THE EFFECTS OF SYSTEMATIC TRAINING ON PARAPROFESSIONALS' PROBLEM-SOLVING COMPETENCE IN COUNSELING INTERACTIONS

BY

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(ABSTRACT)

There is considerable agreement that additional training and research is needed in problem-solving, an advanced counselor skill. This study assessed the effect of systematic problem-solving training on paraprofessionals' competence in counseling interactions with coached "clients." Two groups of 36 students, enrolled in two counseling courses, formed the experimental and control groups. The experimental design consisted of pre- and two postassessments of problem-solving variables. Treatment included didactic presentations and directed practice in five 2-1/2 hour sessions using Robert Carkhuff's model. Data from the two groups was compared using an instrument developed specifically for this study. A pilot test was run to determine reliability of the instrument. Results from the experiment indicate a statistically significant difference between the two groups at the .01 level of significance. It was concluded that Carkhuff's systematic training does make a positive difference in trainees' problem-solving competence. The instrument was found to be reliable, however, continued research is suggested.

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IN MEMORY

OF

MY MOTHER

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CHAPTER 1

Since the beginning of the twentieth century investigators have been trying to clarify the essential variables in the problem-solving process (Heppner, 1978) and problem-solving has now been conceptualized as a group of cognitive abilities which occur in sequential stages (Heppner, Neal, Larson, 1984). This process involves specific skills which are concrete and teachable, enabling people to make constructive changes in their lives. There appears to be consensus that training in problem-solving is essential for counselors (Laquatra, Danish, D'Augelli, 1983), but empirical research on this training has not been substantial and has often focussed too narrowly on vocational decisions to the exclusion of other types of problems. In order to understand the role of problem-solving in counseling, it is useful to examine the roots of counseling and the changes the field has undergone.

Two Important Movements in America: Counseling-Guidance and Mental Health

The early focus of the counseling movement was on vocational development which owed much of its impetus to Parsons in the early part of this century (Gladding, 1985). In 1908, Parsons organized the Boston Vocational Bureau to provide vocational guidance for young people and to train teachers to function as guidance counselors. The vocational

movement focused on the healthy person and his/her positive adjustment (Gladding, 1985). By 1920, there were organized guidance programs and the beginning of standardized testing instruments. The trait and factor approach to vocational counseling became popular in the thirties which matched people to their occupational environments (Parsons, 1909) and was often called "directive" theory (Gibson and Mitchell, 1986). It involved decision-making about careers and was one of the first types of problem-solving counseling. The trait and factor approach attempted to identify important variables upon which people and jobs vary, to develop measuring instruments that were reliable and valid and to use these instruments in conjunction with occupational information in order to match people with jobs. It used test data to counsel people into certain career fields and did not focus on interpersonal issues, attitudes, motives or any mental health problems of the client (Carkhuff and Berenson, 1977).

Parallel to the vocational and guidance movement in counseling was the mental health movement which owed much of its impetus to Beers (Cowen, Gardner and Zax, 1967). For a number of years, Beers suffered from schizophrenia and was confined in a mental hospital. He initiated humanitarian reforms and scientific inquiry into the problems and treatment of mental illness. Beers was instrumental in the development of the mental hygiene movement in the United States which focussed on the problems of mental illness and reforms of the mental hospital. Although the state hospital movement had begun in the nineteenth century due to the efforts of Dix (Bloom, 1977) it became overcrowded with chronic patients and continual reforms were necessary.

The introduction of Freudian psychoanalysis in early twentieth century made a significant impact on the whole counseling movement. For many years the concept of mental illness was associated with bizarre behavior and people were slow to accept the idea that mental illness was on a continuum with "normal" behavior (Cowen, Gardner and Zax, 1967). Freud was instrumental in changing this view because he believed all people were subject to the same biological and experiential factors which could cause mental illness. He solidified the notion that the mentally ill could be treated and he focused his efforts on both psychotic and neurotic behavior. This broadened the scope of the mental health professions and new theories developed about behavior and its determinants. In 1908, there was great hope that psychoanalysis would cure mental illness (Cowen, Gardner and Zax, 1967). Psychiatrists were beginning to earn respect among the medical professionals and were rigid in their acceptance of the psychoanalytic model.

By the end of World War II both the guidance and mental health movements were vigorous and had a commitment to the healthy adjustment of children and adults. Two individuals influenced both movements at this time, Maslow (1968) and Rogers (1951), with theories contrary to the trait and factor and psychoanalytic approaches. Maslow's theory of self-actualization stressed the importance of studying health not illness and the development of the individual's potential (Leonard, 1983). Rogers believed as Maslow that the individual was capable of recognizing his/her potential and must be responsible for personal growth. Rogers influenced the replacement of testing with counseling as the main gui-

dance function (Gibson and Mitchell, 1986) and challenged the deterministic belief of psychoanalysis and the therapist's omnipotence. The field of counseling began to rise in importance as separate from the function of guidance and challenged the purpose of guidance (Aubrey, 1977). Increasingly, the guidance counselor was becoming involved with problems other than vocational.

The role of the counselor was later impacted by the paraprofessional movement, another event in the history of counseling.

The Influence of the Mental Health Paraprofessional on the Field of Counseling

The term, paraprofessional, refers to personnel who have less than a four year bachelor's degree in human services or social work (Mandell and Schram, 1983). Another term synonymous with paraprofessional is functional professional described by Carkhuff (1971) as "a person, independent of formal credentials who possesses those characteristics and skills directly related to performing the essentials of a position or service to a high level of effectiveness" (p. 332). The presence of the paraprofessional has been known since the first mental hospital opened and typically they were employed in a custodial role as aides, attendants, cottage parents and supervised by doctors, psychologists and social workers. However, with the changes in the field of counseling the role of the paraprofessional was drastically modified.

In the 1940s, following the upheaval of World War II, there was much dissatisfaction with the traditional helping systems, typically offering the psychoanalytic approach, because people with the most need received the least help. Cowen (1967) and others (Eysenck, 1952; Levitt, 1957), expressed concern that the psyhoanalytic approach was not meeting the mental health needs and urged counselor training programs to research and teach different methods. By the 1950s there was an increasing need for mental health services, however, only the well-to-do or higher functioning people were involved in psychoanalysis. There was an increase in the training of psychologists, psychiatrists, social workers and others by State and Federal agencies who, upon completion of their training, went into private practice and offered their services to people who could pay (Mehr, 1983). Many professionals were from the white-middle class and lacked the empathy and/or skills to relate with minorities and the poor (Mandell and Schram, 1983).

In 1959, Dr. George Albee published a monograph entitled "Mental Health Manpower Trends," in conjunction with the Joint Commission on Mental Health and Illness, in which severe shortages of mental health professionals were documented largely due to the lengthy educational requirements. Therefore, Albee proposed a new kind of mental health worker who could be trained in a relatively short amount of time (Mandell and Schram, 1983). This notion was supported greatly by the research efforts of Cowen (1967) and Carkhuff (1969) and their associates.

The sixties experienced an increased use of paraprofessionals in the mental health field (Institute for Child Mental Health, 1972) and the shift from using professionals to paraprofessionals grew for several reasons. The civil rights movement identified severe deprivation for some individuals of the lower class who were receiving inappropriate professional services for their needs as well as poor education and job opportunities (Institute for Child Mental Health, 1972). In response to this, President Johnson developed the Economic Opportunity Act in 1964 which caused the employment of 25,000 paraprofessionals in community action programs and 46,000 paraprofessionals in the Head Start program for disadvantaged preschoolers (Dugger, 1980; Mehr, 1983). Often the paraprofessional worker was indigenous to the community he/she was serving and, thus, part of the underprivileged class. The paraprofessional was often able to understand the real needs of their clients (Carkhuff, 1971; Dugger, 1980; Mandell and Schram, 1983; Mehr, 1983), and responded by offering concrete services in housing, public assistance, medical care, legal aid and so forth (Institute for Child Mental Health, 1972). Another type of indigenous paraprofessional came from those individuals who experienced a specific psychological, physical or social difficulty and successfully overcame their handicap. They then directed their efforts toward helping others with the same problem, for example, ex-mental patients, substance abusers, ex-convicts, etc., and through proper training and financial support, hoped to turn their interest into a potential career (Mandell and Schram, 1983).

The sixties also witnessed the emergence of the community as the better place for intervention instead of the institution due to the Community Mental Health Centers Act and the population in public mental hospitals was reduced by 50-75% (Dugger, 1980; Institute for Child Mental Health, 1972; Mehr, 1983). By 1968, 10,000 paraprofessionals were employed in mental health centers (Mehr, 1983) and by 1979 close to one half the workers in mental health facilities in the United States were paraprofessionals (James, 1979).

Today, there continues to be widespread use of paraprofessionals in human service settings, although, there can be controversy over their responsibilities in relation to professionals. Often their duties are vaguely defined and in addition to performing concrete, social-work type tasks, paraprofessionals continue to focus on one-on-one and group counseling which can overlap with the responsibilities of clinical professionals (Institute for Child Mental Health, 1972).

The Initial and the Advanced Stages in Counseling

Counseling has undergone several changes since its early focus on vocational issues, Beers' efforts in mental health and Freud's influence on the perception of mental illness. The humanistic emphasis introduced a concern for health, promotion of one's human potential, personal responsibility and healthy interpersonal relationships. The humanistic model developed as a reaction against psychoanalysis and

facilitated research efforts to determine the effective ingredients in the counseling process (Bergin, 1963; Carkhuff, 1968; Cowen, Gardner and Zax, 1967; Eysenck, 1952; Levitt, 1957; Rogers, 1951). This research has led to considerable agreement that there is an initial stage and a more advanced stage in the counseling process (Berenson, 1977; Corey, 1982; Gibson and Mitchell, 1986; Small, 1981).

Rogers (1951) was one of the first researchers credited with a notable amount of empirical work to determine the effective ingredients in counseling. His humanistic model consists of a set of core conditions, empathy, respect, warmth and genuineness. Research proved that this core was necessary for counselor effectiveness (Carkhuff, 1968; Cowen, Gardner and Zax, 1967; Danish and Brock, 1974; Ivey and Authier, 1978; Rogers, 1957; Truax and Carkhuff, 1967). These core conditions and their related skills came to comprise the initial stage of counseling.

The initial stage is important because it provides the foundation upon which the counseling process can proceed. It is characterized by the following:

> The development of a strong counselor-client relationship, the establishment of caring and trust and client exploration of feelings and thoughts working towards progressively deeper levels of understanding (Carkhuff, 1969; Corey, 1982; Hutchins and Cole, 1986).

The counselor-client relationship can serve as a model for other relationships (Hackney and Cormier, 1979).

The responsibility for the counseling process is primarily the counselor's and it is his/her task to relieve some tensions and stimulate open and honest communication with the client (Gibson and Mitchell, 1986).

The client is provided with the notion that counseling can be a beneficial process and that both counselor and client must work at understanding the client and his/her concerns (Gibson and Mitchell, 1986; Rogers, 1951).

In addition to the findings on the initial stage of counseling were the findings about the advanced stage. A number of studies (Bandura, 1961; Brammer, 1973; Carkhuff, 1968; Danish and Brock, 1974; Ivey and Authier, 1978; Truax and Carkhuff, 1967) discovered certain action-oriented methods essential to counselor effectiveness. These methods were dependent on the relationship established in the initial stage of counseling and, thus, came to comprise the advanced stage. The advanced stage is typically explained through action-oriented methods from various theoretical models of counseling, the most popular being, behavior therapy, reality therapy and rational-emotive therapy (Corey, 1981).

The advanced stage emphasizes action-oriented processes typical of the behavior therapies which lead to behavior change (Corey, 1982). This stage is characterized by the following:

In-depth exploration leading to problem clarification and definition (Carkhuff, 1969; Hutchins, 1984).

Client responsibility for self-understanding and action to achieve personal goals (Gibson and Mitchell, 1986; Glasser, 1965).

Problem-solving (Altmaier and Bernstein, 1981; Carkhuff, 1985; Hutchins and Cole, 1986).

Goal-setting and strategies to achieve the goals (Anthony, 1974; Carkhuff, 1985; Gibson and Mitchell, 1986; Hutchins and Cole, 1986; Laquatra, Danish, D'Augelli, 1983; Kazdin, 1978; Thoresen and Coates, 1980).

Statement of the Problem

The initial stage of the counseling process has been studied for decades which makes it more suitable for training purposes than the advanced stage. There are many well developed training programs for the initial stage but in the advanced stage, programs and empirical research

associated with these are less developed. Altmaier and Bernstein (1981) report that "an extensive review of research on teaching counselor skills reveals virtually no attention to skills other than the core conditions of empathy, warmth, genuineness and the basic interviewing skills of attention, reflection, summarization, and so forth (p. 286). Doyle (1982) agrees with this viewpoint when he writes, "the skill-oriented approach has been limited to describing basic skills important in the initial stage of counseling. The available systems do not provide a comprehensive system for describing skills throughout the entire counseling process" (p. 124). A recent review of the literature reveals some efforts to identify skills in the advanced stage of counseling and develop training programs for these (Berenson, 1974; Carkhuff, 1985; D'Zurilla and Goldfried, 1971; Ellis, 1962; Glasser, 1965; Hutchins and Cole, 1986; Ivey, 1973; Laquatra, Danish, D'Augelli, 1983; Small, 1981). However, individual skills within the advanced stage of counseling are not always clearly identified and empirical research in this area is insufficient.

There is one set of skills identified in the advanced stage of counseling for which a few training programs have been developed (Butcher and Scofield, 1984; Carkhuff, 1977; D'Zurilla and Goldfried, 1971; Fortune, 1984). These skills involve problem-solving and are considered essential techniques for counselors and paraprofessionals. As defined by D'Zurilla and Goldfried (1971) problem-solving is a "behavioral process, whether overt or cognitive in nature, which (a) makes available a variety of potentially effective response alternatives

for dealing with the problematic situation and (b) increases the probability of selecting the most effective response from among these various alternatives" (p. 107). Marchione (1979) defines problem-solving as "a treatment method through which an individual learns a set of cognitive skills that will be essential for the individual to possess in order to be successful in coping with life's problems" (p. 167).

There is a lack of research on problem-solving training in counselor education and the literature suggests the need for more empirical work (Anthony, 1974; D'Zurilla and Goldfried, 1971; Heppner, 1984). Heppner (1984), states that problem-solving training is beneficial but training has "focussed on removing various skill deficits rather than on equipping people preventively with a more effective means of coping." He also explains that "the bulk of research has examined the solutions of impersonal, predefined lab problems with questionable applicability to real-life personal problem-solving" (p. 515). Heppner (1978) continues "a review of the counseling literature revealed that only a handful of studies have empirically investigated problem-solving within the counseling process" (p. 366). D'Zurilla and Goldfried (1971) comment that clinical psychology has paid little attention to formal, systematic training in problem-solving and has not evaluated it experimentally. In addition, Wallace, Horan, Baker, and Hudson (1975) write about problem-solving, "little or no research exists evaluating the various methods counselor educators may employ to foster such skills in counselor trainees" (p. 570).

Other deficiencies in the research on problem-solving center around the traditional focus on vocational conflicts and the lack of attention given to problems of everyday life. Furthermore, the small number of available instruments for measuring counselor problem-solving behavior and the absence of studies focussing on the paraprofessional, underline the need for more research in this area.

Purpose and Hypothesis

The purpose of the current study is to focus on the need for skills-training in the advanced stage of counseling and, specifically, contribute to the research on problem-solving training using real, everyday conflicts. The focus of the problem-solving training is of a cognitive-behavioral nature. The current study investigated the relationship of problem-solving training on a paraprofessional trainee's counseling ability with a fellow student and a coached "client" discussing conflict situations. The null hypothesis states that there is no difference between the experimental and control groups on the adjusted means on the dependent variable.

Another contribution of the current study is to clarify the essential stages in the problem-solving process and provide a training model with a reliable instrument. Carkhuff's problem-solving model (1985) was used in the current study because of his expertise in identifying teachable counseling skills and developing systematic training programs. These training programs evolved largely due to his

associate's empirical research in the sixties and seventies (In particular, see Berenson, B.G., Carkhuff, R.R. and Myrus, P., 1966; Carkhuff, R.R., and Banks, G., 1969; Carkhuff, R.R. and Berenson, B.G., 1967, 1976; Carkhuff, R.R., and Truax, C.B., 1965; Pierce, R., Carkhuff, R.R., and Berenson, B.G., 1967). His model identifes definitive stages in the problem-solving process around which training is easily accomplished. Carkhuff's training method follows the didactic, modeling and experiential format considered to be the most effective process for learning (Bottjer, 1980; Carkhuff and Berenson, 1976; Wallace, 1974).

Institutional Setting and Participants

The population for the current study was taken from the Alexandria campus student body at Northern Virginia Community College which is comprised of five campuses and serves the counties of Arlington, Fairfax, Loudoun, and Prince William and the cities of Alexandria, Falls Church, Fairfax, Manassas Park and Manassas. Programs and courses of instruction encompass post-secondary education, general education, developmental instruction, continuing education, specialized training, community services and cooperative education. The participants were students in the winter quarter, 1986, enrolled in the human services program, one of the occupational-technical programs. The program teaches counseling theory and skills to people who want to be paraprofessionals in the areas of substance abuse, gerontology, mental health or who want to transfer to a four year institution. In addition,

the human services substance abuse curriculum is designed to meet state certification requirements for alcoholism counselors.

The current study consists of an experimental and control group each containing 36 participants. The experimental group is comprised of students from two sections of a course titled, Helping Relationships II and the control group from two sections of a course titled, Introduction to Human Services. A quasi-experimental design was used because participants were in the experimental or control groups due to their enrolling in a particular human service course. Participants ranged in age from 18 to 65 years, some with paraprofessional counseling experience, others with no counseling experience and none of the participants with previous problem-solving training.

