A STUDY OF THE EFFECTS OF TWO TYPES OF GROUP EXPERIENCES ON THE ACADEMIC ACHIEVEMENT OF COLLEGE UNDERACHIEVERS

> Thesis for the Degree of Ph. D. MICHIGAN STATE UNIVERSITY Darrell H. Hart 1963



This is to certify that the

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has been accepted towards fulfillment of the requirements for

Ph. D. <u>degree in Education</u> (Counseling Psychology)

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#### ABSTRACT

#### A STUDY OF THE EFFECTS OF TWO TYPES OF GROUP EXPERIENCES ON THE ACADEMIC ACHIEVEMENT OF COLLEGE UNDERACHIEVERS

by Darrell H. Hart

This study was concerned with the effects of two types of group experiences on the academic achievement of college underachievers. One experience termed <u>cognitive</u> placed an emphasis on material concerned with specific intellectual problem areas related directly to scholastic achievement, and the other experience termed <u>affective</u> emphasized material stressing topics dealing with personal problems and personality dynamics.

The rationale for employing the two types of group experiences was derived from two theoretical positions on the nature of underachievement: (1) underachievement is related to inadequate study-skills, and (2) underachievement is related to personality dynamics and personal problems.

The analysis sample was 96 volunteers from a population of 561 freshman students who were judged to have high ability for college achievement but who received unsatisfactory grades in their first term at Michigan State University.

The design of the study was based on a two-factor treatment plan. Twelve groups were equally divided between two counselors who each led three groups in a cognitive experience and three groups in an affective experience. A third group was included in the experiment to serve as a control. The design employed the principles of randomization by assigning the 96 students to the three treatment conditions and replication by duplicating the experimental methods. Students in the two treatment groups who were included in the analysis attended five to seven group sessions which were held for one hour once a week.

A pre-treatment analysis of the previous grade-point averages and the scores of the College Qualification Test revealed no differences between the three treatment groups. A post-treatment survey was conducted to determine students' opinions about the type of group experience they had received. There was complete agreement among students in each treatment group that their experiences were primarily cognitive or primarily affective according to the design of the experiment.

An analysis of variance was conducted on the criterion measure of grade-point average for winter and spring term to determine the effects of the two types of group experiences immediately following the experiment and three months after completion of the experiment. Duncan's New Multiple Range Test was employed to further analyze data which were indicated by the analysis of variance to be significant. The 5 per cent level of confidence was chosen for accepting or rejecting the null hypotheses. The findings from the analyses indicate that the students who attended five to seven sessions of the affective group experience earned significantly higher gradepoint averages during the term in which the experience occurred than students who received no group experience. No significant differences were found for the term in which the experiment was conducted or three months after the experiment between the grade-point averages of students who received a cognitive group experience and the students who received an affective group experience. Three months after the experiment, no significant differences in grade-point averages were found among students who experienced a cognitive or affective type of group experience and students who received no group experience.

Upon examination of the results it was concluded that a personal-emotional group experience can have an immediate effect in improving the academic achievement of college underachievers, but continued increase in academic achievement after termination of the experience is questionable.

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By

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A THESIS

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#### CHAPTER I

#### THE PROBLEM

Since the early part of the 20th Century when group counseling was introduced on the American scene as a treatment for emotionally disturbed individuals, there has been a gradual accumulation of knowledge concerning group methods, techniques, and suitable treatment populations.<sup>1</sup> In the last decade increasing attention has been given to the role group counseling might play in assisting college students who have personal or academic problems. Among the students receiving attention from the group counselors are the underachievers, those students who have the measured ability to achieve a level of academic success significantly above that which they actually obtain.

Most research efforts investigating group counseling with underachievers have been expended in evaluating the effectiveness of the experience. The criteria frequently used have been increased personal adjustment and selfawareness as measured by personality inventories or rating

<sup>&</sup>lt;sup>1</sup>H. Mullan and M. Rosenbaum, <u>Group Psychotherapy</u>: <u>Theory and Practice</u> (New York: Free Press of Glencoe, 1962).

scales and behavior change as indicated by academic achievement or reduced drop-out rate. The nature of the particular group counseling program designed to produce the changes, however, has received little attention. The factor of variability of content of counseling experiences and the differential effect which it may have upon the outcome has been neglected by researchers. The present investigation is designed to provide information about this important variable by analyzing the effects of two types of group counseling as they influence the academic achievement of college underachievers.

#### Statement of the Problem

This study is an investigation of the effects of two types of group counseling experiences on the academic achievement of college underachievers. One experience places an emphasis on material designed to deal with specific intellectual problem areas related directly to scholastic achievement, and the other emphasizes material stressing topics dealing with personal problems and personality dynamics.

#### The Importance of the Study

Recent national and international circumstances have focused attention upon the waste of existing talents and abilities of a vital portion of the population of the United

States--the underachieving college student.<sup>2</sup> It is becoming increasingly essential that educational institutions develop effective methods of helping these students reach their fullest potential. One approach to the problem used by most colleges and universities is that of counseling where psychologically trained personnel provide assistance in the areas. of academic adjustment, personal-social difficulties and educational-vocational planning. But with a rapidly growing student population and a corresponding increase in student problems, the demands upon counseling centers are increasing to the point where the conventional one to one relationship between student and counselor is not always possible. As a partial solution, group counseling has been posited. and many institutions have begun to investigate the ramifications of such a program.

