.

It is important to determine whether either one or both of the constructs is related to change in human relations skills as a result of human relations training. The identification of a valid predictor of ability to change as a result of training would be a definite advantage in curriculum development for programs of teacher education.

Statement of the Problem and Hypotheses

What is the nature of effective human relations training?—Specific human relations skills (ability to relate positively and constructively to others, to show empathic understanding and unconditionality of regard, and the like) have been identified as attributes of those who can facilitate significant learning in others. What is the most effective way to develop and improve these skills? Will students identify with the goal of improved human relations skills for themselves as being relevant to preparation for teaching? Is one quarter of approximately ten weeks a long enough period of time to establish new responses and to develop new habits of responding in relationships with others? Will students who are provided learning experiences in human relations training in one pattern of instruction differ from students who experience other patterns of instruction?

In seeking answers to these questions, a beginning course in secondary education including different patterns of instruction was developed. These patterns were selected to represent instruction using (1) a human relations training program for two persons written to develop concepts such as acceptance of self and others from Rogers' theory, (2) laboratory practice in human relations through discussions
with a partner of case studies and problems in education, and (3) traditional lectures, class discussions and outside readings covering concepts of human relations in the classroom. The following hypothesis was formulated.

**Hypothesis one.**—Prospective secondary education teachers who experience dyadic programed instruction, The General Relationship Improvement Program, in human relations training will show more growth in human relations skills than those who do not.

**What is the relationship of openness to change?**—If human relations training is successful, some changes in the participants will be expected to occur. Will the degree of openness be related to such change?

Following the personality theory of Rogers, participants who are more open should be more receptive to learning experiences provided and should show more growth in human relations skills than less open participants. Further, more open participants should become still more open as a result of the learning experiences.

The findings of Rokeach suggest that the more open-minded participants should be more able to synthesize new ideas into their belief systems than the closed-minded participants, and should thus be able to change more.

Certain questions are raised in connection with these assumptions. Will participants who are more open initially change more than participants who are less open? Will those who are more open change more in the direction of openness than those who are less open?

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6J. Berlin and Benjamin Wykoff (Atlanta: Human Development Institute, 1962).
Hypothesis two.—The participants who are more open before they experience human relations training will show more growth in human relations skills as a result of their training than the less open participants. Further, the direction of the change will be toward openness.

Do the different tests of openness measure the same thing?—A fundamental question is whether the two different constructs of openness are basically different or whether there is a demonstrable relationship between the construct of openness as described by Rogers and the construct of openness as described by Rokeach.

One purpose of this study was to present and analyze data showing participants' responses on measuring instruments based upon the two constructs selected to gather data for this study of human relations training. If the instruments measure the same thing, there will be a significant correlation between the degree of openness reflected in a measuring instrument built according to Rogers' construct and scores on an instrument designed to measure openness and built upon the Rokeach construct. A statement of the hypothesis follows.

Hypothesis three.—Participants in this study who are identified as being more open according to the Rogers construct of openness (as measured by the College Student Problems u-sort) will also be identified as being more open on the Rokeach construct (as measured by the Dogmatism Scale).

Assumptions Inherent in the Study

1. All other things being equal, teachers who are able to relate more positively and constructively to students will facilitate more learning in the classroom.

2. The individual will move in a direction toward self-actualization and self-enhancement if conditions are favorable.
3. It is assumed that openness to experience is a desirable attribute of personality in a society which is complex and subject to continuing change.

4. It is assumed that an open belief-disbelief system is more desirable than a closed system.

5. It is assumed that behavior is a function of perception. A person reacts to experience in terms of what he, the perceiver, believes to be true. He is capable of reconstructing past experience and behaving in accordance with resulting perceptions. Therefore, perceptual change precedes behavioral change.

6. Man is a social being. He develops best when he relates himself to fellow man.

Scope and Limitations

The participants in this study are 420 preservice secondary teachers at The Ohio State University enrolled in a required course in secondary education in the winter and spring quarters of 1965 who were taught human relations skills in five experimental patterns of instruction. Four sections of approximately 25 each were taught by five instructors, making a total of 84 participants per treatment group spaced over two quarters.

Delimitation

Three major variables considered in this study are (1) human relations skills defined in terms of the participants' ability to show conditions of level of regard, empathy, congruence, unconditionality of regard, and willingness to be known in a relationship with a discussion
partner, (2) openness to experience according to the theoretical orientation of Carl Rogers, and (3) openness of belief-disbelief system described by Milton Rokeach.

No attempt was made to investigate other variables such as other personality factors, age, sex, marital status, intelligence, or professional training.

Limitations

The major limitations of this study are as follows:
1) Human relations skills were measured by responses of only one discussion partner.
2) This study includes preservice secondary teachers only.
3) This study includes participation of preservice teachers for one quarter of approximately ten weeks.

Instruments Employed in This Study

The instruments used in this study were (1) the Relationship Inventory, (2) the College Student Problems Q-sort, and (3) the Dogmatism Scale.

**The Relationship Inventory.**—This instrument was used to assess the extent to which participants could reflect to a discussion partner conditions of level of regard, empathy, congruence, unconditionality of regard, and willingness to be known. A participant's score is based upon his partner's perceptions of their relationship as shown by his responses to the Relationship Inventory.

**The College Student Problems Q-sort.**—This instrument was used to measure the degree of openness of preservice teachers. A score on this
instrument indicates placement on a continuum from stasis (or fixity) to process (or flow) which is openness.

The Dogmatism Scale.—This instrument yields a score which indicates the extent of openness or closedness of a participant's belief-disbelief system.

Organization of the Study

Chapter I shows the general nature of the study, the problems, the purpose and background of the problems, and the major hypotheses to be studied. It includes scope and limitations and assumptions inherent in the study.

Chapter II is devoted to a review of the literature related to the study. Definition of terms and descriptions of instruments to be used, including information on their validity and reliability, are included.

Chapter III contains a review of the parent research, and a general summary of methods and procedures to be followed to test the hypotheses, and an analysis of pretest data to establish initial comparability of treatment groups.

Chapter IV contains a presentation and analysis of data and experimental tests of hypotheses.

Chapter V includes findings and conclusions reached from the study. It also includes presentation and analysis of data regarding the reliability of the measuring instruments based upon their performance in this study. Implications with relevance to teacher education are discussed as well as further study and research suggested by the
results of the human relations training. Elements of the design and their possible effect on the results are also included.
II. REVIEW OF THE LITERATURE

This study represents an intensive effort to translate some elements of theory developed as a result of research in psychology and psychotherapy into identifiable concepts and operations which can be tested in the classroom.

Three ideas to be explored are (1) favorable conditions which contribute to significant learning (Carl Rogers), (2) the process conception of psychotherapy as it relates to openness (Rogers), and (3) openness of belief-disbelief system (Milton Rokeach).

The elements of these theories which are pertinent to this study are presented. Research covering the development of measuring instruments based upon each of the elements selected for study and a discussion of the original purpose and intended use of the measuring instruments are also presented. Where it is available, research on the use of these instruments in educational settings will be presented.

Certain assumptions regarding the nature of the individual, desirable attributes of personality, and the value of openness to experience in a changing society are inherent to this study. A statement of major assumptions was included in an earlier section.

These assumptions regarding the nature of the individual are in part made explicit in certain of the theoretical statements of Carl Rogers. For Rogers the theoretical end point of therapy is the development of a more socially constructive or creative individual, a
"maximally creative, self-actualizing, or fully functioning person." 7 Fundamental to the theory is the concept of self-actualizing tendency which is explained in short as "development toward autonomy and away from heteronomy, or control by external forces." 8 This general tendency is present and the organism will behave in those ways which maintain and enhance itself. The self, or concept of self, "refers to the organized, consistent conceptual gestalt composed of perceptions of the characteristics of the 'I' or 'me' and the perceptions of the relationships of the 'I' or 'me' to others and to various aspects of life, together with the values attached to these perceptions." 9 In other words, it is one's view of himself.

Rogers also presents the individual as having an ideal self concept which may tend to cause one to screen out, or to deny to awareness, experiences which are not congruent with one's ideal self. The greater the agreement between the individual's self-description and an objective description of him, the less defensiveness he will show and the more well adjusted he will be. The aim in the development of the personality is to provide the situations and opportunities for the individual to explore his feelings and thoughts regarding experiences which he has so that he can come to accept into his own consciousness a fuller expression of the reality of those situations. When the


8Ibid., p. 192. 9Ibid., p. 201.
individual is able to accept and integrate ideas which cause a realign-
ment of his concept of ideal self, he is no longer so threatened or
defensive as a protection against aspects of reality which are incon-
gruent with his ideal self. He can begin to see himself as always
changing and becoming that which his life experiences make possible or
necessary.10

Rogers sees significant outcomes of therapy as follows:

- The person comes to see himself differently.
- He accepts himself and his feelings more fully.
- He becomes more self-confident and self-directing.
- He becomes more flexible, less rigid, in his perceptions.
- He adopts more realistic goals for himself.
- He behaves in a more mature fashion.
- He changes his maladjustive behaviors, even such a long-
established one as chronic alcoholism.
- He becomes more accepting of others.
- He becomes more open to the evidence, both to what is going on
  outside of himself, and to what is going on inside of himself.
- He changes in his basic personality characteristics in constructive
  ways.11

It is not the purpose of this paper to make explicit all aspects
of Rogers' theory which are necessarily involved in the development of
the ideas upon which this study rests. The most complete single state-
ment of Rogers' theory is found in "Theory of Therapy, Personality, and
Interpersonal Relationships, as Developed in the Client-centered Frame-
work."12 It has been referred to in previous references; however, the
less technical presentations of the ideas will be used where possible.
Many of these ideas are yet to be tested and are necessarily tentative

10 Rogers, On Becoming a Person, pp. 125-159. 11 Ibid., 280-281.
12 In Sigmund Koch (Ed.), Psychology: A Study of Science (New
in nature. It is the purpose of this study to extract certain ideas which Rogers has suggested for education to introduce them into the classroom for a test under research conditions.

**Human relations skills**

*Conditions for significant learning.*—The first problem for this study is based upon Rogers' theory regarding the conditions which make significant learning possible for individuals. Recognition of the importance of interpersonal relationships in therapy has lead Rogers to the conclusion that they are but special instances of those situations in life where interpersonal relationships are combined with the aims of assisting others in fuller development and growth. He has suggested that certain conditions which have been found to contribute to significant learning in therapy are likewise important for significant learning in education.\(^\text{13}\)

These conditions, excerpted briefly in the following paragraphs, are referred to in this paper under the rubric "human relations skills," with the exception of the first one which is a principle of learning and refers to a condition within the individual student or client.

1. The individual must perceive a problem and be trying to find a solution. He must recognize and accept responsibility for seeking an answer.

\[\ldots\] one of the conditions nearly always present is an uncertain and ambivalent desire to learn or to change growing out of a perceived difficulty in meeting life.\(^\text{14}\)

\[^{13}\text{Rogers, On Becoming a Person, pp. 280-281.}\]

\[^{14}\text{Ibid., p. 282.}\]
2. Congruence must exist in the relationship expressed by the therapist. He must be what he is without creating a "facade, or a role or a pretense." The therapist must be honest about his feelings on the inside and match his external expressions of those feelings.

3. Unconditional positive regard, a warm caring for the client so as to create a supportive climate, is important. This condition must prevail regardless of whether the client is expressing negative, "bad," strange, abnormal, fearful feelings, or positive, "good," mature feelings.

It involves an acceptance of and a caring for the client as a separate person, with permission for him to have his own feelings and experiences, and to find his own meanings in them. To the degree that the therapist can provide this safety-creating climate of unconditional positive regard, significant learning is likely to take place.15

4. An empathic understanding is that ability which allows the therapist to sense the client's world as if it were his own without losing the "as if" quality. Significant learning can occur when the therapist can reflect the client's feelings back to the client with full understanding of the client's world, when he can voice meanings regarding the experience of the client of which the client may not yet be fully aware, when he understands the patient's feelings, and when he is never in doubt of what the patient means, can fit his remarks to the mood and content of the interview, and by his tone of voice shows the complete ability to share the patient's feelings.16

15Rogers, On Becoming a Person, p. 283.
16Ibid., p. 284.
5. Communication to the client of these conditions (congruence, acceptance, and empathy) is vital. It is not enough that the therapist feels these conditions to be present, or feels that he has shown these conditions to the client. It is the client's perception of these qualities that set the conditions for learning.

6. Rogers summarizes therapy as "the type of learning that takes place when five conditions are met"—

When the client perceives himself as faced by a serious and meaningful problem;
When the therapist is a congruent person in the relationship, able to be the person he is;
When the therapist feels an unconditional positive regard for the client;
When the therapist experiences an accurate empathic understanding of the client's private world, and communicates this;
When the client to some degree experiences the therapist's congruence, acceptance, and empathy.17

The conditions for significant learning in therapy have implications for education and for the teacher. If real problems are an important factor in learning, students should have content in courses that will allow them to come into contact with real problems, to identify and search out answers to problems which are of importance to them. The individual student should be able to identify relevant problems so that his own actualizing tendencies are set in motion as he seeks his own solutions to problems of worth and importance to him.

Teachers should have the quality of real-ness with acceptant attitudes toward their own feelings. Rogers explains the congruence of the teacher and how it affects the learning situation.

Because he accepts his feelings as his feelings, he (the teacher) has no need to impose them on his students, or to insist that they feel the same way. He is a person, not a faceless embodiment of a curricular requirement, or a sterile pipe through which knowledge is passed from one generation to the next. 18

Unconditional positive regard and empathic understanding must be expressed by the teacher if significant learning is to occur. The teacher must show conditions of warm and unconditional acceptance of individual students as they are, not as he wishes them to be. This warm and accepting climate provides the psychological security a student needs to face new and threatening experiences, fears, discouragements and the uncertainties that come from continually being tried from day to day as learning in life, both inside and outside the school, takes place. Students need to feel that they are accepted when they do well and make progress; they also need to feel a warm acceptance when they recognize that they are doing less well. These are the conditions which produce the "safety-creating climate" needed for individual growth. 19

To function with these conditions and with this frame of reference a teacher would be more of a resource person available to students for all guidance and help that his familiarity with his field could provide. He might give information (lecture) if that was what the students wished, or he might make other information available. Rogers sees the learning situation as one in which the students set more of the conditions and parameters of activity as they seek solutions to problems which they have defined. The classroom would be different; it would be less

18 Rogers, On Becoming a Person, pp. 284-289.

19 Ibid., pp. 280-289.
under the direct control of the teacher; the students would be active, not passive; they would be questioning and involved with seeking solutions to their problems. They would be self-starting.

Rogers has emphasized that the teacher would be taking advantage of the basic motive for learning as it stems from the individual.

It should be clear . . . . that his (the teacher's) basic reliance would be upon the self-actualizing tendency in his students. The hypothesis upon which he would build is that the students who are in real contact with life problems wish to learn, want to grow, seek to find out, hope to master, desire to create. He would see his function as that of developing such a personal relationship with his students, and such a climate in his classroom that these natural tendencies could come to their fruition.