Variables and Procedure

The independent variable in the current study was the treatment based on Carkhuff's training model for problem-solving; the dependent variables were seven counselor problem-solving behaviors as measured by an instrument developed specifically for this study. The experimental group received training for five weeks, two and one half hours a week, while the control group received no training. Both groups received a pretest at the beginning of their first meeting and two posttests five weeks later. In the pretest and the first posttest the participant assumed the role of counselor and was to assist a fellow student in resolving a personal problem of a relatively specific

nature. In the second posttest, the participant was involved in a similar counseling interaction but with a coached "client" (a human service student who was not part of the experimental or control groups and was unknown to the participant).

During the pre and posttests, participants were informed that problem-solving was a written process and they should record the things they did as the counselor to solve the problem. This work was submitted and scored by two independent raters. The analysis of covariance and the analysis of variance were used to anlayze the data from the two posttests.

The chapters indicated below address the above issues as follows:

Chapter 2 presents an extensive review of the literature on problem-solving models, their commonality and related research. It also discusses paraprofessional counselors and offers empirical research supporting their use in human service settings.

Chapter 3 details the methods used to test the hypotheses with a description of the experimental design, participants, and analysis of the instrument.

Chapter 4 discusses the results from both the experiment and the pilot test.

Chapter 5 discusses the conclusions that can be drawn from the results in Chapter 4, and presents recommendations for future work.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

This chapter reviews the theoretical and empirical research that has dealt with the process of problem-solving in counselor education. A major finding of this review is that although there are a large number of theories concerning the problem-solving process, existing empirical research has not been substantial and has often focussed too narrowly on one or two stages in problem-solving or on specific vocational decisions to the exclusion of life's everyday problems. Methods for evaluating a trainee's skills in problem-solving are few.

The stages in the problem-solving process have been well documented and the literature review centers on the model developed by D'Zurilla and Golfried (1971), and Carkhuff (1977). These models were selected for emphasis because D'Zurilla and Goldfried represent all models and are cited often in the literature and Carkhuff is recognized as a leader in the development of skills-training programs for paraprofessionals and has a training model in problem-solving. The terms problem-solving and decision-making are frequently used interchangably in the literature, although, problem-solving seems to be the dominant term (Horan, 1979).

In addition to the problem-solving research, a synopsis of paraprofessional empirical research will be provided because the current study focusses on their role in problem-solving counseling.

Problem-Solving: The Need for Systematic Training

As stated previously in Chapter I there is less attention given to skills in the advanced stage of counseling, of which problem-solving is one, than there is to skills in the initial stage of counseling. Several theorists in problem-solving suggest that the field of counseling and clinical psychology has devoted little attention to systematic training in problem-solving. Moreover, they acknowledge the importance of problem-solving training for counselors and the need for more empirical work (Anthony, 1974; D'Zurilla and Goldfried, 1971; Heppner, 1984).

D'Zurilla and Goldfried have written extensively on this subject and view problem-solving as a technique in behavior modification whereby the individual can receive training and learn to cope effectively with one's problems. They believe in a systematic approach to training and the importance of clearly identifying the specific skills involved in problem-solving. Other theorists hold similar views and attribute deficits in these skills to increased personal problems, e.g., substance abuse, depression, anxiety, etc. (Horan, 1979; Krumboltz and Thoresen, 1976). The theorists acknowledge the importance of training for counselors in problem-solving skills so that counselors can teach their clients how to solve current and future problems (Anthony,

Margules and Collingwood, 1974). All agree that good decisions are made due to a systematic process in problem-solving and not simply due to chance or counselor empathy (Heppner, Neal and Larson, 1984; Doyle, 1982).

Problem Solving: One Method in Behavior Therapy

Problem-solving models are considered to be cognitive approaches in behavioral counseling (Wilson, 1978), which emphasizes the elimination of ineffective behavior and the learning of new skills by clients (Corey, 1982). According to Krumboltz (1966), problem-solving is one skill that is essential for counselors to have and teach to their clients. The focus of behavioral counseling is on measurable goals with treatment plans and accountability (Horan, 1979; Krumboltz, 1966) plus the use of a wide range of techniques based on reinforcement, punishment, extinction, stimulus control, token economy, modeling and others (Agras, Kazdin, Wilson, 1979). In addition to a systematic approach to counseling, behavioral counseling emphasizes the importance of the client-therapist relationship and the need for the client to make choices for himself/herself because the contemporary view no longer accepts the deterministic principle that individuals are simply products of environmental conditioning. Presently, the focus is on developing procedures that allow clients a good amount of self-control to increase their personal freedom (Corey, 1982), including instruction in problem-solving skills which give people the freedom of choice to enhance personal management of their lives.

Stages in the Problem-Solving Process

Since the early 1900's investigators have been trying to clarify the essential variables in the problem-solving process (Heppner, 1978) and problem-solving has now been conceptualized as a group of cognitive abilities which occur in sequential stages (Heppner, Neal, Larson, 1984). Several theorists have written about the stages of problem-solving and most share considerable agreement concerning this process, in fact, D'Zurilla and Goldfried (1971) state that their five stage model is representative of a consensus viewpoint. The model is cited often in the literature and is used in this chapter (see Tables 2.1 and 2.2) as a basis of comparison to other theorists' models. In addition, Carkhuff's model is emphasized because of its role in the study.

Table 2.1 identifies many of those individuals considered to be prominent as stage theorists in problem-solving relevant to the field of counseling (Horan, 1979). Table 2.2 identifies additional theorists in problem-solving but not cited in the literature as stage theorists.

In Tables 2.1 and 2.2, General Orientation is the first problem-solving stage and focuses on three main ideas. First, the individual must accept the fact that problems occur and it is possible to cope with them appropriately; second, the individual needs to be aware of problems when they do arise; third, the individual should refrain from acting impulsively to solve the problem. In particular, Herr, Horan and Baker (Horan, 1979), agree that this stage is important and explain that an orientation stage is significant at the onset of the

problem-solving process because it is where a foundation is built for further problem-solving counseling. Carkhuff (1985) credits effective interpersonal skills with the successful completion of this stage.

The second stage, Problem Definition and Formulation, will enable the individual to make an ambiguous problem one that can be clearly defined in terms of goals for problem-solving. As can be seen in Tables 2.1 and 2.2, all theorists, except Evans and Cody (1969), cite problem definition as a stage in problem-solving. In his model, Carkhuff (1985) stresses the importance of defining the problem and goal behaviorally because this clarity allows the individual to generate relevant alternatives as possible solutions, the next stage of problem-solving.

In the third stage, the Generation of Alternatives requires the individual to brainstorm possible solutions relevant to the problem. D'Zurilla and Goldfried state that alternatives should be suggested freely without judging their appropriateness before an adequate list is developed. Research suggests that there is a significant correlation between the total number of alternatives generated and the number of alternatives that are truly useful (Parnes, 1961). As can be seen in Tables 2.1 and 2.2, Generation of Alternatives is suggested by nearly all theorists as a separate stage in problem-solving. Horan (1972) submits that the client offer possible alternatives prior to the counselor's suggestions and Carkhuff (1985) maintains that all alternatives are behaviors that involve either a person, program or a combination of the two.

The fourth stage, termed Decision-Making, requires that a decision be made using an alternative(s) that will solve the problem and in order to choose the best alternative, the individual must evaluate what things one is trying to achieve. A study by Johnson, Parrett and Stratton (Horan, 1979), indicates that people do not always identify the best alternatives from their list. Both Katz (Horan, 1979) and Carkhuff (1985) deal with this problem by making the Decision-Making stage a very systematic process. An attempt is made to weigh the various alternatives in terms of how much they satisfy what the individual wants and needs.

Verification is identified as the final stage in the problem-solving process, which takes place after an alternative has been chosen and carried out. This stage enables an individual to determine if the chosen alternative is adequate or if some changes need to be made and D'Zurilla and Goldfried believe that if this stage is satisfactory the problem-solving process can be terminated. Several of the theorists in Table 2.1 and 2.2 discuss Verficiation as the stage where the individual implements the alternative and then re-evaluates this action while others consider the Verification stage as the place where a plan is developed identifying future goals and steps for the individual to complete.

TABLE 2.1: Stage Theorists in the Problem-Solving Literature[1]/

STAGES OF PROBLEM-SOLVING[2]/	GELATT, 1962	KRUMBOLTZ and THORESEN, 1964	KRUMBOLTZ, 1966
1. GENERAL ORIENTATION	1. Purpose		
2. PROBLEM DEFINITION AND FORMULATION	2. Prediction System - Define the objective clearly	1. Defining the problem and the counseling goals. 2. Agreeing mutually to achieve counseling goals.	
3. GENERATION OF ALTERNATIVES	3. Study the possible alternatives and evaluate the consequences.	3. Generating alternative problem solutions.	1. Generating a list of all possible courses of action.

TABLE 2.1: Stage Theorists in the Problem-Solving Literature[1]/ cont'd

STAGES OF PROBLEM-SOLVING[2]/	GELATT, 1962	KRUMBOLTZ and THORESEN, 1964	KRUMBOLTZ, 1966
4. DECISION-MAKING	4. Value System. 5. Having and understanding relevant information.	4. Collecting information about the alternatives. 5. Examining the consequences of the alternatives.	2. Gathering relevant information about each feasible course of action. 3. Estimating the probability of success of each of the experience of others and projections of current trends. 4. Considering the personal values that may be enhanced or diminished under each course of action. 5. Deliberating and weighing the facts, probable outcomes, and values for each course of action. 6. Eliminating from consideration the least favorable courses of action.
5. VERIFICATION			7. Formulating a tentative plan subject to new developments and opportunities. 8. Generalizing in the decision-making process to future problems.

1/ Material in this table can be found in Horan, 1979.
2/ The stages of problem-solving in this column were taken from D'Zurilla and Goldfried, 1971.

TABLE 2.1: Stage Theorists in the Problem-Solving Literature[1]/ cont'd

STAGES OF PROBLEM-SOLVING[2]/	KATZ, 1966	EVANS and CODY, 1969	URBAN and FORD, 1971	HORAN, 1972
1. GENERAL ORIENTATION				
2. PROBLEM DEFINITION AND FORMULATION			1. Identification of the problem. 2. Analysis of the problem. 3. Selection of goals	1. Define the problem as one of choice.
3. GENERATION OF ALTERNATIVES	2. Identify options.	1. Consideration of alternative courses of action.		2. Generate alternatives, first from the client's perspective then from the counselor's perspective.

TABLE 2.1: Stage Theorists in the Problem-Solving Literature[1]/ cont'd

STAGES OF PROBLEM-SOLVING[2]/	KATZ, 1966	EVANS and CODY, 1969	URBAN and FORD, 1971	HORAN, 1972
4. DECISION-MAKING	1. Examine values, scale and weigh them. 3. Choose an alternative that meets the most values. 4. Determine the greatest sum of value returns.	2. Consideration of the consequences of each alternative course of action. 3. Consideration of past experiences appropriate to the problem.		3. Gather information about the client and the alternatives. 4. Identify advantages and disadvantages for each alternative, first from the client's perspective, then from the counselor's perspective. 5. Rank the alternatives and make a tentative selection.
5. VERIFICATION	5. Determine Index of expected value.		4. Implementation of the problem solution. 5. Subsequent evaluation.	

1/ Material in this table can be found in Horan, 1979.
2/ The stages of problem-solving in this column were taken from D'Zurilla and Goldfried, 1971.

TABLE 2.1: Stage Theorists in the Problem-Solving Literature[1]/ cont'd

STAGES OF PROBLEM-SOLVING[2]/	HERR, HORAN, BAKER, 1973	CARKHUFF, 1973, 1985	WALLACE, HORAN, BAKER, HUDSON, 1975	SPIVACK, PLATT, SHURE, 1976
1. GENERAL ORIENTATION	1. Counselor defines the purpose of counseling, and the role of the counselor and student. 4. Counselor explains the decision-making paradigm. 5. Counselor explains the preparatory behaviour needed to make a good decision. 6. Counselor determines if student has sufficient motivation.	1. Develop the problem.	2. Explain the decision-making paradigm.	
2. PROBLEM DEFINITION AND FORMULATION	2. Counselor helps the client define the problem via specific counseling skills. 3. Counselor determines if vocational choice is the primary concern.	2. Define the problem. Define the goal.	1. Define the problem as one of choice.	1. Awareness of the variety of possible problems - the ability to look at how one relates to others and examine self.
3. GENERATION OF ALTERNATIVES	7. Counselor asks the student to identify all possible alternatives that come to mind. 8. Counselor identifies any additional alternatives that come to mind and are ethically appropriate.	3. Develop alternative courses of action.	3. Identify possible alternatives.	2. Generate alternatives.

TABLE 2.1: Stage Theorists in the Problem-Solving Literature[1]/ cont'd

STAGES OF PROBLEM-SOLVING[2]/	HERR, HORAN, BAKER, 1973	CARKHUFF, 1973, 1985	WALLACE, HORAN, BAKER, HUDSON, 1975	SPIVACK, PLATT, SHURE, 1976
4. DECISION-MAKING	9. Counselor assemblems all relevant information about the student. 10. Counselor assembles additional information about the student. 11. Counselor presents to the student any information about the student relevant to the potential vocational decision. 12. Counselor requests that the student identify the advantages and disadvantages of the alternatives that have been identified. 13. Counselor identifies any additional advantages that come to mind. 14. Counselor asks the student to evaluate the alternatives. 15. Counselor helps the student obtain additional information about the most promising alternative(s).	4. Listing and defining the values. 5. Developing courses of action.	4. Gather relevant information from client. 5. Present relevant information to client. 6. Request that the client identify advantages and disadvantages for each alternative. 7. Present any additional advantages and disadvantages for each alternative to the client. 8. Request that client select the most promising alternative. 9. Verbally cue and reinforce the client for gathering additional information about the most promising alternative.	4. Considering the consequences of an alternative.
5. VERIFICATION	16. Counselor helps the student implement the most promising alternative. 17. Counselor determines if the selected alternative is satisfactory. 18. Counselor terminates the counseling relationship.	6. Evaluation of chosen course of action. 7. Identifying the next steps for the person to take.	10. Help the client implement the alternative.	3. Steps to carry out the solution to the problem - identify where one is going and the means to get there (means-end) these steps will help to resolve the problem. 5. A readiness to understand events that propel one toward action.

1/ Material in this table can be found in Horan, 1979.
2/ The stages of problem-solving in this column were taken from D'Zurilla and Goldfried, 1971.

TABLE 2.2: Additional Theorists in the Problem-Solving Literature

STAGES OF PROBLEM-SOLVING	OHIO STATE UNIVERSITY National Center for Research 1978	KAREN MARCHIONE, 1979	BORGEN AND AMUNDSON, 1980	WILLIAM SCHULTZ- West German Employment Counselors, 1983
1. GENERAL ORIENTATION		1. Recognizing problems are solvable.	1. Identifying and sharing problems.	
2. PROBLEM DEFINITION AND FORMULATION	1. Define problem.	2. Problem definition.	2. Accepting responsibility for the problem. 3. Accepting responsibility to do something about the problem. 4. Stating the problem concretely.	1. Conceptualizing the problem and goals.
3. GENERATION OF ALTERNATIVES		3. Generation of alternatives.	5. Exploring alternatives.	2. Facilitating the generation of alternatives.
4. DECISION-MAKING	2. Collect information necessary to make decisions. 3. Analyze alternatives. 4. Select,	4. Decision-making; each solution is assessed in terms of consequences.		3. Weighing alternatives and establishing a criteria for evaluation. 4. Making the decision.
5. VERIFICATION	plan, implement, action. 5. Evaluate action.	5. Implementation of the solution, observation and evaluation.	6. Practice new behaviors. 7. Group feedback and support.	5. Preparation for setbacks.

Research in Problem Solving: Background Information

Dixon, Heppner, Petersen and Ronning (1979), found only a small number of studies on the use of problem-solving within the counseling process. A current review of this literature also revealed only a handful of empirical research on this same topic. Most of the research occurred in the sixties and seventies with a few studies completed in the eighties, and much of the research focused on vocational decision-making with little attention given to the solving of personal problems (Evans and Cody, 1969; Jepsen, Dustin and Miars, 1982; Mendonca and Siess, 1976; Wallace, 1974). This is due, in part, to the focus during the first half of this century on decision-making counseling only as part of vocational guidance with the emphasis on matching people traits with job traits (Horan, 1979; Parsons, 1909). Currently, a few theorists including Carkhuff (1985), have tried to extend decision-making counseling to encompass other problems in living.

The research on problem-solving counseling reveals the emergence of patterns. The majority of participants were undergraduate or graduate students in a counseling related field with some cases of junior high school students facing career decisions (Evans and Cody, 1969; Jepsen, Dustin, Miars, 1982). Another pattern to emerge was the commonality in training methods used to teach problem-solving skills which are defined in Table 2.3 below. It can be seen that the majority of researchers were in support of both didactic and experiential training for maximum learning of problem-solving skills and many

utilized the behavior modification principles of modeling and reinforcement for clarification and praise during training (Horan, 1979).

Table 2.3: Compilation of Training Methods Used in Problem-Solving Training Research

Training Method	Explanation
Training in progressive steps	Instruction in one problem-solving skill per training module.
Didactic training	Lecture and discussion.
Distribution of handouts	Examples of problem-solving.
Experiential training	Role playing and practice.
Modeling	Demonstration of a skill.
Video-taping	Filming the practice sessions.
Responding to written problems	Applying problem-solving skills to hypothetical problems.
Group feedback	Constructive criticism by any member of the learning environment.
Reinforcement	Praise from the instructor(s).
Supervised practicum	Practicing the skills with someone not part of the learning environment.