The application of group counseling to the college setting is in its infancy. Full effectiveness from the group processes cannot be expected without appropriate experimental evaluation of available methods, techniques, and theories.

<sup>&</sup>lt;sup>2</sup>Educational Policies Commission, <u>Manpower and Educa-</u> <u>tion</u> (Washington, D. C.: National Education Association of the United States of America Association of School Administration, 1956).

This study is designed to give information about different kinds of group counseling experiences which will be helpful to the underachieving college student. The fact that no study of the relative effectiveness of different content approached in group counseling with underachievers has yet been reported in the literature further emphasizes the need for research in this area.

#### Theoretical Background

The etiology of academic underachievement has caused wide speculation and, to a lesser extent, efforts in the direction of a systematic analysis. A review of the literature suggests two general areas which have been explored as possible variables relating to underachievement: (1) scholastic factors, such as aptitude, study habits, reading ability, part-time work schedules, and curriculum choice; and (2) personal and social factors characterized by selfconcept, relationship to parents, expression of impulses, social adjustment, academic motivation, and anxiety level.<sup>3,4,5</sup>

<sup>&</sup>lt;sup>5</sup>Charles L. Diener, "Similarities and Differences Between Overachieving and Underachieving Students," <u>Personnel</u> <u>and Guidance Journal</u>, 1960, 38, 396-400.

<sup>&</sup>lt;sup>4</sup>Charles D. Spielberger, "The Effects of Manifest Anxiety on the Academic Achievement of College Students," <u>Mental Hygiene</u>, 1962, 46, 420-6.

<sup>&</sup>lt;sup>5</sup>W. W. Farquhar, <u>Motivation Factors Related to Academic</u> <u>Achievement</u>, Cooperative Research Project 846, January, 1963 (East Lansing: Office of Research and Publications, College of Education, Michigan State University).

Each of these two areas will be reviewed briefly.

The concern about underachievement and inadequate scholastic skills became evident in the 1920's when the "howto-study" courses were introduced in the college curriculum.<sup>6</sup> As early as 1935 Wrenn<sup>7</sup> cited various factors which distinguished high ability college students who were achieving in school from equally high ability but underachieving students. He noted that underachievers wrote lengthy class notes, failed to get the main points in the material, budgeted their time poorly, read slowly, outlined the text inadequately, and failed to review for examinations properly.

More recently the trend in research in the studyskills area has been toward developing study habits inventories which reflect characteristics of achievers and aid in predicting academic success. The importance of study mechanics and adequate planning has been pointed up by the findings of Carter<sup>8</sup> and Chahbazi<sup>9</sup> in their work with study habit inventories.

Francis P. Robinson, <u>Effective Study</u> (Rev. Ed.; New York: Harper and Brothers, 1961).

<sup>7</sup>G. Gilbert Wrenn, "Aiding the Fit," <u>Journal of</u> <u>Higher Education</u>, 1935, 6, 357-63.

<sup>8</sup>H. D. Carter, "Mechanics of Study Procedure," <u>Cali-</u> <u>fornia Journal of Educational Research</u>, 1958, 9, 8-13.

<sup>9</sup>P. Chahbazi, "Analysis of Cornell Orientation Inventory Items of Study Habits and Their Relative Value in Prediction of College Achievement," <u>Journal of Educational</u> <u>Research</u>, 1957, 51, 117-28.

The increasing tendency in the past ten years for colleges to offer courses in study techniques further attests to the theory that there is a relationship between academic achievement and study skills. A survey conducted in 1953 by Blake<sup>10</sup> indicated that over 90 per cent of the colleges in the United States offered some kind of study-skills course.

The personal and social variables which may be related to underachievement represent the second general approach to the problem. Kirk's<sup>11</sup> study of the academic performance in malfunctioning students led her to hypothesize an unconscious motivation among underachievers. She suggests that the underachiever is unable to express negative feelings directly toward appropriate authority figures and thus retains his hostility. His underachievement satisfies an unconscious motive which is often directed toward the family member who demands success of him.

The most recent theorizing which has been published on underachievement has been done by Roth and Meyersburg.<sup>12</sup> They have postulated a "non-achievement syndrome" which is reveiled through the following symptoms: poor academic

<sup>10</sup>W. S. Blake, Jr., "Study-Skills Programs," <u>Journal</u> of <u>Higher Education</u>, 1955, 26, 97-9, 114.

<sup>11</sup>Barbara Kirk, "Test versus Academic Performance in Malfunctioning Students," <u>Journal Consulting Psychology</u>, 1952, 16, 213-6.

<sup>12</sup>R. M. Roth and H. A. Meyersburg, "The Non-Achievement Syndrome," <u>Personnel and Guidance Journal</u>, 1963, 41, 535-46.

achievement, general self-deprecation, lack of recognition of pleasure at "being," no clear systems of personal goals or values, vulnerability to disparagement by others, immature relations with parents, frequent depressions, lack of insight about self and others, and free-floating anxiety. In their formulation of the problem, poor achievement does not arise from an incapacity to achieve but is an expression of the student's choice. His choice for poor achievement relates back to inadequate parent-child relationships where parents payed no attention at all to the accomplishments or failures of the child or where they attended only to his failures and rarely to his successes.