It becomes clear that the conditions which Rogers has found to be necessary for significant learning are not techniques or ways of behaving which can be adopted for classroom use for the sake of getting better results and dropped as the teacher goes out the door. These conditions are dependent upon skills in working with others as well as on basic attitudes toward other human beings and their rights to self-determination, their separateness, and their dignity.

Measuring the conditions necessary for significant learning

G. T. Barrett-Lennard developed the Relationship Inventory to measure the degree to which conditions of therapy as described by Rogers are present in the therapist-client relationship. Barrett-Lennard has included two concepts in his research beyond those described by Rogers and has made a clear statement of the concepts of congruence, empathic understanding and unconditionality of regard. Because he has

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20 Rogers, On Becoming a Person, pp. 289-290.
developed the Relationship Inventory to yield five subscores each based upon one of the five concepts following his definitions, these terms are quoted from his research.21

Empathic Understanding.—Degree of empathic understanding is conceived as the extent to which one person is conscious of the immediate awareness of another. Qualitatively it is an active process of desiring to know the full present and changing awareness of another person, of reaching out to receive his communication and meaning, and of translating his words and signs into experienced meaning that matches at least those aspects of his awareness that are most important to him at the moment. It is an experiencing of the consciousness 'behind' another's outward communication, but with continuous awareness that this consciousness is originating and proceeding in the other.

Thus, empathic understanding is concerned with experiencing the process and content of another's awareness in all its aspects. In particular it includes sensing the immediate affective quality and intensity of the other's experience, as well as recognizing its particular context (for example, who or what his feeling is directed toward, or his awareness of the conditions that produce it).

Level of Regard.—Regard refers here to the affective aspect of one person's response to another. This may include various qualities and strengths of 'positive' and 'negative' feeling. Positive feelings include respect, liking, appreciation, affection, and any other affectively adient response. Conversely, negative feelings include dislike, impatience, contempt, and in general affectively abient responses. Level of regard is the general tendency (at a given time) of the various affective reactions of one person in relation to another. More specifically, it may be considered the composite 'loading' of all the distinguishable feeling reactions of one person toward another, positive and negative, on a single abstract dimension. The 'lower' extreme of this dimension represents maximum predominance and intensity of negative-type feeling, not merely a lack of positive feeling.22


Unconditionality of Regard.—In contrast with level of regard this concept is specifically concerned with how little or how much variability there is in one person's affective response to another. It is defined as the degree of constancy of regard felt by one person for another who communicates self-experiences to the first. (In a casual or impersonal relationship the concept would have no meaning. Regard might be constant but so shallow and unrelated to the other person that it would not be perceived as a feeling toward him.)

Congruence.—The degree to which one person is functionally integrated in the context of his relationship with another, such that there is absence of conflict or inconsistency between his total experience, his awareness, and his overt communication, is his congruence in this relationship. . . . the highly congruent individual is completely honest, direct, and sincere in what he conveys, but he does not feel any compulsion to communicate his perceptions, or any need to withhold them for emotionally self-protective reasons.

Direct evidence of lack of congruence includes, for example, inconsistency between what the individual says, and what he implies by expression, gestures, or tone of voice . . . . It implies that the person is psychologically unthreatened and, therefore, maximally open to awareness of what the other person is communicating to him. And it means that the individual's capacity to discriminate between his own feelings or attitudes, and those of the other person, is at a maximum.

Willingness to be Known.—This factor is conceived as the degree to which one person is willing to be known as a person, by another, according to the other's desire for this. To be known as a person is considered here to involve especially the sharing of experiences and perceptions of the self, perceptions of and feelings toward the other, and perceptions of the self-other interaction or relationship . . . .

The Relationship Inventory is a 90-item test which consists of 18 items for each of the subtests on the dimensions described above. It has items to which responses are made according to how strongly the person feels it is true or not; for example +1, +2, +3 or -1, -2, -3.

Some examples of items on the Relationship Inventory are these:

- He respects me.
- He tries to see things through my eyes.
- He pretends that he likes me or understands me more than he really does.

There are two forms of the Inventory, a male form and a female form. The only difference is in the use of the personal pronoun in phrasing the question. A copy of the instrument is included in Appendix II.

Content validation was by means of judges' ratings of the items as positive or negative indicators of the variables. Validity of the scales was by means of discovering meaningful relationships between the data provided by scores and other data from counseling situations, which are necessarily indirect. Information regarding the validity and reliability of this instrument are found in the Barrett-Lennard research referred to above.24

Barrett-Lennard reported reliability data obtained in two ways. In one method the therapist-client relationship was assessed by means of a split-half method for each of the five scales and the total score. The reliability coefficient of each scale was estimated using the Spearman Brown formula for the data gathered after five interviews.25 The obtained r's are shown in Table 1.

24G. T. Barrett-Lennard, "Dimensions of Therapy . . .," pp. 6-8 (Psychological Monograph No. 562).
25Ibid., p. 12.
TABLE 1
CORRECTED SPLIT-HALF RELIABILITY COEFFICIENTS OF THE RELATIONSHIP INVENTORY SCALE, FROM DATA GATHERED AFTER FIVE INTERVIEWS

<table>
<thead>
<tr>
<th>Scale</th>
<th>Client Data N=42</th>
<th>Therapist Data N=40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of regard</td>
<td>.93</td>
<td>.93</td>
</tr>
<tr>
<td>Empathic understanding</td>
<td>.86</td>
<td>.96</td>
</tr>
<tr>
<td>Congruence</td>
<td>.89</td>
<td>.94</td>
</tr>
<tr>
<td>Unconditionality</td>
<td>.82</td>
<td>.92</td>
</tr>
<tr>
<td>Willingness to be known</td>
<td>.82</td>
<td>.88</td>
</tr>
</tbody>
</table>

The second method used by Barrett-Lennard to establish reliability was test-retest coefficients of correlation obtained from a sample of college psychology students. These students were asked to respond to the Relationship Inventory using as their frame of reference a close, long-standing, and personal relationship. After a four-week interval, these students were asked to make responses a second time reporting on this same relationship. Of the original 45 students, 9 were eliminated from the sample because they reported changes in the relationship during the four-week period. On the basis of 36 pairs of students, test-retest data yielded coefficients of correlation as reported in Table 2.

TABLE 2

COEFFICIENTS OF CORRELATION FOR THE RELATIONSHIP INVENTORY FOR COLLEGE STUDENT SAMPLE BASED ON CLOSE PERSONAL RELATIONSHIPS (N=36)

<table>
<thead>
<tr>
<th>Scale</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of regard</td>
<td>.84</td>
</tr>
<tr>
<td>Empathic understanding</td>
<td>.89</td>
</tr>
<tr>
<td>Congruence</td>
<td>.86</td>
</tr>
<tr>
<td>Unconditionality</td>
<td>.90</td>
</tr>
<tr>
<td>Willingness to be known</td>
<td>.78</td>
</tr>
<tr>
<td>Total Score</td>
<td>.95</td>
</tr>
</tbody>
</table>

In the therapist-client relationship, the length of time in therapy was quoted in numbers of interviews from 7 to 96, with a mean of 33 interviews. In the test-retest data in the sample of college students reported by Barrett-Lennard, their responses to the instrument were based upon a close, long-standing, and personal relationship. In cases where those relationships had changed or developed during the four-week interval between the tests, the student's data were dropped from the sample.

Studies made by Barrett-Lennard in connection with the validation of the Relationship Inventory showed that clients who experienced more growth during therapy and achieved more adjustment were those clients of therapists identified as more expert. There was a correlation between client growth and the client's report of the relationship which showed that in the client's perception of the relationship, he perceived his therapist to be empathic, congruent, and as having
feelings of unconditional positive regard in their relationship to a higher degree than did clients with less expert therapists. Using both a client form and a therapist form of the Relationship Inventory, Barrett-Lennard found that there was more agreement between the way the client marked his Inventory and the way the therapist marked his, for the group of more expert therapists and clients than for the less expert therapists and their clients.\textsuperscript{27}

Barrett-Lennard points out that whether one assumes that more expert therapists actually show more empathy, congruence, and unconditionality of positive regard or whether they are better at communicating these conditions is not the issue; the clients who achieved more growth perceived their therapists as reflecting more empathic understanding, more congruence, and the like is the point. The conditions must be perceived by the client.\textsuperscript{28}

The difference between the more expert therapists and the less expert therapists are described by Barrett-Lennard:

The aim in selecting the more and less expert samples of therapists was to obtain groups who could be expected to differ in their overall therapeutic effectiveness. Therapeutic effectiveness is conceived as ability to facilitate therapeutic personality change in the setting of professional client-therapist relationships. The best available predictive criterion of this ability was thought to be the formal experience level and position of therapists in the Counseling Center. Because all the therapists trained and worked in the same institution, these factors can be expected to have a rather consistent meaning.

The less expert therapists were first year staff interns, and one nonintern research assistant, who had all completed a

\textsuperscript{27}Barrett-Lennard, "Dimensions of Therapy . . .," pp. 1-33.

\textsuperscript{28}Ibid., pp. 1-33.
preliminary practicum course in client-centered therapy. The more expert group had all completed at least the equivalent of a 2-year internship in the Counseling Center and had been appointed to staff counseling positions in the Center.

Other differences between the two therapist groups were that the more expert therapists were older, averaging 35.4 years compared with 28.4 years for the nonexperts; they had a minimum and mean of 3 and 5.4 years' experience counseling in the Center compared with .5 and 1 year, respectively, for the nonexperts; they had already completed or begun therapy with an average of 45 clients while the corresponding figure for the nonexperts was 11; and they had considerably more personal therapy than the nonexperts. Altogether there were eight therapists in the expert group and seven classified as nonexperts, including two women in each instance.29

In making further comparisons between change of clients with expert therapists with those of less expert therapists, length of time that clients would remain with counseling was considered a factor in their growth. It was assumed that clients who were making progress would remain with their counselors long enough to make satisfactory change in the situations with which they were struggling when they entered therapy. The data presented showed that clients of more expert therapists had an average of 48 interviews, those of less expert therapists had a mean of 24.5. Number of clients dropping therapy with less than 35 interviews was 4 for the more expert group and 12 for the less expert group. Expert therapists had 8 cases with more than 35 interviews, the less expert therapists had only 3. (There were 12 clients in the more expert group, 15 in the less expert group.)30

Validity and reliability information have been presented on the Barrett-Lennard instrument, the Relationship Inventory. Information

29 Barrett-Lennard, "Dimensions of Therapy . . .," p. 20.
30 Ibid., p. 23.
regarding some of the factors in this research which provide background for factors in the present study have been reported. This instrument was developed for use in the therapeutic situation and for showing the degree to which the therapist was able to show conditions of congruence, empathy, unconditional positive regard, and the like in a relationship with the client (as measured by client's responses to the Relationship Inventory).

Although this instrument was developed in a clinical setting, it has been used in the classroom. Emmerling used the Relationship Inventory to explore relationships between certain personality traits of classroom teachers and the climate of instruction they provide.\(^3\)

Freese used the Relationship Inventory in a study of students' perceptions of their relationships with student teachers. He found a relationship between the way students perceived their student teachers on empathy, congruence, unconditionality, and the like, and openness on a Q-sort measure.\(^2\) Robert Bills did a replication of the Freese study and used the Relationship Inventory as one of the measures.\(^3\)


studies are mentioned here to show that the Relationship Inventory has been used in the classroom. These studies will be reported in more detail following a discussion of openness according to the Rogers theory, because the studies of Emmerling, Freeze, and Bills involve both the conditions for significant learning and the personality characteristics of openness.

Openness to Experience

Rogers has said that openness to experience is the opposite of defensiveness. He points out that it has generally been established by research that where the evidence of our senses runs contrary to our picture of self, then that evidence is distorted. The person who is open to experience can take the information and data from new situations as it is, he does not need to mold it or fit it to the information he already has. He will be less rigid in his beliefs; he can tolerate ambiguity without forcing closure upon a situation. He is aware of what exists at this moment in himself and in the situation. The extent to which he is open determines his access to all the available data in the situation on which to base his behavior; for example, the knowledge he has of his own feelings and impulses, social demands, relatively rigid social "laws," desires of friends and family. He has access to his memories of similar situations and of different behaviors in these situations. To the extent that he can receive the data from all these sources and deal with it, he has information upon which to base his

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34 Rogers, On Becoming ..., p. 115.
decisions. If he is open, he will be aware of unsatisfying consequences and can make quicker corrections.

The individual as he moves toward openness comes to accept the fact that he must make his own choices and decisions, that evaluative judgment lies within himself. Less and less will he look for approval or disapproval from others; he will set standards and make choices for himself which will be satisfying in terms of his own goals and aims.35

In his study of the process of adjustment and growth, Rogers has observed stages of growth, and from these stages he has postulated a continuum from stasis to process (from fixity to changingness, from rigid structure to flow). This seven-stage process is characterized at the rigid end by one who seems fixed and remote from experience. The communications of these persons are only about externals; feelings and personal meanings are neither recognized nor owned; there is no desire to change.36 From this state to the state of openness which was described above are seven stages of growth. Growth is not always linear; there is an up and back movement as a person in process seeks new experiences and makes tentative changes in his orientations. During the process, there is a growing sense of self-responsibility for problems. This is the process of growth, which is the goal—the person "has become an integrated process of changingness."37

36Rogers, On Becoming ..., pp. 125-158.
37Ibid., p. 158.
Measurement of openness

To measure the degree of openness on the Rogers stasis-process dimension, Robert Bills and a group of his associates and students have developed a series of Q-sorts to be used with teachers and prospective teachers. These Q-sorts were based upon problems collected from large numbers of teachers or from problems collected from prospective teachers, depending upon which Q-sort is being considered. These problems were sorted to reflect the degree to which they were (1) positive, (2) central, (3) self-related, and (4) related to the future as those problems indicating more openness. Those problems which were considered to be indicative of less openness were (1) negative, (2) peripheral, (3) less self-related, and (4) related to the present and past.38

The College Student Problems Q-sort was developed by Freeze. The validation of this instrument was based upon a study of 145 student teachers who took the pre- and post-college student problems Q-sort. From this number Freeze selected 10 student teachers who had high scores and 8 student teachers who had low scores. During the spring semester of 1963, the two groups of student teachers did their student teaching and all of the students in the 18 classes, grades 9 through 12, who were taught by each student teacher in the more open and less open groups, were asked to respond to the Relationship Inventory on the basis of the way they perceived their relationship with their student teachers.

When the results were analyzed, Freeze found those student teachers who were shown to be more open on the College Student Problems Q-sort were perceived by their students as having provided significantly better relationships on all variables (subscores of the Relationship Inventory) than did the students of the less open group of student teachers. On the basis of these data, Freeze considered this instrument to be a valid measure of openness. (Freeze reported an F ratio of 10.80 for significance at greater than the .001 level for this data.)

Freeze reported pre- to posttest data using a series of intercorrelations. This method is quoted verbatim from Freeze's study and is included in the Appendix.