Empirical Research Involving the D'Zurilla and Goldfried Model

Several studies involving the D'Zurilla and Goldfried model support the use of problem-solving training to enhance student acquisition of these skills. For example, Hutchinson (1976) found that undergraduates suggested better solutions to problems when they received systematic training in one stage of problem solving, that is, generating alternatives. Mendonca and Seiss' (1976) results were similar with undergraduates experiencing anxiety in vocational indecision. Training in the D'Zurilla and Goldfried model, plus, training in anxiety management helped increase the student's ability to generate alternative solutions to problems and also to gather relevant information for problem-solving.

In addition to this earlier research, four training studies taught specific stages in the D'Zurilla and Goldfried model and all of the investigations followed a similar format. The treatment groups completed a brief training session in the specific problem-solving skill, and then the treatment and control groups were asked to respond to hypothetical problems using the designated problem-solving skill. Several investigations demonstrated that the treatment groups outperformed the control groups on problem-solving activities applied to hypothetical situations when training was given on the following:

(a) problem definition (Nezu and D'Zurilla, 1981);

(b) generation of alternatives (D'Zurilla and Nezu, 1980; Nezu and D'Zurilla, 1981); and

(c) decision-making (Nezu and D'Zurilla, 1979; Nezu and D'Zurilla, 1981).

Another study assessing the effects of problem-solving training on college student volunteers (Dixon, Heppner, Petersen and Ronning, 1979) found that the trained group outperformed the control groups on quantity of alternatives generated and on self-appraisal of problem-solving skills.

Empirical Research Involving Coached "Clients"

The preceding research discussed the use of problem-solving skills with hypothetical problems. There have been a few studies assessing counselor trainees' use of problem-solving skills with coached "clients"; fellow students needing problem-solving for a situation in their lives.

Wallace (1974) compared three methods of teaching career decision-making to graduate students entering the counseling profession and assessed their effectiveness using coached clients. Method One involved a written handout describing the desired counselor behavior and a lecture on decision-making counseling. Method Two involved the written handout and the viewing of a video-taped counseling session demonstrating the desired counselor behavior. Method Three involved all of the processes in Methods One and Two plus the students role-played the behavior with fellow students and received feedback. Upon completion of training, each student had two counseling interviews with

coached clients, students from counselor education courses, who discussed a problem needing a decision. Each counselor made an audiotape, approximately fifteen minutes in length, independently scored by two raters, and used as the posttest for this study. The raters used the Counselor Behavior Evaluation Form adapted from Herr, Horan and Baker (1973) to evaluate the tapes which outlined specific behaviors, the necessary conditions and the criteria for an effective delivery specific to vocational counseling.

Analysis of variance was used to evaluate the Counselor Behavior Evaluation form with a Tukey WSD to determine where the difference occurred. Three major findings emerged, first, there was no significant difference among students who received the handout, lecture and modeling when compared to those who received only the handout and lecture. Second, a significant difference was found at the .05 level for the students who received the handout, lecture, modeling, and practice when compared to those who received only the handout and lecture. Third, a significant difference was found at the .05 level for the students who received the handout, lecture, modeling and practice when compared to those who had the handout, lecture and modeling.

Wallace closely replicates a study (Wallace, Horan, Baker and Hudson, 1975), involving 54 randomly assigned counselor trainees comparing three different methods for teaching decision-making counseling. Again, the teaching method incorporating practice of the problem-solving skills was found to be significantly more effective than either of the other two teaching methods in promoting student acquisition of these skills.

Bottjer (1980) found similar results when he compared different methods of teaching problem-solving counseling to peer counselor trainees. His training followed a model outlined by Krumboltz and Hamel (1977), which included a total of twenty skills that trainees were taught and then assessed. Four treatments were compared and a post-test involving the student as the counselor in a role-play situation with another student revealed the following: first, trained students demonstrated more problem-solving skills than untrained students; second, students who practiced the skills demonstrated more problem-solving skills than those who did not practice; third, modeling problem-solving skills to students was an important teaching strategy. However, students were more effective in their acquisition of these skills if they had both modeling and practice in their training session.

Summary: Problem-Solving Literature

According to Laquatra, Danish, and D'Augelli (1983), problem-solving skills are advanced helping skills which "encourage personal development and change in the helpee, can be defined in terms of helper behavior, and are teachable" (p. IX). There appears to be consensus that training in problem-solving:

(1) is fundamental for counselors;

(2) follows very specific stages; and,

(3) should involve trainees in experiential learning.

The literature reveals a notable amount of theoretical work in problem-solving but a small body of empirical research. Empirical work tends to focus on one or two of the problem-solving stages instead of assessing the entire process and participants in these studies are often working with hypothetical problems. Therefore, data are insufficient concerning the effects of problem-solving training on counselor trainees' ability to use these skills with others. Often the research is concerned with vocational decisions, with a small amount of research focusing on problem-solving counseling and other problems in living. The current study contributes to the empirical research by examining paraprofessionals involved in all stages of problem-solving with real, everyday problems. In addition, methods for evaluating the problem-solving skills of paraprofessionals are few and the current study offers one more instrument to be used in this area of research.

The last section of this chapter will provide the current empirical research on the use of paraprofessionals in counseling roles. A major finding is that paraprofessionals can be very effective members of a treatment team if trained in specific counseling skills.

The sixties was a decade in which the role of the mental health paraprofessional was researched considerably. Cowen, a major researcher in this area, was instrumental in bringing to focus the severe shortage in mental health professional manpower. He saw the need to break away from traditional approaches to discover new methods for treating mental health problems. Cowen strongly supported the use of paraprofessionals (or nonprofessionals as he labeled them) in helping roles (Cowen, Gardner, Zax, 1967).

Research Involving Students as Mental Health Paraprofessional Counselors

There have been a variety of studies assessing students in the helping role with mental health clients. According to Rappaport, Chinsky and Cowen (1971), research efforts carried out by Harvard and Radcliffe undergraduates were among the early influential programs. During a seven year period, over 2000 students participated in many direct contacts and service functions with mental hospital patients. These included: companionship, improving the ward's appearance, case aides, assistance in establishing half-way houses, music and crafts. Greenblatt and Kantor (1962), found that patients in the experimental group diagnosed as withdrawn became less so and had better conceptual organization than controls. Beck, Kantor and Gelineau (1963) also found similar results when 37% of a 120-patient sample seen by student volunteers was discharged from the hospital. The discharge base-rate for the institution was quite low in comparison at only 3 percent.

Similar positive results were found in a student companion program established at Connecticut Valley State Hospital modeled after the Harvard and Radcliffe program (Holzberg, 1963; Holzberg and Gewirtz, 1964; Holzberg, Whiting and Lowy, 1964; Holzberg and Knapp, 1965; Holzberg, Knapp and Turner, 1967). The findings prompted the development of a program using college students as helping persons in all state hospitals within the Connecticut system. It is the belief of Rappaport, Chinsky and Cowen (1971), that students in these institutions helped improve communication among patients, increased their level of

interaction and helped chronic patients feel more at ease. In addition, 60% of the student participants selected mental health as a career field (Scheibe, Kulik, Hersch and LaMacchia, 1969).

Another study involving students as paraprofessional counselors was done by Poser (1966) in which he compared the effectiveness of experienced mental health professionals with untrained female college undergraduates as group leaders with chronic hospitalized male schizophrenics. A total of 343 patients participated over a five month period in either a professional-led group, a student-led group or a control group. A comprehensive test battery (psychomotor, perceptual and verbal behavior) was used to evaluate the program effects which included word association, tapping speed, and reaction time. The findings included the following:

1. Group contact, either professional or nonprofessional was beneficial.
2. The student-leaders' groups demonstrated greater improvement than either of the other two groups and there was a statistially significant difference between groups on verbal fluency, reaction time and tapping speed.

Three years later a follow-up study was conducted on a small sample of patients from the student-led groups. This indicated that positive changes were stable over time. There was criticism of Poser's work (Rosenbaum, 1966), however, Rappaport, Chinsky and Cowen (1971)

validated an essential point; there was measurable constructive change in profoundly disturbed individuals who had been unreachable for years.

Another study in support of paraprofessionals (Cowen, Gardner and Zax, 1967) used undergraduate volunteers for an after-school day-care activities program. The focus was on developing positive relationships with children who acted out, were withdrawn, had poor academic achievement or children generally at a high risk of developing problems. The study continued for two years and measures of success included a decrease in absenteeism, increased desire of the children to participate in the activities program and comments by the principal indicating a need to continue such a valuable program. Similar positive results can be found in Rappaport, Chinsky and Cowen (1971).

Research Involving Aides and Indigenous People as Mental Health Paraprofessional Counselors

The mental health field has been interested in the effectiveness of trained paraprofessionals in the helping role and often refer to these individuals as lay counselors. In 1963, Margaret Rioch and her associates at the National Institute of Mental Health completed a successful two-year program to train housewives as lay counselors (Rioch, 1966). Shortly after this project, Jean Macht obtained similar positive feedback in her examination of mental health workers trained in a pilot project at Philadelphia State Hospital (Simon, 1972). Following this, Appleby (1963) discovered that chronic schizophrenics who were treated by hospital aides functioning as lay counselors showed

significant improvement. Mendel and Rapport (1963) similarly found, over a four year period, lay personnel valuable in their ability to help chronic patients remain out of the hospital with only periodic outpatient counseling.

Carkhuff and Truax (1965) conducted numerous studies in this area and concluded that trained lay counselors demonstrated a high level of expertise in their treatment, training and teaching responsibilities. Carkhuff believes that they can function effectively as counselors and can even perform better in some situations than the traditional treatment team (Carkhuff, 1971; Dugger, 1980). Through their research, Carkhuff and Truax (1965) have identified three personality variables related to therapeutic effectiveness: accurate empathy, nonpossessive warmth and genuineness. Successful training programs have been developed focussing on these variables (Carkhuff, 1985; Danish, D'Augelli, Hauer, 1980; Ivey, 1978; Laquatra, Danish, D'Augelli, 1983).

Research on aides employed at a state hospital (Colarelli and Siegel, 1966) found results matching those of Carkhuff and Truax. A program was developed to remove aides from custodial roles, train and involve them in professional activities. The study lasted four years with 36 chronic schizophrenic patients and some of the results were as follows:

1. Passes for patients to leave the grounds increased by 300%.
2. The rate of assault incidents dropped to 10% its original level.

3. Readmission rates were about one-seventh of the overall hospital figure.
4. The number of job assignments per patient increased.

A related project in objectives and implementation was the research completed by Ellsworth (1968) which studied aides as lay counselors. On most within-hospital measures, aides in the experimental group outperformed aides in the control group especially among the more chronic patients. A six-year follow-up was completed on patients in the study and the experimental group had a better discharge status than the control group. Ellsworth (1968) commented on the results saying, in order to be effective, a treatment program had to involve a large number of its personnel, not just the professional individuals, in significant roles.

Cowen, Gardner and Zax (1967) in an attempt at early identification and prevention of emotional problems in school children, trained a group of housewives as mental health aides. These women completed five weeks of training and then were placed in a school for part of the day. Their functions included talking informally with the children, reading stories, remedial work and attending specifically to any disruptive children. One measure of success for the program was the large number of referrals to talk with the aides and the development of a waiting list. Teachers, parents and children expressed verbally their satisfaction with the program.

Runion and Gregory (1984) trained Native Americans to provide minimal mental health care for their own people and to gain access to a

variety of state service resources. Areas of success included an increase in: knowledge of mental health systems; number of tribal members with training in mental health; and, number of tribal members committed to helping their own people.

It is beyond the scope of this paper to discuss all studies involving paraprofessionals in mental health interactions. The following are additional areas of research for further reference:

Paraprofessionals working as:

- Big Brothers for troubled youth (Mitchell, 1964; 1966)
- Staff in a halfway house (Huessy, 1966 b)
- Counselors in a pregnancy or well-baby clinic (Rioch, 1966)
- Teacher-therapist with disturbed youngsters (Lewis, 1965)
- Indigenous workers with people in poverty (Reiff and Riessman, 1965; Fishman, Klein, MacLennan, Mitchell, Pearl and Walker, 1965).

The question of why mental health paraprofessionals seem to be so effective is one that several researchers have asked. Gartner (1971) surveyed a variety of research projects and concluded that paraprofessionals were effective in their helping interactions because of the following:

1. Their use of empathy and nonpossessive warmth with clients.
2. The careful selection procedures of paraprofessionals.

3. Their in-depth training programs.
4. Moderate working conditions.

Carkhuff (1969), has also researched the first three points on Gartner's list. In addition, Rappaport, Chinsky and Cowen (1971) cite the following conclusions for paraprofessionals' success:

1. The paraprofessional is challenged when he/she assumes a task which previously belonged to the professional.
2. This group is seeking more than didactic learning; they want training that is meaningful and useful in everyday work situations.
3. Patients are seen as people first and experience positive expectancies from the paraprofessional. The paraprofessional's approach is often simplistic, free from theoretical restrictions, and, therefore, can be more flexible.

Others have added the following explanations for the paraprofessional's success:

1. Patients are often willing to accept the paraprofessional more than the professional because of his/her lower position in the organization (Rioch, 1966; Cowen, 1967).
2. The paraprofessional demonstrates enthusiasm, involvement, high motivation, and dedication (Cowen, Gardner, Zax, 1967; Poser, 1966; Rioch, 1966).

Summary: Paraprofessional Research

Much of the literature concerning the functioning of paraprofessionals is supportive of their use on a therapeutic treatment team and has found that most demonstrate high levels of empathy whether or not they are indigenous with the clientele served. The fact that training is less time consuming and less costly than graduate training enables the paraprofessional to complete an educational program and become a useful member of the mental health work force.

The sixties was the decade in which most of the research occurred largely due to the shortage in mental health manpower and the need for new methods for addressing mental health problems. Cowen and his associates (1967; 1971), and a number of other investigators have conducted a large amount of empirical research and played a major role in proving the worth of the paraprofessional in mental health counseling. Carkhuff and his associates (1965; 1969) have devoted years to ascertaining the kinds of skills and knowledge needed by counselors. Through the efforts of these people, paraprofessionals today are better trained and the clientele better served. The focus on training methods has brought with it an emphasis on accountability and the paraprofessional has been held accountable for the skills he/she learns and the services that are delivered. Empirical studies consistently demonstrate that clientele serviced by paraprofessionals show constructive gain. Clearly, it seems useful to continue employing paraprofessionals in helping roles and maintaining the empirical approach.

The population for the current study comes from a paraprofessional training program at Northern Virginia Community College which has had a training program since 1975. In Northern Virginia there has been a large demand for this type of education with transfer options to university programs. Administrators of this program support research which will improve the quality of education for paraprofessionals and increase their chances for being valued members of a therapeutic team.

CHAPTER 3

METHODOLOGY

Counselor education has many well developed programs for teaching the skills in the initial stage of counseling, however, in the advanced stage of counseling research and training programs are less developed. Problem-solving is one set of skills identified as essential in the advanced stage of counseling and yet training in this is often inadequate. The related literature suggests the need for more empirical research and the purpose of this study is to add both to the problem-solving research and emphasize the need for more training in the advanced stage of counseling. An instrument for measuring the stages of problem-solving is developed so that future instructors and counselors can replicate this training model.

It was hypothesized that the paraprofessional trainee trained in specific problem-solving skills would demonstrate more problem-solving ability with a fellow student and a coached "client" than the untrained paraprofessional. This chapter discusses the methods used for data collection that will accept or reject the hypothesis. The experimental design will be explained in addition to criteria for evaluation of the data, the raters used to score each subject, and possible constraints of the study. An account of the sample selection

is given with relevant information on the participants and the treatment provider. An explanation of the instrument developed for this study will be given with a detailed description of reliability. A thorough discussion of the data collection is presented, and a brief account of the statistical procedures used.

Design, Raters, Constraints

This study examines the differences in performance between a trained and untrained group of student-paraprofessional counselors utilizing problem-solving skills with fellow classmates and coached "clients." It was hypothesized that specific problem-solving training (independent variable) would make a statistically significant improvement in a paraprofessional's problem-solving ability (dependent variable) with others. Problem-solving ability was measured on an instrument designed specifically for this study. The instrument is comprised of seven scales each measuring a specific counselor problem-solving behavior based on the model of Carkhuff (1985). The instrument was used by two independent raters to score the data in the pre and posttests from the pilot, experimental and control groups. Each rater worked independently scoring the subjects and then submitted their completed evaluations. The raters were both female, one age 42 the other age 24, and both had bachelor degrees. The raters had some familiarity with different problem-solving models and received three hours of training in the instrument's use (see Appendix A).

The study used as a basic model the quasi-experimental design as participants were placed in the experimental and control groups through enrolling in a particular human service course. The design is as follows:

O X O

O O

With the quasi-experimental design there can be some gain in external validity because the group is structured as it would be naturally, however, a potential constraint is that there is not complete control over internal validity due to the lack of random assignment. Without this, the sample may be unequal prior to the treatment which could jeopardize the validity of the treatment outcome. Another possible constraint is the difficulty in controlling for counseling experience in the participants as well as innate talent for problem-solving, which could influence the dependent variable. In addition, the project director was the trainer of the experimental group which could be a threat to internal validity. Lastly,it is not presumed that sex or race have much impact on the dependent variable, however, the sample is comprised of a majority of white females which could be considered when considering generalizability.

Population

Northern Virginia Community College is comprised of five campuses, including the Alexandria campus whose students constitute the population for this study. The campus is considered the city campus and services a number of communities in Northern Virginia and Washington, D.C. The participants were from the human services program on the Alexandria campus during the Winter Quarter, 1986, where they were studying to become paraprofessionals. The participants for this study consisted of 72 students, 36 of these in the experimental group and 36 in the control group. Students enrolled in either section of the Helping Relationships II course were part of the experimental group and students enrolled in either section of the Introduction to Human Services course were part of the control group. These courses were selected for participation in the current study because most students enrolled in these would not have taken many other human services courses. All human service students registered for the courses of their choice and became participants simply by being a member of one of the selected courses. The treatment for the experimental group and the pre-posttesting for the experimental and control groups was conducted in two classrooms on the Alexandria campus. Each classroom was equipped in a similar fashion with chalkboards, forty portable desks and chairs which are conducive for practicing counseling skills in training dyads. All participants were asked about their willingness to participate in the study and there was total acceptance.