Taylor, in Farquhar's final report, <sup>13</sup> made an exhaustive review of the general personality characteristics of over and underachievers. His findings give support to the theorizing of Kirk and Roth and Meyersburg. From the review, the underachiever might be characterized as having much underlying aggression, strong feelings of inferiority, negative attitudes toward education, lack of confidence in themselves, defensive behavior about abilities, weak ego control, and hostile behavior patterns.

Pursuing an investigation of over and underachievement further, Farquhar<sup>14</sup> directed a comprehensive study of the motivational factors underlying achievement of eleventh grade high school students and found underachieving students

<sup>13</sup>Farquhar, <u>op. cit</u>.

14 Ibid.

to have low self-concept, a generalized free floating anxiety which is reflected in activity level or hostility, incapacity for time delay, values of conformity to the group, and involvement with simple tasks from which chances for success are great.

It is evident that considerable work has been done in studying the relationship between underachievement and such factors as scholastic skills and personality variables. The literature suggests two approaches which are being taken by educational institutions to provide constructive aid for the underachieving student. The first is the study skills or orientation course where the major emphasis is upon specific intellectual problem areas related to scholastic achievement. The second is the individual and group counseling opportunities which are often designed to provide help with the underlying personality dynamics of underachievement. There is, of course, some overlapping of material in each of these programs.

The question which arises, and which has not been studied in a group counseling context, is the relative effectiveness of a study-skills approach and a personality dynamics approach to the problem of underachievement.

Will high ability underachieving students benefit more from a group counseling experience which has as its major focus the cognitive improvement of scholastic skills than from a group counseling experience which attempts to

deal with the more affective material of personal problems and personality dynamics? Will the students receiving either of these experiences make more improvement in their academic achievement than students who do not receive such experiences? In this investigation, answers to these questions are to be sought in a group counseling design which provides for a comparison of the effects of the two different treatments and a comparison of the effects of either treatment with a control group receiving no treatment.

#### The Hypotheses

The study was designed to investigate the following two hypotheses:

- 1. The academic achievement of students who have experienced group counseling will be greater at the completion of the experiment and three months following the completion of the experiment than the academic achievement of students who did not participate in group counseling.
- 2. There will be differences in academic achievement at the completion of the experiment and three months following the completion of the experiment between students experiencing two types of group counseling.

#### Definition of Terms

For purposes of clarification, three terms which are frequently used throughout the report of this investigation are defined.

- <u>Underachiever</u>: An individual who scores at or above the 50th percentile on the College Qualification Test and receives less than a C average in his first term of college work.
- 2. <u>Cognitive group counseling</u>: An experience, shared by a group of students and a counselor, which places a cognitive emphasis on material dealing with specific intellectual problem areas related directly to scholastic achievement. Study skills, techniques in test taking, and educational information are examples of the topics discussed.<sup>15</sup>
- 3. <u>Affective group counseling</u>: An experience, shared by a group of students and a counselor, which places an affective emphasis on material dealing with personal problems and personality dynamics. Feelings of depression, expression of hostility, and feelings about self are examples of the areas discussed.

<sup>&</sup>lt;sup>15</sup>It is recognized that the material discussed in the cognitive experience is similar to that which is discussed in a class on study-skills, and the process of giving specific information is similar to teaching. However, many of the techniques employed in the cognitive experience are similar to techniques employed in group counseling. For the purposes

### Organization of the Study

The general plan of the study is to present in the following chapter a review of research which is related to the problem of aiding underachievers through group procedures. In Chapter III the design of the study will be described with reference to sampling procedure, method of treatment, the null hypotheses, and the type of analysis. The results of the analysis is reported in Chapter IV.

of this study, the cognitive group experience is referred to as cognitive group counseling and encompasses objectives and processes which might also fall under the label of small group teaching.

#### CHAPTER II

#### REVIEW OF LITERATURE

To review the literature on group methods for improving academic achievement is a complex task because the boundaries of the problem are vague, and the research has been scattered throughout the broad areas of education and psychology. For the purposes of the review, only those studies which are closely related to the problem of this investigation will be considered. These have been categorized into three different classifications:

- Studies which have investigated the effects of study-skills courses upon academic achievement, primarily at the college level.
- Studies which have investigated the effects of group counseling or guidance upon academic achievement, primarily at the college level.
- 3. Studies which have been concerned with the comparative effects of different methods of counseling on academic achievement, primarily at the college level.
- The Effects of Study-Skills Courses on Academic Achievement Because much of the content included in one type of

treatment being investigated in the present study is similar to that which is presented in study-skills courses, it is appropriate to briefly review the effectiveness of such content upon the academic achievement of students. A great number of studies have been conducted to evaluate the effectiveness of how-to-study programs. Rather than examining each study separately, reference is made to two reviews and one carefully designed investigation which report the research in the area of study-skills.

Farquhar<sup>1</sup> reviewed the literature to determine the long-term effects of how-to-study courses. His review made reference to studies by Crawford<sup>2</sup> and Book<sup>3</sup> which were representative of many early investigations. These two researchers optimistically found that students who took training in study-skills stayed in college longer and made better grades than students who did not take such training. Farquhar noted that the two studies did not employ control groups or observations over a period of time and that many subsequent

<sup>1</sup>W. W. Farquhar, <u>An Investigation of the Relationship</u> of Three Teaching Methods to Student Behavior in a How To <u>Study Course</u> (unpublished Ph.D. Dissertation, University of Minnesota, 1955).