Emmerling used both the Relationship Inventory and a Problems Q-sort in a study with teachers who participated in a summer workshop at Auburn University in 1960. He selected from a group of 57 teachers ten teachers from the top scoring range on the Q-sort and ten teachers from the bottom scoring range. He tested the students they were teaching at the time. The Relationship Inventory was used to measure the pupil perceptions of their teachers. He found that teachers who were perceived by their students as having (1) more freedom of communication, (2) empathic understanding, (3) positive regard, (4) unconditionality of regard, and (5) congruence were those who were characterized as more open on a Q-sort measure. He obtained very high confidence levels on his use of the Relationship Inventory, .0001 level of confidence with the exception of congruence which was .001.

40Emmerling, "A Study of the Relationship . . . ."
A second measure used by Emmerling was the Schuman Student Centeredness Scale which showed also that students perceived the more open teachers as being more student-centered.41

A study which focused on the degree of change of the more open and the less open teachers was made by Engle. Engle studied the change made by a more open and a less open group of teachers who attended a workshop for instructional improvement at Auburn University during the summer of 1960. The Teacher Problems Q-sort was used to select the more open and the less open groups. When changes made by these two groups as a result of a relatively student-centered workshop experience were analyzed, Engle found that—

1. "More open" subjects were apparently superior in their ability to make positive change during the 1960 summer workshop.

2. "More open" subjects evidenced more positive and accepting attitudes of themselves.

3. "More open" subjects became more understanding and more accepting of others.

4. Both groups perceived education as being connotatively better, more active, and more potent.

5. "More open" subjects became more heterogeneous in their descriptions of the role of an ideal teacher in a democracy.42

In addition to the part of his study which was devoted to validation of the College Student Problems Q-sort, Freeze studied the relationship between openness in student teachers, cooperating teachers, cooperating teachers, cooperating teachers,
and college supervisors and changes in openness in student teachers during student teaching as a function of the openness of their college supervisors and cooperating teachers. In addition to developing the College Student Problems Q-sort, he also developed the College Teacher Problems Q-sort. These instruments were validated against the Relationship Inventory.

In Freeze's study regarding the relationship between the variables of supervising and cooperating teachers, he reported that evidence suggested that student teachers supervised by more open college supervisors perceived the supervisors as having significantly better relationship variables as measured by the Relationship Inventory.\(^4\)

He further reported that the Relationship Inventory variables were of greater consequence in effecting change in student teachers than were the process characteristics of either the cooperating teacher or college supervisor. He further reported little change in openness in the group of 145 student teachers over a period of one semester. Change in openness was not significant when both college supervisor and cooperating teacher were above the median in openness, nor was it when one was above and one below the median. However, significant changes of a negative type occurred if both were below the median of their groups.\(^5\)

Bills completed a restudy of the question of relationship between the supervising and cooperating teachers' openness and change in student

\(^4\)Freeze, "A Study of Openness . . .," pp. 22-23.

\(^5\)Ibid., p. 23.
teachers which had been a part of Freeze's study. Bills' research included student teachers and supervisors from six colleges with 261 student teachers enrolled for elementary and secondary student teaching. He selected randomly 22 classes in grades 9 to 12 with 602 students who described their student teachers with the Relationship Inventory. Student teachers also described the quality of their perceived relationships with their cooperating teachers and with their college supervisors at the end of student teaching. Nineteen supervising teachers completed the Teacher Problems Q-sort; 206 cooperating teachers completed the Teacher Problems Q-sort.\(^4^5\)

Bills found that significant negative changes occurred in openness of the student teachers during their student teaching. These negative changes occurred for both elementary and secondary student teachers but did not occur to the same degree for students in all colleges which were studied. Negative changes were most notable in connection with the openness scores of cooperating teachers. Bills suggests that perhaps the less open cooperating teacher is more rigid and less variable in his behavior and therefore provides a more stable environment for the student teacher who is functioning in a threatening situation at the culmination of his college program.\(^4^6\)

To summarize, the theory of openness has been presented in the above section along with the Q-sort technique which has been used to

\(^{4^5}\)Bills and others, *Student Teacher Personality Change ...*, pp. 5-6.

\(^{4^6}\)Ibid., pp. 19-25.
measure this construct. In addition, a number of studies have been presented which show the use of the Relationship Inventory and the Problems Q-sorts to indicate factors of climate for change and ability to change in the classroom setting.

**Openness of Belief-Disbelief System**

The construct of openness of belief-disbelief system of Rokeach was included in this study primarily to compare the results from the measurement of openness to experience according to Rogers and the measurement of openness of belief-disbelief system on the Dogmatism Scale. The Dogmatism Scale research has been conducted with many different groups.47

In certain descriptions presented by Rokeach, some correspondence in theory appears. However, the major points will be discussed without an attempt to show whether they are similar to Rogers' theory.

**Three major dimensions**

- **Time perspective.** The time dimension is characteristic of all systems. The open person has a broad time perspective. He can bring to bear on his considerations information from the past and present and relate them to the future without losing the continuity and connections between them. In other words, his system of beliefs and disbeliefs about past, present, and future are open and broad. The closed person has a narrow time perspective. Persons with this narrow time perspective may be equally narrow whether they be past-oriented, present-oriented, or future-oriented. Their perceptions of the past or of the

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47 Rokeach, *The Open and Closed Mind*, pp. 71-97.
of the future may cover a very long span, but they are still narrow in their orientation and consideration of time. A future-oriented person, for example, may be centered in some religious or political movement which proposes a future Utopia. In this case, the present is but a prelude to the future. What is going on in the present can be completely ignored. Rokeach points out that the person who is guided in his belief-disbelief system by a future-oriented time perspective typically expresses overtly greater confidence in the future, and he stands more ready to make predictions about the future.48

The breadth or narrowness of a person's time perspective may perhaps be most simply gauged by noting the relative frequency with which he refers to the past, present, and future in his daily actions and conversation.49

Belief-disbelief dimension.—The belief-disbelief dimension is a characteristic of all systems. Rokeach has pointed out that a basic assumption is that all persons' belief-disbelief systems have two interdependent parts—one is the belief system, the other the disbelief system. The more open person can move between the belief and the disbelief systems with a relatively open intercommunication system and can see consistencies and inconsistencies in his encounters of issues. Therefore, since he can recognize these, he can integrate new beliefs and incongruities into his systems with much more ease. A closed belief system makes it difficult, if not impossible, for the person to recognize differences between his belief and disbelief systems since they are

48Rokeach, The Open and Closed Mind, pp. 51-53.
49Ibid., p. 53.
compartmentalized. A common example might be the one who upholds honesty in one area while retaining certain nonallowable expenses on his income tax report.

Not only will the one with a closed system fail to recognize the inconsistencies, he will deny inconsistencies to his awareness; or he will perceive disagreement as "irrelevant" or deny it completely as being absurd, due to chance, or having come from a biased source.

On the belief-disbelief continua, the more similar a belief or a disbelief is to one already held, the more acceptable it may be. In other words, to a Catholic, Episcopalian views may be more tenable than those of a Baptist. To a Baptist, Methodist views may be more acceptable than Catholic ones if the person has a closed system. Following the theory of Rokeach, the more open the system, the more likely there is to be a free examination of actual similarities between ideas than there is to be a clear acceptance or a clear rejection.

Central-peripheral dimension.—A third general category of similarities of systems whether open or closed is the dimension called central-peripheral. Rokeach points out that this dimension involves the general area of acceptance of people, ideas, and authority and with the way events and ideas in daily life which impinge on the individual are handled. These dimensions are handled in one way by the person who is open and another by the closed person. The closed person believes not only that there is an authority, but he believes in absolute authority.

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It is not that the open and the closed do and do not believe in authority, it is how they believe in it. The more open person has different ideas about the nature of authority. All persons rely on authority; at one extreme is absolute reliance on authority (the closed person); at the other is rational, tentative reliance on authority (the open person).^53

It is further suggested that one of the characteristics of those with closed belief-disbelief systems is that they are unable to evaluate and act on relevant information received from the outside on the basis of its own merits; they are bound by irrelevant internal pressures such as unrelated habits, beliefs, and perceptual cues, irrational ego motives, power needs, the need for self aggrandizement, need to allay anxiety, and the like. They are likewise subject to external pressures as from authority exerted by parents, pressures from peers, authority figures, and reference groups. They are bound by social, institutional, and cultural norms.54

With a more open system one should be governed in his own actions by self-actualizing forces and have a better understanding of himself so that he is not under the influence of such irrational internal forces as mentioned above. He should be able to act and evaluate independently of the pressures. In other words, he comes to understand that he must make his own evaluations, consider himself and his own requirements in the situation. He will have the strength to resist externally imposed reinforcements.55

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53Rokeach, The Open and Closed Mind, p. 44. 54Ibid., pp. 57-58.
55Ibid., pp. 57-58.
Rokeach points out that the more open person comes to see and be able to evaluate information as separate from its source. For example, one might accept financial information from a banker and find him a reliable authority. The banker might not, however, be that same reliable authority on a medical matter. The open person can make this distinction. The more closed person cannot; he relies on authority external to the situation regardless of the appropriateness of source.\(^{56}\)

Included in the central–peripheral dimension are beliefs about people in general. Rokeach points out that we not only have beliefs about people, "We have beliefs about people-who-have-beliefs."\(^{57}\) When authority is seen as absolute, as in the case of the closed person, those who agree are accepted, but conditionally; they are accepted for only so long as they agree. Acceptance can easily turn into unqualified rejection if they come to disagree or differ from the accepted authority.\(^{58}\)

Rokeach points out that two persons may have opposing beliefs, but similarities in belief about authority. Both persons will reject one who disagrees with them. Here the key may be "opinionated language." Rokeach points out that for this category, the world may be organized in a disbelief system, but it also may have a continuum of believers in terms of the belief or disbelief system. "There may be an ingroup and a continuum of outgroups."\(^{59}\)

Regarding beliefs about people, the open person does not believe in accepting or rejecting ideas or people on the basis of authority; he

\(^{56}\)Rokeach, The Open and Closed Mind, pp. 59-60. \(^{57}\)Ibid., p. 45.

\(^{58}\)Ibid., p. 46. \(^{59}\)Ibid., p. 46.
does not especially believe that people should be evaluated at all, and especially not in terms of whether they agree or disagree with a particular authority. 60

**Differences in two orientations toward openness**

It was the purpose of this section to make some comparison of the theoretical orientation of openness of belief-disbelief system with that of Rogers on openness and to show similarities or differences in relation to the construct of openness to experience as described in an earlier section. The theory of Rogers is cast in the framework of personality growth and is concerned primarily with the relationship between the growth of the individual and the interpersonal relationships which provide him with the psychological support and acceptance which is considered to facilitate his growth. The theory of Rokeach is based upon investigations which include not only personality theory but ideological and cognitive development of the individual as well. It is the intent of the research of Rokeach and others with whom he is working to find a more basic dimension than those mentioned which will account for differences in individual orientations.

In an oversimplification, it might be possible to suggest that Rogers is concerned with the individual and in helping him grow and develop to his maximum potential. Rogers has not spent his time delving into the basic or primitive orientations from early experiences of the person, through his (the person's) development of ideas about

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60 Rokeach, *The Open and Closed Mind*, p. 56.
authority, absolute or otherwise, and through to an examination of the way he builds a system of beliefs and disbeliefs. Nor has Rogers been concerned with examination of the similarities in structural orientations of all these beliefs. This, however, has been the area of concern for Rokeach. He has researched in religion, in politics, in orientations to authoritarianism and intolerance, all the while trying to focus on most basic factors which tie all these ideas and area together into a system.

Rogers is process oriented. Rokeach is structure or system oriented. The unit of analysis of Rogers is the individual and his capability of action with growth coming through feedback from this action.

Measuring instrument

The Dogmatism Scale was developed by Rokeach to measure individual differences on relative openness or closedness of belief system. Form E is constructed to reflect the dimensions shown in the previous discussion. It has items designed to measure isolation within and between belief systems, the perception of irrelevance, relative degrees of differentiation of the belief and the disbelief systems. It has items on specific content of primitive beliefs with items to reveal ideas about self-aggrandisement, inadequacy, moral self-righteousness, and paranoid outlook on life. It has items reflecting the structure of the total system; to reveal authoritarianism and intolerance; items on time perspective, attitudes toward past, present, and future, as well as about knowing the future.61

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61 Rokeach, The Open and Closed Mind, pp. 72-80.
Responses on the Dogmatism Scale are marked on the basis of how strongly one agrees or disagrees with each statement. For example, the range for each answer is from +1, +2, to +3 (from agree to strongly agree), and from -1, -2, to -3 (from disagree to strongly disagree). This is a 40-item test (Form E).  

The instrument was validated on the Method of Known Groups. For Form E Rokeach reported reliabilities of .81 for an English College Sample and .78 for an English worker sample. At Michigan State University and The Ohio State University r's for various samples studied ranged from .68 to .85.

The concern of the present study was interpersonal relations and improvement in human relations skills. Rokeach makes reference to interpersonal relations in the report of his research in connection with opinionation in language. Relevant here is the informal observation that in the immediate academic setting in which we have pursued our research there has been a marked reduction in the frequency of use of opinionated language, probably as a result of an awareness of its psychological significance. This suggests that everyday interpersonal relations may sometimes be changed without too much effort. This statement implies that in casual relationships one could change easily, particularly surface behaviors that seem to be required for ease in moving socially with large numbers of people without really becoming involved in close and meaningful interpersonal relationships.

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62 Rokeach, The Open and Closed Mind, pp. 72-73.
63 Ibid., pp. 87-90. 64 Ibid., p. 410.
The primary concern of this study was to ascertain whether there was a similarity of constructs and a relationship between process or openness and openness of belief-disbelief system. Both the Rogers and the Rokeach theories suggest an effect on human relations skills dependent on degree of openness.

To summarise, it was the purpose of this section to show the major theoretical orientation which underlies the construct of openness of belief-disbelief system as described by Rokeach. Three dimensions were discussed: time perspective, belief-disbelief continua, and central-peripheral dimension which includes reactions of the individual to authority, people, ideas, and to the present environmental world as it impinges on the individual and requires decisions, choices, and actions.

The Dogmatism Scale was presented as a reliable instrument for use with many groups. Reliability data were reported for Form E (which was the form used in the present study).
III. METHODS AND PROCEDURES

Introduction

This study was one part of a larger research project carried out at The Ohio State University in an effort to determine the most effective methods of instruction for meeting basic behavioral objectives in an introductory course for the preparation of secondary teachers. The purposes of the parent research project were (1) to test the effectiveness of three methods of teaching human relations skills and (2) to test the effectiveness of two methods of teaching preservice teachers to analyze and control their verbal teaching behavior.

The subject of this study is that part of the larger project which is designed to test the effectiveness of methods of teaching human relations skills to preservice teachers. Also it will be concerned with two constructs of openness to experience as they may affect degree of change in human relations skills. It will include comparison and analysis of data obtained on two different instruments, each designed to measure openness but from two different theoretical orientations.

