

A STUDY OF THE EFFECTS OF PROGRAMMED  
HUMAN RELATIONS TRAINING ON A  
SELECTED GROUP OF HIGH  
SCHOOL DROPOUTS

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A STUDY OF THE EFFECTS OF PROGRAMMED  
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## CHAPTER I

### THE NATURE OF THE PROBLEM

#### Introduction

This dissertation reports an investigation of the effectiveness of programmed dyadic materials with a selected group of high school dropouts when this group was compared with three types of control groups which did not receive this mode of training. These materials were designed to provide human relations training in a school setting. The purpose of the programmed dyadic materials is to teach people to be open in their relationships with others and to show empathic understanding. Relevant variables are examined following the use of the programmed dyadic materials. These variables are academic achievement, anxiety, personal and social adjustment, and dogmatism. In addition, certain variables associated with post-training employment are included in this investigation.

#### General Background and Need for the Study

This section of the dissertation provides the rationale for pursuing the present investigation. Two basic aspects of this rationale will be developed. The first aspect concerns the use of group procedures or methods which

enables a counselor to provide his services to a greater number of students who desire these services. The second aspect deals with the concept of work, and the need for a satisfactory interpersonal relationship with other individuals. The use of the programmed dyadic material may be a technique that satisfies both aspects of this rationale. Two people are required to interact in such a manner as to improve their ability to relate to each other.

The demands on education today seem unlimited. They are commanding a greater amount of governmental funds. The population explosion, the changing economic conditions, technological advances, automation, and the race for space are all exerting great demands on school systems which are already overloaded with responsibilities. To a large degree responses to the challenges placed before educators by the above factors must be met by counselors and other personnel workers in our schools. The demand for trained counselors far exceeds the present supply (37)(46)(60)(104). At the present rate of training, it is unlikely that the situation will be remedied in the foreseeable future (60). Hitchcock (46) estimates that in order to meet the pressing demands, production of counselors must be advanced five-fold by 1970. Due to this shortage in trained personnel in the counseling field, the services provided by this profession must necessarily be limited. One possible solution to this situation would be to investigate the role of the counselor and determine if any of his present duties could be lightened

without a loss of effectiveness.

Upon examining the role of the counselor, it becomes immediately apparent that his role has changed immensely, especially in the last ten years. The question of what the duties of the school counselor are supposed to be has theoretical and practical implications.

Wrenn (105), in an article dealing with the status and role of the school counselor, defined status simply as referring to position or to place in society, and role as referring to the functions performed within that position. In this same article, he concluded that any description of the role of the counselor in a school might be based on several assumptions, two of which would seem very pertinent to this discussion. These are (105, p. 179):

The school counselor's skills should include not only those necessary for the individual counseling relationship but those essential to working effectively with groups.

The school counselor is concerned primarily with the normal growth needs of students and with personality development than with problem crises.

Hitchcock (47) specifies that counselors on the whole do not believe they should engage in activities involving duties of a clerical nature, that is, activities such as scoring tests and recording test results. They should not perform administrative detailed duties such as checking absentees or supervising the halls and washrooms. Yet there are duties that a counselor must perform that are time consuming and, therefore, limit his contact time with



the students who desire his service.

There is a growing awareness in counseling, psychology, and personnel work of the possibilities of assisting the normal person to better utilize his potential abilities. The basic rationale for this approach seems to be both for the betterment of the individual involved and for the ultimate benefit of society. Group procedures, especially group counseling and group therapy, have been presented in the literature as methods which can be appropriately used in conjunction with individual counseling to assist in the development of the "fully functioning," "self-actualizing," "adequate" personality that is desired. Therefore, more substance is provided to indicate concern with counseling procedures, especially in the schools.

Following World War II, the use of counseling in the schools became widespread, and was greatly stimulated by Dr. Conant and by Title V of the National Defense Education Act of 1958 (65). Counselors are now presented with many individuals who are reasonably well adjusted to their environment, and who might very well profit from developmental rather than remedial counseling. The possibilities for the utilization of group procedures with most of these students go far beyond mere economy of time and of personnel. Today, there is much interest in the application of group procedures in the schools. The increasing increment of pupils, which year after year have reiterated the pressures on school registrations since the end of World War II, has caused

many educators to seek more efficient methods to work with students and to meet their needs. The result of these undertakings has been an uncoordinated development of various group procedures which had, prior to this point, been used in mental health organizations, in educational settings, and in the T (Training) Groups of the National Training Laboratories division of the National Education Association (4).

The use of programmed materials is a relatively recent innovation in the field of counseling, guidance, and personnel work. The origin and use of programmed instruction in personnel work are somewhat vague and, as yet, scanty evidence exists concerning its value. Nevertheless, many individuals in counseling and guidance are convinced of the ultimate destiny of programmed instruction as a useful procedure. Berlin and Wyckoff (7) at the American Psychological Association Convention in 1963, presented a paper concerning the use of programmed materials in a human relations setting. Callis (15) was chairman of a meeting at the 1965 American Personnel and Guidance Association Convention dealing with the use of a programmed manual for self-exploration in junior high school guidance programs. At the 1966 American Personnel and Guidance Association Convention, Levake (54) was in charge of a program entitled Programmed Test Interpretation--Why, What, How. Various presentations at this meeting dealt with the use of programmed test interpretation materials from the elementary school level to the

university level.

To this point, one reason has been discussed to establish the need for this study. Group techniques which will provide services for more students are needed, which can also be seen in the second reason for this study. The second reason is concerned with the concept of work and the need for satisfactory interpersonal relationships in the world of work.

To quote Peters and Hansen (68, p. 1):

Work has not always been universally considered a dignified condition. To the Greeks, work was a curse; the Romans thought much of work was vulgar; and the Hebrews thought it was a form of drudgery. The modern attitude toward work evolved slowly from the beginning of Christianity. Now work is emerging as more than a method for earning a living, and is becoming a means of achieving satisfaction.

Many people in our society take work for granted, as a necessary part of life. Yet, this assumption does not mean that people can fully realize what work means to them. The multitude of "activities of daily living depend to a large measure upon the nature and conditions of one's work. Our society considers it only natural that each member enter the labor force" (68, p. 1). Each individual learns that work is the gateway to meeting the needs in other areas of living.

Childs (21, p. 371) indicates that "work provides the principal means of social interaction in our society and, for large numbers of people, offers the only means of establishing social contact." Through work one can achieve identity.

Various individual (16)(73)(89) have indicated that

work is a way of life which affects the way people think of themselves, the neighborhood in which they live, their leisure time activities, the friends they make, and the values they have.

In 1958, the American Personnel and Guidance Association (87, p. 454) went on record supporting certain basic principles relevant to the identification and development of the nation's human resources. The following of these basic principles seems relevant:

- a. Students must learn, at successive levels of education, progressively more about themselves--their interests, talents, values and abilities--through assistance in interpreting test results, educational experiences, and personality potentials.
- b. Students must learn about the large, complex, and changing world of career opportunities.
- c. Students should be motivated to explore the best outlets for their talents.
- d. Students must be instilled with a sense of responsibility and the feeling of 'stewardship' in the use of their talents.

When considering the growth in population size and the great increase in knowledge and technology, the trend under the present standards indicates that the total number of individuals who do not graduate from high school will, in all probability, increase in number. For this large minority called school dropouts, the employment market, where persons with varying amounts of diverse skills are "bought and sold," will lack enough buyers. As Wolfbein (101, p. 108) has stated, "The most recent data show that, for 1961, the unemployment rate among new high school dropouts was 27

per cent--more than 5 times that of the national average."

That early school leaving is a problem has been emphasized by both the late President John F. Kennedy, and the current President Lyndon B. Johnson. In his "State of the Union" message to Congress on January 14, 1963, President Kennedy made the following statement (83, p. iii):

The future of any country which is dependent on the will and wisdom of its citizens is damaged, and irreparably damaged, whenever any of its children is not educated to the fullest extent of his capacity, from grade school through graduate school. Today, an estimated four out of every ten students in the fifth grade will not even finish high school--and that is a waste we can not afford.

Bogan (8, p. 637), in the Monthly Labor Review, states as follows:

One of the nation's most pressing needs is to expand employment, and to assure that young people are given the opportunities and incentives to prepare themselves properly for the job openings.

The 1963 Manpower Report of the President (97, p. 6) indicates that "This country's work force will grow by about 13 million during the 1960's," or fifty percent greater than in the fifties. However, this same 1963 Manpower Report of the President indicates that the annual rate of increase of employment in the five years prior to 1963 was only half the rate for the previous ten years. According to the 1964 Manpower Report of the President, (98, p. 15), "About 4.2 million persons were unemployed, on the average, during each month of 1963." This year was the sixth consecutive year that unemployment in the United States averaged over 5.5 percent. The 1964 Manpower Report of the President further

states (98, p. 123), "Nearly 350,000 young men under the age of 25 are neither in school or in the labor force." In fact, they are not attempting to locate jobs and "are not counted as part of the labor force or included in the unemployment figures" (98, p. 123).

The employment difficulties of these young people who leave high school early are evident. Fuhrman (40) indicates that dropouts are the most difficult group to place on a job. Many employers believe that if these young people cannot get along with their teachers and other school personnel, they will not adjust to authority and supervision on the job. Since a large number of high school graduates are available, employers are more likely to choose them as better employment risks.

Venn (99, p. 33) comments that "most individuals, though they be Ph.D. or seventh grade level, lose their jobs because they do not know how to cooperate with other people." To prepare people to meet this problem, Peters and Hansen (68, p. 42) say, "Indications point to training and education which will make the individual as maneuverable, flexible, and responsive to change as possible."

If society is to progress, methods must be developed to assist the dropout to become more prepared for employment. These methods must bring the dropout to an increased ability to understand personal and social change and to enable him to adapt more readily to this change.

The preceding discussion develops the rationale for

this investigation. It provides justification for the statement of the objective of this thesis.

#### Statement of Objective

The objective of this study is to determine whether the personal functioning of high school dropouts can be significantly improved through the use of programmed dyadic materials. The dependent variables to be considered are academic achievement, anxiety, dogmatism, and personal and social adjustment.

#### Statement of Hypotheses

Statements of the major hypotheses for this investigation are presented next. Their justification will be presented in Chapter II.

1. The use of the General Relationships Improvement Program will result in a significant reduction of anxiety for the experimental group as measured by the IPAT Anxiety Scale Questionnaire.
2. The use of the General Relationships Improvement Program will result in a significant improvement in achievement for the experimental group as measured by the Sequential Tests of Educational Progress.
3. The use of the General Relationships Improvement Program will result in a significant improvement of the personal and social adjustment of the

experimental group as measured by the California Test of Personality.

4. The use of the General Relationships Improvement Program will result in a significant opening of the belief-disbelief system of the experimental group as measured by Rokeach's Dogmatism Scale.
5. The use of the General Relationships Improvement Program will result in a greater proportion of employment success for the experimental group as evidenced by a more stable employment record, by a longer period of employment, and by a higher wage.



## CHAPTER II

### REVIEW OF THE THEORY AND THE RESEARCH

#### Introduction

The purpose of this chapter of the dissertation is to present a discussion of the general theories upon which this investigation is based. Both the social learning theory of Julian B. Rotter and the theoretical concept of the dyad as presented by Georg Simmel in the sociological literature will be discussed. Following this discussion, a summary of the research concerning the characteristics of high school dropouts will be presented. More specifically, a selection of relevant literature which pertains to the hypotheses will be discussed. The theory and the use of programmed instruction will be presented. The final section will relate to the selection of the experimental treatment.

#### General Theories

##### Social Learning Theory

The social learning theory or approach by Julian B. Rotter (76)(77) has been well illustrated as a method to be used in a psychotherapeutic setting. Yet, one must consider that a distinction between psychotherapy, counseling, and guidance is not precisely delineated in the literature.