The instructor for the experimental group was the project director, a white female, age 34, with a master of arts degree in human relations and community development. The instructor had several hundred hours of training and eleven years college teaching experience in problem-solving counseling. The instructor for the control and pilot groups was a Black male, age 37, with a master of arts degree in counseling and seven years college teaching experience. The control group received no problem-solving training of any kind but, instead, completed the standard course content for an introduction to human services course which discussed relevant theories and organizations. The collection of data from these participants was supervised so that the process was the same for the experimental, control and pilot groups. In addition, a personal information form was collected (see Appendix B) and Table 3.1 presents relevant data on the experimental and control groups.

Results indicate that there were not great differences between the experimental and control groups on any of the seven questions from the information form. Both the experimental and control groups had more women than men and more Whites than other races. None of the participants in the study had received prior problem-solving or decision-making training. Five individuals (two from the experimental group and three from the control group) who indicated they had prior problem-solving training were dropped earlier from the sample. Participants in the experimental group completed more human service course work than the control group, however, none of these courses taught problem-solving or decision-making skills. In addition, the experimental group had three more participants with a bachelor's degree

than did the control group, although the total number was only four people, and the control group contained more participants who completed coursework from another college or university. The experimental group had two more paid counselors than the control group, however, the average number of years working as a paid counselor was larger for the control group. The control group had more individuals who had performed volunteer work in human services and for more years than those in the experimental group. It is not the purpose of this study to correlate any of these variables with a participant's problem-solving ability, but instead to report this as relevant participant information which can be further examined when discussing the results of the research.

Table 3.1: Results of the Information Form Completed By Participants In the Experimental and Control Groups

DEMOGRAPHIC CHARACTERISTICS	EXPERIMENTAL GROUP NUMBER OF PEOPLE	CONTROL GROUP NUMBER OF PEOPLE
AGE[a]		
Under 20	2	8
21-30	10	10
31-40	11	11
41-50	9	5
51-60	3	1
Over 60	1	1
RACE		
White	29	25
Black	6	3
Hispanic	0	5
Other	1 (Indian)	1 (Cuban) 1 (Italian) 1 (Jamaican)
COUNSELOR TRAINING CLASSES COMPLETED AT NVCC:		
Helping Relationships I	33	25
Group Process I	15	10
Group Process II	4	4
Group Process III	7	4
Intro. Mental Health II	2	1
Mental Health I	2	3
Mental Health II	1	0
Mental Health III	1	2
COMPLETED COURSES IN PROBLEM-SOLVING OR DECISION-MAKING[b]		
Yes	2	3
No	36	36
COURSES/DEGREE EARNED AT ANOTHER COLLEGE/UNIVERSITY		
I have only attended College at NVCC	25	24
AA Degree or Less (not including course work at NVCC)	7	11
B.A. or B.S.	4	1
M.A. or M.S.	0	0

Table 3.1: (continued)

DEMOGRAPHIC CHARACTERISTICS	EXPERIMENTAL GROUP NUMBER OF PEOPLE	LENGTH OF TIME-GROUP MEAN	CONTROL GROUP NUMBER OF PEOPLE	LENGTH OF TIME-GROUP MEAN
WORKED AS PAID COUNSELOR IN HUMAN SERVICE PROFESSION				
Yes	7	3.8 years	5	5.1 years
No	29		31	
PERFORMED VOLUNTEER WORK IN A HUMAN SERVICE ORGANIZATION				
Yes	5	1.3 years	11	2.6 years
No	31		25	

a The total number of females in the experimental group was 28, and for the control group was 26. The total number of males in the experimental group was eight, and for the control group was ten. A breakdown of females and males according to age group can be found in Appendix E.

b Anyone who answered "yes" to this question was omitted from the study.

Instrumentation

An instrument was developed specifically for the current study with assistance from Dr. J. Fortune, a research faculty member of Virginia Polytechnic Institute and State University. Two scales located in the existing literature were not applicable to the current study. The instrument is a rating form consisting of seven scales each measuring a specific counselor behavior in problem-solving based on Carkhuff's model (1985). Briefly, the counselor behaviors are:

(1) A written definition of the counselee's problem to be solved;

(2) A written definition of the counselee's goal;

(3) A written list of relevant alternative courses of action for solving the problem;

(4) A written list of the counselee's values (likes, dislikes, wants or needs) and weights;

(5) A written evaluation of each alternative course of action with each of the counselee's values and selecting a course of action;

(6) A written evaluation of the chosen alternative course of action to determine if it satisfies the counselee's values and goal;

(7) A written list of steps for the counselee to take once the problem-solving process is completed.

Emphasis was on defining each level of the scale so that the counselor behavior was clearly stated (see Appendix C).

Each scale was pilot tested in the Summer, 1986, to determine reliability using data from a group of 36 participants in an introductory human services course. Participants in the pilot group received identical instructions as those given to the experimental and control groups (refer to the data collection section in this chapter for these instructions).

Prior to the problem-solving exercise participants in the pilot test completed the same personal information form as the experimental and control groups (see Appendix B) in order to assess any major differences between the pilot and the other groups. Results can be found in Table 3.2, and are organized according to each question.

Table 3.2 indicates that there were not great differences between participants in the pilot and the experimental or control groups on any of the seven questions from the information form, however, the minor differences are worth noting. In the area of race, the control group had fewer Blacks than either of the other two groups but had more Hispanics and all had more Whites than other races. The pilot group had finished more human service courses than the experimental or control groups and nine participants in the pilot group stated they had some type of problem-solving training whereas no participants in the experiment had any training. The problem-solving training of the participants in the pilot group would not jeopardize the experiment because the outcome of the pilot group was not being compared to the

outcome of the experimental and control groups. Of all groups, only one person in the pilot group had attained a master's degree.

The three groups were quite similar in several ways, for example, each group contained a majority of White women in the age groups of 21-30 years old and 31-40 years old with the over 60 age group the least represented. The pilot and the experimental groups each had four people who obtained their bachelor's degree while the control group had only one person. All three groups had some members with experience as paid counselors and volunteers, however, the control group's participants had the most number of years as paid counselors and the most people as volunteers. It was not the purpose of the pilot test to correlate any of the variables with a subject's problem-solving ability but instead to report these as relevant subject information which can be examined when discussing the results of the research.

Table 3.2: Results of the Information Form Completed By Participants In the Pilot Group

DEMOGRAPHIC CHARACTERISTICS	NUMBER OF PEOPLE
AGE[a]	
Under 20	5
21-30	12
31-40	10
41-50	8
51-60	1
Over 60	0
RACE	
White	25
Black	9
Hispanic	2
Other	0
COUNSELOR TRAINING CLASSES COMPLETED AT NVCC	
Helping Relationships I	21
Group Process I	22
Group Process II	19
Group Process III	7
Intro. Mental Health II	1
Mental Health I	5
Mental Health II	6
Mental Health III	3
COMPLETED COURSES IN PROBLEM-SOLVING OR DECISION-MAKING[b]	
Yes	9
No	27
COURSES/DEGREE EARNED AT ANOTHER COLLEGE/UNIVERSITY	
I have only attended College at NVCC	17
A.A. Degree or less (not including course work at NVCC)	14
B.A. or B.S.	4
M.A. or M.S.	1

Table 3.2: (continued)

DEMOGRAPHIC CHARACTERISTICS	NUMBER OF PEOPLE	LENGTH OF TIME-GROUP MEAN
WORKED AS PAID COUNSELOR IN HUMAN SERVICE PROFESSION		
Yes	5	2 years
No	31	
PERFORMED VOLUNTEER WORK IN A HUMAN SERVICE ORGANIZATION		
Yes	6	1.7 years
No	30	

[a] The total number of females in the pilot group was 31 and the total number of males was five. A breakdown of females and males according to age group can be found in Appendix E.

[b] Participants were included in the pilot test who indicated previous problem-solving or decision-making training because this would not jeopardize the data.

To test the reliability of the instrument, problem-solving data collected on the participants in the pilot group was analyzed using the Spearman rank correlation coffecient (rho), the Kendall rank correlation coefficient (tau) and the Pearson product-moment correlation (Pearson r). The rho and the tau are statistical tests which measure correlation between variables and are used on ranks with at least ordinal data to measure interrater agreement (Siegel, 1956). The tau is a more powerful test because it measures both direction and distance where the rho only measures direction. Both the rho and the tau were used to compare how the two raters scored a particular participant on the seven scales in week one and week two for the rho and in week one only for the tau.

The Pearson r is a statistical test used to assess the relationship between two variables when variables are measured on an interval scale (Hinkle, Wiersma & Jurs, 1979). It was used to analyze reliability over time by contrasting how one rater scored a participant in week one in comparison to how this rater scored the same participant in week two on each of the seven scales.

Data Collection

All participants in the experimental and control groups completed the same process except that the experimental group received problem-solving training and the control group received no training. All participants in the experimental and control groups received identical instructions in the areas identified below.

1. All were informed about their participation in a research project, the purpose of it, the hypothesis, the nature of pre-posttesting, and experimental vs. control groups. All participants willingly agreed to participate.
2. Each person took a pretest while they were paired as counselor and counselee. The counselee was asked to discuss with the counselor a real decision he/she was currently facing and one which was of a relatively specific nature. The counselee was instructed to make a conserted effort to work with the counselor's suggestions and try to work towards making a real decision. The counselee was requested to refrain from offering advice on procedure or method and the counselor was instructed to use any problem-solving skills that he/she had to help the counselee work towards a decision. He/She was encouraged to accomplish as much as possible as if he/she were the counselee's paid paraprofessional counselor. They were told that they had up to three hours to complete this, but could take as little time as personally needed. The average counseling session was 30 minutes during the pretest and, during the posttest, 30 minutes for the control group and one hour and a half for the experimental group. The average counseling session for the pilot group was 30 minutes during both the pre and posttests.
3. The counselor was informed that problem-solving was a written process and he/she should write down the things

the two of them did to solve the problem and submit this as the pretest. In the event that the counselor did not write anything, he/she was instructed to submit a blank sheet of paper with his/her name on it which would serve as the pretest.

4. Upon completion, the participants were asked to switch the roles and complete the exact process again so that the counselee had an opportunity to work as the counselor.
5. The participants were reminded that in five weeks they would repeat the same exercise with two different people which would serve as two different posttests.

   Participants would be paired up with a classmate different from the one during the pretest and then again with a coached "client", a human service student not part of this study and unknown to the participant. In the pilot group, the participants received no problem-solving training and were reminded that in one week they would repeat this same exercise with a different classmate.

The experimental group completed five weeks of problem-solving training using Carkhuff's model and his text, The Art of Problem Solving (1977). Each training session met once a week for two and a half hours and followed a didactic, modeling, experiential design which, according to the current literature (Bottjer, 1980; Carkhuff and Berenson, 1976; Wallace, 1974), is the most effective teaching design. There were a total of seven problem-solving behaviors to be taught and

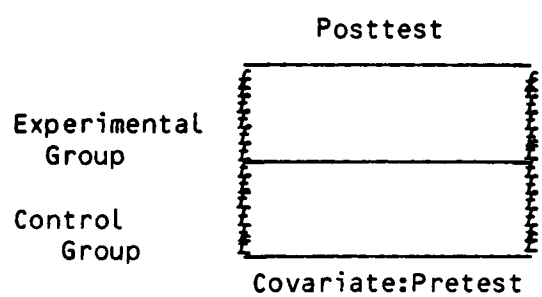
training focussed on mastery of one behavior before moving to the next (see Appendix D). The seven counselor behaviors were as follows:

1. A written definition of the counselee's problem to be solved;
2. A written definition of the counselee's goal;
3. A written list of relevant alternative courses of action for solving the problem;
4. A written list of the counselee's values (likes, dislikes, wants or needs) and weights;
5. A written evaluation of each alternative course of action with each of the counselee's values and selecting a course of action;
6. A written evaluation of the chosen alternative course of action to determine if it satisfies the counselee's values and goal;
7. A written list of steps for the counselee to take once the problem-solving process is completed.

Upon completion of the training, the experimental group participated in two posttests, one with a fellow classmate (different from the pretest or class training) and one with a coached "client". The control group received no problem-solving training and in five weeks completed two posttests exactly as the experimental group had done. Instructions given to both groups were identical to those given for the pretest.

Data Treatment

The analysis of covariance was used to answer the research question, "Do paraprofessional trainees trained in systematic problem-solving skills perform more effectively with fellow classmates and coached "clients" during a problem-solving counseling interaction than untrained trainees?" The null hypothesis states that there is no difference between the experimental and control groups on the adjusted means on the dependent variable and rejection of the null was at the .05 level of significance. The analysis of covariance was used to adjust the posttest means on the basis of the covariate (pretest) means and then compare these adjusted posttest means to determine if they were significantly different from one another. The adjustment on the posttest takes into consideration the initial differences between the pretest means and controls statistically for this to prevent compromising the posttest data (Huck, Cormier, Bounds, 1974). The design is as follows:



Use of the analysis of covariance requires consideration of the assumptions listed below (Hinkle, Wiersma, Jurs, 1979; Huck, Cormier, Bounds, 1974).

1. Whenever the analysis of covariance is used to compare groups of unequal size, testing for the homogeneity of variance is merited.
2. The requirement that the various comparison groups have a common slope.
3. The concept of normality.
4. The concept of linearity.
5. Randomization.

In addition to the analysis of covariance, the analysis of variance, both parametric and nonparametric, was used because these tests are not concerned with as many assumptions as the analysis of covariance. The null hypothesis for the analysis of variance states that there is no difference between the experimental and control groups on the means on the dependent variable and rejection of the null was at the .05 level of significance.

Summary

In summary, the methodology employed in this study provides the opportunity to assess potential paraprofessional workers involved in real counseling interactions instead of in hypothetical role-plays. A model of problem-solving training is presented which incorporates didactic, modeling and experiential learning and can be replicated by counselor educators. The design and the instrument make it possible to assess a trainee's problem-solving skills. Evaluation of the

participant's problem-solving behavior determines if the null hypotheses will be rejected. Chapter 4 discusses the hypotheses and details the results which provide insight into problem-solving training and measurement.

CHAPTER 4

RESULTS

This chapter yields the results of the study beginning with a review of participant characteristics from the pilot, experimental and control groups and their similarities and differences. Prior to the experiment a pilot test was completed to test the reliability of an instrument developed specifically for this study to measure counselor problem-solving behavior. The hypotheses for the pilot, experimental and control groups are restated with a discussion of the supporting data.

Participant Characteristics

All participants completed an information form consisting of seven questions with possible relevance to counselor problem-solving training. An attempt was made to include participants in the pilot, experimental and control groups who had similar backgrounds required for the experiment. This would minimize one group's advantage over another group. The methodology chapter presented a thorough description of the participants' characteristics. A summary of these is given below.

All groups were comprised of more women than men and more whites than other races. The majority of participants fell between the

ages of 21 and 40 years old. It was necessary to ensure that one group did not outweigh the others with participants employed as counselors or related volunteers. This could possibly influence their level of problem-solving skills prior to training. All three groups had similar numbers of participants with paid counseling experience; five people in the pilot group, seven people in the experimental group, and five people in the control group. Those participants with volunteer experience included six people in the pilot group, five people in the experimental group and eleven people in the control group. The number of years as a paid counselor was highest for the control group (Group $\bar{X}$ = 5.1 years) and lowest for the pilot group (Group $\bar{X}$ = 2 years). The number of years as a volunteer was highest for the control group (Group $\bar{X}$ = 2.6 years) and lowest for the experimental group (Group $\bar{X}$ = 1.3 years).

The pilot group had completed more human service courses than the experimental or control groups. The experimental and control groups were similar to each other in this area. Nine participants in the pilot group stated they had completed some type of problem-solving training whereas no participants in the experiment had any prior training. This was not viewed as a constraint because the pilot group was not being compared with the other two groups.

In the experimental, control and pilot groups the majority of participants had attended college only at Northern Virginia Community College. One person in the control group and four people in the experimental group had bachelor degrees. The pilot group contained four people with bachelor degrees and one person with a master's degree.

In conclusion, the three groups were similar on the seven characteristics from the information form with only minor differences. The study attempted to work with a pilot, experimental and control group whose participants were similar in these variables to minimize one group's advantage over another group.

Statistical Procedures

The hypotheses in this study were tested for significance at alpha levels of $p < .05$. Both parametric and nonparametric statistical procedures were used. It is stated by Huck, Cormier and Bounds (1974) "that unless there is sufficient evidence to suggest that the population is extremely non-normal and that the variances are heterogeneous, parametric tests should be used because of their additional power" (p. 197).

The analysis of covariance was the principle statistical test computed to analyze the data in the experiment. The adjustment on the posttest considers the initial differences between the pretest means and controls statistically for this to prevent the posttest data from being jeopardized. The use of the covariate data in the analysis of covariance provides a powerful statistical analysis (Huck, Cormier, Bounds, 1974). The analysis of variance was also computed to determine if the results were supportive of those from the analysis of covariance. Nonparametric statistics were used in the experiment as a comparison to the analysis of covariance when assumptions were violated.