<sup>2</sup>C. C. Crawford, "Some Results of Teaching College Students How to Study," <u>School and Society</u>, 1926, 23, 471-2.

<sup>5</sup>W. F. Book, "Results Obtained in a Special Course Given to College Students," <u>School and Society</u>, 1927, 26, 529-34.

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investigations which included these essentials in design did not substantiate the findings of Crawford and Book.

Farquhar's review, which covered the literature up to 1954, pointed to inconclusive results regarding the effectiveness of the how-to-study courses, and he cited a need for more research based on modern research tools where adequate control groups take into account motivational differences as well as other background factors.

A review by Entwisle,<sup>4</sup> which was published six years after Farquhar had examined the literature, shows evidence of improvement in the general designs of research investigating study-skills courses. She points out, however, that inadequate criteria for evaluating the effects of the study programs and lack of control for motivation are among the common weaknesses of the studies reviewed.

In addition to improvement in methodology, the more recent studies are more consistent in showing effective results from study courses. After examining the results of 22 studies, Entwisle concludes that academic improvement following a study-skills course seems to be the rule. She notes that the improvement varies from a very slight amount to a considerable amount and seems to be related to voluntary selection of the study course. In studies controlling for motivation, it was found that students wishing to take a

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D. R. Entwisle, "Evaluations of Study-Skills Courses: A Review," Journal of Educational Research, 53 (March, 1960), 247-51.

study-skills course, but prevented from doing so, failed to show significant improvement.

In her review, Entwisle overlooked an investigation by Krumboltz and Farquhar<sup>5</sup> which was designed to examine the effects of three teaching methods on achievement and motivational outcomes in a how-to-study course. Because the Krumboltz and Farquhar study represents a marked improvement in design and methodology over other investigations of studyskill courses, the exclusion of the study from Entwisle's review marks a serious shortcoming in the review.

The population used by Krumboltz and Farquhar for their investigation consisted of 177 University of Minnesota students who elected to take a two credit how-to-study course. Of the 177 who registered for the course, 112 were randomly assigned to one of three teaching methods. Two instructors each taught three different class sections where a different teaching method was employed in each section.

The three teaching methods were instructor-centered, student-centered, and eclectic. The instructor-centered method placed an emphasis on intellectual content and instructor-directed activities. The student-centered approach was primarily student-directed with committee work and student-led discussions of study problems receiving

<sup>&</sup>lt;sup>5</sup>J. D. Krumboltz and W. W. Farquhar, "The Effect of Three Teaching Methods on Achievement and Motivational Outcomes in a How-To-Study Course," <u>Psychological Monographs</u>, 71:14, 1957.

major emphasis. The eclectic method consisted of a combination of the instructor and student-centered approaches and emphasized instructor-led class discussions which were interspersed with a variety of teaching techniques.

Five criterion instruments were employed to test the effectiveness of the three teaching methods. The final examination for the 30-session course was used to test knowledge about the course content. The Survey of Study Habits and Attitudes was used to obtain students self-rating of study habits and attitudes. The <u>n</u> Achievement Test was employed to measure achievement motivation. The Opinion Attitude and Interest Survey which was developed to measure certain non-intellectual personality factors important in academic success was also used to measure motivation. And, the Survey of Opinions-Attitudes was designed to measure student attitudes toward class.

No significant differences in scores on the final examination were found between the students receiving instruction by the three different teaching methods. An examination of the post-treatment results of the other criterion measures revealed: (1) students in the eclectic classes were most highly motivated as measured by the <u>n</u> Achievement Test, (2) the method which was most successful in pleasing the students under one instructor was not most successful under another instructor, and (3) regardless of

the type of instruction the students actually received, students who originally expressed a preference for a more cognitive-type instruction increased their self-ratings of study habits and attitudes where the opposite occurred with the students who originally desired a student-centered type of instruction.

A number of methodological techniques were employed by Krumboltz and Farquhar to strengthen the design of the study. They employed randomization in assigning students to treatment, replication by including two instructors who both taught all three methods, and control by having each method of teaching become a control on the other. They also employed a check on the consistency of instruction by each instructor in each method. A weakness in the design of the study is the use of pre-treatment measures which might have had a contaminating effect on the treatment and the posttreatment measures.

The Krumboltz and Farquhar study is more similar to the present study than most investigations of the effects of study-skills courses because it examined the effects of three teaching approaches on selected criteria. The material discussed in the classes taught under the three methods is similar to that which is discussed in the cognitive counseling approach used in the present investigation. And, the teaching procedures followed in the eclectic method are similar to many of the counseling procedures employed in the

cognitive counseling group. A major difference is that none of the three teaching methods were designed to explore the affective domain outlined in the affective group counseling approach of the present study.

The reviews by Farquhar and Entwisle and the investigation by Krumboltz and Farquhar point to two trends in the research of the effects of study-skills courses: (1) increased concern by investigators in the precision of their experimental efforts, and (2) more consistent results showing improvement from study-skills courses. This later trend is striking when one considers the variation in kind of courses listed under the "study-skills" rubric and the disparate kinds of students enrolled in the courses.