Various authors (42)(53) make different distinctions; however, most authors agree that the range of behavior in psychotherapy, counseling, and guidance lies on a continuum from the normally adjusted individual to the very maladjusted individual who may be unable to function in his everyday life. In the same sense, the methods and the techniques used by professional therapists, counselors, and guidance workers overlap; hence, a fine distinction cannot be made as to which of the above workers will or will not use a specific technique in their professional endeavors.

The contention of the investigator is that Rotter's social learning theory of personality does provide an adequate theoretical basis for this dissertation. According to Rotter (77, p. 87), "Social learning theory implies that psychotherapy is social interaction." The laws and the principles that govern and direct behavior in other interpersonal situations apply as well to the therapy situation.

The statement of the theory follows (77, pp. 57-59, 86-87):

To sum up, the potentiality of a given behavior or set of behaviors to occur in some specific situation is dependent on an individual's expectancy that the behavior will lead to a particular goal or satisfaction, the value that satisfaction has for him, and the relative strength of other behavior potentials in the same situation. It is assumed that often the individual is unaware of the goals (or meaning) of his behavior and of the expectancies of achieving these goals.

.....  
 According to social learning theory, man's behavior is determined by his goals. Behavior is always directional. An individual responds with those

behaviors that he has learned will lead to the greatest satisfaction in a given situation.

...personality is not merely composed of characteristics entirely within the individual, rather it is a potential to respond in a given way to a given situation.

[the]...theory emphasizes the development of problem-solving skills, such as those of looking for alternative ways of reaching goals, analyzing the consequences of behavior, understanding the motives of others, and trying to analyze how one situation differs from others.

Rotter's theory indicates that the behavior potential is a function of the expectancy of the individual and the reinforcement value for that person.

The expectancy in this system refers to the subjective probability that an individual has for obtaining positive reinforcement by using behaviors that are functionally related to a specific class of reinforcements. This expectancy is a combination of generalized and specific expectancies. The generalized expectancies are those that have been built up over a period of time in the learning process. The specific expectancies are those that are related more directly to the immediate environmental situation. The reinforcement values or need satisfying factors are those positive reinforcements which the individual has learned can be obtained by certain functionally related behaviors. In addition, the expectancies and reinforcement values must be appropriate to the culture in which the individual is situated.

According to Rotter's formulations, a high persistence in school should be manifest in a person showing both high

expectancy and high reinforcement value. The least persistence would be shown by the person with low expectancy and low reinforcement value. In the academic realm, this would seem to be the expected pattern. School leavers might well be characterized as having a low expectancy--low reinforcement value.

When Rotter (77, p. 57) speaks of the behavior potential, he also presents the concept of "freedom of movement." He defines this concept as the "average level of the expectations that the behaviors that one has learned to rely upon to achieve certain satisfactions will actually lead to those satisfactions." In essence, this concept refers to the range or latitude of possible expectancies available to an individual at any certain time. One's behavior is constricted due to the limitations imposed upon his response patterns by his somewhat narrow and inflexible attitudes and values.

The behavior potentials with which this study is concerned are a function of a low freedom of movement, or a rather narrow expectancy, and a high need value in obtaining certain gratifications one desires. This investigation deals with the relative degree of openness of an individual's attitude system as it affects his behavior. In essence, the present study is concerned with the relative degree of openness of an individual's belief-disbelief system as the individual relates to the world about him. Rokeach refers to this construct as dogmatism.(74).

That high school dropouts who have returned to a

retraining program have a low freedom of movement and a high need value has been ascertained by Frazier (39). In comparing a group of high school dropouts who had returned to a retraining program with a group of high school students pursuing similar curricula who were selected as potential dropouts, but who had remained in high school, the major difference found was that the students in the retraining program had established their own homes. In addition, Frazier indicated that he was unable to control for age, parental influence, marital status, and the several other developmental factors that high school dropouts, ages 17-22, would have in contrast to individuals who had continuously attended school. He pointed out that a great number of "factors which are often related to school attrition" (39, p. 52) did not differ significantly for his two samples. These factors included participation in school activities, popularity in school, socio-economic backgrounds, and education of older siblings and parents. In summary, Frazier (39, p. 53) "believes that a strong case is presented in defense of [his] design by relating the two samples." The dropouts in his study are program "finishers" and did, in many cases, receive their high school diplomas.

In a paper by Twyman, Hornbostel, and Egermeier (96) read at a conference on Research in Vocational and Technical Education, a research paradigm was presented that suggests the individual's interaction with his environment when leaving school is characterized by the following behavior

processes (96, p. 18):

1. Aggression--overt physical and/or withdrawal (aloofness)
2. Insecurity
3. Low scholastic performance--repeated failure to meet standards.
4. High mobility rate (geographic)
5. Low degree of performance in formal and informal school activities
6. Failure to relate to authority figures
7. Low verbal and perceptual performance
8. Low attendance rate
9. Negative self-concept

They suggest that during the time prior to returning to a retraining program, the school leaver's interaction with his environment can be characterized by goal seeking behavior caused by the following (96, p. 18):

1. Boredom from lack of responsibility--low interest level
2. Repeated failure to attain job rewards
  - a. Lack of skills
  - b. Lack of general education
3. Increased hostility against value of intellectual pursuits
4. High level of anxiety
5. Sustained reinforcement of identity as a member of society's "out-group"--recognition of difference between "in-groups" and "out-groups"

As Frazier (39, p. 13) has concluded, "The dropout, at the time of program entry, may be positively motivated by the negative experiences of the past."

The above discussion should demonstrate a high reinforcement value as characterizing school leavers who return to retraining programs, as opposed to those who do not, or those who are dropouts from the retraining program. The return to training is important in that it provides possible goals that are now valued by the dropout. In the same vein, since the dropout has not met with an appreciable amount of

success as characterized by the research paradigm of Twyman, Hornbostel, and Egermeier (96), he is seen as having a low expectancy; in other words, he does not see himself as succeeding.

Restating Rotter's theory, but with specific reference to the high school dropout who has returned to a retraining program, the following sentence evolves: The behavior potential of the high school dropout in a retraining program is a function of the interaction of (1) the low expectancy of the individual for achieving the goal and (2) the high reinforcement value that achieving the goal has for that person. In this situation (77, p. 82):

...defensive or maladaptive behavior frequently arises. Instead of learning how to achieve his goals, he learns how to avoid, or defend himself against, the failure and the frustration of not achieving his goals, or he may attempt to reach the goals by 'irreal' ways.

Rotter indicates that this is one of three ways that conflict can develop, and that freedom of movement and behavior potential can be restricted.

Low freedom of movement may result from lack of knowledge or ability to acquire adequate behaviors to reach one's goals. "...his problem may lie in having learned inadequate pathways to achieve these goals. Here the problem might be regarded as pedagogical" (77, p. 85). Thus, the idea of searching for alternative ways of reaching goals "both as a general technique of dealing with problems and as a method of achieving specific satisfactions in current life situations" (77, p. 85) must be taught.

Another indication is that low freedom of movement may result from "mistaken" evaluations of the present because of early experience. Rotter (77, p. 83) believes that these are the primary sources of difficulty. He indicates that "this concept of low freedom of movement, or anticipation of failure and punishment, overlaps" with the construct of anxiety that other theorists present.

One other aspect requires discussion at this point. With much available literature concerning the "self-concept," Rotter's position relevant to this construct needs illumination. One of the major predictors of behavior for social learning theory is the subject's expectancy regarding the outcome of his behavior in a specific situation, that is, what he thinks will transpire. These expectancies could be called self concepts if that person's conception of himself in a specific situation is a major determiner of his behavior. Rotter (76, pp. 240-241) states,

In this sense, every time we mention the word expectancy, since expectancy always deals with a person's expectancy of the outcome of his own behavior, one might put in parentheses self concept.

However, Rotter (76, p. 241) would reject a single, unitary self concept "which is an entity and provides a person with a motive force of some kind."

To this point in the discussion, Rotter's theory provides justification for various criteria of measurement of changes due to an experimental treatment. These are personal and social adjustment, anxiety, dogmatism, and



academic achievement.

### The Dyad

The purpose of this section is to present the theoretical concept of the dyad, a two-person interaction system, from a structural point of view. In general, a structure might be considered as something created, as an enduring arrangement, pattern, or articulation of parts to form a relatively stable system or whole (34). The basic concern for this investigation relates to these patterns or consistencies, the relative constant relationships, that exist in the dyad.

Much of the literature and many textbooks in sociology give credit to Georg Simmel as the first major contributor concerning the dyad, a form of sociation. Simmel states, "Sociation is the form in which individuals grow together into a unity and within which their interests are realized" (102, pp. 314-315). On the basis of their interests, individuals form such unities. This unity, or sociation, may be of many different shades, depending on the form and on the intimacy of the interaction which prevails.

The difference between the psychological and sociological approaches to the forms of interaction is delineated by Wolff (102, p. 69):

Strictly speaking, the psychological understanding of interaction reduces all societal phenomena to distributive phenomena which ultimately originate in individual action systems. Sociology deals with phenomena only in so far as they are truly collective phenomena, which cannot be reduced to individual

action systems. Interaction is more than a series of reactions.

Simmel speaks of "forms of sociation," or reciprocal orientations, the conditions which account for stable patterns in interaction and for the regularities of overt behavior (collective phenomena). These forms are in contrast to the content, or what is referred to as the individual action systems (25).

Hare (44) in his Handbook of Small Group Research discusses the effects of group size upon the potential relationships possible within a group. The number of possible relationships for a group of two persons would be only one; yet, when the group size has reached seven, there would be 966 possible relationships. As group size increases, there is a tendency to form sub-groups within the larger group. However, if there is a need or desire for intimate or face-to-face relationships, there will be a tendency toward the restriction of group size.

Simmel seems in accord with this concept when he states that the dyad allows the possibility of the greatest degree of intimacy. This concept is the simplest sociological formation. The limitation of this sociological formation to two persons is a situation where alone several forms of relationship exist. Perhaps the reason for this relationship is that "the greatest variation of individualities and unifying motives does not alter the identity of these forms" (103, pp. 122-123). In essence, the difference between a dyad and a larger group lies in the fact a dyad has a

different relationship to its two elements than a larger group has to its members.

Normally, the dyad does not function as an autonomous, superindividual unit. Instead, each of the two elements feels himself confronted only by the other element, and not as a collectivity above him. The life of this social structure rests immediately upon one and then the other element, and the withdrawal of either would destroy the dyad. As such, the dyad "does not attain the super-personal life which the individual feels to be independent of himself" (103, p. 123). Therefore, the dependence of both members upon the life or death of the dyad is bound to influence the inner attitudes of the individual toward it.

Simmel has hypothesized that this formal condition of immediate reciprocity of action without any overlaying structure restricting the interaction gives rise to four specific sociological features (102, p. 26):

1. the chance of intimacy,
2. the threat of triviality,
3. a check on irresponsibility, and
4. the promotion of individuality.

The use of the programmed dyadic materials as a basis for experimental treatment appears appropriate. The fact that only two people are present allows for "the chance of intimacy" in a face-to-face relationship. The reciprocity of the interactional system provides "a check on irresponsibility" in that each member is required to contribute his

share. "The threat of triviality" would be lessened considerably since the programmed dyadic materials provide a structured situation. Yet, each member must contribute from his own repertory of behavior potentials for "the promotion of individuality."

The next section of this chapter will review the research relevant to the high school dropout.

### The High School Dropout

The purpose of this section of the dissertation is to present a brief summary of the literature concerning the high school dropout. The span of the literature shows studies ranging back to Edward L. Thorndike's 1907 study, Elimination of Pupils from School. He was basically interested in the extent of the dropout situation, that is, if it was actually a problem. Schreiber (82)(83) presents some relevant comparisons. Sixty-six years ago, "...not more than 6 or 7 of every 100 ninth grade students graduated four years later. By 1930, the proportion had risen to one-half; at present, it stands at about two-thirds" (83, p. 2). Only fifteen years ago, for the first time there were more high school students graduated from high school than dropped out in the United States. The problem for the dropout not only has to do with numbers, but it also has to do with the world to which the contemporary dropout seeks entrance which has a diminishing place for him. Schreiber points out that two-thirds of the service workers, operatives,

and laborers in the labor force of the United States were dropouts. Two-thirds of the unemployed do not graduate from high school. According to Schreiber (84, p. 52), "This decade's expected 7.5 million dropouts will be all but useless in a world where, by 1970, not more than five per cent of all available jobs will be of the unskilled variety."