In the pilot test, the nonparametric tests, Spearman rho and Kendall tau, were computed to test for interrater agreement of the instrument. The tau was the most appropriate statistical procedure to use. It measures agreement between the scores given by different raters (Kendall, 1956) which was the purpose of the pilot test. The tau does not assume that the scores under analysis are drawn from a normally distributed population. The tau was computed as a means of comparison with the Spearman rho to determine if the findings were similar. According to Kendall (1956) the tau is a more accurate statistical test for assessing interrater agreement. The tau is more powerful than the rho because it measures both direction and distance where the rho only measures direction.

A parametric test, the Pearson product-moment correlation (r), was also used in the pilot test to determine reliability of the instrument over time by comparing how the same rater scored the participants at two different points in time. The Pearson r is used to determine the relationship between two variables measured on an interval scale (Hinkle, Wiersma and Jurs, 1979). In the current study, data is considered interval because it specifies both the order and the distance between scores.

Results of the Pilot Test

Prior to the actual experiment, a pilot test was required to test interrater agreement on an instrument developed specifically for this study (Fortune, 1985).

The following three statistical tests were used to assess the reliability of the instrument developed for this study:

the Spearman rank correlation coefficient (rho);
the Kendall rank correlation coefficient (tau);
the Pearson product-moment correlation (Pearson r);

The Spearman rho and Kendall tau were used to measure interrater agreement between two raters on each of seven scales which measured counselor problem-solving behavior. Both the rho and tau were used to compare how the two raters scored a particular participant on the seven scales in week one and two for the rho and in week one only for the tau. (The Spearman correlations were statistically significant at the .01 level of significance, therefore, it was only necessary to compute the Kendall correlations for week one.)

Null Hypothesis: There is no correlation between two raters' scores of each participant on seven scales.

In tables 4.1 and 4.2 it can be seen that both the rho and tau yielded strong positive correlations at the .01 level of significance between two raters on the first five of the seven scales, rejecting the null hypothesis for the first five scales. The Spearman rho correlations were statistically significant without adjusting for ties,

however, the tau correlations were somewhat lower and according to Siegel (1956), adjustments should be made with a large number of ties.

TABLE 4.1: Spearman Rho Correlating the Two Raters' Scores on Seven Scales During Week One and Week Two

	Define the Problem	Define the Goal	List Alternatives	List Values	Assess each Alternative	Evaluate Decision	List the Next Steps
rho[a] (week 1)	.998	.995	.993	.998	.999		
rho[a] (week 2)	.999	.998	.998	.997	.999		

a Test of significance based on the student t disbtribution ($t = r_s\sqrt{\frac{N-2}{1-r_s^2}}$ where N = number of observations and r_s = Spearman rho) indicated that the Spearman rho coefficients presented in the table were significant at the .01 level. Therefore, the null hypothesis of no correlation was rejected in every case reported in the table.

TABLE 4.2: Kendall Tau Correlating Two Raters' Scores on Seven Scales During Week One

	Define the Problem	Define the Goal	List Alternatives	List Values	Assess each Alternative	Evaluate Decision	List the Next Steps
tau[a]	.973	.561	.536	.765	.446		
Level of Significance[b]	Z = 8.461	Z = 4.878	Z = 4.664	Z=6.652	Z = 3.88		

a Each score is corrected for ties.

b In every case reported in the table the null hypothesis of no correlation between the raters' scores is rejected at the .01 level of significance. This is due to the fact that all of the z values lie above 2.34, the value associated with probability .01. The computation of the z statistic is described in Siegel, page 221.

The Pearson r was computed to determine reliability of the instrument over time by comparing how the same rater scored the participants during two different weeks.

Null Hypothesis: There is no correlation between the same rater's scores of the participants during week one and week two.

In Table 4.3 it can be seen that for the first five scales the Pearson r did not yield significant positive correlations at the .05 level of significance and the null hypothesis could not be rejected.

Table 4.3: Pearson r Correlating One Rater's Scores On Seven Scales For The Same Participants In Week One and Week Two

Week 1 and 2

	Define the Problem	Define the Goal	List Alternatives	List Values	Assess each Alternative	Evaluate Decision	List the Next Steps
r	.000	.000	.001	.000	.001		

There was insufficient participant data to assess reliability on scale six which measures how well the counselor evaluated the decision that was made with the counselee; and on scale seven which measures how well the counselor helped the counselee plan some future steps for him/herself upon completion of problem-solving. In an effort to examine how trained paraprofessional trainees scored on scales six and seven in comparison to participants in the pilot group, the group means were computed on posttest one and two for both groups. Results in Table 4.4 indicate that out of a possible two points for each scale, the experimental group had a higher group mean on both scales as compared to the pilot group.

TABLE 4.4: Group Mean on Scales Six and Seven in Problem-Solving for Participants in the Experimental and Pilot Groups

	Experimental Group Scale 6	Scale 7		Pilot Group Scale 6	Scale 7
Posttest 1	$\bar{X}$ = 1.3	$\bar{X}$ = .4	Posttest 1	0	0
Posttest 2	$\bar{X}$ = 1.6	$\bar{X}$ = .8	Posttest 2	0	0

N = 36 N = 36

total points per scale = 2.0

Results of the Experimental and Control Groups

The study used as a basic model the quasi-experimental design and the analysis of covariance was used to adjust the posttest means on the basis of the covariate (pretest) means and then compare these adjusted posttest means to determine if there was a statistically significant difference. Use of the analysis of covariance requires consideration of the assumptions listed below (Hinkle, Wiersma, Jurs, 1979; Huck, Cormier, Bounds, 1974).

1. Whenever the analysis of covariance is used to compare groups of unequal size, testing for the homogeneity of variance is merited.
2. The requirement that the various comparison groups have parallel slopes.
3. The concept of normality.
4. The concept of linearity.
5. Randomization.

A pretest and two posttests were given to the experimental and control groups to assess problem-solving skills of the paraprofessional counselor. The first posttest involved the paraprofessional in the counseling role with a fellow classmate, while the second posttest involved the paraprofessional in the counseling role with a coached "client".

Null Hypothesis: There is no difference between the experimental and control groups on the adjusted means on the dependent variable.

Table 4.5 indicates that in both situations the null hypothesis is rejected at less than the .05 level of significance with the F statistic at 298.148 and the significance of F .000 for the first posttest, and the F statistic at 519.344 and the significance of F .000 for the second posttest.

TABLE 4.5: Tests of Significance for PostTests One and Two using Analysis of Covariance

	Posttest 1					Posttest 2				
Source of Variation	SS	df	MS	F	Signif. of F	Source of Variation	SS	df	MS	F	Signif. of F
Residual	905.039	69	13.117			Residual	717.279	69	10.395		
Regression (Covariant adjustment)	24.934	1	24.934	1.901	.172	Regression (Covariant adjustment)	2.610	1	2.610	.251	.618
Group	3910.656	1	3910.656	298.148	.000	Group	5398.762	1	5398.762	519.344	.000

In table 4.6, the means are listed for both groups and for both posttests and in the first posttest, the mean for the experimental group was adjusted lower by .068 and the mean for the control group adjusted higher by .067. The group mean for the experimental group was much greater than the group mean for the control group both before and after the means were adjusted. In the second posttest, the mean for the experimental group was adjusted higher by .021 and the mean for the control group adjusted lower by .022. Again, the group mean for the experimental group was much greater than the group mean for the control group both before and after the means were adjusted.

Table 4.6: Observed and Adjusted Means

Cell	First PostTest		Second PostTest	
	Observed Mean	Adjusted Mean	Observed Mean	Adjusted Mean
1. Experimental Group	17.250	17.182	19.056	19.077
2. Control Group	2.278	2.345	1.667	1.645

In addition to these findings, Table 4.7 indicates that the covariate used in the current study, at a significance of .171 in the first posttest, and .617 in the second posttest, was not found to be significant at the .05 level. In response to this, an analysis of variance was computed on posttest two.

Null Hypothesis: There is no difference between the experimental and control groups on the means on the dependent variable.

The results in Table 4.8 indicate that the null hypothesis was again rejected at less than the .01 level of significance with the F statistic at 529.235 and the significance of F at .000.

TABLE 4.7: Tests of Homogeneity of Regression for PostTests One and Two using Analysis of Covariance

Posttest 1						Posttest 2					
Source of Variation	SS	df	MS	F	Signif. of F	Source of Variation	SS	df	MS	F	Signif. of F
Residual	886.422	68	13.036			Residual	703.224	68	10.342		
Group	4035.014	1	4035.014	309.538	.000	Group	5442.722	1	5442.722	526.298	.000
Pre (covariate)	24.934	1	24.934	1.913	.171	Pre (covariate)	2.610	1	2.610	.252	.617
Group by Pre	18.617	1	18.617	1.428	.236	Group by Pre	14.055	1	14.055	1.359	.248

TABLE 4.8: Tests of Significance for PostTest Two
Using Analysis of Variance

Source of Variation	SS	df	MS	F	Signif. of F
Group Main Effect	5442.722	1	5442.722	529.235	.000
Residual	719.889	70	10.284		
Total	6162.611	71	86.797		

Assumptions for the Analysis of Covariance

According to Huck, Cormier, Bounds (1974), "whenever the analysis of covariance is used to compare groups that differ in size, a test of the assumption of homogeneity of variance is appropriate. With groups having the same number of Ss, however, the analysis of covariance is robust to this assumption and it need not be subjected to empirical testing" (p. 143). The current study met this assumption.

Table 4.7 indicates that there was no interaction between the groups' pretests, .236 for the first posttest and .248 for the second posttest, which are greater than the .05 level of significance, so the assumption of parallel slopes is met.

The assumption of normality was not met so a nonparametric analysis of variance was computed on both posttests.

Null Hypothesis: There is no difference between the experimental and control groups on the means on the dependent variable.

Table 4.9 supports the previous findings and rejects the null hypothesis at less than the .01 level of significance.

TABLE 4.9: Tests of Significance for the Two PostTests Using a Nonparametric Test

Kruskal-Wallis One-Way ANOVA

	First Posttest		Second Posttest	
	MEAN	Significance level, corrected for ties	MEAN	Significance level, corrected for ties
Experimental Group	54.33	.0000	54.50	.0000
Control Group	18.67		18.50	

The assumption of linearity assumes that the increase in number of points on the covariate in relation to the dependent variable is similar (Huck, Cormier, Bounds, 1974). The control group in the current study somewhat met this assumption, however, the experimental group did not.

The last assumption, randomization, was not met in the current study. The experimental and control groups were comprised of students from established groups and were not a random sample. To determine if the two groups had equivalent pretest means, an analysis of variance and a Kruskal-Wallis were computed on the covariate. If the null hypothesis cannot be rejected then one can assume the pretests are equivalent (Huck, Cormier, Bounds, 1974).

Null Hypothesis: There is no difference between the pretest means of the experimental and control groups.

The results from the analysis of variance in Table 4.10 indicate that the null hypothesis could not be rejected at the .05 level of significance. The F statistic was .926 and the significance of F .339. The results from the Kruskal-Wallis support the findings from the analysis of variance. In Table 4.11, the χ^2 = .9276 and the significance of F is .3355. Again, the null hypothesis cannot be rejected at the .05 level of significance.

TABLE 4.10: Tests of Significance for the Covariate Using Analysis of Variance

Source of Variation	SS	df	MS	F	Significance of F
Group Main Effect	12.500	1	12.500	0.926	0.339
Residual	945.000	70	13.500		
Total	957.500	71	13.486		

TABLE 4.11: Tests of Significance for the Covariate
Using Kruskal-Wallis one-way ANOVA

Mean Rank		Corrected for Ties	
		Chi-Square	Significance
38.82	Experimental	.9276	0.3355
34.18	Control		

Summary of Results

Prior to the actual experiment, a pilot test was required to test interrater agreement on an instrument developed specifically for this study. In testing the null hypothesis the data reveal a significant positive correlation between the two raters' scores on five of the seven scales. There was not enough data to determine reliability on scales six and seven. The data did not reveal a significant positive correlation when assessing one rater's scores at two different points in time.

The study used as a basic model the quasi-experimental design and the analysis of covariance was used to adjust the posttest means on the basis of the covariate (pretest) means and then compare these adjusted posttest means to determine if there was a statistically significant difference.

In testing the null hypotheses in the experiment, the data reveal a statistically significant difference between the experimental and control groups in problem-solving counseling interactions. The group mean for the experimental group was much greater than the group mean for the control group both before and after the means were adjusted for the analysis of covariance.

The analysis of covariance requires that certain assumptions be met. The study met the assumptions of homogeniety of variance and parallel slopes. The assumptions of normality, linearity and randomization were not met. Therefore, a parametric and nonparametric analysis of variance were computed to determine if the violated

assumptions jeopardized the outcome. Results supported those from the analysis of covariance and indicated a statistically significant difference between the experimental and control groups in problem-solving counseling interactions.

Chapter five discusses the conclusions that can be drawn from the results in chapter four, and presents recommendations for future work.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

Chapter five provides a summary of the hypotheses and results stated in chapter four with conclusions indicated from the data, and recommendations for further research.

Discussion of Results

The current study attempted to determine the effect of systematic training on paraprofessionals' use of problem-solving skills in counseling interactions. The study used a quasi-experimental design and data obtained on two posttests from an experimental group was compared to data obtained from a control group and then measured on an instrument developed specifically for this study.

The null hypothesis states:

> There is no difference between the experimental and control groups on the adjusted means on the dependent variable.

Using the analysis of covariance, a statistically significant difference was found between the experimental and control groups at less than the

.01 level of significance, rejecting the null hypothesis. This indicates that problem-solving training enables the trainee to use these skills in counseling interactions more than untrained trainees. The adjusted means on both posttests identified in Table 4.6 (Chapter four) support these results. The experimental group had an adjusted mean of 17.182 in comparison to the control group's of 2.345 on the first posttest. On the second posttest, the adjusted mean was 19.077 for the experimental group and 1.645 for the control group. This indicates again that training made a significant positive difference.

In the current study, Carkhuff's (1985) problem-solving model was effective in teaching paraprofessional trainees the skills needed for resolving conflicts in counseling interactions. This supports the empirical work of Nezu and D'Zurilla (1979; 1980; 1981) in which individuals trained in specific problem-solving skills demonstrated more ability than untrained individuals dealing with hypothetical problems. Similar to this was the empirical work of Hutchinson (1976) and Mendonca and Seiss (1976) in which the experimental group displayed an increased ability over the control group in one skill of problem-solving, generating alternatives. The empirical work of Wallace (1974; 1975) and Bottjer (1980) with coached "clients" is also supported by results from the current study. Trained individuals demonstrated more problem-solving skills with coached "clients" than untrained individuals.

Prior to the actual experiment, a pilot test was completed in order to test reliability of the instrument developed for the current study. Two statistical tests were used to measure interrater agreement,

the Spearman correlation (rho) and the Kendall correlation (tau). The null hypothesis states:

> There is no correlation between two raters' scores of each participant on seven scales.

Both the rho and tau rejected the null hypothesis at the .01 level of significance on the first five of seven scales. Thus, the instrument was reliable in testing for interrater agreement on the first five scales and could be used by the raters to evaluate participants' level of problem-solving skills in the experimental and control groups.

A third test, the Pearson correlation (r), was computed to determine reliability of the instrument over time. The null hypothesis states:

> There is no correlation between the same rater's scores of the participants during week one and week two.

The Pearson r failed to reject the null hypothesis at the .05 level of significance on the first five of seven scales. There are two explanations for these low correlations, the first being that the pre and posttest are not standardized tests so some variability in behavior can be expected. The trainee is being assessed in two different counseling interactions with two different "clients" and there would tend to be some variance in the trainee's behavior. However, the second

explanation is perhaps more relevant because it identifies the fact that untrained paraprofessional trainees are not consistent in their behavior. These individuals lack essential counseling skills and, therefore, may be uncertain about how to help a counselee in problem-solving. The trainee may think of one or two obvious strategies to use with a counselee, for example, considering some alternatives for solving his/her problem, but the untrained person does not approach the problem-solving experience in an organized manner with a variety of strategies. Therefore, he/she does things differently from week to week and the instrument was not measuring similar behavior in week one and week two. It is an interesting comparison to review the data from trained participants in the experimental group. They demonstrate consistency in behavior in two different problem-solving interactions with "clients" (high scores in both posttest one and posttest two). These individuals had an organized set of skills to use and completed most, and sometimes all, of the stages in the problem-solving process. Thus, it is suggested by the project director that the problem with the Pearson r correlations is not a function of the instrument but is due to the inconsistency in behavior of the untrained participants.

There was insufficient data obtained from the participants to assess reliability on scales six and seven. This will be discussed later under the heading "Constraints."

Assumptions for the Analysis of Covariance

Use of the analysis of covariance requires consideration of the assumptions given below:

1. homogeneity of variance;
2. parallel slopes;
3. normality;
4. linearity;
5. randomization.

One can assume the F statistic in the analysis of covariance to be a valid F due to the assumptions of homogeneity of variance and parallel slopes. The analysis of covariance is robust to the assumption of homogeneity of variance in groups with an equal number of participants (Huck, Cormier, Bounds, 1974). The assumption of parallel slopes was demonstrated in Table 4.7 (chapter four) when there was no interaction between the groups' pretests. These assumptions were met in the current study. The other assumptions were not met but further examination reveals that the dependent variable does not appear to have been jeopardized by these assumptions.

The assumption of normality refers to the normal distribution of the posttest scores. This assumption was not met by the current study, so a nonparametric analysis of variance was computed on both posttests because the nonparametric statistic does not depend on a normal distribution.

The null hypothesis states:

> There is no difference between the experimental and control group on the means on the dependent variable.

Results in Table 4.9 (chapter four) reject the null hypothesis at less than the .01 level of significance. This demonstrates definitive agreement that training made a strong, positive difference in paraprofessionals' use of problem-solving skills, although, the exact numerical difference is not clear. In other words, the difference is qualitative, not quantitative, because the raters consistently scored the experimental group with high scores and the control group with low scores but frequently did not have exact agreement on a particular score. Although a quantitative measurement is functional, the qualitative results of this study are worthy of note.