Review of the Parent Study

The following sections show the design of the research, the setting, population, makeup of experimental groups, assignments of participants to class sections, and the like for the parent study. They are reported because the design and procedures of that research are an integral part of the present study.
Setting.—A two-year course revision and institutional research project was undertaken at The Ohio State University in connection with the preparation of secondary teachers. During this time the content of the course was gradually changed from a general introduction to education and the secondary school to a course more concerned with the introduction of the preservice teacher to the instructional role of the teacher in the secondary classroom. Among the behavioral outcomes sought by the instructional staff for the course were those in the area of improved human relations skills and more flexibility in the use of teacher verbal behaviors, which were the subject of the parent research project.

During the period covered by the planning and completion of this research, approximately 365 students per quarter were being enrolled in Education 535, Theory and Practice in Secondary Education, the course under revision. The large enrollment made possible a research project for simultaneously testing effectiveness of different methods of instruction.

Population.—The participants in this study were approximately 450 students enrolled over two quarters in a required course in secondary education. Most of the students were sophomores and juniors with a few seniors and adult students in each section. The participants were enrolled during the winter and spring quarters of 1965 when the study was undertaken. They were assigned to Education 535 at each scheduled time through regular procedures in the office of the registrar.

Experimental treatments.—The parent research project had two purposes. The first was to test the effectiveness of three methods of

65 Final analysis of the research is based on 84 subjects per treatment group, 420 participants, because of dropouts, inadequate data, and the like.
teaching human relations skills. The second was to test the effectiveness of two methods of teaching preservice teachers to analyze and control their verbal teaching behavior. All participants in the study experienced both human relations training and analysis of verbal teaching behavior in one of the experimental treatments. Treatments differed only in the means used to teach for the behavioral objectives.

Human relations training was provided in three ways: (1) dyadic programmed instruction, (2) dyadic discussions of case studies in education, and (3) lectures, class discussions, and readings. Methods two and three were provided as a control for method one. Approximately ten hours were scheduled for human relations training regardless of method used. The characteristics of the methods are described as follows.

1) Dyadic programmed instruction was provided by The General Relationship Improvement Program which focuses upon the need for the development of greater awareness and acceptance of self and others and the need to be more open in relationships with others. As a result of the program, it is expected that participants will be better able to relate more positively and constructively to others. The students read and react to the program together; they discuss with each other structured questions and role play situations given in the program. The program is written for ten hour-long sessions which were covered during the ten-week quarter.

2) Dyadic discussion of case studies in education were scheduled in the same way as the programmed instruction. Two students met for ten hour-long sessions. They were assigned ten different case studies in

66 A dyad is a pair of students assigned to share a learning situation. (Dyadic—a group of two.)
education which they read and discussed together. The case studies were relevant to problems encountered by the teacher in the secondary school; they were not selected to relate directly to the concepts being emphasized in the human relations training. A sample study is shown in Appendix III.

The use of dyadic discussions of case studies was planned as a control for the relationship factor in this method. The relationship which would develop between the students as a result of their working through the program together during the ten hours was the factor which was built into the dyadic discussion of case studies, not the content. The intent was to equalize the discussion aspect so that any greater degree of change which might result from the use of dyadic programmed instruction could be attributed to content, not the discussion, since both groups would include ten hour-long discussions with a partner. The schedule for all dyadic discussions and programmed instruction is shown in Table 3.

**TABLE 3**

**SCHEDULE OF DYADIC PROGRAM HOUR-LONG SESSIONS**

<table>
<thead>
<tr>
<th>Week of Quarter</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Sessions</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

Procedures used in pairing students for human relations training will be presented in the section on collecting pretest data.

3) The third method of providing human relations training was through lectures, class discussions, and outside readings covering the
theory and concepts of human relations in the classroom. Time spent for lectures and classroom discussions, including time for outside readings, was approximately ten hours, to correspond with the other two methods of teaching human relations skills. This method included discussions with the whole class and with smaller groups, but did not include discussions between pairs of students. This method was selected to provide a control for the content dimension of the dyadic programmed instruction.

Analyzing verbal teaching behavior was taught by (1) Flanders' system of interaction analysis\(^{67}\) and (2) analysis of verbal teaching behavior by use of tapes, observations, and simulations of classroom situations, but no training in the use of a category system. All participants in the research project experienced one or the other of these two methods of analyzing and controlling verbal teaching behavior along with their human relations training.

1) Flanders' system of interaction analysis included training in recognition of categories, skill training in tabulating into categories from tapes of recorded classroom teaching situations to a minimum level of proficiency. They plotted these data into matrices, computed indirect-direct ratios, and interpreted meanings of these data. Participants developed the ability to read and interpret the verbal behaviors from cell loadings in major categories of the matrix. Students were given training in using verbal categories; they practiced replicating various sequences of verbal behaviors in small group situations and had a series of

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micro-teaching experiences with practice in combining patterns of interaction with objectives for a teaching-learning situation.

2) Analysis of verbal teaching behavior included the use of tapes, observations, and simulations of classroom situations. Students were not taught any system of analyzing verbal behavior, but they were encouraged to analyze and suggest categories that represented major classes of behavior which they observed. They used small group discussions to replicate verbal behaviors the group had categorized; they also did micro teaching in which they practiced patterns of verbal behaviors from their observations.

Approximately 17 hours were devoted to teaching students to analyze and control verbal teaching behavior for each method used.

In addition to being assigned to one or the other of the methods of analyzing verbal behavior, all students spent approximately eight hours of observation in public school classrooms where they were able to observe human relations and analyze verbal teaching behavior following the concepts they had learned in their education classes. In some cases, students were able to teach for short periods of time while a fellow student took notes or recorded by means of interaction analysis the verbal teaching behavior, depending upon which method of analysis he learned in his experimental treatment group. After the students left the school classrooms, they shared notes on their own verbal teaching behaviors and their understandings of concepts and interaction discussed in their education classes.

General course content beyond the experimental aspects of the research were the same for all groups. These included instruction and
class discussion of theories of learning and instructional method; lectures and skill sessions in stating objectives to be achieved in learning situations in terms of observable behaviors; lectures and discussions on lesson planning and related activities; simulated teaching experiences with student evaluations of these experiences; and evaluation procedures for the course along with routine administrative activities.

Content for the course in which this study was completed was translated into a series of behaviorally stated objectives which were identical in intent for all treatment groups but were expressed in terms of the experimental instructional pattern experienced by each treatment group. A full statement of the behavioral objectives for a non-interaction analysis treatment group is included in Appendix IV.

Simulated teaching was an experience which was defined in specific detail as to requirements and expectations. One of the aspects of that experience as it appears in the statement of objectives is as follows:

e) The lesson should contain at least 20 per cent student verbal participation and no more than 40 per cent of any single teacher or student behavior, e.g., teacher lecture, student answers to questions, teacher directions, etc.

f) Using the Teaching Process Model as a guide, analyse whether the objective(s) was met or not and why.

The course was planned and scheduled to include activities which had to follow closely a predetermined schedule in order to meet the deadline for the culminating activity of the course, the simulated teaching. It was the opinion of the instructors generally that there was not much time in the teaching schedule for particular concerns of individual prospective teachers. The content of the course was predetermined and time was to be used for scheduled activities.
Five experimental treatment groups

The two main objectives of the parent research project were met by combining each of the three methods of teaching human relations with one of the two methods of teaching analysis and control of verbal teaching behavior so that data for each experimental treatment group using a different pattern of instruction could be subjected to statistical analysis and compared with each other group to determine which of the instructional patterns proved most effective in meeting each of the aims of the research. Experimental treatment patterns are summarized in Table 4.

Table 4
SUMMARY OF THE FIVE EXPERIMENTAL TREATMENTS

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Human Relations Training</th>
<th>Verbal Teaching Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Lectures and classroom discussion of human relations in teaching.</td>
<td>Skill training in Interaction Analysis as a means of analyzing verbal teaching behavior.</td>
</tr>
<tr>
<td>II</td>
<td>Dyadic programed instruction in human relations skills.</td>
<td>Analysis and discussion of verbal teaching behavior, but no instruction in the skill of Interaction Analysis.</td>
</tr>
<tr>
<td>III</td>
<td>Lectures and classroom discussion of human relations in teaching.</td>
<td>Analysis and discussion of verbal teaching behavior, but no instruction in the skill of Interaction Analysis.</td>
</tr>
<tr>
<td>IV</td>
<td>Dyadic discussion of educational case studies.</td>
<td>Analysis and discussion of verbal teaching behavior, but no instruction in the skill of Interaction Analysis.</td>
</tr>
<tr>
<td>V</td>
<td>Dyadic programed instruction in human relations skills.</td>
<td>Skill training in Interaction Analysis as a means of analyzing verbal teaching behavior.</td>
</tr>
</tbody>
</table>
Sectioning.—The classes participating in the parent study had approximately 28 students each. Classes met for two hours a day, four days a week, Monday through Thursday, for a quarter of approximately ten weeks. Three classes were scheduled each quarter at each of the following times: 8:00, 10:00, 12:00, and 2:00 o'clock.

Approximately 90 students were scheduled by the registrar for Education 535 at each meeting time. Students were assigned by the Education 535 staff to each of the sections so that there was approximately equal distribution on the basis of sex, age, marital status, and subject area major.

Assignment of sections to experimental groups.—There were 20 sections of approximately 28 students each. Four class sections were included in five experimental treatment groups. Ten were taught during the winter quarter and ten during the spring quarter. In assigning sections to experimental treatment groups, the class meeting time was a variable factor. Sections were assigned so that each meeting time was represented in each experimental group. For example, Treatment Group I included winter quarter sections which met at 8:00 a.m. and 12:00 N., and spring quarter sections which met at 10:00 a.m. and 2:00 p.m. Treatment Group II included winter quarter 10:00 a.m. and 12:00 N. sections and spring quarter 8:00 a.m. and 2:00 p.m. sections, and so on. Assignments of sections to treatment groups are summarized in Table 5.
TABLE 5
SECTION ASSIGNMENTS TO TREATMENT GROUPS

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>8:00 12:00</td>
<td>10:00 2:00</td>
</tr>
<tr>
<td>II</td>
<td>10:00 12:00</td>
<td>8:00 2:00</td>
</tr>
<tr>
<td>III</td>
<td>12:00 2:00</td>
<td>8:00 10:00</td>
</tr>
<tr>
<td>IV</td>
<td>8:00 10:00</td>
<td>12:00 2:00</td>
</tr>
<tr>
<td>V</td>
<td>8:00 2:00</td>
<td>10:00 12:00</td>
</tr>
</tbody>
</table>

Instructors.—Instructors for the parent research project were five graduate assistants completing their doctoral studies in the area of secondary education. The staff met weekly with the coordinator of all Education 535 sections to insure that the various experimental treatments would be as uniform as possible.

Each instructor taught two treatment groups per quarter, a total of four treatment groups per instructor for the experiment. Each instructor taught a specific treatment group only once; and insofar as possible, each instructor taught only one section that met at each meeting time. However, different meeting times could not be assigned in all cases due to conflicting class schedules in the graduate programs of the instructors.

The instructor was considered an important variable. Therefore an attempt was made to equalize the effect of the instructor on the experimental treatments. For the purpose of this study it was assumed
that this process would equalize the impact of the teacher personality on each of the experimental treatments so that differences which might occur could be assumed to result from differences in treatments rather than differences in impact of instructors. Assignments for instructors are summarized in Table 6.

**Table 6**

**Instructional Pattern Assignments for Instructors**

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Winter Treatment and Time</th>
<th>Spring Treatment and Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I I III 12:00 2:00</td>
<td>II V 8:00 10:00</td>
</tr>
<tr>
<td>2</td>
<td>I II 8:00 10:00</td>
<td>V IV 12:00 2:00</td>
</tr>
<tr>
<td>3</td>
<td>III V 12:00 2:00</td>
<td>IV I 12:00 2:00</td>
</tr>
<tr>
<td>4</td>
<td>V IV 8:00 10:00</td>
<td>III II 10:00 2:00</td>
</tr>
<tr>
<td>5</td>
<td>IV II 8:00 10:00</td>
<td>III II 8:00 10:00</td>
</tr>
</tbody>
</table>
To summarize, the parent research had two broad purposes, (1) to test the effectiveness of three methods of teaching human relations skills to preservice secondary teachers, and (2) to test the effectiveness of two methods of teaching preservice teachers to analyze and control their verbal teaching behavior.

When the three methods of teaching human relations skills were combined with two methods of analyzing verbal teaching behavior, five different instructional patterns resulted. For the purpose of this study, each of these instructional patterns was considered to be an experimental treatment.

The general design and procedures for the parent research have been presented here because they are an integral part of this study.

Methods and Procedures for This Study

The present study has three purposes which are derived from the study of human relations skills in the parent study. They are (1) to test the effectiveness of five different patterns of instruction for their effectiveness in teaching human relations skills, (2) to ascertain the growth in human relations skills and the degree and direction of change in openness for the participants who are more open and participants who are less open, and (3) to examine theoretical constructs of openness by comparing the performance of prospective teachers on measuring instruments based on each of the theories to see whether those participants who are identified as open on the measurement of one construct of openness will also be identified as open on the measurement of the other construct.
In an effort to explore these problems, the design of the parent study detailed above has been employed as it was used in the parent study. In other words, this present study is actually a part of the larger study, and as such represents an effort to look at three problems within the framework and assumptions of that larger study.

The first problem: teaching human relations skills

The first purpose of this study was to provide a test of the effectiveness of three methods of providing human relations training. The dyadic programed instruction was expected to prove more effective than either of the other methods. Therefore, this expectation is reflected in the statement of the following hypothesis:

Hypothesis one.—Prospective secondary teachers who experience dyadic programed instruction, The General Relationship Improvement Program, will show more growth in human relations skills than will those who experience the other instructional patterns (as measured by the Relationship Inventory).

In an effort to test this hypothesis a three-phase study was undertaken.

1) All students in the experimental treatment groups were tested with the Relationship Inventory.

2) The extent to which these groups differed at the beginning of the experiment was determined.

3) All students were administered the same test at the end of the experimental treatments and the changes in scores were analyzed by means of analysis of variance.
The Relationship Inventory yields a total score made up of five subscores based on the ability of the participant to show conditions of empathy, congruence, level of regard, unconditionality of regard, and willingness to be known in a relationship with another person. One's score is based upon the other person's perceptions of the relationship. This instrument was discussed in Chapter II in more detail. Procedures used to score this instrument are presented in Appendix II along with a copy of the test items.

Testing procedures for the Relationship Inventory.—For the pretest in all sections, participants were assigned partners for the quarter with as nearly equal numbers of boy-boy, girl-girl, and girl-boy pairs as possible. Following the assignment of a partner, the pairs were given a "What Would You Do" series of short problems in education with questions to be answered. Pairs were instructed to arrive at an agreement on an answer to each question if possible but to answer as many questions as they could within the class hour allotted to this activity. During the following class hour the students were asked to respond to the appropriate form of the Relationship Inventory. (The Male Form for a male partner, a Female Form for a female partner. The forms differ only in the use of the personal pronoun in the statements; for example, "He respects me." or "She respects me.")

For the posttest situation in those sections using dyadic programmed instruction and dyadic discussion of case studies in education, the Relationship Inventory was administered following the tenth discussion session.
For the sections using lecture, class discussion, and outside readings, the student pairs were given a case study in education to discuss for one class hour; the Relationship Inventory was administered in the hour following this discussion.