In recent years many bibliographies, some annotated, and many summaries of the literature on the school leaver have been published (49)(62)(71)(72)(79)(83)(91)(95). The Texas Education Agency (92) compiled a Bibliography of School Dropouts in February, 1964, listing over 275 references. Over 200 references are listed in Dropouts: Selected References (61), a United States Department of Health, Education, and Welfare publication, of which none are dated prior to 1960.

For this reason a summary of findings for which general agreement has been found in the literature is presented. According to Frazier (39, pp. 11-12), dropouts as a group generally differ from graduates in the following manner:

1. Dropouts will score lower on intelligence tests than graduates. Some authorities will not agree that dropouts are lower in intelligence, but most will agree they do not do as well on intelligence tests.
2. Dropouts will have lower reading abilities than graduates.
3. Dropouts will be more likely to repeat one or more grades before dropout than will graduates.
4. Dropouts will achieve lower grade point averages in school.

5. Dropouts will participate in less extra-curricular activities.
6. Dropouts will be more likely to express dislike for teachers or complain about teachers being unfair.
7. Dropouts will more often express dissatisfaction with school.
8. Dropouts will be in a lower socio-economic bracket.
9. Dropouts will have higher mobility as indicated by the number of schools attended.
10. Dropouts will exhibit poorer social and personal adjustment than graduates.
11. Dropouts will have more absenteeism from school.

When high school dropouts are compared with other high school dropouts, the following characteristics are generally true (39, p. 12):

1. There will be more males than females.
2. There will be more dropouts who have parents in low-skill occupations.
3. More of the dropouts will have come from broken homes.
4. More will have dropped from the tenth grade than from any other grade level.

Hoyt (49, pp. 516-517) describes the dropout in this way:

He is more likely to be a boy than a girl, to be below average in intellectual ability and even lower, relatively speaking, in academic achievement. He will not have participated in many school extra-curricular activities and will have his closest friends outside of the school population. He comes from a relatively large town and is attending a relatively large high school. In this community, he will see some opportunity for employment. His parents are likely to be from a lower-class occupation. Neither his parents nor any of his brothers or sisters are apt to have distinguished themselves

in terms of educational attainments. While he may or may not express an active dislike for school, he is apt to be absent rather frequently and, in other ways, to demonstrate his attitude that he really doesn't belong in the school setting.

The above descriptive sentences and paragraph provide the standard profile of the high school leaver. They also describe many students who do not culminate their education prior to graduation. Perhaps this group of finishers should be designated as "potential dropouts."

Many studies have been concerned with the identification of potential school leavers. Within recent years, however, there has been a trend to provide programs of a very wide variety directed toward preventing the potential school leavers from severing their relationships with the school and toward rehabilitating and retraining the individuals from the community who, for a variety of reasons, have ceased formal classroom attendance. Quinn (71) relates that the major impetus in developing programs for rehabilitation and retraining of high school dropouts comes from the federal government through three major offices under the executive wing of the government: (1) the United States Department of Labor, (2) the United States Department of Health, Education, and Welfare, and (3) the Office of Economic Opportunity. Two major acts that are administered by these offices are the Manpower Development and Training Act of 1962 and the Economic Opportunity Act of 1964. Quinn (71, p. 14) after an intensive review of these major acts and of the dropout programs which they are fostering concludes that "limited

attention is being directed to the personal and social adjustment levels of those whom the programs are designed to help." The stated purposes of the Manpower Development and Training Act contains no mention "of personality variables, value orientations, or social attitudes." Yet, many references in the literature specifically state that the high school dropout is a product of the interaction of the home, school, and community. His psychological and emotional make-up are reinforced by his interactions and relationships in his environment. The summaries by Hoyt (49) and Frazier (39) mentioned above attest to this fact.

Bowman and Matthews (10) report a massive longitudinal study of all sixth-graders in the Quincy, Illinois, public schools in 1951-52 who were followed through high school graduation or until they withdrew from school. They report that 75 percent of the dropouts and 37 percent of the stay-ins were in the lower half of the distribution on the Chicago Primary Mental Abilities Test. The academic records of the individuals were evaluated. Even though the dropouts and the controls had been matched on ability and on Warner's Index of Status Characteristics, one-half of the controls and only 7 percent of the dropouts were in the upper half of the grade point distribution for the entire class. Their grades had also been lower in elementary school. Twenty-five percent of the dropouts as opposed to 10.5 percent of the stay-ins were one year or more behind their age mates. The California Test of Personality, the California



Psychological Inventory, and the Sentence Completion Test had been administered to these Quincy students. "On all three tests, dropouts had statistically significantly lower scores than ...the controls matched with the dropouts on intelligence and social status (10, p. 65). The dropouts were ranked lower in social adjustment ratings and self-adjustment ratings. Their personalities were characterized by a lack of respect for others. On the California Psychological Inventory, the dropouts were significantly inferior to the control group on maturity and responsibility. They demonstrated a lower level of maturity in social situations.

When these same Quincy students were asked to describe their concepts of self, mother, father, student, work, and school, the control group felt more positive toward self, father, and school.

In a study by Coster (26), a random sample of 878 pupils from nine Indiana high schools were selected. These students, divided into three income groups (high, medium, and low), responded to a questionnaire containing items on attitudes toward school, teachers, other pupils, school program, and the value of education. Their attitudes varied more on items in the questionnaire relating to interpersonal relations than on items involving an objective appraisal of the school. The low income pupils reacted less favorably to their social life, in their opinion of other students, and to being liked by their classmates.

In two reports dealing with 311 males and 311 females

who did not return to or withdrew from twenty secondary schools in Detroit, Michigan, during September, 1951, Dresher (32)(33) presents some relevant findings. Having a sense of belonging in the high school situation, of participating in extracurricular and in out-of-school activities, and having a school spirit were significantly related to postponing dropping out until a later age. Related to dropping out at an early age was the presence of a discipline problem. In his second report Dresher (33, p. 596) indicated that the following factors were significant statistically in favor of normal dropouts when contrasted with anti-social dropouts. The anti-social individuals: (1) dropped out a lower grade level than normal behavior students, (2) failed more subjects before dropping out, (3) were absent more frequently from school, (4) were more often rated as poor citizens, (5) less frequently came from a happy, well adjusted home, (6) had out-of-school friends more often and spent more time with them, (7) less frequently got along well with others in the home, (8) less frequently got along well with students and teachers, (9) had a sense of belonging in the high school less often, (10) less often had school spirit, and (11) participated less frequently in out-of-school activities. Dresher (33, p. 598) concludes with the following statement:

The seeds of delinquency grow in the soil of poor personal relationships, unsolved personal problems, and frustration, and root in social inadequacy, social disorganization, and moral and social deprivation.

Liddle (56)(57) reports a cross-sectional study of 1200 children from the time they were elementary pupils until early adulthood. This study included those who persisted through high school graduation and those who dropped out. He reports that dropouts, as a group, had below average personal and social adjustment, and that this weighed heavily in their decision to withdraw from school. According to the Sentence Completion Test, their manifested tendencies toward "isolation, rejection, and defeat almost always leads to a lack of acceptance of and respect for others" (57, p. 279). Liddle (57, p. 276) indicates that a lower class, low I.Q. pupil who remains in school must find some social and academic satisfaction for at least part of the day. These pupils leave because they "fail to find personal acceptance, what they regard as meaningful instruction, and a chance to be successful."

Livingston (59) reports that 60 percent of elementary school dropouts were classified by their teachers as non-participants or isolates.

A follow-up study by Schaffler (79, p. 16), seeking the social factors that might have contributed to deviant behavior of school leavers who should have graduated from the Faribault, Minnesota, high school in 1960, reports a low reading ability, frequent absenteeism, and grades in the lowest quartile.

He tends to shun extra-curricular activities and expresses an alienation from the mainstream of high school social activity. This loss of identification

leads to monotony, lonesomeness, restlessness, and in some cases hostility toward the social system of the school. As this feeling of general anomie increases he either becomes a recalcitrant member of the high school peer group or separates himself entirely from the school system.

Another follow-up survey reports that dropouts out of school from eight to ten years do not place all of the blame on the schools for their failure to complete their formal education. Remarks such as "I should have accepted people as they were...I should have had a better attitude toward teachers" (36, p. 18) were prevalent.

As was specified earlier, there are many other studies that could have been reviewed for this section of the paper. The case study approach of Lichter et al. (55), the sociological investigation by Cervantes (20), and the correlation study by Dentler and Warshauer (29) are just three of the larger reports available.

#### Programmed Instruction

A review of the literature indicates that from the first conception and practice of automated or programmed instruction by E. L. Pressey in 1926 to the major impetus of B. F. Skinner's article The Science of Learning and The Art of Teaching in 1954, only a very limited amount of relevant research had been conducted (81). But since 1954, there have been over 190 reports of original research on programmed instruction, 165 of these occurring since 1959 (81).

Skinner (86, pp. 87-88) combined Thorndike's Law of Effect with the concept of scheduling reinforcements to

provide the theoretical basis of the "technology of learning."

Once we have arranged the particular type of consequence called a reinforcement, our techniques permit us to shape up the behavior of an organism almost at will.

.....  
Extremely complex performances may be reached through successive stages in the shaping process, the contingencies of reinforcement being changed progressively in the direction of the required behavior.

.....  
Reinforcements continue to be important, of course, long after an organism has learned how to do something, long after it has acquired behavior. They are necessary to maintain the behavior in strength.

.....  
These new methods of shaping behavior and of maintaining it in strength are a great improvement over the traditional practices of professional animal trainers, and it is not surprising that our laboratory results are already being applied to the production of performing animals for commercial purposes. ...it is not too difficult to arrange the complex contingencies which produce many types of social behavior.  
(86, pp. 87-88)

Skinner believes that classroom learning, like any other situation in which certain behavior is to be shaped, is amenable to the principles of the "science of learning." It is necessary that the student progress gradually from familiar to unfamiliar material, that he be given an opportunity to learn the necessary discriminations, and that his responses be reinforced. The program to be used must present the learning requirements gradually so that the learner rarely makes a mistake. If the student's effort is successful, then on every item the student is reinforced. Skinner believes that this is the best possible arrangement for learning.

Bandura and Walters (2, p. 5) suggest the following:

While the principles of successive approximation and imitation are crucial for the understanding of the acquisition of social behavior patterns; maintenance of the patterns over a long period of time can best be explained in terms of principles derived from studies of the effects of the scheduling of reinforcements.

Many authors (14)(35)(65)(81)(88) have surveyed the available literature. The following are summary statements derived from these authors:

1. People do learn from programmed materials, but the degree to which they learn has not been precisely delineated.
2. There are contradictory reports as to the significance of overt responders versus readers. It has been suggested that, for more complex programmed materials, overt responding is best.
3. There are contradictory reports as to the effects of scholastic aptitude on the level of achievement of program users.
4. Groups utilizing smaller programmed steps did significantly better on immediate test performance and their total number of errors was less.
5. The modes of presentation do not provide significantly different results.

The major point to be made concerning the mass of experimental studies in the literature is that those who use programmed materials generally do as well or better than individuals using the more traditional approaches to learning.

## Rationale for Selection of Experimental Treatment

This section will integrate some of the concepts already presented earlier in this chapter.

According to Rotter (77, pp. 86-87), one characteristic of a social learning theory is that it,

...not only emphasizes insight into one's own motives as they have been developed from past experience, but also insight into the motives of others and insight into the long-term consequence of one's own behavior.