The Effects of Group Counseling on Academic Achievement

A review of the studies of group counseling as it affects academic achievement will provide a broad perspective of the methods, findings, and problems involved in group counseling research. The first three studies reviewed in this section have used young adolescents as subjects and have been concerned with personal adjustment as well as academic achievement. The remaining five reports are of investigations employing college populations and are, therefore, more directly related to the problem of this investigation.

Broedel and associates<sup>6</sup> studied the effects of group

<sup>&</sup>lt;sup>6</sup>J. Broedel, <u>et al.</u>, "The Effects of Group Counseling on Gifted Underachieving Adolescents," <u>Journal of Counseling</u> <u>Psychology</u>, 7, 1960, 163-70.

counseling on 29 freshman high school underachievers. The students were selected on the basis of high aptitude for scholastic work as measured by the California Test of Mental Maturity and low grade-point averages. An assignment of the students to two experimental and two control groups was done by use of random numbers. The experimental groups received 16 sessions of group counseling while the control groups received no treatment. At the completion of the treatment of the experimental groups, the control groups were counseled for 16 sessions. This experimental design provided a control for both treatment and time effects.

The criteria used for evaluating the effects of the group counseling were grade-point increase, improved scores on the California Achievement Test, and increased personal adjustment as assessed by a special picture story test and the Mooney Problems Check List. Conclusions reached from an analysis of the criteria after treatment were that group counseling did not improve academic performance, but did aid the students in acceptance of self and others. Two followup investigations conducted four and 18 months after treatment revealed no changes in the original outcome.

Strengths of the study which are not often found in the research on group counseling are the design which controls for both treatment and time effects and the follow-up evaluation of the effects of treatment. Weaknesses of the study are failure to apply appropriate sampling techniques in

the selection of the subjects, including some students in the experiment who objected to the experience, and failure to include a description of the treatment conditions.

Caplan<sup>7</sup> examined the effects of group counseling on the self-concept and academic performance of junior-high boys who had long-term records of frequent conflict with school authorities and regulations. Thirty-four students were divided into six groups, three experimental and three control. The three experimental groups met with regular school counselors weekly for ten 50-minute sessions. These sessions were conducted in a permissive manner with only minimal limits on behavior. The counselor was a non-evaluating sounding board for feelings of hostility against school in general, particular teachers, and parents.

Changes in the self-concept and ideal self-concept were assessed by pre- and post-experimental administration of Q-sorts. Honor point ratios were used in evaluating the academic performance. Caplan reports that changes between the self-concept and the ideal self-concept were highly significant for each experimental sub-group and within the total experimental group; whereas, no such changes took place within any control sub-group nor within the total control group. After an analysis of the post-treatment grades

<sup>&</sup>lt;sup>7</sup>S. W. Caplan, "The Effects of Group Counseling on Junior High School Boys' Concepts of Themselves in School," Journal of Counseling Psychology, 4, 1957, 124-8.

of the experimental and control groups, Caplan states that no conclusion can be made regarding the effectiveness of group counseling on academic achievement.

The following criticisms are made of Caplan's study: he does not report how his subjects were selected or that they were randomly assigned to treatment groups, no pretreatment assessment of the homogeneity of the groups on ability and previous grades was made, the students were allowed to receive individual counseling during the experimental period if they so desired, and no assessment was made of the differential effects which the three counselors might have on the criteria.

The third study involving young adolescents was conducted by McCarthy.<sup>8</sup> She evaluated the effects of nondirective group counseling on grade improvement and attitude change. Twenty-four boys with the greatest discrepancy between ability and academic achievement from 17 Boston high schools were non-randomly assigned to two experimental and two control groups of equal number. A check on the homogeneity of the groups revealed equal variances in aptitude, achievement, and personality variables.

The counselor in the experimental groups began each session by introducing a disguised case study resembling an

<sup>&</sup>lt;sup>8</sup>M. V. McCarthy, <u>The Effectiveness of a Modified</u> <u>Counseling Procedure in Promoting Learning Among Bright Under-</u> <u>achieving Adolescents</u>, Research Project <u>ASE-6401</u> (Washington, D.C.: Department of Health, Education, and Welfare, 1959).

underlying problem of a student in the group. Once the material was presented, the counselor assumed a nondirective role and left most of the direction of the sessions to the students. The students attended the groups once a week for six weeks. Grade improvement was determined by grade-point averages, and attitude change was assessed by a Q-sorts and a sentence completion test.

At the completion of the experiment, McCarthy concluded that the type of group counseling offered the 12 experimental subjects was ineffectual in improving grades or changing attitudes. The experimental group did not differ from the control on these criteria. Any conclusions from this study concerning the effectiveness of group counseling, however, are extremely tenuous due to a very small sample, non-random assignment to treatment, no attempt to control for motivation of the students for counseling and failure to replicate by using a different counselor in each of the two experimental groups. The commendable aspect of the study was a clear description of the type of treatment involved.