Determining comparability of groups.—To establish that the five experimental treatment groups were comparable and did not differ significantly from each other on human relations skills as measured by the Relationship Inventory at the beginning of the experiment, the pretest scores on this instrument were used to compute an analysis of variance for between and within the groups. With 4 and 415 degrees of freedom an F ratio of 2.39 is required for significance at the .05 level. The F ratio obtained for the five treatment groups on the Relationship Inventory pretest was .73. This is not a significant value. Therefore, it may be assumed that the groups did not differ significantly from each other on human relations skills as measured by this instrument at the beginning of the experiment. These data are summarized in Table 7.

### Table 7

**Analysis of Variance for Five Treatment Groups on the Relationship Inventory Pretest**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>d.f.</th>
<th>Mean</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>5,988.20</td>
<td>4</td>
<td>1,497.05</td>
<td>.73</td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td>853,491.03</td>
<td>415</td>
<td>2,056.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>859,479.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Testing hypothesis one.—Before testing the hypothesis, it was determined that the groups were not significantly different before the experimental treatments were administered. The groups must be significantly different after the completion of experimental treatments are completed. An analysis of variance was computed. If the difference was significant, it was assumed to be the result of experimental treatments. Two conditions which must be met are (1) a significant difference as shown by an F ratio and (2) an examination of the data by treatment groups must show that groups II and V which experienced the dyadic programed instruction made the most change.

The second problem: human relations skills and openness

The second purpose of this study was to determine whether participants who are more open before they experience human relations training would show more growth in human relations skills as a result of their training than the less open participants. Further, the direction of this change was to be determined. The theoretical orientation upon which the study is based suggests that more open participants should change more than less open participants since they are more open to experience and thus should be more able to benefit from instruction. It is also suggested that change resulting from instruction in human relations training should be in the direction of openness. These ideas are expressed in the following hypothesis to be tested as a part of this study.

Hypothesis two.—The participants who are more open before they experience human relations training will show more growth in human relations skills as a result of their training than the less open participants. Further, the direction of the change will be toward openness.
In an effort to test this hypothesis, a five-phase study was undertaken.

1) All participants in the experimental groups were tested with the Relationship Inventory, which measures human relations skills, and the College Student Problems Q-sort, which measures openness.

2) The extent to which the five treatment groups differed at the beginning of the experiment on pretest scores was determined.

3) All participants were administered the same tests at the end of the experimental treatments, and a pre- to posttest difference score was obtained for each participant on each instrument.

4) The more and less open groups were selected on Q-sort pretest scores.

5) A t test of the difference of means was computed to determine whether the more open group changed more on human relations skills than the less open group (as measured by the Relationship Inventory).

Testing procedures.—The College Student Problems Q-sort was used to collect data on openness according to the Rogers construct. It was administered in the five treatment groups at the beginning of the quarter before the experimental treatments were introduced. The posttest Q-sort was administered during the final week of the quarter after experimental instructional patterns were completed.

The Relationship Inventory was administered at the beginning and end of the experiment following procedures reported in an earlier section.
Determining comparability of groups.—An analysis of variance between and within the five experimental treatment groups was computed for the pretest scores on each of these instruments to determine that the groups did not differ significantly from each other on variables measured by these two instruments at the beginning of the experiment. This procedure was followed to insure that the samples drawn from the five treatment groups and combined to make the more open group and the less open group were representative of the entire population.

The comparability of the Relationship Inventory pretest scores for the five treatment groups was reported in the section on hypothesis one. An F ratio of .73 (with 4 and 415 degrees of freedom) was not a significant value. These data were summarized in Table 7. It is assumed that the groups did not differ significantly from each other on human relations skills as measured by this instrument.

For the College Student Problems Q-sort, the pretest scores on this instrument were used to compute an analysis of variance for between and within groups. With 4 and 415 degrees of freedom an F ratio of 2.39 is required for significance at the .05 level. An F ratio of .72 was obtained. This was not significant; therefore it may be assumed that the groups did not differ significantly from each other on openness as measured by the College Student Problems Q-sort at the beginning of the experiment. These data are summarized in Table 8.
### Table 8

**Analysis of Variance for Five Treatment Groups on the College Student Problems Q-Sort Pretest**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>d.f.</th>
<th>Mean</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>428.31</td>
<td>4</td>
<td>107.08</td>
<td>.72</td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td>61,076.31</td>
<td>415</td>
<td>147.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61,504.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Selection of more open and less open groups.**—To provide a test of this hypothesis, the pretest scores on the College Student Problems Q-sort were used to select the more open and the less open groups. Approximately 27 per cent of the top scoring participants from each experimental group were combined to make up the more open group, and 27 per cent of the bottom 27 per cent to make up the less open group.

To select the more open and the less open groups, the pretest scores on the College Student Problems Q-sort were used. The pretest scores for participants within each treatment group were ranked from high to low (top to bottom). Those whose scores fell in the top 27 per cent were placed in the more open group and those in the bottom 27 per cent were placed in the less open group.

Twenty-two participants were selected from each treatment group except where the cut-off score was made by several participants. Where the number of scores which fell at this rank were fewer than five, all scores were included; where the number of identical scores made the group too large, they all were excluded. No group was less than 20 or more than 26; no random selection from within a rank was made. It was
reasoned that participants with identical scores would be affected differently by the same experimental treatment and thus make different responses on posttest measures. These within-rank differences were either all retained or all excluded.

Testing hypothesis two.—Before testing this hypothesis, it was determined that the treatment groups were not significantly different as measured by either instrument before the experimental treatments were administered. The comparability of the five treatment groups on the Relationship Inventory pretest was reported under the test for hypothesis one. The comparability of groups on the College Student Problems Q-sort pretest was determined. The pre- to posttest score differences on human relations skills for the more open and less open Q-sort groups was obtained. A t test to determine significance of difference of means between the more and less open groups was computed.

Two conditions must be met to confirm this hypothesis: (1) a significant t value must be obtained to show that there was more change in one group than in the other and (2) examination of the data must show that the mean score of the more open group has changed more in the direction of openness (toward a higher score) than the less open group. In other words, the more open group must show more change than the less open group; further, the direction of this change must be toward more openness.

The third problem: two constructs of openness

The third purpose of this study was to examine two different theoretical constructs of openness by comparing the performance of
prospective teachers on measuring instruments based upon each of the theories and to see whether those participants identified as more open on the measurement of one construct of openness would also be identified as more open on the measurement of the other construct. To provide a means of making this comparison, hypothesis three is stated as follows:

**Hypothesis three.**—Participants in this study who are identified as being more open according to the Rogers construct (as measured by the College Student Problems Q-sort) will also be identified as being more open on the Rokeach construct (as measured by the Dogmatism Scale).

In an effort to test this hypothesis, a five-phase study was undertaken.

1) All participants in the experimental treatment groups were tested with the College Student Problems Q-sort and the Dogmatism Scale at the beginning of the experiment.

2) Comparability of the five treatment groups was determined.

3) Coefficients of correlation were computed between the pretest scores on the Q-sort and the pretest scores on the Dogmatism Scale for each of the participants within the five treatment groups.

4) Using the pretest scores on the College Student Problems Q-sort for participants in the five treatment groups to select a more open and a less open Q-sort group, a t-test was computed to compare mean scores made on the Dogmatism Scale by the more open group with the less open group.

5) Using the pretest scores on the Dogmatism Scale for participants in five treatment groups as a control to select a more open and a
less open Dogmatism Scale group, a t test was computed to compare mean scores on the q-sort for the more open group with the less open group.

**Constructs of openness and measuring instruments.**—A review of the construct of openness described by Rogers (measured by the College Student Problems q-sort) and the construct of openness of belief-disbelief system described by Rokeach (measured by the Dogmatism Scale) is presented here. A more complete statement was presented on each of these constructs in Chapter II.

Rogers has postulated a seven-step continuum from stasis (or fixity) to process (or openness) in growth of the individual personality. The person who is more open is thought to identify the central and self-related problems and be able to deal with them in terms of his own feelings and goals. The less open person is thought to see problems which are peripheral and not related to his own feelings. According to the theory of Rogers, the person who is more open to his experience can more accurately symbolize perceptions and act upon them in terms of the present situation without including, consciously or unconsciously, past impressions and experiences which are not a part of the present experience data. The more open person should be able to relate positively and constructively to others because he has no need to control or manipulate another to preserve his own self image.

The College Student Problems q-sort based on the Rogers construct was developed to yield a score on openness. Scoring range on this instrument is from +68 to -68. Those who have the higher plus value scores are considered to be the more open persons.
Rokeach has postulated a continuum to indicate individual differences in the extent to which belief systems are open or closed. Defining characteristics of those persons with closed systems are closed-mindedness, uncritical acceptance of authority, rejection of those who disagree, qualified acceptance of those who agree, inability to evaluate information independently from its source. "For the closed person, the power of authority does not lie in cognitive correctness, but on the ability of authority to mete out reward and punishment."\(^{68}\)

The more open person is able to evaluate information separately from its source; he is able to resist irrelevant motivational or reinforcement pressures. He can reevaluate the past in terms of the present and can make judgments about immediate future based upon the results of his own evaluations. Beliefs held in common are less of a criterion for acceptance and evaluation of others for the more open person.

The Rokeach construct of openness is measured by the Dogmatism Scale. The high score on this instrument indicates a closed belief system; the low score indicates the more open system. Form E of the Dogmatism Scale was used in this study. This instrument has 40 items. For the present study 20 neutral items were imbedded in the test but these 20 items were not scored.

**Testing procedures.**—The Dogmatism Scale was used to collect data on openness according to the Rokeach construct. It was administered in the five treatment groups at the beginning of the quarter before the

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\(^{68}\)Rokeach, *The Open and Closed Mind*, pp. 62-63.
experimental treatments were introduced. The posttest Dogmatism Scale was administered during the final week of the quarter after experimental instructional patterns were completed.

The College Student Problems Q-sort was administered during the first and last weeks of the quarter. The data for this measure were presented in a previous section.

Comparability of five treatment groups on openness as measured by the College Student Problems Q-sort was determined and presented under the discussion on hypothesis two.

Comparability of five treatment groups on openness of belief-disbelief system.—This construct is measured by the Dogmatism Scale. The comparability of the five treatment groups on the pretest score on the D-Scale is presented both as a matter of information and as a test to insure that the sampling procedures to be used to select more open and less open groups on this instrument will yield a sample which will be representative of the population of this study.

An analysis of variance for between and within the five treatment groups was computed for pretest scores. With 4 and 415 degrees of freedom an F ratio of 2.39 is required for significance at the .05 level. An F ratio of .39 was obtained. This is not a significant value. Therefore, it may be assumed that the groups did not differ significantly from each other on openness of belief-disbelief system as measured by this instrument at the beginning of the experiment. These data are summarized in Table 9.
TABLE 9
ANALYSIS OF VARIANCE FOR FIVE TREATMENT GROUPS
ON THE DOGMATISM SCALE PRETEST

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>d.f.</th>
<th>Mean</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>666.89</td>
<td>4</td>
<td>166.72</td>
<td>.39</td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td>176,985.19</td>
<td>415</td>
<td>426.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>177,652.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Method of selection of more open and less open groups.—The procedures followed to select the more open and less open groups on the College Student Problems Q-sort were presented under the sections on hypothesis two.

The same procedures were followed to select the more open and less open groups on the Dogmatism Scale. The Dogmatism Scale pretest scores were used as the control. On this measure the low scores indicate the more open belief-disbelief system. Those participants whose scores were ranked in the bottom 27 per cent of each treatment group were combined to make the more open group. Those whose scores ranked in the top 27 per cent of the scores were combined to make the less open group.

Testing hypothesis three.—Three tests were provided for this hypothesis.

1) Coefficients of correlation were computed between pretest scores on the College Student Problems Q-sort and pretest scores on the Dogmatism Scale for each of the participants within the five treatment groups.
2) Using the College Student Problems q-sort pretest scores to select more open and less open groups as the control, the mean scores made on the Dogmatism Scale by the more open group were compared with the mean scores by the less open group as shown by a t test.

3) Using the Dogmatism Scale pretest scores to select more open and less open groups, mean scores made on the q-sort by the more open group were compared with the scores made by the less open group as shown by a t test.

Three conditions must be met to confirm hypothesis three.

1) When pretest scores on the College Student Problems q-sort for participants in five treatment groups are compared with their pretest scores on the Dogmatism Scale, coefficients of correlation must be significantly different from zero at the .05 level.

2) When the College Student Problems q-sort pretest scores were used to select the more open and the less open groups, the Dogmatism Scale mean score for the more open group must be significantly different from the mean score for the less open group, as shown by a t test.

3) When the Dogmatism Scale pretest scores were used to select the more open and the less open groups, mean score on the College Student Problems q-sort made by the more open group must be significantly different from the mean score made by the less open group, as shown by a t test.

Summary

This chapter has presented a summary of methods and procedures in the parent research project because they are an integral part of this study.
The design, hypotheses, and procedures to be followed in this study were presented.

The initial comparability of treatment groups was determined based upon pretest scores on measuring instruments administered before the experimental treatments were begun. These data were presented to show that the five treatment groups did not differ initially on human relations skills, openness to experience (Rogers) or openness of belief-disbelief system (Rokeach), which are the subject of this study.

After the present data were obtained in the five treatment groups, instruction following the design of this study was begun using the five different experimental patterns of instruction. At the completion of the instruction in each of the five groups, measuring instruments were again administered to obtain posttest data.

Presentation and analysis of data to test the hypotheses for this study will be the subject of Chapter IV.
IV. PRESENTATION AND ANALYSIS OF DATA

This study proposed to investigate the effectiveness of different methods of providing training in human relations skills, to determine whether openness was a factor in the development of these skills, and to ascertain whether there was a significant relationship between the construct of openness to experience described by Carl Rogers and openness of belief-disbelief system described by Milton Rokeach.

Pretest data for each of the treatment groups was presented in the previous chapter to establish that the experimental treatment groups did not differ initially on human relations skills, on openness to experience as described by Rogers, and on openness of belief-disbelief system described by Rokeach, the variables which are the subject of this study.

After completion of experimental patterns of instruction, posttest data were collected on the variables being studied. Presentation and analysis of the data will be shown to test each hypothesis.

The Experimental Hypotheses

Results for hypothesis one

Hypothesis one.—Prospective secondary education teachers who experience dyadic programmed instruction, The General Relationship Improvement Program, in human relations training will show more growth in human relations skills than will groups of participants experiencing other instructional patterns.

The Relationship Inventory was used to collect data on human relations skills. Inasmuch as the treatment groups were comparable at the
beginning of the experiment, any change in human relations skills was considered to result from the effects of the experimental treatments. The degree of change in human relations skills was determined by obtaining the difference between the pretest and posttest scores of participants on the Relationship Inventory. Mean changes in human relations skills for the five treatment groups along with range and standard deviations are summarized in Table 10.