A process of re-education has been suggested for human behavior and social relationships as a method of reducing personal and social maladjustment. This process is similar to the human relations training that originated with the National Training Laboratories of the National Education Association at Bethel, Maine, in 1947. Bradford et al. (11, p. 1) state the following:

A T (Training) Group is a relatively unstructured group in which individuals participate as learners. The data for learning are not outside these individuals or remote from their immediate experiences within the T Group. The data are the transactions among members, their own behavior in the group, as they struggle to create a productive and viable organization, a miniature society; and as they work to stimulate and support one another's learning within that society.

Each individual may learn about his own feelings and behavior towards others. In addition, he learns of the reactions he produces in others as he interacts with them on a "here-and-now" basis. Changes in behavior and social relationships may, thus, be effected. According to Benne et al. (4), the T Group training has evidenced success with

heterogeneous groups of workers from various helping professions including education, government, and industrial relations. Other types of populations where significant progress has been demonstrated involves work with children, youth, and college students. Some work has been done with the Cross-Cultural Client group. Indications are that many types of homogeneous and heterogeneous groups in diverse segments of society have responded favorably to T Group training.

Two variations of the T Group concept have recently appeared. The first, pioneered by the Graduate School of Business Administration at the University of California in Los Angeles, deals with "therapy for normals." This type of sensitivity training is admittedly very closely related to psychotherapy (3). In this case the role of the group trainer is emphasized. The second variation is known as the Instrumented T Group. As might be indicated by its name, the trainer is removed from direct participation in the group; instead, a series of self-administered instruments are used. Feedback is obtained by compilation and analysis of the instruments by the members of the group rather than from the trainer. For the purposes of research, the second variation seems more applicable.

Berlin and Wyckoff (7) have recently developed an instrument aimed at improving interpersonal relations through programmed instruction for two people working together--The General Relationships Improvement Program. Attention is



focused on each member doing that which will aid the other in gleaning the most from the program, in responding to feelings rather than fact. Alternate, rather than fixed, patterns of relating are encouraged in responding to case studies and role playing.

In a study by Dailey, subjects presented with "programmed cases" became increasingly accurate in predicting events as increased amounts of information were obtained. In addition, prediction skill of the subjects generalized from one case to others.

Bolda and Lawshe (9) found that role playing could be used to advantage in human relations training, if the appropriate conditions were involved and if case contents could be varied to emphasize alternate courses of action. By appropriate conditions, the authors designated impact or emotional importance relating to specific facets of learning. Sensitivity was particularly amenable to role playing, but without impact it did not assure better human relations. According to Brondzel (12, p. 16), role playing was "described as an effective, practical method for helping overcome personal and social deficits," for teaching responses to new situations.

The goals listed by Berlin and Wyckoff (7, pp. 4-5) for the teaching of improved interpersonal relations through programmed instructions for two people working together are to achieve more than just giving knowledge about one's own behavior and other's behavior. Their general aims are stated

as follows:

- a. To deepen one's ability to be more aware of his own feelings and the feelings of others.
- b. To enhance one's appreciation of his own potential.
- c. To increase flexibility in both the emotional and cognitive aspects of behavior.
- d. To develop the ability to apply these new behavior patterns to the life situation.

At the 1966 American Personnel and Guidance Association convention, Fridon (69, p. 2) presented a paper entitled Problem Solving through Group Sharing. She indicated that counselors "attempt to get students involved in thinking more positively and more toward personal adjustment in a given positive situation." The students are assisted in recognizing the problem. Only then are the students able to reason a solution without any actual advice from others.

Bandura and Walters (2, p. 251) when discussing the role of the therapist in the therapist-client relationship, comments that any modifications of behavior that occur through this interaction are "undoubtedly due to inadvertent applications of learning principles by the therapist." They continue with the following statement (2, p. 251):

Obviously, the outcomes would be much more predictable and readily attained if the therapist were to apply learning principles in a deliberate and carefully programmed manner, instead of depending on the fortuitous occurrence of client-therapist response sequences that are essential for specified changes to ensue.

Tannenbaum and Bugental (90, p. 1) "experimented with a training design which utilized two variants of the T Group

and made major use of Dyads to facilitate the process of learning about self and other." For the first time within the experience of the trainers, a design element, the dyad, had as high or higher learning impact as had the T Groups when viewed by both the trainers and the participants.

Of particular interest to one group of investigators were the conditions of learning which occur when pupils work in the dyadic arrangement, one pupil in the teacher role and the other in the learner role. These investigators used self-instruction or programmed materials. When the achievement of the individuals in the dyads was compared to the achievement of the students who pursued the program singly, there was an initial advantage for the dyad. The authors specify that the programmed materials should be constructed so that each student receives feedback from the other student. "Verbal reinforcement by another person appears to be important in this kind of learning" (63, p. 71).

In another investigation consisting of paired and individual use of programmed instruction, Dick (30) found no significant results on a final examination. However, a retesting of 80 percent of the original subjects one year later resulted in significantly better retention by the paired group.

As indicated from this review, there has been ample work completed in the use of programmed instruction of a cognitive nature. In addition, the concepts of the T Groups and of the human relations training of Berlin and Wyckoff (7)

point toward the use of programmed instruction in the affective realm of human behavior. In fact, Forster (38) has used emotional arousal as a criterion for evaluating the use of programmed materials.

The General Relationships Improvement Program has been the experimental treatment in some recent investigations.

Brown and Campbell (13, p. 4) report that ten female university students served as their experimental group. The significant difference "found on the experimental and control group on five of the MMPI scales indicate that the HDI program is capable of producing measurable personality changes." They indicated that the changes reflect a more integrated, better functioning personality. It provides increasing flexibility of response to both internal and environmental stimulation. In conclusion, to the degree that enhanced awareness and increased flexibility generalize to the environment, the "HDI program may also be said to effect improvements in interpersonal relationships" (13, p. 4).

Improvement in the human relation skills of pre-service teachers was reported by Hough (48). Data were presented which suggested that not all pre-service teachers profited equally from this type of programmed human relations training. Highly dogmatic people, those with relatively closed belief-disbelief systems, were perceived as having made less gain in human relations skills than the less dogmatic individuals.

Another article provides the following statement

(1, p. 142): "Hopefully, it changes workers' attitudes and in doing so makes them happier, more productive workers."

The General Relationships Improvement Program by Berlin and Wyckoff (7) is an instrument directed toward self-exploration and toward the understanding of the feelings of oneself and the feelings of others. The goal of the program is to increase flexibility in both the emotional and cognitive aspects of behavior. Perhaps the aims of this program may be reduced to the achievement of personality changes which are indicative of a well integrated, socially-adept person; hence, the General Relationships Improvement Program has been selected to provide the experimental treatment for this investigation. Consequently, this study seeks to determine the nature of such personality changes as can be observed by using standardized instruments of measurement.

## CHAPTER III

### DESIGN AND METHODOLOGY

#### Introduction

The primary objective of this investigation is to evaluate the effectiveness of programmed human relations training with a selected group of high school dropouts.

This chapter consists of the procedures and a description of the analyses upon which conclusions will be based. The relationship to an ongoing Ford Foundation retraining program for high school dropouts will be discussed. A description of both the instrument used for the experimental treatment and the instruments used for measurement will be presented. The three major statistical analyses for this investigation are discussed.

#### The Manpower Sample

The subjects for this investigation were drawn from an ongoing retraining program for high school dropouts sponsored by the Manpower Development and Training Act of 1962 and the Ford Foundation. This study under the direction of J. Paschal Twyman, Victor O. Hornbostel, and John C. Egermeier, is attempting to discern which of three types of retraining will best prepare high school dropouts for employment.

The original selection and assignment of the participants in the retraining program mentioned above was arranged by the Oklahoma Employment Security Commission. To be eligible, the individuals had to meet two criteria. First, they had to be school dropouts (ages 17-22) who were unemployed or underemployed, and had been out of school for the duration of one or more years. Second, they had to score at or above certain minimum aptitude levels as measured by the General Aptitude Test Battery. In addition, the candidates who were designated as qualified to participate in this retraining or continuation program were free of any severe physical deficiencies. Oklahoma City school officials had estimated that in excess of 2,000 youth in the Oklahoma City area met these criteria (96).

From the available qualified subjects, the various experimental and control groups for the Ford Foundation project were selected. After training was initiated, a second control group was established consisting of those individuals who started in a retraining program, but who withdrew prior to completing fifteen percent of the program in which they were enrolled.

#### Relationship and Design of Percent Study

The study by this investigator is superimposed upon the investigation by Twyman, Hornbostel, and Egermeier. The individuals with which the present study is concerned are those who received academic classroom training for a period

of forty-three weeks, either with or without vocational training. The students who received the experimental treatment of the programmed dyadic materials were paired on the basis of two criteria. First, same sex pairs were used. Second, the instructors for the academic training were consulted to insure that none of the pairings included two people who overtly showed dislike and antagonism toward each other. The individuals were randomly assigned by sex to the experimental group. The remaining portion of the individuals in the academic program served as control group number one (I).

Control group number two (II) was composed of those students who were initially in the academic program, but who withdrew prior to completing 15 percent of their training. Control group number three (III) was composed of individuals who received no training in the Ford Foundation project; they merely served as a control group. Table I provides a classification of the experimental group and the three control groups.

The experimental plan for this project was a pretest-posttest control group design. The individuals in the experimental and three control groups were administered a pretest on the following instruments: (1) Sequential Tests of Educational Progress, Form 3-A, (2) California Test of Personality, Secondary Level, Form BB, and (3) IPAT Anxiety Scale Questionnaire. The Oklahoma State University School Dropout Research team pretested with these instruments



during August 3-6, 1964. In addition, the experimental group and the control group I were administered Rokeach's Dogmatism Scale prior to the use of the General Relationships Improvement Program (experimental treatment).

TABLE I

SUBJECTS ASSIGNED TO EXPERIMENTAL AND CONTROL GROUPS			
Groups	Male	Female	Total
Experimental (E)	6	14	20
Control (I)	3	14	17
Control (II)	6	8	14
Control (III)	2	10	12
Total	17	46	63

Several students were randomly selected from those who were participating in a different segment of the Ford Foundation Project for administration of the General Relationships Improvement Program. These students completed the first two sessions of the programmed dyadic materials. The purpose of these sessions was to allow this investigator to determine the appropriateness of the reading level of the programmed materials.

Following this pilot use of the programmed materials, administration of the experimental treatment to the experimental group was initiated on February 15, 1965. The pairs of students were allowed to complete each of the ten sessions, two sessions per week, in a room without other

individuals in attendance. Completion of the ten sessions by the pairs of the experimental group was accomplished at the end of a six week period, or on March 26, 1965.

In May, 1965, the individuals in all of the groups were administered a posttest on the following instrument: (1) Sequential Tests of Educational Progress, Form 3-A, (2) California Test of Personality, Secondary Level, Form AA, and (3) IPAT Anxiety Scale Questionnaire. In addition, the experimental group and control group I were administered a posttest on Rokeach's Dogmatism Scale.

Follow-up information of a nominal or an ordinal nature concerning wages and length of employment for the experimental and control group I was collected effective February 1, 1966.

#### Instrumentation

This study required the use of instruments which were selected for use on the Ford Foundation School Dropout Research Project.

#### General Aptitude Test Battery (GATB), Form B-1002

This instrument used by the United States Employment Service is one of the best known of the factored aptitude test batteries. This test yields nine aptitude scores: (1) intelligence, (2) verbal aptitude, (3) numerical aptitude, (4) spatial aptitude, (5) form perception, (6) clerical perception, (7) motor coordination, (8) finger dexterity, and

(9) manual dexterity. Based on combined test-retest data published by the United States Department of Labor, reliability coefficients above .80 are reported for intelligence, verbal aptitude, numerical aptitude, and spatial aptitude. Reliability coefficients for clerical perception, form perception, motor coordination, and manual dexterity exceed .70. For finger dexterity, the reliability coefficient exceeds .60.