The assumption of linearity assumes that the increase in number of points on the covariate in relation to the dependent variable is similar (Huck, Cormier, Bounds, 1974). This assumption was met, somewhat, by the control group, however, the experimental group did not meet this assumption. A possible explanation for this is the fact that there was much growth between the pre and posttest in the experimental group. The group $\underline{F}$ is so large in the current study (298.148 in the first posttest and 519.344 in the second posttest) it is unlikely that the results are affected by this assumption. Related to the assumption of linearity is the finding that the covariate in this study was not found to be significant at the .05 level which means that the covariate may not be useful. The analysis of variance was computed on the second posttest to use as a comparison with the results from the analysis of covariance.

The null hypothesis states:

> There is no difference between the experimental and control groups on the means on the dependent variable.

The null hypothesis was again rejected at less than the .01 level of significance implying that there is a significant difference between the experimental and control groups (see Table 4.8, chapter four). The analysis of variance is not concerned with linearity or the covariate, therefore, it seems reasonable to consider the F statistic as valid.

The last assumption, randomization, was not met in the current study because the two groups were not comprised of a random sample. In the absence of randomization groups may differ prior to the treatment and these differences may be reflected in the outcome of the study. Computing an analysis of variance on the covariate would determine if the covariate means were equivalent. If statistically significant equivalency is established the groups may be considered equal (Huck, Cormier and Bounds, 1974).

The null hypothesis states:

> There is no difference between the pretest means of the experimental and control groups.

As indicated in Table 4.10 (chapter four) the significance of F for the analysis of variance (.339) is greater than the .05 level so the null hypothesis cannot be rejected. In addition, a Kruskal-Wallis, nonparametric test was computed on the covariate, and findings support the results of the analysis of variance on the covariate. Table 4.11 (chapter four) indicates the significance of F for the Kruskal-Wallis (.3355) is greater than the .05 level so, again, the null hypothesis cannot be rejected. One can assume by these two measures that the covariate means of the experimental and control groups are equivalent. The F statistic in the analysis of covariance can be considered valid.

Discussion of Results from the Information Form Completed by Participants in the Pilot, Experimental and Control Groups

All participants completed an information form consisting of seven questions so that an attempt could be made to involve only those participants with similar backgrounds relevant to the experiment. It was necessary to ensure that one group (the pilot, experimental or control) did not outweigh the others in a particular variable so as to minimize one group's advantage over another group.

Data collected from participants on the personal information form revealed that the three groups were similar on the eight variables, identified below, with only minor differences:

Age

Sex (This variable was not a question on the information form. The project director recorded the sex of each participant.)

Race

Counselor training classes completed at Northern Virginia Community College

Courses/degree earned at another college/university

Experience as a paid counselor

Volunteer work in a human service area

Previous problem-solving training

The variables most likely to affect the dependent variable would be;

1. Counselor training classes completed at N.V.C.C.
2. Experience as a paid counselor.
3. Volunteer work in a human service area.
4. Previous problem-solving training is a variable likely to affect the dependent variable in the experimental and control groups. However, no participants were allowed with prior training in either of the two groups.

At the present time, research in problem-solving has not examined the correlation of generic counseling training, counseling experience or innate ability with problem-solving competence. This is due, at least in part, to the difficulty in measuring these variables. In the current

study the pilot, experimental and control groups had similar numbers of participants with paid counseling experience; five people in the pilot group, seven people in the experimental group, and five people in the control group. Those participants with volunteer experience included six people in the pilot group, five people in the experimental group and eleven people in the control group. The group mean for number of years as a paid counselor and as a volunteer was highest for the control group and yet this group scored lower in problem-solving competence than the experimental group. Thus, it does not appear that these variables had an appreciable affect on the outcome of the study.

Research in problem-solving to date has not examined the correlation of age, sex or race with problem-solving competence. There has been no indication that these variables, by themselves, correlate positively or negatively with problem-solving ability. The sample for the study was comprised of a majority of white females which could be considered when thinking about generalizability.

Constraints

The project director was the trainer of the experimental group which could be a threat to internal validity. There is a potential here for experimenter bias. The project director was used as the trainer because she was the only individual qualified at the college to do the intensive skills-training in problem-solving. Four other instructors questioned indicated they could lecture on problem-solving theory but could not teach the relevant skills. To minimize this potential

constraint a few measures were taken. First, the control and pilot groups were handled by an instructor, different from the project director. This would ensure that the project director did not unintentionally influence the results of the control or pilot groups. Second, scoring was done solely by two independent raters with no chance of bias here from the project director. Third, it is important to compare the group means for the experimental and control groups on the pre and posttests. Both groups were placed in interpersonal situations to counsel people with real problems during the pre and posttests. The gain was so significant for the experimental group that it seems reasonable to assume that they learned something which the control group did not, in order to obtain these results.

The current study used the quasi-experimental design and a potential constraint is the lack of random assignment which could jeopardize internal validity. However, it is a common practice of research in education to study groups as they naturally are and not randomly assigned. For example, it is popular to use established courses of instruction for studying a new method of teaching, a variable related to learning, a type of testing procedure, to name a few. Therefore, it is important to identify this potential constraint and work to overcome its limitations. The current study attempted to do this in two ways; first, by involving participants in the three groups (the pilot, experimental and control groups) who were similar on eight variables. Second, possible differences in the groups' pretest scores were considered when selecting the statistical procedures. The analysis of covariance was computed to adjust the posttest means on the basis of

differences on the covariate (pretest) means. The analysis of variance and the Kruskal-Wallis one-way analysis of variance were computed on the covariate to determine if the experimental and control groups had equivalent pretest means. It was determined that the pretest means from both groups were equivalent. Results from the analysis of covariance implied a statistically significant difference between the experimental and control groups. It does not appear that the lack of randomization affected the validity of the outcome. However, the study could be replicated in the future using a random sample and compare the results with those from the current study.

The last constraint of the study is with the instrument. There was insufficient participant data to assess reliability on the last two scales, six and seven. Scale six measured how well the counselor evaluated the decision that was made with the counselee. Scale seven measured how well the counselor helped the counselee plan some future steps for him/herself upon completion of problem-solving. These reflect the last two stages in the problem-solving process and it appears that these stages are not considered part of this process by paraprofessional trainees and they omit these stages. In an effort to examine if trained paraprofessional trainees scored differently on scales six and seven in comparison to the participants in the pilot group, the group means were computed on posttest one and two for both groups. Results listed in Table 4.4 (chapter four) indicate that out of a possible two points for scales six and seven, the experimental group had a higher group mean on both scales as compared to the pilot group. This implies that systematic training does increase a participant's use

of stages six and seven in a problem-solving counseling interaction. However, training in stage seven needs increased attention because the experimental group received a relatively low group mean on scale seven following training. This last stage in problem-solving seems to be overlooked by trainees involved in counseling interactions. There is consensus in the literature that the last stage is important to the problem-solving process (Horan, 1979). Future training programs must focus on stage six and especially stage seven by emphasizing the didactic, modeling and experiential training format discussed in the literature review (Bottjer, 1980; Carkhuff, 1973; Wallace, 1974). The emphasis on training should increase trainee performance on stages six and seven in problem-solving.

Conclusions and Contributions

The purpose of the current study was to focus attention on the advanced stage of counseling and the need for additional paraprofessional counselor training programs. In particular, the study focussed on one advanced counselor skill, problem-solving and contributed to the empirical work in this area. The results of the study indicate that the training received by the experimental group was effective in promoting trainees' use of problem-solving skills in counseling interactions. Beyond these general statements, there are a number of specific contributions reflecting the implications for future theory.

1. Counselor education must include training in both the initial and advanced stages of counseling. Efforts should be made to identify counselor skills in the advanced stages and conduct empirical research.

The current study attempted to increase awareness of the need for more training in the advanced stage of counseling. There is agreement on the skills which comprise the initial stage of counseling and the importance of this process. However, the advanced counselor skills are less defined and often the training programs are either inadequate or nonexistent. Empirical work in this area is frequently lacking.

It has been the project director's experience over the past eleven years that both paraprofessional and counselor trainees can become well trained in initial counselor skills. However, they are often unprepared when they must help counselees beyond this stage and into behavior change. Training in advanced counselor skills would be advantageous for the trainee.

Problem-solving has been identifed as one set of skills in the advanced stage of counseling. The current study identifies the importance of this training, the obligation to go beyond current efforts, and the necessity for more empirical work.

2. Problem-solving is not only a verbal process, it is a written process as well. Problem-solving involves systematic thinking and action in specific stages. The

stages are measurable and are effective in promoting trainee acquisition of problem-solving skills.

The model used in the current study divides the problem-solving process into seven individual skills. Trainees are required to learn the entire process by practicing one skill at a time. The methodology is provided clearly and systematically so that it can be easily replicated. The study can serve as a model for others in the development of more comprehensive training programs. For example, empirical research combining initial counselor skills with problem-solving would be a contribution to the field of counselor education.

Problem-solving is measured in the current study on an instrument developed specifically for this research. The instrument is a contribution to an area where measurement is inadequate and future empirical work is needed.

3. Counselor training programs must involve the trainees in didactic, modeling and experiential learning in order to get the most gain.

The literature supports the use of all three training methods for problem-solving instruction (Horan, 1979). The current study incorporated all three methods with special emphasis on experiential learning. Trainees were involved with real, not hypothetical, problems in counseling interactions. It is the belief of the project director

that trainees learn the most about problem-solving counseling when they are involved interpersonally with another person.

4. The skills necessary for the paraprofessional to function effectively are often the same as those for the professional counselor.

The current study concerned itself with the effectiveness of paraprofessionals trained in problem-solving skills. The literature supports the use of paraprofessionals as lay counselors (Appleby, 1963; Carkhuff and Truax, 1965; Cowen, Gardner and Zax, 1967; Mendel and Rapport, 1963; Rioch, 1966). Problem-solving skills, however, are not unique to the paraprofessional and training programs for the professional counselor need to encorporate these skills. Several theorists (Anthony, 1974; Carkhuff, 1985; D'Zurilla and Goldfried, 1971; Heppner, 1984) believe that problem-solving skills are essential for counselors to have and counselors need more than empathy to assist a counselee in problem-solving (Heppner, Neal and Larson, 1984; Doyle, 1982). Anthony, Margules and Collingwood (1974) submit that counselors need these skills in order to teach their counselees how to solve current and future problems.

Recommendations for Future Research

It is essential to continue both research and training efforts in the advanced counselor skills, of which problem-solving is one. The following are recommendations for future research:

1. The problem-solving instrument developed for this study is quite acceptable as a qualitative instrument and can be used as such by investigators. Continued efforts at defining, behaviorally, each level on the scales may make it a quantitative instrument. At that time the instrument would need to be pilot tested again for reliability.
2. During future problem-solving training sessions, it would be useful to concentrate efforts on stages six and seven to ensure that trainees understand the importance of these last two stages. Results of the data collected from this group can be compared to the results from this study for similarities and differences.
3. It would be of use to replicate this study with paraprofessionals currently working in a human service setting and assess their use of problem-solving skills with clients. The eventual goal of the paraprofessional trainee is to work in a human service setting and this would provide data on the use of skills in a work setting with a clientele different from the one at a college or university.

4. This study should be replicated in a college or university counseling degree program to determine the similarities and differences with the paraprofessional experience.
5. A future study examining skill retention would be relevant to determine after a six and twelve month period how much of the problem-solving skills are retained and used by the participants. A variation of this research would be to examine the participants' use of problem-solving skills in their own lives for personal decisions. Results could assist the development of future training programs emphasizing not only skill acquisition but also application.
6. The study should be replicated in a setting with more participants and using counselor educators, other than project directors, for the didactic phase of the training.
7. It would be advantageous to study problem-solving training in organizational development settings due to the generic use and importance of the problem-solving process.
8. Lastly, it would be advantageous to expand this study to include training in interpersonal skills and examine the effect of these skills on a counselor's problem-solving ability. Tapes of the counseling interaction could be submitted to the researcher along with the problem-solving written work.

Project Director's After Thoughts

I have been an instructor in counselor education for 11 years and am committed to teaching students concrete skills so they may have tools to apply in their own lives and in their counseling relationships.

The following are those insights gained from my research which are not supported by measurable data.

1. A majority of students become enthusiastic learners when they receive training in concrete skills and can apply these skills in counseling interactions.

Over the years I conversed with and trained a large number of undergraduate and graduate students in counseling-related fields. Many complain of their inability to help individuals take constructive action in their lives. They experience difficulty in moving beyond the initial stage of counseling. Theoretical training is often excellent, but the students express dissatisfaction with their inability to apply the theories. When students receive concrete training in counselor skills the majority become committed to learning, not only in one particular course, but in other areas of their lives. Their confidence increases and they feel encouraged to learn as much as possible. In addition, they engage in tremendous self-exploration, learning about themselves and people in general.

The results from my research indicate a substantial difference between the trained and untrained groups in problem-solving competence. In addition to these results, it appears that trained students have a different attitude toward counseling than the untrained individuals. Trained, more than untrained students, consider seriously their counselor roles and work harder at their counseling tasks. In addition, trained students tend to develop better relationships with the individuals they are helping. They approach the counseling session organized and with strategies more often than their untrained counterparts.

It is clear that theoretical training in counselor education is essential, however, skills-training is a necessary component.

2. Counselor skills required in the advanced stage of counseling need to be identified.

Instructors must pool the resources to teach these various skills. Where deficits exist, we must develop the competencies which will enable us to teach skills.

3. Skills-training requires students and instructors to take risks.

The most effective form of skills-training involves the students in counseling real, everyday problems. To engage in this requires risk on the part of the student. He/She must

self-explore and self-disclose in order for a meaningful counseling interaction to occur. It is much safer to work with text book problems. The instructor must also risk because he/she can never be fully prepared for the kinds of problems to emerge during training. Ultimately, the instructor is responsible not only for effective resolution of the problem, but also for teaching students the counselor skills needed to manage the situation. The instructor must be proficient in the skill he/she is teaching and have the ability to be spontaneous during training sessions.

4. Scales for measuring individual counselor skills cause less difficulty to use when each level of a scale is defined in behavioral terms.

When a scale is defined in behavioral terms there appears to be a greater chance for interrater agreement. Training a rater in the use of the instrument may be more easily accomplished when the instrument is quantitative. Furthermore, it is easier to be objective when using a quantitative instrument. However, it is difficult to quantify certain counseling variables. Our efforts to quantify often facilitate the development of effective qualitative instruments. These instruments can be quite effective in measuring change. When it is possible, we can strive to create quantitative instruments or, perhaps, develop instruments which are a combination of the two. The instrument developed for this study has both quantitative and qualitative variables. Interrater agreement was obtained and it is a useful

instrument. Future applications of this instrument may reveal new ways in which the scales can be quantified if this seems desirable.

REFERENCES

Agras, Stewart, Kazdin, Alan, and Wilson, G. Terense. (1979). Behavior therapy. Toward an applied clinical science. San Francisco: W.H. Freeman and Co.

Altmaier, E., and Bernstein, D. (1981). Counselor trainees' problem-solving skills. Counselor Education and Supervision, 20, (No. 4), 285-290.

Anthony, W.M., Margules, Adela, and Collingwood, T. (May/June, 1974). A decisive approach. Journal of Rehabilitation, 40, (No. 3), 18-20.

Appleby, L. (1963). Evaluation of treatment methods for chronic schizophrenia. Archives of General Psychiatry, 8, 8-21.

Aubrey, R.F. (1977). Historical development of guidance and counseling and implications for the future. Personnel and Guidance Journal, 55, 288-295.

Bandura, A. (1961). Psychotherapy as a learning process. Psychological Bulletin, 58, 143-159.

Beck, J.C., Kantor, D., & Gelineau, V.A. (1963). Follow-up study of chronic patients "treated" by college case aide volunteers. American Journal of Psychiatry, 120, 269-271.

Berenson, Bernard. (1974). Confrontation, for better or for worse. Massachusetts: Human Resource Development Press.

Berenson, B.G., Carkhuff, R.R., and Myrus, P. (1966). The interpersonal functioning and training of college students. Journal of Counseling Psychology, 13, 441-446.

Bergin, A.E. (1963). The effects of psychotherapy: Negative results revisited. Journal of Counseling Psychology, 10, 244-250.

Bloom, Bernard (1977). Community mental health, a general introduction. California: Brooks/Cole.

Borgen, William, and Amundson, Norman. (Oct., 1980). A problem-solving approach to group employment counseling. Andre Paquin (Ed.) Canadian Counsellor, 15, (No. 1) 10-15.

Bottjer, Fritz H. (1980). A comparison of alternative rehearsal strategies in video tape training of decision-making counseling skills. Dissertation (order no. 81-03487). Stanford University.

Brammer, L. (1973). The helping relationship: Process and skills. Englewood Cliffs, N.J.: Prentice-Hall.

Butcher, E. and Scofield, M. (Sept., 1984). The use of a standardized simulation and process training for studying clinical problem-solving competence. Counselor Education and Supervision, 70-83.

Carkhuff, R.R. (1969). Helping and human relations, vol. I and II. New York: Holt, Rinehart, and Winston.

Carkhuff, R.R. (1985). Productive problem-solving. Amherst, Mass.: Human Resource Development Press, Inc.

Carkhuff, R.R. (1983). The art of helping V. Massachusetts: Human Resource Development Press.

Carkhuff, R.R. (1977). The art of problem-solving. Massachusetts: Human Resource Development Press.

Carkhuff, R.R. (1971). The development of human resources. Education, psychology and social change. New York: Holt, Rinehart, Winston.

Carkhuff, R.R. (1968). The differential functioning of lay and professional helpers. Journal of Counseling Psychology, 15, 117-126.