Winborn and Schmidt<sup>9</sup> investigated the effectiveness of short-term group counseling upon the academic achievement of potentially superior but underachieving college freshmen at Indiana University. On the basis of high aptitude scores

<sup>&</sup>lt;sup>9</sup>B. Winborn and L. G. Schmidt, "The Effectiveness of Short-Term Group Counseling Upon the Academic Achievement of Potentially Superior but Underachieving College Freshmen" Journal of Educational Research, 55, 1962, 169-73.

and low first semester grade-point averages, they selected a population of 135 students from which a random sample of 68 students was drawn and randomly assigned to an experimental or control group. The groups were found to be equivalent prior to treatment. The experimental group was broken down into six sub-groups and given six counseling sessions by two counselors who were considered skilled in techniques of counseling.

The criteria used for evaluating the effectiveness of the experience were change in grade-point average and change on three selected scales of the Psychological Inventory. After treatment, differences in mean grade-point averages between the experimental and control groups were found to be significant. The students in the control group had higher grade-point averages than those in the experimental group. No differences were found between the experimental and the control groups on any of the three scales measuring personality change.

For help in understanding the negative results of the Winborn-Schmidt experiment, a careful report is needed of the nature of the treatment which was administered to the experimental group and the motivation of the students for such an experience. This criticism can justifiably be made of the majority of the studies reviewed.

One of the earliest doctoral dissertations reporting an investigation of group counseling with college students

was written by Anderson.<sup>10</sup> The objective of the study was to enhance the students academic performance and facilitate the solution of personal problems. Sixty freshman students in a woman's college were assigned at random to an experimental and control group. The equivalence of the two groups was determined by statistical analysis prior to counseling. The treatment, which lasted for eight sessions, was unstructured with the direction of the discussions left, for the most part, to the wishes of the students. Rating scales were used to evaluate the effects of counseling on the reduction of problems. Grades were compared for assessment of academic performance.

An analysis of the results led Anderson to conclude that group counseling of no more than eight sessions can be effective as a method for helping students deal with personalsocial and college adjustment problems, but that there was no evidence that it helps increase academic achievement. The validity of the first conclusion depends upon the accuracy of non-validated rating scales and the students judgments about effects of treatment.

A doctoral study conducted by Duncan<sup>11</sup> assessed the effects of required group counseling on academic achievement.

<sup>10</sup>R. L. Anderson, <u>An Experimental Investigation of</u> <u>Group Counseling with Freshmen in a Woman's College</u> (unpublished Ph.D. Dissertation, New York University, 1956). <sup>11</sup>D. R. Duncan, <u>Effects of Required Group Counseling</u> <u>with College Students in Academic Difficulty</u> (unpublished Ed.D. Dissertation, University of Florida, 1962).

He selected 62 students who were on academic probation at the University of Florida and randomly assigned them to experimental and control groups. The students were required to attend 12 sessions which were conducted by three doctoral students. Each counselor had a group of nine to 11 students. The criteria for improvement were increase in grade-point average and attitude change on a self-rating scale.

In analyzing his data, Duncan found no differences between his two groups in either of the two criteria and concluded that there was little effect from requiring group counseling with students in academic difficulty. Duncan's efforts lend further support to the notion that in order for counseling to be effective, the students must desire to participate in the experiment. This consideration has been neglected in many research designs by not equating experimental and control groups on the variable of motivation. Often, the students in the experimental group have desired counseling while those in the control group have not.

Another dissertation dealing with academic probationary students has been written by Maroney.<sup>12</sup> Fifty-two transfer students who were admitted on academic probation were randomly assigned to an experimental and a control group. The two groups were found to be homogeneous in ability and academic

<sup>&</sup>lt;sup>12</sup>K. A. Maroney, <u>Effectiveness of Short-term Group</u> <u>Guidance with a Group of Transfer Students Admitted on</u> <u>Academic Probation</u> (unpublished Ed.D. Dissertation, North Texas State University, 1962).
achievement. The experimental group was divided into four sub-groups. One counselor led all four sub-groups in semistructured group discussions of educational and vocational information, study techniques, and information regarding the mechanics of academic probation. The treatment lasted six weeks and included 13 sessions.

The criteria for evaluating the effectiveness of the study were improved grade-point averages and changes on scales of the Edwards Personal Preference Schedule. The analysis at the conclusion of the experiment revealed a greater but non-significant increased grade-point average of the experimental subjects than of the control subjects. Minor changes on the personality schedule were also interpreted as irrelevant.

A number of research problems are present in the Maroney study. The students in the experiment were a whole population which was unique in its characteristics, thus any generalizations of the results of the study are limited to a similar population. Thirteen group sessions were held, but the range in number of sessions attended by the students was very large. Because the experimental and control groups were both informed of the experiment prior to treatment, an extraneous variable was introduced into the study. And, competence of the single counselor was not taken into account in interpreting the results.

Spielberger, Weitz and Denny<sup>13</sup> conducted an elaborate study of the effects of group counseling on the academic performance of anxious college freshmen at Duke University. From a population of 565 male liberal arts freshmen, 112 met the selection criteria of high anxiety and high ability as determined by standardized personality and aptitude tests. Fifty-six of these 112 students volunteered for group counseling. They were matched on factors, such as ability, major field of study, and type of high school attended, and then assigned to an experimental and control group. The experimental group was broken down into four sub-groups.