This test was used to control for differences in ability for the experimental and control groups. The intelligence score was selected as the measure of ability to be used in the statistical analysis of this investigation. The score is representative of the global "g" and is obtained by combining other subtest scores. To use other subtest scores in addition to the "g" value would be of limited value, since they are highly correlated with "g."

Carroll (17, p. 1028) reports that new validity data are being collected continually, in both concurrent and longitudinal designs. In fact, "The GATB probably comes closer than any other multifactor test battery to meeting the requirement of validity for success in a variety of occupations." He summarizes his review with the following statement (17, p. 1029):

All in all, the data now available on the GATB support the claim that it is indeed comprehensive in the sense that it measures

most of the ability traits that are important in predicting success in a substantial sample of occupations that can be identified.

### Sequential Tests of Educational Progress (STEP)

These tests were administered for the purpose of measuring academic achievement without concern to specific academic classwork. Jackson (51, p. 62) points out that this test battery is not attempting to measure achievement in a specific academic area. Rather,

...it has been the intention of the authors to emphasize in particular the utilization of learned skills in solving new problems. The objectives of the tests are, therefore, sufficiently general to be considered attainable by a variety of teaching procedures and materials.

This instrument includes tests in six major fields of school and college instruction. These fields are Listening, Mathematics, Reading, Science, Social Studies, and Writing. Due to the length of the battery, the Listening Test was omitted from the battery.

Roberts (72, p. 53) reports the following reliability data:

The norms for the tests are based on the performance of students from a large number of schools, carefully chosen to be representative of the geographic areas of the nation. The Kuder-Richardson Formula 20 was used to estimate all of the reliabilities and standard errors of measurement for the six S T E P tests. The median reliabilities are .915 for reading, .865 for writing, ...,

.850 for science, .835 for mathematics,  
and .890 for social studies.

### The California Test of Personality (CTP)

This instrument was selected for the Ford Foundation School Dropout Research Project as the measuring device for personal and social adjustment. The instrument is divided into two major segments, personal and social adjustment. The six component parts for personal adjustment are self-reliance, sense of personal worth, sense of personal freedom, feelings of belonging, withdrawing tendencies, and nervous symptoms. The six component parts for social adjustment are social skills, anti-social tendencies, family relations, school relations, and community relations. A total adjustment score is derived by addition of the personal adjustment score and the social adjustment score. Reliability coefficients computed by the Kuder-Richardson formula for the twelve component scores range from .70 to .91. The reliability coefficients for personal adjustment, social adjustment, and total adjustment are .90, .89, and .93. As with most instruments of this type, validity is defended in terms of success in use rather than on data of a statistical nature (94, p. 5).

Due to the short fifteen item length of each component scale, the decision was made to drop these component scores

from consideration and to use only the personal adjustment, social adjustment, and total adjustment scores.

### IPAT Anxiety Scale Questionnaire (ASQ)

This test is a brief, objective, self-administrable questionnaire for the assessment of general free anxiety level. The test yields scores of covert or hidden anxiety and overt or symptomatic anxiety, as well as the total anxiety score. Five factors which group together as anxiety components are measured by this instrument. These factors are defective integration, ego weakness, suspiciousness or paranoid insecurity, guilt proneness, and frustrative tension or id pressure. The authors (18, p. 5) of this instrument describe it as a

...a brief, non-stressful, clinically valid questionnaire for measuring anxiety, applicable to all but the lowest educational levels and appropriate for ages of 14 or 15 years on upward throughout the adult range. The scale gives an accurate appraisal for free anxiety level, supplementing clinical diagnosis, and facilitating all kinds of research or mass screening operations where very little diagnostic or assessment time can be spent with each examinee.

The ASQ test manual reports reliability coefficients for test-retest, split-half, and Kuder-Richardson Formula 20 formulations ranging from .80 to .93. The test-retest reliability coefficient for the covert anxiety scale was .89, and for the overt anxiety scale was .82. No reliability information was reported for the other five anxiety components.

Cohen (22, p. 256) makes the following statement:

Evidence for the test's validity is varied and impressive. It rests first on the foundation of replicated factor-analytic researches involving not only questionnaire items but objective test and physiological measures, which established and cross-matched the anxiety factor. From these, 'construct' validity coefficients in the range .85 to .90 are claimed. These are multiple correlation functions of factor loadings and are therefore probably somewhat overstated. Nevertheless, they are high enough.

Cohen (22, p. 255) in the Sixth Mental Measurements Yearbook reports that the ASQ

...manual, although adequate by the standards of the Technical Recommendations, can provide only an overview of, and entry into, the research and theoretical background on which the test and its interpretation are based.

This limited overview is due to over a third of a century of both methodologically and clinically sophisticated large scale factor-analytic research.

Only the total anxiety, covert anxiety, and overt anxiety scores are considered in this investigation. Any other component score would be based on less than twenty items.

#### Rokeach's Dogmatism Scale, Form E

This instrument, selected by the present investigator, measures the degree of openness of closedness of an individual's belief-disbelief system. Dogmatism is formally defined by Rokeach (75, p. 3) as

...(a) a relatively closed cognitive organization of beliefs and disbeliefs about reality,  
(b) organized around a central set of beliefs

about absolute authority which, in turn,  
(c) provide a framework for patterns of  
intolerance toward others.

In essence, Rokeach would designate one's form of thinking as dogmatic to the extent to which his system is open or closed. More specifically, the extent to which the person can receive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside would determine the degree of dogmatism. Those who are highly dogmatic do not approach a new experience openly. They are defensive, insecure, and threatened. They are inclined to ignore, rationalize, project, distort, or narrow in their attempts to deal with a new experience (74). Dogmatic thinking and dogmatic believing makes possible the warding off of threatening aspects of reality which at the same time gives one the one the satisfaction of feeling that one understands it.

The Dogmatism Scale was developed and refined through several analyses until the present Form E with forty items evolved. Reliability is reported for this form for several different populations. They range from .64 for a group of Ohio State University Students via the test-retest method over a period of five months to a .93 coefficient for residents of a Veterans Administration domiciliary. Rokeach defends this level of reliability as quite satisfactory, especially if



some consideration be given to the fact that quite a strange collection of items are contained in the test (74).

Appendix A contains a copy of Rokeach's Dogmatism Scale, Form E.

### Experimental Treatment

The General Relationships Improvement Program is designed to provide human relations training in a school setting. In the use of this program, two individuals sit side by side and take turns reading the step-by-step instructions aloud and answering questions, discussing items, or going through other special exercises ranging from conversations to role-playing exercises, according to the printed instructions given in the program. The program contains ten sessions, each session consuming approximately one hour for the participants to complete.

The purpose of this program is to teach people to be open in their relationships with others and to show empathic understanding. The program contains two different sets of stimuli. First, there is the more conventional type of didactic frame where bits of pertinent information are presented to the participants. These frames take the forms of a frame with a blank, multiple choice frames, question frames, and informational frames requiring no answer. The second set of stimuli are interactive frames and include instructions for discussion, script reading, role-playing, and

"some less directive frames inserted to bring the participants into freer communication with each other" (6, p. 3). These sets of stimuli are combined to have the individuals intellectually understand the behaviors in addition to actually putting them into practice.

Wyckoff (106, p. 5) indicates that special instructions being the subjects into interaction with each other. Some of these are described below:

...subjects may be instructed at points to set the program aside and just talk to each other. At other points there are dialogues or little dramas where subjects take parts and read a script, or perhaps make up their own parts or a mixture of these. At other points they may be asked to discuss a particular topic, and even sometimes to sit in silence for a minute. These special instructions are carefully constructed to lead the subjects into experiencing some of the things that they are learning about in the program and to get some real life practice.

The authors (7, p. 3) of the General Relationships Improvement Program describe its content in the following manner:

In the first three sessions of the program it is pointed out that each participant is responsible in some measure for what the other will get out of this experience, and the main emphasis of the content of these sessions centers on things that the individual can do which will help his partner to get the most from the program. Attention is immediately focused on feelings as contrasted to facts, opinions, problems, etc., and on ways in which one may respond to another person's feelings.

.....  
Beginning in the third session and continuing through the sixth session the material is concerned with the crucial and complex relationship between expression of feelings and self-awareness and self-understanding. It is emphasized throughout that open expression of feelings is not always appropriate, but that advances in self-understanding occur most readily in situations where feelings are

not kept hidden.

. . . . .  
 In the next three sessions the program presents a series of concepts which are designed to stimulate the participants to look at themselves and their relationships with others from a new viewpoint. In each case they are prompted to stop and look at themselves and at each other in the light of the particular concepts involved. Definitions of self concept and self ideal are introduced and a distinction is made between the motivations for self-preservation and self-actualization.

. . . . .  
 In the final session of the program the learning process through which individual change takes place is examined. A distinction is made between intellectual understanding and 'internalizing' of a concept. This is seen as a gradual process which will continue after the program is finished. Participants are warned that they will inevitably revert to older habits, but that new learning is never entirely lost.

#### Statistical Procedures

Analyses of the data are completed in three major procedural operations. The first analyses are made for the experimental and three control groups using a multiple analysis of covariance (31)(66)(100). This statistical technique is a combination of analysis of variance and multiple regression techniques. This method enables one to draw conclusions about treatment effect after variables which affect the observation are adjusted statistically. This statistic allows the investigator to control for differences in intelligence, reading achievement, and pretest score results for the four groups while comparing differences exhibited on the posttest score results. The pretest and posttest score results are responses of the

individuals in experimental and control groups on the five subtests of the STEP, the social adjustment, personal adjustment, and total adjustment on the CTP, and overt anxiety, covert anxiety, and total anxiety on the ASQ.

The second set of analyses is made for the experimental group and the control group I, which includes only those individuals who completed the forty-three week academic program. The multiple analyses of covariance are used again with the concomitant variables being reading achievement, dogmatism, and the pretest score results for the two groups while comparing differences exhibited on the posttest score results. The pretest and posttest score results are the responses of the individuals in the experimental group and control group I on the five subtests of the STEP, the social adjustment, personal adjustment, and total adjustment on the CTP, overt anxiety, covert anxiety, and total anxiety on the ASQ, and dogmatism on Rokeach's Dogmatism Scale.

The third set of analyses is concerned with comparisons of the experimental group and control group I in relation to follow-up information concerning employment. Data which could be readily ranked are compared by the Mann-Whitney U statistic (85). Data of a nominal nature are compared using the Fisher exact probability statistic (85).

The first two chapters of this dissertation have presented the problem and its theoretical basis. This chapter specifies the design and methodology of the investigator.

Chapter IV will present the analyses of the investigation.

## CHAPTER IV

### RESULTS

#### Introduction

This chapter will present the findings of the statistical tests used to determine the significance of the results of this investigation. The .05 level of confidence will be used to determine significance on all tests. The alternate hypotheses specify direction of change for the variables under scrutiny; therefore, one-tailed tests of significance are employed. The three major headings which represent the three major statistical analyses will be presented: multiple analysis of covariance--four groups, multiple analysis of covariance--two groups, and nonparametric comparisons--two groups. A summary of the results will follow the presentation of the statistical analyses.

#### Multiple Analysis of Covariance--Four Groups

Data for the one experimental and three control groups were prepared for the Oklahoma State University Computing Center to be used on the IBM 7040 computer system. The multiple analysis of covariance program (45) was utilized. This program calculates the F ratio for the adjusted treatment means, the Beta coefficients and their standard errors

and t values, and the adjusted treatment means with their accompanying standard errors.

Garrett (41, p. 295) states the following concerning analysis of covariance:

Analysis of covariance represents an extension of analysis of variance to allow for the correlation between initial and final scores. Covariance analysis is especially useful to experimental psychologists when for various reasons it is impossible or quite difficult to equate control and experimental groups at the start: a situation which often obtains in actual experiments. Through covariance analysis one is able to effect adjustments in final or terminal scores which will allow for differences in some initial variable.