Carkhuff, R.R., and Banks, G. (1969). The effects of human relations training upon relations between races and generations. Journal of Counseling Psychology, in press.

Carkhuff, R.R. and Berenson, B. (1977). Beyond counseling and therapy. New York: Holt, Rinehart and Winston.

Carkhuff, R.R., and Berenson, B.G. (1966). Teaching as treatment. Amherst, Massachusetts: Human Resource Development Press.

Carkhuff, R.R., and Griffin, A. (1971). The selection and training of functional professionals for the inner-city pre-school. Journal of Research and Development in Education, 4, 87-96.

Carkhuff, R.R., and Truax, Charles. (1965). Lay mental health counseling: The effectiveness of lay group counseling. Journal of Consulting Psychology, 29, 426-431.

Clarke, Robert, Gelatt, H.B., and Levine, Louis. (Sept., 1965). A decision-making paradigm for local guidance research. Personnel and Guidance Journal, 40-51.

Colarelli, N.J., & Siegel, S.M. (1963). Administrative structure and treatment goals: Diprhythmia? Mental Hospitals, 14, 608-612.

Colarelli, N.J., & Siegel, S.M. (1966). Ward H: An adventure in innovation. Princeton, New Jersey: Van Nostrand.

Corey, Gerald. (1982). Theory and practice of counseling and psychotherapy (2nd ed.). California: Brooks/Cole.

Cowen, Emory, Gardner, Elmer, and Zax, Melvin. (1967). Emergent approaches to mental health problems. New York: Appleton - Century -Crofts.

Danish, Steven, and Brock, Gregory. (Dec., 1974). The current status of paraprofessional training. Personnel and Guidance Journal, (No. 4), 299-303.

Danish, Steven, D'Augelli, Anthony, Hauer, Allen. (1980). Helping skills: A basic training program. Second edition. New York: Human Services Press.

Dixon, David, Heppner, Paul, Petersen, Chris, and Ronning, Royce. (1979). Problem-solving workshop training. Journal of Counseling Psychology, 26, 133-139.

Doyle, Robert. (1982). The counselor's role. Communication skills, or the roles counselors play: A conceptual model. Counselor Education and Supervision, 22, (No. 2), 123-131.

Dugger, James G. (1980). The new professional, an introduction for the human service worker. 2nd Edition. California: Brooks/Cole.

D'Zurilla, Thomas J., Goldfried, Marvin R. (1971). Problem-solving and behavior modification. Journal of Abnormal Psychology, 78, (No.1), 107-126.

D'Zurilla, T.J., and Nezu, A. (1980). A study of the generation of alternatives process in social problem-solving. Cognitive Therapy and Research, 4, 67-72.

Egan, G. (1975). The skilled helper. California: Brooks/Cole Publishing Company.

Ellis, A. (1962). Reason and emotion in psychotherapy. New York: Stuart.

Ellsworth, R.B. (1968). Non-professionals in psychiatric rehabilitation. New York: Appleton.

Equal Opportunity and Treatment Classroom Course 17-9. (May 30, 1978). Military curricula for vocational and technical education. Columbus, Ohio: Ohio State University National Center for Research in Vocational Education.

Evans, John, and Cody, John. (1969). Transfer of decision-making skills learned in a counseling like setting to similar and dissimilar situations. Journal of Counseling Psychology, 16, (No. 5), 427-432.

Eysenck, Hans J. (1952). The effects of psychotherapy: An evaluation. Journal of Consulting Psychology, 16, 319-324.

Fishman, J.R., Klein, W.L., MacLennan, B.W., Mitchell, L., Pearl, A., & Walker, W. (1965). Training for new careers. Washington, D.C.: President's Committee on Juvenile Delinquency and Youth Crime.

Fortune, Anne. (1984). Problem-solving ability of social work students. Journal of Education for Social Work, 20, (No. 2), 25-33.

Fortune, Jim C. (1985). Understanding testing in occupational licensing. San Francisco: Jossey - Bass.

France, Honore, and McDowell, Christina. (July 1982). A peer counseling model for computer-assisted career counseling. Canadian Counsellor, 16, (No. 4), 206-212.

Garner, H.H. (1966). Interventions in psychotherapy in confrontation technique. American Journal of Psychotherapy, 22, 1-12.

Gartner, Alan. (1971). Paraprofessionals and their performance. New York: Praeger.

Gazda, G. (1973). Human relations development: A manual for educators. Boston: Allyn and Bacon.

Gelatt, H.B. (1962). Decision-making: A conceptual frame of reference for counseling. Journal of Counseling Psychology, 9, (No. 3), 240-245.

Gibson, Robert L., and Mitchell, Marianne H. (1986). Introduction to counseling and guidance, 2nd. Edition. New York: Macmillan.

Gladding, Samuel T. (June, 1985). History and systems of counseling: A course whose time has come. Counselor Education and Supervision, 24-25, 325-329.

Glasser, W. (1965). Reality therapy: A new approach to psychiatry. New York: Harper and Row.

Greenblatt, M., & Kantor, D. (1962). Students and the manpower shortage. American Journal of Psychiatry, 118, 809-814.

Hackney, H., and Cormier, L.S. (1979). Counseling strategies and objectives (2nd. Edition). Englewood Cliffs, N.J.: Prentice-Hall.

Heppner, P. Paul. (1978). A review of the problem-solving literature and its relationship to the counseling process. Journal of Counseling Psychology, 25, (No. 5), 366-375.

Heppner, P. Paul, Neal, Gary W. and Larson, Lisa M. (May, 1984). Problem-solving training as prevention with college students. The Personnel and Guidance Journal, 514-517.

Hinkle, Dennis, Wiersma, Williams, and Jurs, Stephen. (1979). Applied statistics for the behavioral sciences. Boston: Houghton Mifflin Company.

Holzberg, J.D. (1963). The companion program: Implementing the manpower recommendations of the Joint Commission on Mental Illness and Health. American Psychologist, 18, 224-226.

Holzberg, J.D., Gewirtz, H., & Ebner, E. (1964). Changes in moral judgement and self-acceptance as a function of companionship with hospitalized mental patients. Journal of Consulting Psychology, 28, 299-303.

Holzberg, J.D., & Knapp, R.H. (1965). The social interaction of college students and chronically ill mental patients. American Journal of Orthopsychiatry, 35, 487-492.

Holzberg, J.D., Knapp, R.H., & Turner, J.L. (1967). College students as companions to the mentally ill. In E.L. Cowen, E.A. Gardner, & M. Zax (Eds.) Emergent approaches to mental health problems. New York: Appleton.

Holzberg, J.D., Knapp, R.H., & Turner, J.L. (1966). Companionship with the mentally ill: Effects on the personalities of college student volunteers. Psychiatry, 29, 395-405.

Holzberg, J.D., Whiting, H.S., & Lowy, D.G., (1964). Chronic patients and a college companion program. Mental Hospital, 15, 152-158.

Horan, John J. (1979). Counseling for effective decision-making. A cognitive-behavioral perspective. North Scituate, Massachusetts: Duxbury Press.

Huck, S., Cormier, W., and Bounds, W. (1974). Reading statistics and research. New York: Harper and Row.

Huessy, H.R. (1966). Spring Lake Ranch - the pioneer halfway house. In H.R. Huessy (Ed.), Mental health with limited resources: Yankee ingenuity in low-cost programs. New York: Grune & Stratton, 63-72.

Hutchins, David E. (June 1984). Improving the counseling relationship. Personnel and Guidance Journal, 62, 572-575.

Hutchins, David E., and Cole, Claire G. (1986). Helping relationships and strategies. California: Brooks/Cole Publishing Company.

Hutchison, William Ray. (1976). Measurement and systematic training of creative problem-solving skills. Dissertation (order no. 77-10736). State University of New York at Stony Brook.

Institute for Child Mental Health. (July, 1972). Utilization of paraprofessionals in three mental health settings. Monograph 7. New York.

Ivey, Allen E. (1983). Intentional interviewing and counseling. California: Brooks/Cole.

Ivey, A. (1973). Microcounseling: The counselor as trainer. The Personnel and Guidance Journal, 51 (No. 5), 311-317.

Ivey, Allen, and Authier, Jerry. (1978). Microcounseling (2nd. ed.): Innovations in interviewing, counseling, psychotherapy and psychoeducation. Illinois: Charles C. Thomas Publisher.

James, Vernon. (1979). Paraprofessionals in mental health: A framework for the facts. In Stephen Alley, J. Blanton, and R.,E. Feldman (authors) Mental health: theory and paractice. New York: Human Sciences Press.

Jepsen, David, Dustin, Richard, and Miars, Russen. (Nov., 1982). The effects of problem-solving training on adolescents. Career exploration and career decision-making. The Personnel and Guidance Journal, 149-153.

Kazdin, A. E. (1978). History of behavior modification: Experimental foundations of contemporary research. Baltimore: University Park Press.

Krumboltz, John D. (Dec., 1965). Behavioral counseling: Rationale and research. Personnel and Guidance Journal, 383-387.

Krumboltz, John D. (1966). Behavioral goals for counseling. Journal of counseling Psychology, 13, (No. 2), 153-159.

Krumboltz, John D., and Thoresen, Carl E. (Eds.). (1976). Counseling methods. New York: Holt, Rinehart and Winston.

Laquatra, Idamarie, Danish, Steven, and D'Augelli, Anthony. (1983). Helping skills II: Life development intervention. New Hork: Human Sciences Press, Inc.

Leonard, George (December, 1983). Abraham Maslow and the new self. Man at his best - Esquire Magazine Golden Anniversary Issue, 326-339.

Levitt, E. (1963). Psychotherapy with children: A further evaluation. Behavior Research and Therapy, (No. 1), 45-51.

Lewis, W.W. (1965). Continuity and intervention in emotional disturbance: A review. Exceptional Children, 31, 465-475.

Little, Verda L., and Kendall, Philip C. (1979). Cognitive-behavioral interventions, theory, research and procedures. New York: Academic Press.

Mandell, Betty Reid, and Schram, Barbara. (1983). Human services an introduction. New York: John Wiley and Sons.

Marchione, Karen. (1979). Cognitive - behavioral interventions theory, research and procedure. New York: Academic Press, 167-169.

Maslow, Abraham. (1968). Toward a psychology of being, 2nd. Edition. New York: D. Van Nostrand Company.

Matarazzo, R. (1978). Research on the teaching and learning of psychotherapeutic skills. In S. Garfield and A. Bergin (Eds.) Handbook of psychotherapy and behavior change. An empirical analysis. New York: John Wiley.

McNemar, Quinn. (1969). Psychological statistics. New York: J. Wiley Publishers.

Mehr, Joseph (1983). Human services concepts and intervention strategies. 2nd. Edition. Boston: Allyn and Bacon, Inc.

Mendel, W.M., and Rapport, S. (1963). Outpatient treatment for chronic schizophrenic patients: Therapeutic consequences of an existential view. Archives of General Psychiatry, 8, 190-196.

Mendonca, James, and Siess, Thomas. (1976). Counseling for indecisiveness: Problem-solving and anxiety management training. Journal of Counseling Psychology, 23, (No. 4), 339-347.

Mitchell, W.E. (1964). Fictive siblings and the "unworthy" child in changing rural Vermont. Americal Journal of Orthopsychiatry, 34, 265-366.

Mitchell, W.E. (1966). The use of college student volunteers in the outpatient treatment of troubled children. In H.R. Huessy (Ed.), Mental health with limited resources: Yankee ingenuity in low-cost programs. New York: Grune & Stratton, 28-37.

Nezu, A., D'Zurilla, T.J. (1981). Effects of problem definition and formulation on decision-making in the social problem-solving process. Behavior Therapy, 12, 100-106.

Nezu, A., D'Zurilla, T.J. (1979). Effects of problem definition and formulation on the generation of alternatives in the social problem-solving process. Cognitive Therapy and Research, 5, 265-271.

Parnes, S.J. (1962). The creative problem-solving course and institute at the University of Buffalo. In S.J. Parnes, and H.F. Harding (Eds.) A source book for creative thinking. New York: Scribner's.

Parsons, F. (1909). Choosing a vocation. Boston: Houghton Mifflin.

Pierce, R., Carkhuff, R.R., and Berenson, B.G. (1967). The differential effects of high and low functioning counselors upon counselors-in-training. Journal of Clinical Psychology, 23, 212-215.

Poser, E.G. (1966). The effect of therapist training on group therapeutic outcome. Journal of Consulting Psychology, 30, 283-289.

Rappaport, Julian, Chinsky, Jack M., and Cowen, Emory L. (1971). Innovations in helping chronic patients. College students in a mental institution. New York: Academic Press.

Reiff, R., and Reissman, F. (1965). The indigenous nonprofessional: a strategy of change in community action and community mental health programs. Community Mental Health Journal, Monogr. No. 1.

Rioch, M.J. (1966). Changing concepts in the training of therapists. Journal of Consulting Psychology, 30, 290-292.

Rogers, Carl. (1951). Client-centered therapy. Boston: Houghton Mifflin.

Rogers, C. (1957). The necessary and sufficient conditions of therapeutic personality change. Journal of Consulting Psychology, 22, 95-103.

Rosenbaum, M. (1966). Some comments on the use of untrained therapists. Journal of Consulting Psychology, 30, 292-294.

Runion, Keith, Gregory, Hiram Jr. (Mar., 1984). Training native Americans to deliver mental health services to their own people. Counselor education and supervision, 23, (No. 3), 225-233.

Scheibe, K.E., Kulik, J.A., Hersch, P.D., & La Macchia, S. (1969). College students on chronic wards. Community Mental Health Journal, Monograph Series, No. 5, 33 pp.

Schultz, William E. (March 21, 1983). The training and role of West German employment counselors. Paper presented. Washington, D.C.: APGA Annual Convention, 15-16.

Siegel, Sidney. (1956). Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill.

Simon, Ralph (1972). "The Paraprofessionals are Coming! The Paraprofessionals are Coming!" Atlanta, Georgia: Southern Regional Education Board.

Small, Jacqueline. (1981). Becoming naturally therapeutic. Texas: The Eupsychian Press.

Spivack, George, Platt, Jerome, and Shure, Myrna. (1976). The problem-solving approach to adjustment. San Francisco: Jossey-Bass.

Thoresen, C.E., and Coates, T.J. (1980). What does it mean to be a behavior therapist? In C.E. Thoresen (Ed.) The behavior therapist. Monterey, California: Brooks/Cole.

Truax, C.B., & Carkhuff, R.R. (1967). Toward effective counseling and psychotherapy: Training and practice. Chicago: Aldine.

Wallace, Warren Gene. (1974). Three approaches to teaching decision-making counseling. Dissertation (order no. 75-19, 829). Pennsylvania State University.

Wallace, W., Horan, J., Baker, S., Hudson, G. (1975). Incremental effects of modeling and performance feedback in teaching decision-making counseling. The Journal of Counseling Psychology, 22 (No. 6), 570-572.

Wilson, T. (1978). Cognitive behavior therapy: Paradigm shift of passing phase? In J.P. Foreyt, and D.P. Rathjen (Eds.) Cognitive behavior therapy: Reserach and applications. New York: Plenum.

APPENDIX A

Training the Raters

The process for training the raters will follow the didactic, modeling and experiential format as was used to train the participants in the study.

1. Review the definition of problem-solving, the reason for doing problem-solving and the situations in which problem-solving is used.

2. Elicit from the raters their image of the problem-solving process.

3. Discuss the stages of the problem-solving process according to the D'Zurilla and Goldfried model and also the Carkhuff model.

4. Explain what the instrument is, what it does, the reason for using it and how it evaluates individually each stage of problem-solving.

5. Overview the entire instrument briefly so that the raters are familiar with each scale, and the meaning of each.

6. <u>A Written Definition of the Problem</u>

   A. Define this stage.

   B. Highlight the following points:

- The difference between behavioral and nonbehavioral problems and give an example.

- Problems are usually stated as something the counselee cannot do, or is not doing.

- If the problem is not stated as the counselee's problem (but instead as belonging to someone else) the counselor receives the rating of zero on the scale.

C. Discuss each level of the scale with the raters and show an example for rating a problem at each level.

7. A Written Definition of the Goal

A. Define this stage.

B. Highlight the following points:

- The difference between behavioral and nonbehavioral goals and give an example.

- Goals are usually stated as something positive which the counselee can, will, or wants to do.

- If a goal is not stated as the counselee's goal (but instead as belonging to someone else) the counselor receives the rating of zero on the scale.

C. Discuss each level of the scale with the raters and show an example for rating a goal at each level.

8. A Written List of Possible Alternative Courses of Action

A. Define this stage.

B. Highlight the following points.

- Alternatives are actions and should be stated as behaviors. Give an example of behavioral and nonbehavioral alternatives.

- All alternatives should be relevant to achieving the counselee's goal; they should not detract from the counselee reaching his/her goal.

- If the problem or goal is not listed then it cannot be determined if alternatives are relevant to the goal and the counselor cannot receive a rating above level 2.0 on the scale.

C. Discuss each level of the scale with the raters and show an example for rating alternatives at each level.

9. A Written List of the Counselee's Values and Weights

A. Define this stage.

B. Highlight the following points:

- The difference between behavioral and nonbehavioral values and give an example.

- If the problem or goal is not listed, then it cannot be determined if the list of values is appropriately expansive and the counselor cannot receive a rating above level 2.0 on the scale.

- If the values are not stated as the counselee's values (but instead as belong to someone else), the counselor receives the rating of zero on the scale.

- Explain what value weights are, why they are important and how to assign value weights. Give an example.

C. Discuss each level of the scale with the raters and show an example for rating values at each level.

10. A Written Evaluation of each Alternative Course of Action with Each of the Counselee's Values and Selecting a Course of Action

A. Define this stage.

B. Highlight the following points.

- The counselee's values are used to chose from the alternative courses of action.