### TABLE 10

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>Mean Change</th>
<th>Range</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>64</td>
<td>20.036</td>
<td>+136 to -90</td>
<td>41.666</td>
</tr>
<tr>
<td>2</td>
<td>64</td>
<td>13.610</td>
<td>+144 to -238</td>
<td>58.313</td>
</tr>
<tr>
<td>3</td>
<td>64</td>
<td>3.274</td>
<td>+149 to -92</td>
<td>45.685</td>
</tr>
<tr>
<td>4</td>
<td>64</td>
<td>23.368</td>
<td>+121 to -109</td>
<td>44.096</td>
</tr>
<tr>
<td>5</td>
<td>64</td>
<td>13.690</td>
<td>+103 to -92</td>
<td>49.740</td>
</tr>
</tbody>
</table>

**Testing hypothesis one.**—The first test of this hypothesis is an analysis of variance of mean changes between and within five treatment groups on the Relationship Inventory. With 4 and 415 degrees of freedom, an F ratio of 2.39 is required for significance at the .05 level. An F ratio of 2.13 was obtained. This is not a significant value. These data are summarized in Table 11.

Hypothesis one is rejected.
TABLE IX
ANALYSIS OF VARIANCE FOR FIVE TREATMENT GROUPS
ON THE RELATIONSHIP INVENTORY PRE- TO
POSTTEST SCORE DIFFERENCES

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>d.f.</th>
<th>Mean</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>19,815.62</td>
<td>4</td>
<td>4,953.75</td>
<td>2.13</td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td>966,318.05</td>
<td>415</td>
<td>2,328.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>986,133.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results for hypothesis two

**Hypothesis two.**—The participants who are more open before they experience human relations training will show more growth in human relations skills as a result of their training than the less open participants. Further, the direction of the change will be toward openness.

The Relationship Inventory was used to collect data on human relations skills. The College Student Problems Q-sort was used to collect data on openness described by Rogers. Inasmuch as treatment groups were comparable at the beginning of the experiment on each of these instruments, any change in human relations skills and in openness will be considered to result from the effects of experimental treatments. These data were presented in earlier sections.

**Testing hypothesis two.**—The first test of this hypothesis is a t test of mean changes on human relations skills between the more open and less open groups (selected on the basis of College Student Problems Q-sort pretest scores).

The more open group (N=121) had a mean change of 15.33; the less open group (N=117) had a mean change of 12.53. With 236 degrees of
freedom, a $t$ distribution of 1.96 is required for significance at the .05 level. A $t$ distribution of .44 was obtained. This is not significant. These data are summarized in Table 12.

**TABLE 12**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Range</th>
<th>S.D.</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>More Open</td>
<td>121</td>
<td>15.33</td>
<td>+134 to -238</td>
<td>50.313</td>
<td></td>
</tr>
<tr>
<td>Less Open</td>
<td>117</td>
<td>12.53</td>
<td>+128 to -148</td>
<td>47.592</td>
<td>.44</td>
</tr>
</tbody>
</table>

The more open group did not change significantly more than the less open group as a result of human relations training.

Hypothesis two is rejected.

**Results for hypothesis three**

**Hypothesis three.**—Participants in this study who are identified as being more open according to the Rogers construct (as measured by the College Student Problems $q$-sort) will also be identified as being more open on the Rokeach construct (as measured by the Dogmatism Scale).

The College Student Problems $q$-sort and the Dogmatism Scale were used to collect data on openness according to two different theoretical constructs. The pretest scores on each of the instruments were used in making the comparisons and the statistical analyses.

**Testing hypothesis three.**—Computations of coefficients of correlation provided the first test of hypothesis three. The pretest scores
on the College Student Problems Q-sort for each of the participants were compared with their pretest scores on the Dogmatism Scale by means of product moment coefficients of correlation for each of the five treatment groups. With 80 degrees of freedom a correlation coefficient of .217 is required for significance at the .05 level. The coefficients of correlation which resulted from the computations are summarized in Table 13.

### TABLE 13

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-.16</td>
</tr>
<tr>
<td>2</td>
<td>.03</td>
</tr>
<tr>
<td>3</td>
<td>-.19</td>
</tr>
<tr>
<td>4</td>
<td>-.17</td>
</tr>
<tr>
<td>5</td>
<td>.06</td>
</tr>
</tbody>
</table>

An examination of the data show that while none of the correlations are significant at the .05 level, three of them are in the predicted direction. The data presented do not support the hypothesis, however.

The second test of this hypothesis is provided by a $t$ test of difference of means on the Dogmatism Scale pretest scores for the more open and less open groups when the College Student Problems Q-sort pretest scores were used to select the groups. For 236 degrees of freedom a $t$ value of 1.96 is required for significance at the .05 level.
computations for the difference of means yielded a $t$ distribution of .99 which is not significant. When the more open and the less open groups are selected on the basis of the College Student Problems $q$-sort and their scores are compared on the Dogmatism Scale, the more open group is not more open on that measure; the less open group is not less open on the Dogmatism Scale. Therefore the hypothesis is not supported by this test either. These data are summarized in Table 14.

**TABLE 14**

A COMPARISON OF SCORES MADE BY THE MORE OPEN AND LESS OPEN GROUPS ON THE DOGMATISM SCALE PRETEST USING THE COLLEGE STUDENT PROBLEMS $q$-SORT PRETEST SCORES TO SELECT GROUPS

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Range</th>
<th>S.D.</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>More Open</td>
<td>121</td>
<td>143.80</td>
<td>191 to 89</td>
<td>19.475</td>
<td>.99</td>
</tr>
<tr>
<td>Less Open</td>
<td>117</td>
<td>146.80</td>
<td>190 to 87</td>
<td>26.255</td>
<td></td>
</tr>
</tbody>
</table>

The third test of hypothesis three is provided by a $t$ test of difference of means for the more open and the less open groups on the College Student Problems $q$-sort pretest scores when the Dogmatism Scale pretest score was used to select the groups. With 234 degrees of freedom a $t$ distribution of 1.96 is required for significance at the .05 level. Computations yielded a $t$ value of 1.30 which is not significant at the .05 level. The hypothesis is not supported by the third test. These data are summarized in Table 15.
A COMPARISON OF SCORES MADE BY THE MORE OPEN AND LESS OPEN GROUPS ON THE COLLEGE STUDENT PROBLEMS Q-SORT PRETEST USING THE DOGMATISM PRETEST SCORES TO SELECT GROUPS

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Range</th>
<th>S.D.</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>More Open</td>
<td>120</td>
<td>15.87</td>
<td>+34 to -42</td>
<td>11.97</td>
<td>1.30</td>
</tr>
<tr>
<td>Less Open</td>
<td>116</td>
<td>17.90</td>
<td>+46 to -24</td>
<td>11.87</td>
<td></td>
</tr>
</tbody>
</table>

Summary

Experimental hypotheses were presented and tested.

1. Prospective secondary education teachers who experience dyadic programmed instruction, The General Relationship Improvement Program, in human relations training will show more growth in human relations skills than will groups of participants experiencing other instructional patterns.

Rejected. No significant differences were found between the experimental treatment groups.

2. The participants who are more open before they experience human relations training will show more growth in human relations skills as a result of their training than the less open participants. Further, the direction of the change will be toward openness.

Rejected. No more significant gains in human relations skills were made by the more open groups than by the less open groups.

3. Participants in this study who are identified as being more open according to the Rogers construct (as measured by the College Student Problems Q-sort) will also be identified as being more open on the Rokeach construct (as measured by the Dogmatism Scale).

Rejected. Participants who were identified as being more open on one construct were not identified as more open on the other. Scores on neither construct could be used as a predictor of a score of openness on the other construct.
V. SUMMARY AND IMPLICATIONS

The purposes of this study were (1) to test the effectiveness of three methods of teaching human relations skills, (2) to ascertain the growth in human relations skills and the degree and direction of change in openness for the participants who were more open and those who were less open, and (3) to examine two theoretical constructs of openness by comparing the performance of prospective teachers on measuring instruments based on each of the theories to see whether those participants who were identified as open on the measurement of one construct of openness would also be identified as open on the measurement of the other construct.

This study was part of a parent research project which had two purposes, (1) to test the effectiveness of three methods of teaching human relations skills and (2) to test the effectiveness of two methods of teaching preservice teachers to analyze and control their verbal teaching behavior. The design and procedures of the parent research were an integral part of the present study.

The Hypotheses and Results

The three hypotheses were tested following procedures outlined in earlier sections. None of the hypotheses were supported by the data presented.
Discussion and Implications

With the theory so clear and the design worked through in so much detail to test each hypothesis, the results were disappointing. Why were the hypotheses so consistently rejected? Questions to be raised cover applications from the theory, the design, the instruments, environment, and the like. Questions which are raised may be converted to problems for specific research.

The order of discussion of factors cannot be taken to indicate the order of importance.

Human relations skills

Measuring instrument.—The Relationship Inventory was used to collect data on human relations skills. Was it reliable when used in a classroom setting? Data concerning the reliability of this instrument in the clinical situation were reported. In view of the negative results in the present study, it seemed desirable to analyze pretest and posttest data by computing coefficients of correlation for participants in five treatment groups. The resulting ρ's of these computations ranged from .37 to .69. With 80 degrees of freedom ρ's of .217 and .283 are significant at the .05 and .01 level respectively. It would appear, therefore, that the instrument has sufficient reliability to yield dependable results when used in the classroom. A summary of these data is included in Appendix II.

Variables controlled in the study.—Were the variables controlled in the design the most appropriate ones? Factors which were considered
in randomization and purposeful sampling were age, sex, subject area of major, instructors, time of day, and the factor of winter and spring quarter, to name the more important ones. These factors were treated so as to equalize their distribution within the treatment groups. No plan was provided by which data could be analyzed concerning changes on the dependent variables by sex, age, subject area of major, and the like. Perhaps analysis of the data in terms of some of these factors might yield different results from those obtained when no consideration was given to the influence of these factors on change in human relations skills.

Sex of participants was a variable which was equalized by purposeful sampling. The results might show that men reacted differently from women as a result of human relations training.

Subject area of major may be a factor more related to change in human relations skills. Those majoring in history might experience human relations training and change more than those in some other area. Would those in the physical science program, for example, show more or less change on human relations than participants in biological sciences, or than those in mathematics? In other words, perhaps the choice of subject area of major study is a more important variable to be studied than method of teaching taken as the single variable to be studied.

Instructor impact was carefully equalized between treatments. Personality of the instructor would be expected to be an important variable. It was important enough that the impact of the instructor was purposefully distributed so as to be approximately equal for the five
treatment groups. It is possible that if one instructor was especially effective in handling all instructional patterns and another instructor equally ineffective, the results of the entire study could be biased because gains made under the instruction of one person may have been counteracted by poor results achieved by another.

It could be that differences in an instructor's effectiveness in handling one instructional pattern could have been balanced out in the data by his less effective handling of another instructional pattern.

Personal biases of instructors of which they were not aware could have prejudiced their performance with one instructional pattern in favor of another.

The differences in prior training and academic major may have produced differences. Two of the instructors were known to have had experience in guidance and counseling during their graduate programs. The human relations skills being taught were taken from personality theory. It might be that the lack of experience of three of the instructors in handling the concepts involved in human relations training would show through if the data were analyzed by instructor. The analysis of data in terms of instructors' handling of different instructional patterns might yield information which could either support or allay these questions about differential effects of instructors on methods of teaching human relations skills.

Rigorous design is a factor related in part to the ability of instructors to function in ways which may be more characteristic or less characteristic of their individual teaching styles under more normal conditions.
The design of this study was considered carefully with as much attention given to the detail in handling instruction as was given to the other aspects discussed. If the demands of the schedule of handling behavioral objectives were too heavy, it is because the staff was ambitious and wanted to achieve too much. However, once the study was under way, it seemed to be the feeling among the instructors that the behavioral objectives laid out for the course provided no latitude or leeway in handling different concerns of students or for taking more time on a difficult point if the class seemed to need or want more time. Further, very little time was provided in the schedule for instructors to handle matters of particular concern to the prospective teachers, many of whom were taking their first education course. The schedule moved inexorably on toward the culminating activity.

The pressure of moving groups of students along the schedule regardless of what other factors might require attention may have been one of the contributing factors to the lack of success in teaching human relations skills. Pressures on students and instructors were considerable.

Environmental factors outside the college classroom may have contributed in some degree to the lack of definitive results. It is a condition which exists in all research—the entire gamut of personal experience is not available to control or study. The college campus has so many activities running concurrently and pressures on students can come from so many different spheres of influence that it is difficult to estimate the degree to which classroom activities provide positive and
constructive influences. Counteracting pressures in other classes, other campus activities, other interpersonal relationships, pressures from families for grades, and the like make it difficult to explain the environmental influences which may be at work during a research project.

**Nature of individual student personality factors** may make some students more able to respond to some methods of instruction than to others. For example, research has shown that when student-centered teaching is employed, some students benefit more from it than others; some like it more; some actually resist the lack of organization and structure. It is possible that students might have benefited more from instruction in human relations training provided by a method different from the one in which they were randomly assigned. Nothing was provided in this study to collect data on that point. No attempt was made to consider whether student preference for method would determine the degree to which he would change in human relations training if given a choice of instructional pattern.

The personality structure of some individuals makes resistance to arbitrary assignments a probability. Students at The Ohio State University participate in large numbers of experimental projects in the various schools, such as in psychology, sociology, or education. In assigning students to sections in this study, students were given no choice. Much of the theory of Rogers which the students were reading, much of the course content in human relations, and content in the interaction analysis training program call for student-centered activity. The more open student functioning in this research study with its
rigorous design, its somewhat "lock step" series of learning experiences, must have been struck by the inconsistency between course organization and the theory being covered in the content. The less open student could find great security in the rigorous design and possibly do much better with it than the more open student.

The point here is that these factors of student personality were not used to assign students to different teaching methods; very little student-centered activity was in evidence. Perhaps these factors should have been considered.

Time necessary for change in human relations skills is not known. However, when one examines the data presented by Barrett-Lennard, it becomes clear that the expectation of change in the skills identified for study in the ten weeks was perhaps not reasonable. In presenting the validation study for the Relationship Inventory, Barrett-Lennard did not take the pretest data on the Relationship Inventory before the fifth interview between a therapist and client. The second one was not taken until later than the tenth interview. In making determinations about changes under expert therapists, Barrett-Lennard pointed out that it takes time for changes to occur in individuals. A criterion for selection of the more expert therapists was the length of time their clients remained for therapy. More than 35 interviews were found for the group of expert therapists; less than 35 interviews for the less expert therapists. This points up the fact that a quarter is perhaps far too little time to expect students to comprehend and integrate new concepts regarding ways of working and relating to others.
An additional point made by Barrett-Lennard was that no meaningful relationship can develop when contacts are casual or transient; for example, empathy would not be expected to develop between individuals merely because they come together in a ten-week quarter for discussion. Further, not all relationships between the expert therapists and their clients develop empathic, congruent, and unconditionally positive conditions. The incidence of discontinued therapy because of lack of ability of the experts to establish a congruent and empathic relationship with every client is reported both by Barrett-Lennard and by Rogers. Failures in professional therapy are not rare. It is not too unexpected that many of the relationships established in this study between students on a ten-week basis were not successful in effecting change.