Most authors (41)(31)(58)(100), in explaining the application of the analysis of covariance, let the covariate score or initial score represent a pretest score. In the present analysis, the pretest score is used as a covariable, but the GATB "g" and the STEP Reading pretest score are also used as covariables for the dependent variable. This dependent variable is the posttest score for whatever construct that is under consideration as being affected by the experimental treatment.

The findings for five academic achievement variables are presented in Table II. The differences in the number of degrees of freedom in Table II are due to two factors. There are only two covariates used in the analysis of covariance for the STEP Reading posttest variable. Therefore, one less degree of freedom is subtracted from the total degrees of freedom. For the Writing, Mathematics, and Science subtests of the STEP, one less observation is available since one

TABLE II  
ANALYSIS OF COVARIANCE FOR FIVE ACADEMIC  
ACHIEVEMENT VARIABLES--FOUR GROUPS

Source of Variation	Adjusted Sum of Squares	df	Variance Estimate	F	p
<u>Reading<sup>a</sup></u>					
Total	3197.967	60			
Between	30.976	3	10.325	0.18	.90 < p < .95
Within	3166.991	57	55.561		
<u>Writing<sup>b</sup></u>					
Total	2792.488	58			
Between	234.274	3	78.091	1.67	.10 < p < .25
Within	2558.214	55	46.513		
<u>Social Studies<sup>c</sup></u>					
Total	3785.778	59			
Between	87.849	3	29.283	0.43	.50 < p < .75
Within	3697.929	56	66.034		
<u>Mathematics<sup>d</sup></u>					
Total	2212.838	58			
Between	95.794	3	31.931	0.83	.25 < p < .50
Within	2117.044	55	38.491		
<u>Science<sup>e</sup></u>					
Total	3103.545	58			
Between	240.505	3	80.168	1.54	.10 < p < .25
Within	2863.040	55	52.055		

- a Concomitant variables were GATB g and STEP Reading, pretest.
- b Concomitant variables were GATB g, STEP Reading, and STEP Writing pretest.
- c Concomitant variables were GATB g, STEP Reading, and STEP Social Studies pretest.
- d Concomitant variables were GATB g, STEP Reading, and STEP Mathematics pretest.
- e Concomitant variables were GATB g, STEP Reading, and STEP Science pretest.



individual did not complete these subtests. Therefore, the number of degrees of freedom is reduced by one. None of the F ratios and their associated probabilities for the five achievement variables is large enough to warrant adjustment of the means for further comparisons.

The findings for the personal and social adjustment variables are presented in Table III. None of the F ratios and their associated probabilities for the three CTP adjustment variables is large enough to warrant adjustment of the means for further comparisons.

Table IV presents the findings for the three anxiety variables. None of the F ratios and their associated probabilities for the three anxiety variables is large enough to warrant adjustment of the means for further comparisons.

#### Multiple Analysis of Covariance--Two Groups

Data for the experimental and control group I were prepared for the Oklahoma State University Computing Center to be used by the IBM 7040 computer system. The multiple analysis of covariance program (45) was employed.

The decision to compare these two groups relates to the experimental design of this investigation. One area of commonality within the investigative population is their membership in the Ford Foundation School Dropout Research Project's training group which received forty-three weeks of academic or academic-vocational training. The major area of difference lies in the application of the experimental

TABLE III  
ANALYSIS OF COVARIANCE FOR PERSONAL AND SOCIAL  
ADJUSTMENT VARIABLES--FOUR GROUPS

Source of Variation	Adjusted Sum of Squares	df	Variance Estimate	F	p
<u>Personal</u>					
<u>Adjustment<sup>a</sup></u>					
Total	3679.874	59			
Between	82.733	3	27.577	0.43	.50 < p < .75
Within	3597.141	56	64.234		
<u>Social</u>					
<u>Adjustment<sup>b</sup></u>					
Total	4173.962	59			
Between	70.954	3	23.651	0.32	.75 < p < .90
Within	4103.008	56	73.268		
<u>Total</u>					
<u>Adjustment<sup>c</sup></u>					
Total	11611.312	59			
Between	224.498	3	74.832	0.36	.75 < p < .90
Within	11386.814	56	203.336		

a Concomitant variables were GATB g, STEP Reading, and CTP Personal Adjustment pretest.

b Concomitant variables were GATB g, STEP Reading, and CTP Social Adjustment pretest.

c Concomitant variables were GATB g, STEP Reading, and CTP Total Adjustment pretest.

TABLE IV  
ANALYSIS OF COVARIANCE FOR COVERT, OVERT, AND  
TOTAL ANXIETY VARIABLES--FOUR GROUPS

Source of Variation	Adjusted Sum of Squares	df	Variance Estimate	F	p
<u>Covert</u>					
<u>Anxiety<sup>a</sup></u>					
Total	976.351	59			
Between	41.196	3	13.732	0.82	.25 < p < .50
Within	935.155	56	16.732		
<u>Overt</u>					
<u>Anxiety<sup>b</sup></u>					
Total	1825.229	59			
Between	81.857	3	27.285	0.87	.25 < p < .50
Within	1743.372	56	31.131		
<u>Total</u>					
<u>Anxiety<sup>c</sup></u>					
Total	3845.247	59			
Between	256.246	3	85.386	1.33	.25 < p < .50
Within	3589.087	56	64.090		

a Concomitant variables were GATB g, STEP Reading, and ASQ Covert Anxiety pretest.

b Concomitant variables were GATB g, STEP Reading, and ASQ Overt Anxiety pretest.

c Concomitant variables were GATB g, STEP Reading, and ASQ Total Anxiety pretest.

treatment, the General Relationships Improvement Program. Control groups II and III differ in that they did not receive the academic training for forty-three weeks.

A Pearson product-moment coefficient of correlation was computed between the GATB "g" score and the STEP Reading pretest score. This coefficient of correlation  $r$  equals 0.68. This coefficient would imply that the GATB "g" and the STEP Reading pretest are measuring, to a large extent, the same variable. Therefore, the decision was made to use only the STEP Reading pretest of these two constructs as a covariable. In addition, the pretest score of the construct under examination was also used as a covariable.

A third covariable used in this analysis was the pretest Dogmatism score. Rokeach (74) had indicated that there is a differential effect of dogmatism upon the relative degree of openness or closedness of an individual's belief-disbelief system. The more dogmatic person is less likely to change his views substantially when contrasted to the person with a lower level of dogmatism.

Table V presents the findings of the analysis of covariance for five academic achievement variables for the experimental group and control group I. The difference in the number of degrees of freedom in Table V are due to two factors. There are only two covariates used in the analysis of covariance for the STEP Reading posttest variable. One less degree of freedom, therefore, is subtracted from the total degrees of freedom. For the Writing, Mathematics,

TABLE V  
ANALYSIS OF COVARIANCE FOR FIVE ACADEMIC  
ACHIEVEMENT VARIABLES--TWO GROUPS

Source of Variation	Adjusted Sum of Squares	df	Variance Estimate	F	p
<u>Reading<sup>a</sup></u>					
Total	1606.414	34			
Between	1.974	1	1.974	0.04	.75 < p < .90
Within	1604.440	33	48.619		
<u>Writing<sup>b</sup></u>					
Total	1710.922	32			
Between	65.863	1	65.863	1.24	.25 < p < .50
Within	1645.059	31	53.066		
<u>Social Studies<sup>c</sup></u>					
Total	1136.605	33			
Between	7.359	1	7.359	0.21	.50 < p < .75
Within	1129.246	32	35.288		
<u>Mathematics<sup>d</sup></u>					
Total	1494.527	32			
Between	130.383	1	130.383	2.96	.05 < p < .10
Within	1364.144	31	44.004		
<u>Science<sup>e</sup></u>					
Total	1864.387	32			
Between	2.700	1	2.700	0.04	.75 < p < .90
Within	1861.687	31	60.054		

- a. Concomitant variables were Dogmatism and STEP Reading pretest.
- b. Concomitant variables were Dogmatism, STEP Reading, and STEP Writing pretest.
- c. Concomitant variables were Dogmatism, STEP Reading, and STEP Social Studies pretest.
- d. Concomitant variables were Dogmatism, STEP Reading, and STEP Mathematics pretest.
- e. Concomitant variables were Dogmatism, STEP Reading, and STEP Science pretest.

and Science subtests of the STEP, one less observation is available since one individual did not complete these subtests. Therefore, the number of degrees of freedom is reduced by one. None of the  $F$  ratios and their associated probabilities for five achievement variables is large enough to indicate a significant difference between the two adjusted means for the dependent variable, the adjusted posttest means.

The findings for the personal and social adjustment variables are presented in Table VI. None of the  $F$  ratios and their associated probabilities for the three CTP adjustment variables is large enough to indicate a significant difference in the adjusted posttest means for the two groups.

Table VII presents the findings for the three anxiety variables. None of the  $F$  ratios and their associated probabilities for the three anxiety variables is large enough to indicate a significant difference in the adjusted posttest means for the two groups.

Table VIII presents the findings for the analysis of covariance for the dogmatism variable. The  $F$  ratio and its associated probability is not large enough to indicate a significant difference in the adjusted posttest means for the two groups. However, since this  $F$  ratio was the only statistic relevant to the dogmatism posttest scores between the two groups, a further analysis of covariance was made using the pretest dogmatism score as the dependent variable and the STEP Reading score as the independent variable for

TABLE VI  
ANALYSIS OF COVARIANCE FOR PERSONAL AND SOCIAL  
ADJUSTMENT VARIABLES--TWO GROUPS

Source of Variation	Adjusted Sum of Squares	df	Variance Estimate	<u>F</u>	<u>p</u>
<u>Personal</u>					
<u>Adjustment<sup>a</sup></u>					
Total	2572.573	33			
Between	168.611	1	168.611	2.24	.10 < p < .25
Within	2403.962	32	75.123		
<u>Social</u>					
<u>Adjustment<sup>b</sup></u>					
Total	1691.072	33			
Between	23.670	1	23.670	0.45	.50 < p < .75
Within	1667.402	32	52.106		
<u>Total</u>					
<u>Adjustment<sup>c</sup></u>					
Total	6635.968	33			
Between	286.725	1	286.725	1.45	.10 < p < .25
Within	6349.243	32	198.413		

a. Concomitant variables were Dogmatism, STEP Reading, and CTP Personal Adjustment pretest.

b. Concomitant variables were Dogmatism, STEP Reading, and CTP Social Adjustment pretest.

c. Concomitant variables were Dogmatism, STEP Reading, and CTP Total Adjustment pretest.

TABLE VII  
ANALYSIS OF COVARIANCE FOR COVERT, OVERT, AND  
TOTAL ANXIETY VARIABLES--TWO GROUPS

Source of Variation	Adjusted Sum of Squares	df	Variance Estimate	<u>F</u>	<u>p</u>
<u>Covert</u>					
<u>Anxiety<sup>a</sup></u>					
Total	691.383	33			
Between	.974	1	0.974	0.05	.75 < p < .90
Within	690.409	32	21.575		
<u>Overt</u>					
<u>Anxiety<sup>b</sup></u>					
Total	916.307	33			
Between	10.810	1	10.810	0.38	.50 < p < .75
Within	905.307	32	28.290		
<u>Total</u>					
<u>Anxiety<sup>c</sup></u>					
Total	2165.526	33			
Between	.434	1	0.434	0.01	.90 < p < .95
Within	2165.092	32	67.659		
<p>a Concomitant variables were Dogmatism, STEP Reading, and ASQ Covert Anxiety pretest.</p> <p>b Concomitant variables were Dogmatism, STEP Reading, and ASQ Overt Anxiety pretest.</p> <p>c Concomitant variables were Dogmatism, STEP Reading, and ASQ Total Anxiety pretest.</p>					



TABLE VIII  
ANALYSIS OF COVARIANCE FOR DOGMATISM--TWO GROUPS

Source of Variation	Adjusted Sum of Squares	df	Variance Estimate	F	p
<u>Dogmatism<sup>a</sup></u>					
Total	12559.511	34			
Between	582.169	1	582.169	1.60	.10 < p < .25
Within	11977.342	33	362.949		
<u>Dogmatism<sup>b</sup></u>					
Total	20325.192	35			
Between	3083.374	1	3083.374	6.08	.01 < p < .025
Within	17241.818	34	507.112		

a. Concomitant variables were STEP Reading and Dogmatism pretest.

b. Concomitant variable was STEP Reading and dependent variable was Dogmatism pretest.