The groups were conducted by two faculty members who were experienced in counseling and clinical work. Students were encouraged to bring up problems of any sort; the topics most favored included methods of study, vocational goals, and academic difficulties. The treatment ranged from eight to 11 sessions. Academic achievement as assessed by grade-point average provided the principle objective criterion for evaluating the effects of the counseling. Data were also collected on factors which might relate to academic performance and thereby provide alternative explanations for any obtained effects of group counseling. Measures of these factors were class attendance, results of the survey of Study Habits and

<sup>&</sup>lt;sup>13</sup>C. D. Spielberger, <u>et al.</u>, "Group Counseling and the Academic Performance of Anxious College Freshman," Journal of Counseling Psychology, 9, 1962, 54-61.

Attitudes, and personality patterns determined by the Minnesota Multiphasic Personality Inventory.

In contrast with the non-significant findings of the previous studies, the Duke investigation revealed that the counseled students showed greater improvement in academic performance than thenon-counseled students (p < .05). They also found that there was a positive relationship between the number of counseling sessions attended and grade improvement. Although it was possible to isolate a personality pattern which uniquely characterized the students who attended the counseling sessions regularly, those with the same personality pattern in the control group did not show comparable academic attainment.

An examination of the Spielberger, Weitz and Denny study reveals three experimental procedures seldom found in the research of group counseling. Motivation was controlled by including only volunteers in both experimental and control groups, an analysis was conducted on the length of treatment variable, and the influence of personality patterns which may have influenced the results was examined.

# Comparative Effects of Different Methods of Counseling on Academic Achievement

Five studies have been reported in the literature which deal with the comparative effects of different methods of counseling on academic achievement. One of the recent investigations is a comparison of three methods of assisting

underachieving high school students reported by Baymur and Patterson.<sup>14</sup> These researchers selected as subjects for their study, 32 high school juniors who were considered underachievers on the basis of a large discrepancy between scores on an aptitude test and school grades. These students were matched on selected variables and assigned to one of four groups. The assignment was not completely random due to scheduling conflicts.

Three experimental variables were applied to three different groups: individual counseling at weekly intervals for a maximum of 12 weeks, group counseling for nine sessions, and one-session motivational group counseling. The fourth group served as a control and received no counseling. The approach used by the counselor was described as clientcentered for the individual and group counseling. The onesession motivational treatment was designed to bring the students to an awareness of their underachievement and the value of applying themselves to their school work. A weakness in the report is a failure to include a more detailed description of any of the treatment variables. The major criteria for evaluating the counseling methods were improved personal adjustment as measured by a carefully prepared Qsort. increased scores on the Brown-Holtzman Survey of Study Habits and Attitudes, and increased grade-point average.

<sup>14</sup>F. A. Baymur and C. H. Patterson, "A Comparison of Three Methods of Assisting Underachieving High School Students," Journal of Counseling Psychology, 7, 1960, 83-9.

The results of the experiment were inconclusive. With regard to improvement in grades, the analysis of variance was not significant. However, when the two counseling groups were combined and compared with the one-session motivational group and the control group, the improvement by the counseling groups was significantly greater than that of the non-counseled groups. The same two-step analysis produced similar results with personal adjustment scores from the Q-sort. The authors recognized the weakness in the analysis procedure and thus make no conclusions about the effectiveness of any of the treatment conditions. Limitations of the study are similar to those found in many investigations previously cited in this review; they are lack of follow-up beyond experimental period, small sample size, nonmotivated students, and dependence upon the skills and personality of one counselor.

For his doctoral dissertation, Marx<sup>15</sup> reports a study which was designed to evaluate the comparative effects of individual and group counseling on academic achievement. A group of 181 freshman students were identified as underachievers on the basis of a large discrepancy between aptitude and first semester grade-point average. From the population of 181 underachievers, 46 students were selected

<sup>&</sup>lt;sup>15</sup>G. L. Marx, <u>A Comparison of the Effectiveness of</u> <u>Two Methods of Counseling with Academic Underachievers</u> (unpublished Ph.D. Dissertation, State University of Iowa, 1959).

to receive group counseling, 58 were to be seen as individual counseling clients, and 24 were to serve as a control group. The experimental subjects volunteered to receive counseling, but the control group was given no chance to volunteer. This weakness in the sampling procedure leaves the question of equal motivation for all groups unanswered. A second control group of 53 students who declined the opportunity for counseling was also included in the design.

Two criteria were used in the experiment, grade-point average increase, and number of credit hours which were completed during the semester in which treatment was offered. The number of interviews or group sessions attended by the counseled students ranged from one to four. The counseling in both groups focused on study-skills and educationalvocational planning and was done by three doctoral students.

Marx concludes, upon analysis of his post-treatment data, that the results pertaining to the effectiveness of counseling with academic underachievers must be considered inconclusive. No differences were found between either of the counseled groups and the control group which had no opportunity to volunteer. The group of control subjects who refused counseling received significantly lower grade-point averages than the students who received individual counseling. In a comparison of the two counseled groups, Marx noted significant differences in the grade-point improvement between students who participated in individual counseling

and students who received group counseling. These differences were in favor of the individually-counseled subjects.

The results of the Marx study would be more informative and conclusive if the investigator had controlled for motivation, increased the number of treatment interviews, and reduced the variance in students' attendance at interviews.