- In this stage, the counselor has written some process for comparing the counselee's values with the alternative courses of action.

C. Discuss each level of the scale with the raters and show an example for rating this process at each level.

11. A Written Evaluation of the Chosen Alternative Course of action to Determine if it Satisfies the Counselee's Values.

A. Define this stage.

B. Highlight the following points.

- The difference between an evaluation which discusses the counselee's values and one that does not discuss values.

- If the counselor does not discuss at least one of the counselee's values at this time then he/she will receive a lower rating on the scale.

C. Discuss each level of the scale with the raters and show an example for rating this process at each level.

12. A Written List of Steps for the Counselee to Take Upon Completion of Problem-Solving.

A. Define this stage.

B. Highlight the following points.

- The issue of the counselee accepting or rejecting the decision.

- The identification of the next step the counselee should take once the process is completed -- steps should be things the client can actually do or the counselor will receive a low rating on the scale.

C. Discuss each level of the scale with the raters and show an example for rating this process at each level.

13. Remind the raters that a counselor does not have to label the stage of problem-solving in order to get credit for the things he/she wrote. For example, a counselor may have written the counselee's problem but did not label it "the counselee's problem." The counselor can still be assessed using the appropriate scale.

14. Show the raters examples of the scales being applied to various counselors' problem-solving worksheets.*

15. Involve the raters in assessing various counselors' problem-solving worksheets* using the scales. Be sure that all scales are used.

16. Test the raters on their ability to use the scales for assessing problem-solving worksheets.* Obtain consensus between the two raters a minimum of three times before completing the training.

17. Review

*Counselor worksheets are not those from the study.

APPENDIX B

Information Form for the Study on Problem-Solving

NAME:

1. AGE: Under 20, 21-30, 31-40, 41-50, 51-60, over 60

(please circle)

2. RACE: White, Black, Hispanic, Other -- please indicate

_____

3. Which of these counselor training classes have you completed at Northern Va. Community College? (please circle)

Helping Relationships	Group Process			Introductory Mental Health	Mental Health		
I	I	II	III	II	I	II	III

4. Have you ever completed any courses or training in problem-solving or decision-making skills? (please circle)

YES NO

5. Have you had college or university training other than at Northern Va. Community College? (please circle)

YES NO

Your major area of study at this school:

Please identify any college degrees that you have:

6. Have you worked as a paid counselor in a human service profession?

YES NO

If yes, for approximately how long? _____

7. Have you performed volunteer work in a human service organization?

YES NO

If yes, for approximately how long? _____

APPENDIX C

The Instrument

Scale 1: A Written Definition of the Problem

Defining the problem enables the counselor and counselee to know exactly what the counselee's problem is.

0 No written statement of the problem. There is nothing on paper indicating what the counselee's problem is.

1.0 There is a written problem statement, however, it:
is not clear
is not measurable.

The counselor has written something about the counselee and his/her situation, but from this information one cannot get a clear idea of what the problem is.

Example: The counselee is unhappy about his situation and would like to change things. He is 49 years old, an established auto mechanic and earns a good living. He is feeling unfulfilled at this time.

2.0 There is a written problem statement which:

is clear

is not measurable.

The counselor has provided a general description of the problem but a specific behavior has not been identified. The problem is stated as the counselee's problem.

Example: The counselee is unhappy about his relationship with his son and feels inadequate as a father.

3.0 There is a written problem statement which:

is clear

is measurable.

The counselor has described the problem as a behavior(s) that is missing or an action that is not occurring. It may be stated as something the counselee is not doing, or cannot do. The problem is stated as the counselee's problem.

Example: The counselee cannot talk to his son without it ending in an argument. Therefore, they do not talk with each other very often.

Scale 2: A Written Definition of the Goal

Defining the goal enables the counselor and counselee to know what they are trying to achieve by solving the problem.

0 No written statement of the goal. There is nothing on paper indicating what the counselee's goal is.

1.0 There is a written goal statement, however, it:
is not clear
is not measurable.

The counselor has written something about the counselee's situation which suggests a goal, but from this information one cannot get a clear idea of what the goal is.

Example: The counselee is a 25 year old woman who is depressed quite often and would like to change.

2.0 There is a written goal statement which:
is clear
is not measurable.

The counselor has provided a general description of the goal but a specific behavior has not been identified. The goal is stated as the counselee's goal.

Example: The counselee has been a legal assistant for three years and would like to be challenged in her work and feel productive.

3.0 There is a written goal statement which:

is clear

is measurable.

The counselor has described the goal as a behavior(s) that the counselee wants to achieve. It is stated in positive terms as something the counselee wants or needs to do, accomplish or reach. The goal is stated as the counselee's goal.

Example: The counselee would like to be challenged in her career by writing a finished product from the data she collects, accepting responsibility for its success or failure.

Scale 3: A Written List of Possible Alternative Courses of Action

Courses of action enable the counselee to consider alternatives for solving the problem. They suggest possible action the counselee can take to solve the problem and achieve the goal.

0 No written alternatives. There is nothing on paper indicating possible alternatives for the counselee.

1.0 One or more alternatives is listed. Most of the alternatives are not defined behaviorally.

Example: The counselee's goal is to stop drinking all alcohol. A nonbehavioral alternative identified for this goal is as follows: the counselee must develop discipline.

2.0 Two or more alternatives are listed. At least half of these alternatives are defined behaviorally.

Example: The counselee's goal is to stop drinking all alcohol. A behavioral alternative identified for this goal is as follows: attend an Alcoholics Anonymous meeting within one week.

3.0 Two or more alternatives are listed. All alternatives are defined behaviorally. The list of alternatives is somewhat limited -- more alternatives could have been listed by the counselor.
*All alternatives are relevant to achieving the goal.

4.0 Two or more alternatives are listed. All alternatives are defined behaviorally. The list of alternatives is appropriately expansive -- no obvious alternatives have been omitted.
*All alternatives are relevant to achieving the goal.

*If the counselor has not listed either a problem or a goal then it cannot be determined if the alternatives are relevant to achieving the goal and the counselor cannot receive a score on this scale above level 2.0.

Scale 4: A Written List of Counselee Values and Weights

The term values refers to those things that are important to the counselee in solving the problem. The values help the counselee make choices between the alternatives because different alternatives satisfy different values. Also, the counselee will need to determine which of the values are most important to him/her by assigning weights to them.

0 No written values. There is nothing on paper indicating what the counselee values in relation to the problem and goal.

1.0 One or more values are listed. Most of the values are not defined behaviorally.

Example: The counselee's goal is to enroll in a parenting group. A nonbehavioral value identifed for this goal is as follows: the counselee values a group that is interesting

2.0 Two or more values are listed. At least half of these values are defined behaviorally.

Example: The counselee's goal is to control the behavior of his children. A behavioral value identified for this goal is as follows:

putting the children to bed by 8:00 p.m. will allow peace and quiet in the house: time to sit and read the newspaper, uninterupted, for a period of time.

3.0 Two or more values are listed. All values are defined behaviorally. The list of values is somewhat limited -- more values could have been considered by the counselor.*

4.0 Two or more values are listed. All values are defined behaviorally. The list of values is appropriately expansive -- no obvious values have been omitted.*

5.0 Two or more values are listed. All values are defined behaviorally. The list of values is appropriately expansive -- no obvious values have been omitted.*
Value weights have been assigned to at least half of the values indicating which of the values are most important to the counselee.

*If the counselor has not listed either a problem or a goal then it cannot be determined if the list of values is appropriately expansive and the counselor cannot receive a score on this scale above level 2.0.

Scale 5: A Written Evaluation of Each Alternative Course of Action With Each of the Counselee's Values and Selecting a Course of Action(s)

Assessing each course of action with each value enables the counselee to systematically choose a solution to the problem by considering what is important to him/her.

0 No written evaluation of each course of action. There is nothing on paper indicating that the various alternatives have been evaluated with the counselee's values.

1.0 Courses of action are evaluated using only one of the counselee's values.

2.0 Courses of action are evaluated with more than one but less than half of the counselee's values.

3.0 Courses of action are evaluated with at least half of the counselee's values.

4.0 Courses of action are evaluated with all of the counselee's values.

Scale 6: A Written Evaluation of the Chosen Alternative Course of Action to Determine if it Satisfies the Counselee's Values

It is important that a chosen course of action meet many of the counselee's values so that the counselee will be satisfied with the solution to the problem.

0 No written evaluation is made.

1.0 A written evaluation is made of the chosen course of action, but it does not discuss which of the counselee's values are satisfied.

2.0 A written evaluation is made which:

a. discusses the values satisfied; or

b. identifes the percent of values satisfied by the chosen course of action (for example, 100% of the counselee's values are satisfied by the course of action or only 50% of the values are satisfied, etc.)

Scale 7: A Written List of Steps for the Counselee to Take Upon Completion of Problem-Solving

It is important to identify the next action for the counselee to take once the problem-solving process is completed.

0 No steps are listed which identify what the counselee might do after the problem-solving process is completed.

1.0 a. The counselee does not completely accept the decision at this time.

b. Some steps are listed for the counselee to take in order to determine his/her next action.

2.0 a. The counselee accepts the decision at this time.

b. Some steps are listed for the counselee to take in order to begin carrying out the chosen alternative course of action.

APPENDIX D

Training Modules for the Stages in Problem-Solving

Overview of Problem Solving

I. Review

A. The definition of problem-solving.

B. The importance of the problem-solving process:
counselor perspective
counselee perspective

C. The different types of situations in which problem-solving can be used.

II. Overview

A. Overview all of the steps in problem-solving. Show a written example of a finished problem-solving matrix so that trainees have some understanding of the whole process.

Refer to pages 1-14 in the text, Productive Problem-Solving* by Carkhuff.

* The Art of Problem-Solving by Carkhuff is no longer in print. Productive Problem-Solving is the latest edition.

Defining the Problem

I. Review

A. The definition of problem-solving.

II. Overview

A. The definition of the skill, defining the problem.

B. Identify when and why the counselor and counselee define the problem.

C. Write on the board, the steps involved in defining the problem.

Refer to pages 15-38 in the text, Productive Problem-Solving by Carkhuff.

III. Presentation

A. Teach the trainees the steps for defining the problem.

B. Provide trainees with a handout showing how the problem is defined.

C. Practice by asking trainees to think of a real problem of their own (one that is relatively specific in nature) and try to define it following the steps outlined in the overview. Tell trainees they will refer to this same problem throughout the training during the practice session.

D. The instructor checks the trainees' work for accuracy.

IV. Exercise

A. Practice in dyads as counselor and counselee with the counselor helping the counselee to define a real problem of his/hers. The problem should be different from the one dealt with previously in the practice session. Tell trainees they will refer to this same problem throughout the training during the exercise session.

B. The instructor checks the counselor's work for accuracy.

C. Upon completion, the trainees switch roles so that each has an opportunity to function as the counselor.

V. Summary

A. The instructor asks the trainees to discuss the process just completed.

Defining the Goal

I. Review

A. The steps for defining the problem and the role this plays in defining the goal.

II. Overview

A. The definition of the skill, defining the goal.

B. Identify when and why the counselor and counselee define the goal.

C. Write on the board, the steps for defining the goal.

Refer to pages 39-52 in the text, Productive Problem-Solving by Carkhuff.

III. Presentation

A. Teach the trainees the steps for defining the goal.

B. Provide trainees with a handout showing how the goal is defined.

C. Practice by asking trainees to think of the goal in relation to the problem with which they have been working. Instruct them to define the goal following the steps outlined in the overview.

D. The instructor checks the trainees' work for accuracy.

IV. Exercise

A. Practice in dyads as counselor and counselee with the counselor helping the counselee to define the goal in relation to the problem.

B. The instructor checks the counselor's work for accuracy.

C. Upon completion, the trainees switch roles so that each has an opportunity to function as the counselor.

V. Summary

A. The instructor asks the trainees to discuss the process just completed.

Listing Alternative Courses of Action

I. Review

A. The steps for defining the problem and goal and the role they play in listing alternative courses of action.

II. Overview

A. The definition of the skill, listing alternative courses of action.

B. Identify when and why the counselor and counselee list alternative courses of action.

C. Write, on the board, the steps for listing alternative courses of action.

Refer to pages 53-68 in the text, Productive Problem-Solving by Carkhuff.

III. Presentation

A. Teach the trainees the steps for listing alternative courses of action.

B. Provide trainees with a handout showing this process.

C. Practice by asking trainees to list alternative courses of action in relation to their problem and goal.

D. The instructor checks the trainees' work for accuracy.

IV. Exercise

A. Practice in dyads as counselor and counselee with the counselor helping the counselee list alternative courses of action for the problem and goal.

B. The instructor checks the counselor's work for accuracy.

C. Upon completion, the trainees switch roles so that each has an opportunity to function as the counselor.

V. Summary

A. The instructor asks the trainees to discuss the process just completed.

Listing and Defining the Counselee's Values

I. Review

A. The steps previously covered in problem-solving and the role they play in defining the counselee's values.

II. Overview

A. The definition of the skill, listing and defining the counselee's values.

B. Identify when and why the counselor and counselee define the counselee's values.

C. Write, on the board, the steps for listing and defining the counselee's values, including assignment of value weights.

Refer to pages 67-101 in the text, Productive Problem-Solving by Carkhuff.

III. Presentation

A. Teach the trainees the steps for listing and defining the counselee's values.

B. Provide trainees with a handout showing this process.

C. Practice by asking trainees to list and define the values in relation to their problem and goal.

D. The instructor checks the trainees' work for accuracy.

IV. Exercise

A. Practice in dyads as counselor and counselee with the counselor helping the counselee list and define his/her values. The values are developed in relation to the problem and goal. Weights are assigned.

B. The instructor checks the counselor's work for accuracy.

C. Upon completion, the trainees switch roles so that each has an opportunity to function as the counselor.

V. Summary

A. The instructor asks the trainees to discuss the process just completed.

Selecting an Appropriate Alternative Course of Action

I. Review

A. The steps covered thus far in problem-solving and the role they play in selecting an alternative course of action.

II. Overview

A. The definition of the skill, selecting an appropriate alternative course of action.

B. Identify when and why the counselor and counselee select an alternative course of action.

C. Write, on the board, the steps for selecting an appropriate alternative course of action.

Refer to pages 95-116 in the text, Productive Problem-Solving by Carkhuff.

III. Presentation

A. Teach the trainees the steps for selecting an appropriate alternative course of action.

B. Provide trainees with a handout showing this process.

C. Practice by asking trainees to select an alternative course of action from the list they developed previously.

D. The instructor checks the trainees' work for accuracy.

IV. Exercise

A. Practice in dyads as counselor and counselee with the counselor helping the counselee select an alternative course of action.

B. The instructor checks the counselor's work for accuracy.

C. Upon completion, the trainees switch roles so that each has an opportunity to function as the counselor.

V. Summary

A. The instructor asks the trainees to discuss the process just completed.

Evaluation of the Chosen Alternative Course of Action

I. Review

A. The steps in the problem-solving process and their relationship to assessment of the chosen alternative course of action.

II. Overview

A. The definition of the skill, assessment of the chosen alternative course of action.

B. Identify when and why the counselor and counselee make an assessment of the chosen alternative course of action.

C. Write, on the board, the steps for assessment of the chosen alternative course of action.

Refer to pages 117-128 in the text, Productive Problem-Solving by Carkhuff.

III. Presentation

A. Teach the trainees the steps for assessment of the chosen alternative course of action.

B. Provide trainees with a handout showing this process.

C. Practice by asking trainees to assess the chosen alternative course of action from the work they completed previously.

D. The instructor checks the trainees' work for accuracy.

IV. Exercise

A. Practice in dyads as counselor and counselee with the counselor helping the counselee assess his/her chosen alternative course of action.

B. The instructor checks the counselor's work for accuracy.

C. Upon completion, the trainees switch roles so that each has an opportunity to function as the counselor.

V. Summary

A. The instructor asks the trainees to discuss the process just completed.

Determining the Next Steps for the Counselee to Take

I. Review

A. The steps in the problem-solving process and their relationship to determining the next steps for the counselee to take.

II. Overview

A. The definintion of the skill, determining the next steps for the counselee to take.

B. Identify when and why the counselor and counselee list the next steps for the counselee to take.

C. Write, on the board, the steps for identifying the next steps for the counselee to take.

Refer to pages 129-144 in the text, Productive Problem-Solving by Carkhuff.

III. Presentation

A. Teach the trainees the steps for identifying the next steps for the counselee to take.

B. Provide trainees with a handout showing this process.

C. Practice by asking trainees to determine their next steps in relation to their chosen alternative course of action.

D. The instructor checks the trainees' work for accuracy.

IV. Exercise

A. Practice in dyads as counselor and counselee with the counselor helping the counselee determine the next steps he/she should take in relation to his/her chosen alternative course of action.

B. The instructor checks the counselor's work for accuracy.

C. Upon completion, the trainees switch roles so that each has an opportunity to function as the counselor.

V. Summary

A. The instructor asks trainees to discuss the process just completed.

B. The instructor reviews all the steps in the problem-solving process and discusses relevant issues, trainees' feelings and ideas.

APPENDIX E

Breakdown of Females and Males According to Age in the Experimental, Control and Pilot Groups

Experimental Group
(AGE)

	Under 20 yrs.	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.	Over 60 yrs.
Women	2	6	11	5	3	1
Men	0	4	0	4	0	0
Total	2	10	11	9	3	1

N=36

Control Group

	Under 20 yrs.	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.	Over 60 yrs.
Women	7	6	9	4	0	0
Men	1	4	2	1	1	1
Total	8	10	11	5	1	1

N=36

Pilot Group

	Under 20 yrs.	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.	Over 60 yrs.
Women	5	10	7	8	1	0
Men	0	2	3	0	0	0
Total	5	12	10	8	1	0

N=36

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