Content.—The General Relationship Improvement Program written to reflect the basic orientation of Rogers and to provide instruction in relating positively and constructively to others failed to live up to expectations. It had been found in a pilot study to be more effective when paired with other experiences. However, in the setting of this study, it proved to be no more effective than any other method used to teach human relations skills.

Perhaps student comments provide some insight into why it was not effective. The content was seen as not relevant to education. The time spent on ten hours of dyadic programed instruction when evaluated against other classroom activities was considered to be wasted. It was seen as too elementary, too juvenile, by many. It was obvious that some students had difficulty developing rapport and creating a satisfactory
relationship with an assigned partner. Others developed a relationship which was more interesting than the program. Students were assigned to read the program together in close proximity with other student pairs. This often proved distracting. The reading was at times superseded by four-way discussions.

It was the experience of some instructors, perhaps all, that the discussions of case studies in education was seen as much more relevant to the purposes which they accepted for the course. Heated discussions arose, not only between pairs, but between close groups. Students became interested in the case studies and wanted to have class-wide discussions of some of the issues. Even though time for this was not provided in the schedule, it was considered as a factor to indicate that consideration of these problems was a positive and constructive activity as seen by most students.

The effects on human relations skills of the teaching of interaction analysis were not available to complete analysis independently of other methods. This method of teaching analysis and control of verbal teaching behavior has inherent in its content both practice and theory in human relations. From the way the data were available for analysis it became clear that the effects of interaction analysis on human relations skills could not be determined except as paired with one or the other of the methods of teaching human relations skills. It is suggested that a restudy of the data be made to isolate this variable so that its effect on human relations skills can be determined.
Interaction analysis was not paired with dyadic discussion of case studies in education. The use of the case studies produced some more positive results than use of the dyadic programmed instruction. From an analysis of the data, it would appear that the lecture, class discussions, and outside readings produced the least change in human relations skills and could be dropped from any training program in human relations skills in favor of the use of case studies with some cognitive content to allow students to explore the possibilities of establishing a facilitating relationship rather than developing a discussion of a common problem. If this method could be paired with interaction analysis, it would appear that students would have greater opportunities for growth and development of flexibility in both the facilitating relationship and human relations skills. The case studies could be developed in content to carry out the concepts in human relations skills that are emphasized in interaction analysis.

Appropriate under content is the observation that students with the combination of lectures, discussions, and outside readings in human relations paired with discussions of teacher verbal behavior were the least able to meet the end requirement established for the culminating experience—the simulated teaching. Students were required to show a flexibility in use of verbal teaching behaviors which they seemed unprepared to do. The simulated teaching experience was extremely threatening for all students, and, as such, could have washed out any positive feelings students had about participating in an experimental program, about human relations, or about any part of the course. The
pressure to teach before ones peers, to be evaluated, to have the instructor busy taking interaction analysis and not apparently able to give time to evaluation of the student's performance may have had some adverse effects reflected in posttest collection of data.

To summarize, in an analysis of factors which may explain the failure to achieve positive results in teaching human relations skills in a course in secondary education, there seem to be a number of possible explanations. Analysis of data taking into account factors other than treatment group—such as instructor, sex of participants, and subject area major—may yield different results. The extremely tight teaching schedule did not provide time for student-selected activities or discussions and the incongruity between the content of the course and the schedule of learning experiences are considered important.

Openness to experience

Measuring instrument.—The College Student Problems q-sort was used to measure openness to experience. In view of the lack of positive results in this study, one of the factors questioned is the reliability of the instruments. Freese reported reliability obtained by a series of intercorrelations rather than a pretest with posttest correlation for each student. An analysis of coefficients of correlation for participants of the five treatment groups between their pretest and posttest scores on the College Student Problems q-sort yielded r's of .16, .17, .24, .32, and .54. With 80 degrees of freedom r's of .217 and .283 are significant at the .05 and .01 level respectively.

Data in the present study which were obtained through use of the College Student Problems q-sort are difficult to interpret because of
the range of coefficients of correlation for the five treatment groups. This instrument appears to have less reliability in test-retest use in the classroom situation than may be desirable.

The Relationship Inventory was used in the study by Freeze when he validated the College Student Problems q-sort. Following the theory of Rogers, there should be a correspondence between openness and human relations skills. Those who are open to experience should be able to show more conditions of congruence, empathy, unconditionality of regard and the like. Freeze administered the Relationship Inventory to the students of a more open and less open group of student teachers. The more open group of student teachers were perceived by their students as having better human relations than the less open group as measured by the Relationship Inventory. In view of the lack of significant results in this study, r's were computed to determine the possible relationship between the College Student Problems q-sort and the Relationship Inventory as used in this study.

Correlation coefficients between the pretest of the Relationship Inventory and the pretest of the q-sort, between posttest scores, and between pre- to posttest score differences—for participants in five treatment groups, three pairs of correlations, 15 in all—were computed. Only one of the 15 was significant and that one was not in the predicted direction. These data are summarized in Appendix V.

There appears to be no relationship between human relations skills as measured by the Relationship Inventory and openness as measured by the College Student Problems q-sort for the participants in this study.
The analysis of these additional data make even stronger the rejection of the hypothesis that those students who were more open at the beginning of the experiment would change more than those students who are less open. However, it is not clear whether the failure of the hypothesis is due to the failure of the experimental treatments, a real lack of relationship between the theoretical elements, or due to the lack of reliability of the measuring instruments employed to collect data on openness.

Instruction to develop more openness should have a certain freedom and self-determination for the students if it follows the theory of Rogers. The conditions of congruence, empathy, and unconditionality of regard and the like were shown by Rogers to be necessary for significant learning to occur. Openness to experience was shown by Rogers to be an appropriate outcome of therapy where conditions favorable to the growth of the individual personality are assumed to be shown the client by the therapist. Thus it would seem to follow that if it were desired to have a change in openness in preservice teachers, they should be provided conditions shown to be necessary for growth in openness.

One of the crucial questions that may be raised about the appropriateness of instruction for certain selected goals may be raised in connection with conditions presumed to exist in the experimental instructional patterns. The course content and behavioral objectives were spelled out in considerable detail. Change in openness to experience was not expressed in these objectives, and there is some question whether it could be. However, it is clearly one of the expected outcomes of instruction in human relations skills.
An additional question may be raised about the consistency of selection of theory and implementation within instructional patterns of the study. If openness is the desired outcome, what steps were taken to collect data on whether the instructors were able to show conditions of congruence, empathy, and unconditional positive regard in their relationships with students. Previous research studies have used the Relationship Inventory to gather data from students on how they perceived their relationships with their teachers. It might have been appropriate to ask whether change in openness was related to the perceived relationship with the instructor than to ask whether it was related to a ten-hour dyadic programmed instruction method or to ten hours of dyadic discussions of case studies with a fellow student.

A question may also be raised about the effect of a tight structure of learning experiences as appropriate to the development of more openness. Or what is the relationship between a threatening experience such as simulated teaching coming as a culminating activity after only eight or nine weeks of instruction? Are these appropriate as learning activities if openness to experience is the learning outcome desired?

Bills' study has shown that student teachers who are open at the beginning of student teaching show negative changes in openness at the end of their student teaching. This raises some question about the desired aims of education. If we desire a more open group of teachers, are we providing the right kind of experiences? If student teaching is more threatening when done under the direction of a less open cooperating teacher, what implications does this have for planning the student
teaching experience? Should a more supportive atmosphere be provided for the student teacher? Should the experience be highly structured to provide more security? These are questions of the appropriateness in our society of goals which are theoretically very attractive but which may not be the most practical in terms of the problems encountered.

The tight structure of this study seemed to provide support for the less open student; but for the more open student, it may have been too constricting to provide growth experiences in terms of his needs.

Other variables not a part of this study may be related to openness as an aspect of personality development. For example, are the young men coming into teaching more or less open than the young women? Are the young men who come into teaching more open than the young men in other groups? These same questions apply to young women.

Is openness a factor related to subject area selected for a major teaching area? Are there some subject areas with more opportunities for the development of openness than others? A study of the relationship of some of these factors, as revealed by data available from this study, may be more productive than the analysis of data by treatment groups proved to be.

Openness of belief-disbelief system

Measuring instrument.—In view of the lack of favorable results in this study, each instrument has been analyzed to see whether in the classroom situation pre- and posttest administration of the instrument it has proved to be reliable. The Dogmatism Scale was used to measure openness of belief-disbelief system. Coefficients of correlation
between the pretest and posttest scores of participants in five treatment groups ranged from .67 to .80. For 80 degrees of freedom, \( r \)'s of .217 and .283 are significant at the .05 and .01 level respectively. The Dogmatism Scale was found to be a reliable instrument when used in the classroom pretest and posttest situation in this study.

The use of the Dogmatism Scale in this study was exploratory. It was not intended to provide instruction to effect change on the dimensions measured by this instrument. However, the data were analyzed to determine whether there were significant changes in any of the groups on the dimensions measured by the Dogmatism Scale. Results of that analysis were negative. Dogmatism Scale scores appeared not to be affected to any significant degree by the course content, instructional patterns, interpersonal relationships or class activities. This seems to follow the suggestion that Rokeach has made that the fundamental aspects of belief systems are rooted in primitive beliefs and are not subject to easy change. However, Rokeach reported that apparently changes in interpersonal relationships could be effected rather readily because he had noted the lessening of opinionated language on the college campuses where he had been doing research. He accounted for the change in terms of the growing recognition of the psychological implications of opinionation. Perhaps a fruitful line of endeavor to develop more open belief-disbelief systems would be to create a general knowledge and press in favor of more tolerance. Surface changes may be the first signs of thoughtful reconsideration by an individual of personality factors and personal goals.
Summary

This study investigated methods of providing human relations training and the relationship between openness and change in human relations skills as a result of human relations training.

Four hundred twenty preservice secondary teachers at The Ohio State University during the spring and winter quarters were taught human relations training in five different treatment groups of 64 students each. Three methods of providing human relations training were combined with two methods of teaching analysis and control of verbal teaching behavior to make five different instructional patterns.

Data were collected by the Relationship Inventory, the College Student Problems Q-sort, and the Dogmatism Scale. No method of teaching human relations skills was found to be more effective than any other.

Participants who were more open on the Rogers construct as measured by the College Student Problems Q-sort changed no more as a result of human relations training than did the less open participants.

There was no significant correlation between openness as measured by the College Student Problems Q-sort and openness of belief-disbelief system as measured by the Dogmatism Scale.
APPENDIX I

In his study validating the College Student Problems \( q \)-sort, Freeze reported the following method of establishing reliability.

**Student Teacher Scores Related to Traditional Measures**

A phase of this study was to determine if the 'process' scores derived from the College Student Problems \( q \)-sort were related to the more traditional measures used with \( q \)-sorts. Two forms of analyses were undertaken. First, the \( q \)-sorts of the 145 student teachers were correlated with their second \( q \)-sorts. The consequent \( r \)'s were converted to Fisher's Z scores and were correlated with the discrepancy between first and second 'process' scores for each student teacher.

In this analysis all discrepancy scores between first and second scores for each student teacher were considered to be positive. This was predicted because the larger discrepancy of \( r \) would be associated with the reality of the direction of the smaller positive or negative values. In other words, a discrepancy of 0 in the two 'process' scores would be related to a correlation of plus 1.00; and the largest discrepancy, whether it was positive or negative should be associated with the largest negative value. The resulting Pearson product moment coefficient correlation was .65 which shows that these two methods were substantially related.

The next test for this same thing was to intercorrelate the pre-College Student Problems \( q \)-sort of each subject with every other subject. This correlation resulted in a matrix of 10,440 coefficient correlations for which the median score was .2500. For each subject then 144 coefficient correlations in the matrixes were divided to give a score for the entire matrix. This at/or above score was then correlated with the 'process' score from the pre-College Student \( q \)-sort and resulted in a Pearson Product moment coefficient correlation of .70.

In like manner the next test was to inter-correlate the post- \( q \)-sort of each subject with every other subject.

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\(^{69}\) Freeze, "A Study of Openness . . . .", pp. 70-72.
Selected Items

1. Finding time to do the things I would like to do in light of the amount of work assigned to me.


5. I am poorly organized and have difficulty in studying.

7. Not knowing how to adjust my behavior to please the professor.

9. The assignments given me in class are inadequate to meet my intellectual needs.

10. Receiving little or no cooperation from other students in organizational projects.

12. Having to take courses in college that offer no challenge or are outside my major field.

14. Professors who do not make subject matter interesting and meaningful for me.

17. Will the subject-matter I am studying be of value to me when I finish?

19. Emphasis that is placed on fraternities, sororities, and social life.

20. Lack of a uniform grading system for evaluating the progress of students.

23. Learning how to express my real views in class without having my grade lowered for it.

24. Helping my parents understand that it is not as easy to make high marks in college as in high school.

26. Professors who try to flunk out students and who tell the class this is their purpose instead of judging me on the basis of my achievement.

29. Planning my time so that I do not get so involved in extracurricular activities that I do not have time to study as much as I believe I should.
Instructions

College Student Q-sort

You have been given a package of 84 problem statements. Each slip of paper contains a problem statement which may be of concern to you as a student in The College of Education. All 84 problem statements have been suggested by other students who were preparing to be teachers. We would like you to use these statements to describe the most pressing problems you experience as a student in The College of Education.

To describe the problems you experience as a pre-service teacher, the statements are sorted as below:

<table>
<thead>
<tr>
<th>Least Pressing</th>
<th>Most Pressing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category Number:</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Number of Cards:</td>
<td>1 2 6 11 14 16 14 11 6 2 1</td>
</tr>
</tbody>
</table>

You must place one and only one statement in category #11. This is the problem that is most pressing to you. Category #10 will contain the two (and only two) next most pressing problems. Category #9 will contain the six next most pressing problems. When you have finished sorting all of the cards. The number of cards in each category should check with the number of cards in the illustration above.

The easiest way to make the sort is to begin by dividing the 84 statements into three piles - "most pressing," "least pressing" and a third group between these. The three big piles may then be subdivided into the final eleven piles.

After you have completed the sort, please record your responses on the record sheet. You will notice that each card has a number. Note the category in which you placed a problem and opposite the problem number on the record sheet write the appropriate category number in which you placed each card.

Before you begin check to make sure that you have 84 different cards. You might do this by making eight piles (1 to 9, 10 - 19, 20 - 29, etc.) and arranging the cards so that you can see if your deck of cards has any omissions, duplicates, etc. If you have any omissions or duplicates, report this to your instructor immediately.
APPENDIX II

The Relationship Inventory

Method of scoring used in this study

Because hand scoring of measuring instruments was necessary in this study, an adjustment in scoring was made. All items marked by students were converted to positive numbers by adding a +4 to each value as shown for the following items: -3 to +1; -2 to +2; -1 to +3; 0 to +4; +1 to +5; +2 to +6; and +3 to +7.

Converting all scores to positive numbers has the advantage of making the scoring easier for the person doing the hand scoring. The scores may be handled with ease and compared within the project with no difficulty. This procedure has the disadvantage of providing scores on the instrument that cannot readily be compared with those from other research using the same instrument and scoring it with both positive and negative numbers.