TABLE IX  
TREATMENT MEANS DERIVED FROM ANALYSIS OF COVARIANCE  
FOR DOGMATISM PRETEST AND DOGMATISM POSTTEST

	Dogmatism Pretest		Dogmatism Posttest	
	Treatment Mean	Adjusted Treatment Mean	Treatment Mean	Adjusted Treatment Mean
Experimental Group	188.85	184.13	167.95	157.09
Control Group	158.58	164.13	153.76	166.53

the same two groups. This analysis is presented in Table VIII.

Table IX presents the mean dogmatism score and the adjusted mean dogmatism score based on the covariance analyses presented in Table VIII. These two sets of scores are given for the experimental group and the control group I. The first F ratio in Table VIII indicates that the final posttest comparison between groups approaches significance in the expected direction, that is, the adjusted mean for the dogmatism posttest is less for the experimental group than the control group. However, when the dogmatism pretest is used as the dependent variable, the F ratio is significant at the .025 level of confidence with the control group being less dogmatic. A perusal of the adjusted means within the same group shows a considerable change in the expected direction for the experimental group, but almost no change for the control group.

Appendix B gives the means for all pretests and posttests of the variables under consideration for the experimental group and control group I. The differences between the mean pretest scores and the mean posttest scores are shown. In addition, the posttest means after adjusting for STEP Reading, Dogmatism, and pretest scores, are shown. The differences between the adjusted posttest means and the pretest means are provided. All but the STEP Mathematics and the anxiety variables give results which favor the experimental group.

### Non-Parametric Comparisons--Two Groups

Information was collected effective February 1, 1966, concerning the employment record since June 1, 1965, of the individuals in the experimental group and control group I. From the thirty-seven individuals who originally were assigned to one of these two groups, twenty-eight were located to provide information relative to the following employment variables selected as relevant measures of employment stability and success of workers: (1) a more stable employment record, (2) a longer period of employment, and (3) a higher wage. Darley and Hagenah (28, p. 9) provide justification for these variables when they report that individuals at the "lower occupational levels stress as sources of satisfaction economic factors, security, a chance to get ahead, a need for recognition as persons." Satisfaction stems from sources external to the work. The ability to interact successfully with other individuals is at the base of job satisfaction criteria. Darley and Hagenah (28, p. 11) further report:

More and more our society is trying to define the working situation as a setting in which the individual may find the social meaning and dignity and sense of participation that are important and basic needs of all men.

The first of these variables is the number of jobs held by the individuals during the eight months following the completion of a retraining program. The number varied from no jobs held to three jobs held. These data are presented in Table X. The decision was made to combine the individuals

with one or two jobs as evidencing a greater degree of job stability and success than the individuals from the no job and three job classifications. The Fisher exact probability statistic (85) was computed for the combined set of data, as illustrated in Table X. The probability that the above set of observations would occur by chance is .17.

TABLE X  
NUMBER OF JOBS HELD DURING EIGHT MONTH PERIOD

	No Job	One Job	Two Jobs	Three Jobs	One or Two Jobs	No or Three Jobs	Total Jobs
Experimental Group	4	3	7	1	10	5	15
Control Group	7	4	2	0	6	7	13
Total	11	7	9	1	16	12	28

The second of these employment variables deals with the number of weeks worked on the longest job held during the eight month period under consideration. Table XI presents the pertinent information for the experimental group and control group I. The Mann-Whitney U statistic (85) was computed using the normal distribution as the basis of the test of significance for the two groups on average length of employment. The probability of an obtained z score of  $\pm .99$  occurring by chance is .16.

TABLE XI  
MANN-WHITNEY U ANALYSIS OF LENGTH OF EMPLOYMENT

	Control Group	Experimental Group	<u>z</u> score	<u>p</u>
Number of Individuals	13	15		
Sum of Ranks	167	239		
Average Rank	12.85	15.93	$\pm 1.99$	$p = .16$

The third employment variable deals with the salary per hour on the longest job held by the individuals in the experimental group and control group I. Table XII presents the relevant information for these two groups. The Mann-Whitney U statistic (85) was computed using the normal distribution as the basis of the test of significance for the two groups on the average amount of hourly salary. The probability of an obtained z score of  $\pm 1.45$  occurring by chance is .07.

TABLE XII  
MANN-WHITNEY U ANALYSIS OF AMOUNT OF HOURLY SALARY

	Control Group	Experimental Group	<u>z</u> score	<u>p</u>
Number of Individuals	13	15		
Sum of Ranks	157	239		
Average Rank	12.07	15.93	$\pm 1.45$	$p = .07$

## SUMMARY AND DISCUSSION OF FINDINGS

In the course of this investigation statistical tests were made of five major hypotheses. The first three of these hypotheses were tested using four groups, the experimental group and the three control groups. These same three hypotheses were further tested employing only two groups, the experimental group and control group I. Hypotheses four and five were tested utilizing the experimental group and control group I. The data upon which these statistical tests were made were from a total of sixty-three high school dropouts who were originally eligible for the Ford Foundation School Dropout Research Project. From their original eligibility, four groups of high school dropouts evolved which provided the basic design for this investigation.

In this section, the five major hypotheses of the investigation are restated. A summary and discussion of the results of the statistical tests of these hypotheses is then presented.

1. The use of the General Relationships Improvement Program will result in a significant reduction of anxiety for the experimental group as measured by the IPAT Anxiety Scale Questionnaire.
2. The use of the General Relationships Improvement Program will result in a significant improvement in achievement for the experimental group as measured by the Sequential Tests of Educational Progress.

3. The use of the General Relationships Improvement Program will result in a significant improvement of the personal and social adjustment of the experimental group as measured by the California Test of Personality.
4. The use of the General Relationships Improvement Program will result in a significant opening of the belief-disbelief system of the experimental group as measured by Rokeach's Dogmatism Scale.
5. The use of the General Relationships Improvement Program will result in a greater proportion of employment success for the experimental group as evidenced by a more stable employment record, by a longer period of employment, and by a higher wage.

Using the analysis of covariance, no significant F ratios were obtained on a between group basis for the covert anxiety, overt anxiety, or total anxiety scores of the ASQ. No specific trends can be discerned when reference is made to the difference scores between pretest means and adjusted posttest means for the experimental group. However, the difference scores for control group I indicated a slightly lower level of anxiety. Perhaps, the individuals in control group I have become more complacent.

Although the analysis of covariance does not provide any significant F ratios for the five achievement subscales of the STEP, some subscales do approach statistical

significance. A perusal of the pretest means and the posttest means, after adjustment for pretest scores, STEP Reading, and dogmatism, indicates that all of the STEP difference scores are in the expected direction for the experimental group except for the STEP Mathematics subscale. The greatest difference between the experimental group and control group I occurs on the STEP Reading subscale. Perhaps, an indirect benefit for the experimental group has been an increase in reading skills.

When one considers that the individuals in the experimental group were removed approximately ten hours from their academic classes, this trend of a greater gain in the expected direction for the experimental group might have added importance.

For the two group comparisons, in the analysis of covariance procedure culminating in the F test, the personal adjustment and total adjustment scales approach significance at the .10 level. The trend of the results supports the hypothesized direction of change for the experimental group. When the pretest mean is subtracted from the posttest mean, after adjustment for the pretest score, STEP Reading, and dogmatism, all three of the adjustment variables show gains supporting the experimental group.

The F test derived from the analysis of covariance for the dogmatism variable approaches significance at the .10 level. The trend of the adjusted mean is in the expected direction for the experimental group. When the pretest



mean is subtracted from the posttest mean, after adjustment for the pretest score and STEP Reading, the dogmatism variable is in the hypothesized direction for the experimental group.

Results of the nonparametric statistical tests on the three employment variables are not significant at the .05 level. However, all three employment variables approach significance. The trend of the results, in each case, is in the hypothesized direction for the experimental group.

If the above results are viewed in overall perspective, four of five STEP achievement variables, all adjustment variables, the dogmatism variable, and all three of the employment variables are in the expected direction for the experimental group. The only variables which do not provide support for the experimental group are the anxiety variables measured by the ASQ. Cattell and Scheier (18, p. 10) report that raw scores from 20 to 43 for teen-age high school students indicates an "average degree of anxiety." Since the adjusted posttest means of the experimental group and control group I on the total anxiety variable are within this specified range of scores, perhaps the anxiety construct is not a critical construct for this investigation. The anxiety construct is not polarized at an extreme point on the measured continuum and, as such, is less amenable to change. In this manner of thinking, indirect support may be indicated for the experimental group since anxiety, as an energizer, may favor the experimental group's continued

improvement.

Another factor which might invalidate the use of the ASQ has been discussed by Rotter (78). This factor relates to the question of the constructs used in the theory and the constructs which the tests were developed to measure. As Rotter points out (78, p. 112).

In many instances rather than devising tests which measure specific theoretical constructs which are carefully defined and for which the test behavior can be understood as a logical referent, the descriptive constructs used to classify test response do not logically relate to the new theoretical constructs but are bent or twisted to measure the new variables.

The years of factor analytic research for the ASQ may well have provided an instrument which measures some construct quite well, but which does not measure anxiety as defined by Rotter's social learning theory.

The results of the statistical tests are not significant. Nevertheless, a strong trend is indicated in the expected direction for the experimental group on most of the variables. This trend points toward possible benefits derived from the use of the General Relationships Improvement Program by the experimental group.

That the trend of the findings offers support for the experimental group, but without significant results, needs some elaboration. All of the dependent variables, except those concerned with post program employment, were obtained within two months of the completion of the experimental treatment. With the findings in the expected direction at this point, one might inquire as to the possible measurement

of the dependent variables in a future time. Would the trends continue over a period of time to the point where they would give significant results in favor of the experimental group?

## CHAPTER V

### SUMMARY, LIMITATIONS, AND CONCLUSIONS

The principle objective of this study is to determine the effects of some programmed dyadic materials on a selected group of high school dropouts. The purpose of the programmed dyadic materials is to teach people to be open in their relationships with others and to show empathic understanding. These materials are designed to provide human relations training in a school setting.

The rationale for this investigation is based on two basic factors: (1) there is a need for new and improved group procedures for school counselors, and (2) in the world of work, there is a need for a satisfactory interpersonal relationship with other individuals.

The social learning theory of Julian B. Rotter (76)(77) and the theoretical concept of the dyad as presented by Georg Simmel (102)(103) were discussed as the major underlying theoretical bases for this study.

The subjects for this investigation were drawn from an ongoing retraining program for high school dropouts sponsored by the Manpower Development and Training Act of 1962 and the Ford Foundation. These school dropouts (ages 17-22) were selected from a pool in excess of 2,000 youth in the

Oklahoma City area who had been out of school one or more years and who had scored at or above certain minimum aptitude levels as measured by the General Aptitude Test Battery.

From the Ford Foundation retraining program which provided forty-three weeks of academic classroom instruction, either with or without vocational training, the experimental group and control group I were selected. Twenty individuals were assigned by sex to the experimental group to form seven pairs of females and three pairs of males. The remaining portion of the individuals in the academic program served as control group I.

Control group II was composed of those students who were initially in the academic program, but who withdrew prior to completing 15 percent of their training. Control group III was composed of individuals who received no training in the Ford Foundation project.