This instrument has five subscores which makes for a more difficult process if one wishes to reconvert scores to make them comparable to those obtained for this instrument in other research.
TABLE 16

COEFFICIENTS OF CORRELATION BETWEEN PRETEST AND POSTTEST SCORES ON THE RELATIONSHIP INVENTORY FOR PARTICIPANTS IN FIVE EXPERIMENTAL TREATMENT GROUPS

<table>
<thead>
<tr>
<th>Item</th>
<th>Treatment Group</th>
<th>N</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Test Score</td>
<td>1</td>
<td>84</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>84</td>
<td>.42</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>84</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>84</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>84</td>
<td>.60</td>
</tr>
<tr>
<td>Subscores:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of regard</td>
<td>1</td>
<td>84</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>84</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>84</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>84</td>
<td>.56</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>84</td>
<td>.63</td>
</tr>
<tr>
<td>Empathic understanding</td>
<td>1</td>
<td>84</td>
<td>.42</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>84</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>84</td>
<td>.55</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>84</td>
<td>.69</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>84</td>
<td>.46</td>
</tr>
<tr>
<td>Congruence</td>
<td>1</td>
<td>84</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>84</td>
<td>.42</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>84</td>
<td>.51</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>84</td>
<td>.42</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>84</td>
<td>.54</td>
</tr>
<tr>
<td>Unconditionality of regard</td>
<td>1</td>
<td>84</td>
<td>.63</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>84</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>84</td>
<td>.54</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>84</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>84</td>
<td>.51</td>
</tr>
<tr>
<td>Willingness to be known</td>
<td>1</td>
<td>84</td>
<td>.55</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>84</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>84</td>
<td>.55</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>84</td>
<td>.41</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>84</td>
<td>.57</td>
</tr>
</tbody>
</table>

For 80 degrees of freedom r's of .217 and .283 are significant at the .05 and .01 level respectively.
RELATIONSHIP INVENTORY - FORM BL - MALE

Please consider each statement with reference to your present relationship with your partner.

Below are listed a variety of ways that one person could feel or behave in relation to another person. Please consider each statement with respect to whether you think it is true or not true in your present relationship with your partner. Mark each statement on the answer sheet according to how strongly you feel it is true or not true. Please mark every one. Write in +1, +2, +3, or -1, -2, -3, to stand for the following answers.

+1: I feel that it is probably true, or more true than untrue.
-1: I feel that it is probably untrue, or more untrue than true.
+2: I feel it is true.
-2: I feel it is not true.
+3: I strongly feel that it is true.
-3: I strongly feel that it is not true.

1. He respects me.
2. He tries to see things through my eyes.
3. He pretends that he likes me or understands me more than he really does.
4. His interest in me depends partly on what I am talking to him about.
5. He is willing to tell me his own thoughts and feelings when he is sure that I really want to know them.
6. He disapproves of me.
7. He understands my words but not the way I feel.
8. What he says to me never conflicts with what he thinks or feels.
9. He always responds to me with warmth and interest - or always with coldness and disinterest.
10. He tells me his opinions or feelings more than I really want to know them.
11. He is curious about "the way I tick," but not really interested in me as a person.
12. He is interested in knowing what my experiences mean to me.
13. He is disturbed whenever I talk about or ask about certain things.
14. His feeling toward me does not depend on how I am feeling toward him.
15. He prefers to talk only about me and not at all about him.
16. He likes seeing me.
17. He nearly always knows exactly what I mean.
18. I feel that he has unspoken feelings or concerns that are getting in the way of our relationship.
19. His attitude toward me depends partly on how I am feeling about myself.
20. He will freely tell me his own thoughts and feelings, when I want to know them.
21. He is indifferent to me.
22. At times he jumps to the conclusion that I feel more strongly or more concerned about something than I actually do.
23. He behaves just the way he is, in our relationship.
24. Sometimes he responds to me in a more positive and friendly way than he does at other times.
25. He says more about himself than I am really interested to hear.
26. He appreciates me.
27. Sometimes he thinks that I feel a certain way, because he feels that way.
28. I do not think that he hides anything from himself that he feels with me.
29. He likes me in some ways, dislikes me in others.
30. He adopts a professional role that makes it hard for me to know what he is like as a person.
31. He is friendly and warm towards me.
32. He understands me.
33. He tries not to say anything that would hurt my feelings.
34. If I feel negatively toward him he responds negatively to me.
35. He tells me what he thinks about me, whether I want to know it or not.
36. He cares about me.
37. His own attitudes toward some of the things I saw, or do, stop him from really understanding me.
38. He does not avoid anything that is important for our relationship.
39. Whether I am expressing 'good' feelings or 'bad' ones seems to make no difference to how positively—or how negatively—he feels toward me.
40. He is uncomfortable when I ask him something about himself.
41. He feels that I am dull and uninteresting.
42. He understands what I saw, from a detached, objective point of view.
43. I feel that I can trust him to be honest with me.
44. Sometimes he is warmly responsive to me, at other times cold or disapproving.
45. He expresses ideas or feelings of his own that I am not really interested in.
46. He is interested in me.
47. He appreciates what my experiences feel like to me.
48. He is secure and comfortable in our relationship.
49. Depending on his mood, he sometimes responds to me with quite a lot more warmth and interest than he does at other times.
50. He wants to say as little as possible about his own thoughts and feelings.
51. He just tolerates me.
52. He evaluates my experiences and feelings from the point of view of an expert.
53. He is playing a role with me.
54. He is equally appreciative—or equally unappreciative—of me, whatever I am telling him about myself.
55. His own feelings and thoughts are always available to me, but never imposed on me.
56. He does not really care what happens to me.
57. He does not realize how strongly I feel about some of the things we discuss.
58. There are times when I feel that his outward response is quite different from his inner reaction to me.
59. His general feelings toward me vary considerably.
60. He is willing for me to use our time to get to know him better, if or when I want to.
61. He seems to really value me.
62. He responds to me mechanically.
63. I don't think that he is being honest with himself about the way he feels toward me.
64. Whether I like or dislike myself makes no difference to the way he feels about me.
65. He is more interested in expressing and communicating himself than in knowing and understanding me.
66. He dislikes me.
67. He considers what I say and do from an impartial uninvolved point of view.
68. I feel that he is being genuine with me.
69. Sometimes he responds quite positively to me, at other times he seems indifferent.
70. He is unwilling to tell me how he feels about me.
71. He is impatient with me.
72. He understands me whether the thoughts and feelings I am expressing are clear or confused.
73. Sometimes he is not at all comfortable but we go on, outwardly ignoring it.
74. He likes me better when I behave in some ways than he does when I behave in other ways.
75. He is willing to tell me his actual response to anything I say or do.
76. He feels deep affection for me.
77. He usually understands all of what I say to him.
78. He does not try to mislead me about his own thoughts or feelings.
79. Whether I feel fine or feel awful makes no difference to how warmly and appreciatively—or how coldly and unappreciatively—he feels toward me.
80. He tends to evade any attempt that I make to get to know him better.
81. He regards me as a disagreeable person.
82. He brings a different point of view to bear on my problems.
83. What he says gives a false impression of his total reaction to me.
84. I can be very critical of him or very appreciative of him without it changing his feelings towards me.
85. He never refuses to tell me what he thinks or feels.
86. At times he feels contempt for me.
87. When I do not say what I mean at all clearly he still understands me.
88. He tries to avoid telling me anything that might upset me.
89. His general feeling toward me (of liking, respect, dislike, trust, criticism, anger, etc.) reflects the way that I am feeling toward him.
90. He is willing for me to know as much or as little about him as I want to.
APPENDIX III

Dyadic discussion of case studies in education was one method of providing human relations training in this study. The following material provides a sample of case studies presented for discussion.

Case Discussion Number Five

A superior student with failing grades is motivated to do better work.

This is the case of a student who was continuously the lowest in performance in the entire class. Because it was an accelerated class, I knew his I.Q. was above average; placement in that class was dependent on past achievement and on I.Q. Yet the highest mark made by this student in any of the tests I gave was 66.

I arranged a talk with him, during which my approach was direct and simple, but friendly. In return, he was just as frank with me. He said that basketball practice and practice for the school play were taking a great deal of his time, but that that was not the real reason for his poor performance in class. Indeed, this fact was obvious, because other students in the class were just as busy with other activities and yet were doing excellent work. The true reason, he said, was that so much emphasis was being placed on science and mathematics these days that he could not see the value of studying civics. He felt almost an annoyance at having to take it. The math and science he liked and was doing well in them.

My next step, obviously, was to try to show him that a course in civics was important to him. I explained the need for civics to help him find his place in society and its place in providing a student with a well-rounded education. I simply asked him what science and mathematics would avail him if he could not learn to live properly in society with other people. He frankly admitted that he had never had the question put to him in that light. I made another appeal to him on the basis of his ability as an athlete. I told him that competition in future life would be severe, and that here, in civics, he would find the basic elements that would help him meet that challenge. He admitted that he had never considered either; he simply never had thought in terms of the future. I did not press our talk any further. He promised to think about what I had said.
Case discussion number five, p. 2.

Apparently he gave some consideration to what we had discussed, because his marks rose well above the previous ones. While it is true that his interest will not be what I hoped for, he is at least devoting a fair share of his time to studying this subject. There is now no doubt about his passing.

Points for discussion:

1. What sources of motivation were utilized by the student teacher in getting the pupil to study?

2. What do you think of the pupil's attitude that science and mathematics are the subjects of greatest importance?

This case study is taken from Problems & Methods in High School Teaching by Adam H. Drayer, King's College (Boston: D. C. Heath and Company), pp. 54-55.
APPENDIX IV

Objectives - Education 535

Theory and Practice in Secondary Education

Primary Objective: As a result of their work in Education 535 students should evidence an understanding of and skill in the performance of (under simulated conditions) selected aspects of the teaching role in the secondary school.

Secondary Objectives: As a result of their work in Education 535 students should:

1. Be able to describe and analyze the verbal behavior associated with the act of teaching.

2. Evidence an understanding of and facility in the application of selected aspects of instructional theory.

Third Level Objectives: As a result of their work in Education 535 students should:

1.1 Given a tape recorded transcript of a classroom teaching situation, be able to identify the verbal behavior used by teachers and students.

1.2 Given a series of verbal behaviors used by teachers and students be able to list at least two functions performed by each of the behaviors in the process of facilitating learning.

2.1 Be able to state objectives in behavioral terms, i.e., descriptions of what students will be able to do following instruction.

2.2 Be able to state primary, secondary and third level objectives for a subject area with which the student is familiar.

2.3 Be able to define (or recognize a definition of) at least twenty-five of the following twenty-eight terms.
Objectives - Education 535, p. 2.

<table>
<thead>
<tr>
<th>acceptance of response</th>
<th>affective learning</th>
<th>transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>clarification of response</td>
<td>guided discovery</td>
<td>free discovery</td>
</tr>
<tr>
<td>positive reinforcement</td>
<td>corrective feedback</td>
<td>attitude</td>
</tr>
<tr>
<td>negative reinforcement</td>
<td>elicited response</td>
<td>motivation</td>
</tr>
<tr>
<td>aversive stimulation</td>
<td>emitted response</td>
<td>congruence</td>
</tr>
<tr>
<td>conditioned response</td>
<td>over learning</td>
<td>empathy</td>
</tr>
<tr>
<td>unconditionality of regard</td>
<td>test validity</td>
<td>insight</td>
</tr>
<tr>
<td>level of regard</td>
<td>test reliability</td>
<td>retention</td>
</tr>
<tr>
<td>active involvement</td>
<td>self concept</td>
<td>values</td>
</tr>
<tr>
<td>cognitive learning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.4 Be able to describe the flow of communication and distortion of communication as explained by the performance feedback model.

2.5 Be able to select and defend the selection of learning activities as being appropriate means for facilitating learning in terms of stated objectives.

2.6 Be able to construct valid evaluation devices for measuring student learning as expressed in statements of behavioral objectives.

2.7 Be able to translate the following ideas into examples of teacher and student verbal behavior in the classroom.

a. reinforcement of responses
b. acceptance of responses
c. aversive stimulation
d. exercise of responses (drill)
e. acceptance of student feeling
f. guided discovery
g. elicited responses
h. emitted responses
i. clarification of responses
j. corrective feedback
k. encouragement and praise as extrinsic motivators
l. diagnosis of student level of understanding
m. cognitive structuring through information giving

1,2,1 Be able to plan, teach and evaluate the effectiveness of a simulated lesson adhering to the following stipulated requirements:

a. Objective(s) should be stated behaviorally
Objectives – Education 535, p. 3.

b. Instructional techniques should be appropriate for facilitating learning of the type stated in the objective(s).

c. Instructional techniques should be appropriate for the type of student and class assumed to be members of the simulated class.

d. Learning should be measured by means of a valid evaluation device.

e. The lesson should contain at least 20 per cent student verbal participation and no more than 40 per cent of any single teacher or student behavior, e.g., the teacher lecture, student answers to questions, teacher questions, teacher directions, etc.

f. Using the Teaching Process Model as a guide, analyze whether the objective(s) was met or not and why.
### APPENDIX V

#### TABLE 17

**COEFFICIENTS OF CORRELATION FOR THE COLLEGE STUDENT PROBLEMS Q-SORT BETWEEN THE PRETEST AND POSTTEST SCORES OF PARTICIPANTS IN FIVE TREATMENT GROUPS**

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>N</th>
<th>r*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>84</td>
<td>.24*</td>
</tr>
<tr>
<td>2</td>
<td>84</td>
<td>.32*</td>
</tr>
<tr>
<td>3</td>
<td>84</td>
<td>.17</td>
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<tr>
<td>4</td>
<td>84</td>
<td>.54*</td>
</tr>
<tr>
<td>5</td>
<td>84</td>
<td>.16</td>
</tr>
</tbody>
</table>

*For 80 degrees of freedom r's of .217 and .283 are significant at the .05 and .01 level respectively.

#### TABLE 18

**COEFFICIENTS OF CORRELATION FOR HUMAN RELATIONS SKILLS AS MEASURED BY THE RELATIONSHIP INVENTORY AND OPENNESS AS MEASURED BY THE COLLEGE STUDENT PROBLEMS Q-SORT FOR FIVE TREATMENT GROUPS**

<table>
<thead>
<tr>
<th>Coefficients of Correlation for Pretest Scores</th>
<th>Coefficients of Correlation for Posttest Scores</th>
<th>Coefficients of Correlation for Pre- to Posttest Score Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Group r</td>
<td>Treatment Group r</td>
<td>Treatment Group r</td>
</tr>
<tr>
<td>1 .16</td>
<td>1 -.03</td>
<td>1 .03</td>
</tr>
<tr>
<td>2 .08</td>
<td>2 -.22*</td>
<td>2 .08</td>
</tr>
<tr>
<td>3 .01</td>
<td>3 -.03</td>
<td>3 .06</td>
</tr>
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<td>4 -.02</td>
</tr>
<tr>
<td>5 -.11</td>
<td>5 .00</td>
<td>5 .05</td>
</tr>
</tbody>
</table>

*For level of significance, see Table 17 above.*
BIBLIOGRAPHY