The experimental plan for this project was a pretest-posttest control group design. The individuals in the experimental and three control groups were administered a pretest and a posttest on the following instruments: (1) California Test of Personality, Secondary Level, (2) IPAT Anxiety Scale Questionnaire, and (3) Sequential Tests of Educational Progress, Form 3. In addition, the experimental group and control group I were administered Rokeach's Dogmatism Scale prior to the use of the General Relationships Improvement Program (experimental treatment) and again following the completion of the experimental treatment by

the experimental group.

Follow-up information of a nominal or an ordinal nature concerning wages and length of employment for the experimental and control group I was collected eight months after completion of the Ford Foundation retraining program.

Analyses of the data were completed in three major operations. The first analyses were made for the experimental and three control groups using a multiple analysis of covariance. This statistic allowed the investigator to control for differences in intelligence, reading achievement, and pretest scores for the four groups while comparing differences exhibited on the posttest scores. The pretest and posttest scores are the responses of the individuals in all four groups on the five subtests of the STEP, the social adjustment, personal adjustment, and total adjustment on the CTP, and overt anxiety, covert anxiety, and total anxiety on the ASQ.

The second set of analyses was made for the experimental group and control group I. The multiple analysis of covariance was again employed with the concomitant variables being reading achievement, dogmatism, and pretest scores while comparing differences exhibited on the posttest scores for the two groups. In addition to the dependent variables in the first set of analyses, the dogmatism variable was also employed as a dependent variable in the second set of analyses.

The third set of analyses was concerned with comparisons

of the experimental group and control group I in relation to follow-up information concerning employment. The Mann-Whitney U and the Fisher exact probability statistics were employed for these comparisons.

#### Limitations

In interpreting the findings of this investigation, the reader should be aware of certain limitations which are inherent. A brief discussion of the factors which may have influenced the findings of this study will be presented.

One of the advantages of the investigation reported herein is that it deals with a specific type of population, namely high school dropouts who have recognized the need for further training, and who are attempting to satisfy this need. Yet no conclusive evidence is available to indicate that those who are pursuing training in this project are typical of the larger group of dropouts on a statewide basis or a national basis. As such, there is no statistical evidence to indicate that this group of high school dropouts is atypical.

Another variable affecting the interpretation of these results is the unavoidably small sample size. This study, as completed, includes all of the available population for each of the four groups under consideration. No student was omitted from the study who met the criteria for the experimental group or any one of the three control groups.

Another consideration in interpreting the results of

this investigation is the Hawthorne effect (107). The experimental group realized that they were participating in a study which could have affected the results. However, their contact with this investigator before and after he administered the sessions was much less than might have transpired had a counselor been employed instead of the programmed dyadic materials. In a normal school setting, this activity might be considered a regular portion of the daily school routine and, therefore, attract little special attention. A second point related to the Hawthorne effect which might confound the results of the present investigation is that the individuals in control group I, as well as the experimental group, were all participants in the Ford Foundation School Dropout Research Project. In addition, members of control group I were in small classes each day with members of the experimental group. It was not feasible, methodologically, to attempt to measure the Hawthorne effect.

Another variable which might have influenced the interpretation of the present findings is the reading comprehension level of the members of the experimental group. Their mean pretest STEP Reading score was 35.80 as opposed to 44.88 on the same measure for control group I. The control group had higher reading achievement scores. An attempt was made to statistically control this reading variable by the use of the analysis of covariance technique.

The lack of optimum facilities for appropriate utilization of the experimental treatment undoubtedly has influenced



the interpretation of the findings of this investigation. A variety of rooms was utilized for the dyadic sessions. Some rooms allowed relatively few interruptions from any source of disturbance, whereas other rooms permitted frequent interruptions of the programmed sessions.

### Conclusions and Recommendations

In view of the limitations discussed in the preceding section, an interpretation of the results of this study should be conservatively stated.

Through analysis of covariance techniques, between group comparisons were made first for the experimental group and the three control groups. There were no statistically significant findings for the comparisons on any of the dependent variables--academic achievement, personal and social adjustment, or anxiety. No specific trends could be discerned which could be attributed to the experimental treatment.

Through analysis of covariance techniques, between group comparisons were made for the experimental group and control group I. The results of the statistical tests are not significant, although the general tendency of the experimental group to excel over the control group in terms of the dependent variables provides some support for continued investigations with the General Relationships Improvement Program.

On the basis of this study, it appears that more

extensive investigation is needed and justified to determine the value of the General Relationships Improvement Program as a tool for the school counselor and for the research worker. More specifically, longitudinal follow-up studies should be made in an effort to determine if participants who receive this type of experimental treatment are actually more successful in their interpersonal relations with other individuals. The experimental conditions should be more rigidly controlled to eliminate some of the sources of error which confound the results of this type of investigation. Only when these conditions are available will a measure of certainty be attained concerning the effectiveness of the programmed human relations training employed in this investigation.

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APPENDIX A

## ROKEACH'S DOGMATISM SCALE

## FORM E

The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

## CODE:

+1: I Agree A Little	-1: I Disagree A Little
+2: I Agree On The Whole	-2: I Disagree On The Whole
+3: I Agree Very Much	-3: I Disagree Very Much

Respond to each statement in the left margin according to how much you agree or disagree with it.

## EXAMPLE:

(+3) +2 +1 -1 -2 -3 (1) All youth should be educated.

In this example the respondent agreed very much with this statement.

PLEASE RESPOND TO EVERY QUESTION. CIRCLE ONLY ONE NUMBER.

- +3 +2 +1 -1 -2 -3 1. The United States and Russia have just about nothing in common.
- +3 +2 +1 -1 -2 -3 2. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.
- +3 +2 +1 -1 -2 -3 3. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.
- +3 +2 +1 -1 -2 -3 4. It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes.
- +3 +2 +1 -1 -2 -3 5. Man on his own is a helpless and miserable creature.
- +3 +2 +1 -1 -2 -3 6. Fundamentally, the world we live in is a pretty lonesome place.
- +3 +2 +1 -1 -2 -3 7. Most people just don't give a "damn" for others.
- +3 +2 +1 -1 -2 -3 8. I'd like it if I could find someone who would tell me how to solve my personal problems.
- +3 +2 +1 -1 -2 -3 9. It is only natural for a person to be rather fearful of the future.
- +3 +2 +1 -1 -2 -3 10. There is so much to be done and so little time to do it in.
- +3 +2 +1 -1 -2 -3 11. Once I get wound up in a heated discussion I just can't stop.
- +3 +2 +1 -1 -2 -3 12. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.
- +3 +2 +1 -1 -2 -3 13. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.
- +3 +2 +1 -1 -2 -3 14. It is better to be a dead hero than to be a live coward.

- +3 +2 +1 -1 -2 -3 15. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespeare.
- +3 +2 +1 -1 -2 -3 16. The main thing in life is for a person to want to do something important.
- +3 +2 +1 -1 -2 -3 17. If given the chance I would do something of great benefit to the world.
- +3 +2 +1 -1 -2 -3 18. In the history of mankind there have probably been just a handful of really great thinkers.
- +3 +2 +1 -1 -2 -3 19. There are a number of people I have come to hate because of the things they stand for.
- +3 +2 +1 -1 -2 -3 20. A man who does not believe in some great cause has not really lived.
- +3 +2 +1 -1 -2 -3 21. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.
- +3 +2 +1 -1 -2 -3 22. Of all the different philosophies which exist in this world there is probably only one which is correct.
- +3 +2 +1 -1 -2 -3 23. A person who get enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of person.
- +3 +2 +1 -1 -2 -3 24. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.
- +3 +2 +1 -1 -2 -3 25. When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.
- +3 +2 +1 -1 -2 -3 26. In times like these, a person must be pretty selfish if he considers primarily his own happiness.
- +3 +2 +1 -1 -2 -3 27. The worst crime a person could commit is to attack publicly the people who believe in the same thing he does.



- +3 +2 +1 -1 -2 -3 28. In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp.
- +3 +2 +1 -1 -2 -3 29. A group which tolerates too much differences of opinion among its own members cannot exist for long.
- +3 +2 +1 -1 -2 -3 30. There are two kinds of people in this world: those who are for the truth and those who are against the truth.
- +3 +2 +1 -1 -2 -3 31. My blood boils whenever a person stubbornly refuses to admit he's wrong.
- +3 +2 +1 -1 -2 -3 32. A person who thinks primarily of his own happiness is beneath contempt.
- +3 +2 +1 -1 -2 -3 33. Most of the ideas which get printed nowadays aren't worth the paper they are printed on.
- +3 +2 +1 -1 -2 -3 34. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.
- +3 +2 +1 -1 -2 -3 35. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.
- +3 +2 +1 -1 -2 -3 36. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.
- +3 +2 +1 -1 -2 -3 37. The present is all too often full of unhappiness. It is only the future that counts.
- +3 +2 +1 -1 -2 -3 38. If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."
- +3 +2 +1 -1 -2 -3 39. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what's going on.

+3 +2 +1 -1 -2 -3 40. Most people just don't know what's  
good for them.

APPENDIX B

PRETEST, POSTTEST, AND ADJUSTED POSTTEST MEANS, AND DIFFERENCES OF PRETEST MEANS  
SUBTRACTED FROM POSTTEST MEANS AND FROM ADJUSTED POSTTEST MEANS

	Pretest Means	Posttest Means	Differences between Pretest & Posttest	Adjusted Posttest Means	Difference between Pretest & Adjusted Post- test Means
<u>Achievement Variables</u>					
<u>Reading</u>					
Experimental	35.80	42.00	+ 6.20	45.87	+ 10.07
Control	44.88	49.88	+ 5.00	45.32	+ .44
<u>Writing</u>					
Experimental	29.10	29.73	+ 0.63	32.69	+ 3.59
Control	34.94	39.23	+ 4.29	35.92	+ .98
<u>Social Studies</u>					
Experimental	40.45	37.45	- 3.00	41.57	+ 1.12
Control	47.06	45.35	- 1.71	40.50	- 6.56
<u>Mathematics</u>					
Experimental	20.60	21.32	+ 0.72	22.49	+ 1.89
Control	24.35	28.35	+ 4.00	27.03	+ 2.68
<u>Science</u>					
Experimental	30.75	29.89	- 0.86	32.72	+ 1.97
Control	37.59	35.23	- 2.36	32.07	- 5.52

	Pretest Means	Posttest Means	Differences between Pretest & Posttest	Adjusted Posttest Means	Difference between Pretest & Adjusted Posttest Means
<u>Adjustment Variables</u>					
<u>Personal</u>					
Experimental	63.60	66.25	+ 2.65	68.33	+ 4.73
Control	61.82	65.58	+ 3.76	63.13	+ 1.31
<u>Social</u>					
Experimental	67.90	66.40	- 1.50	68.53	+ .63
Control	67.47	69.11	+ 1.64	66.60	- .87
<u>Total</u>					
Experimental	131.50	132.65	+ 1.15	136.69	+ 5.19
Control	129.29	134.70	+ 5.41	129.94	+ .65
<u>Anxiety Variables</u>					
<u>Covert Anxiety</u>					
Experimental	15.75	16.10	+ .35	16.31	+ .56
Control	17.47	16.18	- 1.29	15.92	- 1.55
<u>Overt Anxiety</u>					
Experimental	16.55	17.10	+ .55	16.26	- .29
Control	18.23	16.59	- 1.64	17.57	- .66
<u>Total Anxiety</u>					
Experimental	32.30	33.20	+ .90	32.87	+ .57
Control	35.70	32.76	- 2.94	33.14	- 2.56

	Pretest Means	Posttest Means	Differences between Pretest & Posttest	Adjusted Posttest Means	Difference between Pretest & Adjusted Post- test Means
<u>Dogmatism Variable</u>					
<u>Dogmatism</u>					
Experimental	188.85	167.95	-20.90	157.09	- 31.76
Control	158.58	153.76	- 4.82	166.53	+ 7.95

VITA

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Doctor of Education

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