Speegle<sup>16</sup> recently completed a study evaluating the effectiveness of individual and group counseling with students on academic probation. The subjects for his investigation were selected from 180 second semester college freshmen who were on academic probation. The selected subjects were assigned to one of three groups; one received individual counseling, another group counseling, and a third served as a control group. The treatment consisted, for both groups, of two to five contacts with a counselor in which study habits and skills were discussed. Grade-point average and eligibility to remain in school were the two principal criteria used in the study. The results of the treatment show no statistically significant differences in grade-point average any of the three groups. However, more students who among received group counseling were able to remain in school because of acceptable grades than students receiving individual counseling or students in the control groups.

<sup>&</sup>lt;sup>10</sup> P. T. Speegle, <u>The Effectiveness of Two Techniques</u> of <u>Counseling with Students on Academic Probation</u> (unpublished Ed.D. Dissertation, North Texas State University, 1962).

A careful review of Speegle's dissertation reveals a number of weaknesses in his study. The control group was not selected from the students who volunteered for counseling. Although the students receiving treatment were sorted into two general categories according to high and low ability, no assessment was made of the pre-treatment equivalence of the treatment and control groups on ability or first semester grade-point averages. Two counselors were used in the experiment, but no estimate was made of this variable on the effects of the treatment. The number of treatment interviews was very few and the variability of the students' attendance at the interviews was large.

The studies which have been reviewed in this chapter thus far have dealt with the effectiveness of study-skills courses, group counseling, and individual vs. group counseling in improving academic achievement. Although these studies are related to the problem of the present investigation, none have compared the effects of different types of group counseling nor have they investigated the comparative effects of different types of content presented in either a counseling or study-skills class experience. The following two studies are not identical to the present investigation in that they do not employ two types of group counseling, but they have a more direct relationship than those already cited because the content of the treatment variables has been compared.

DeWeese<sup>17</sup> completed a doctoral study in which the academic achievement of students receiving group counseling was compared with the academic achievement of students taking a remedial reading course. His report includes two experiments, the first was a pilot study and the second was an attempt to clarify the results of the first. The subjects for both experiments were low achieving first semester college freshmen. In both experiments DeWeese controlled for motivation, assigned students randomly to the treatment and control groups, and verified the homogeneity of the groups on ability and grades.

The students assigned to the reading groups were included in a regularly taught reading class offered by the Reading Institute of the university. The students receiving group counseling focused upon such topics as study skills, reading habits, and educational planning.

In analyzing the results, DeWeese states that there were no significant differences in grade-point averages in either experiment between the counseling and reading groups. However, the grades of the students in the counseling groups improved enough so that significantly more counseling students were permitted to remain in college than reading students.

<sup>&</sup>lt;sup>17</sup>H. L. DeWeese, <u>The Extent to Which Group Counseling</u> <u>Influences the Academic Achievement, Academic Potential, and</u> <u>Personal Adjustment of Predicted Low-Achieving First Semester</u> <u>College Freshmen</u> (unpublished Ed.D. Dissertation, University of Illinois, 1959).

Although the DeWeese study is more carefully designed than many previously reviewed, the following limitations are noted: sample sizes ranged from six to 16 students, treatment effects were contaminated, and length of treatment varied within and between experimental groups.

Sheldon and Landsman<sup>18</sup> investigated the comparative effects of nondirective group counseling and conventional classroom instruction on academic achievement, reading skills, and personality change of college students. Twentyeight freshmen, whose academic performance during their first semester of college was below expectation, were invited to participate in a course in academic methods. Using a matched pair technique, these students were divided into two classes. The classes were judged to be homogeneous in ability, reading skills, and personality.

The treatment consisted of a lecture on study-skills and reading improvement which was given to the combined classes three times a week. Twice a week the two classes were separated; one continued to be taught by the same instructor in a conventional lecture and discussion method, the other class participated in nondirective group therapy sessions led by a competent nondirective therapist. While study-skills continued to be taught in the conventional

<sup>&</sup>lt;sup>18</sup> W. D. Sheldon and T. Landsman, "An Investigation of Nondirective Group Therapy with Students in Academic Difficulty, Journal of Consulting Psychology, 14, 1950, 210-5.

class, the therapy group often explored personal and social problems introduced by the group members. The treatment lasted for one term. The criteria for evaluating the effectiveness of the two treatment methods were improvement in grade-point average, reading skills, and personality characteristics. The reading and personality variables were measured by the Iowa Silent Reading Test and the California Test of Personality.

Sheldon and Landsman report that the members of the nondirective group had significantly higher grade-point averages at the conclusion of the semester in which treatment was administered than the students taught in a conventional manner. No differences between the groups were noted on the reading and personality measures.

The results of the investigation are tenuous due to weaknesses in the design. No mention was made in the report of how the 28 students were selected and what their motivation for assistance was. The method of treatment variables were not isolated; the counseled group received both types of treatment. The fact that one group saw a skilled therapist and the other did not introduced a variable which was not controlled. The effects of two experimental variables, content of treatment and method of treatment, were not separated.

In considering the design of the study, very little can be concluded about the effectiveness of the two types

of content. The major emphasis of the study was on method-lecture vs. nondirective therapy.

### Summary

The review of the literature pertinent to the present investigation was centered on the studies which evaluated (1) the effects of study-skills courses on academic achievement, (2) the effects of group counseling on academic achievement, and (3) the comparative effects of different counseling approaches on academic achievement. The major findings of the review are summarized in the following paragraphs.

The results of early investigations of the effectiveness of study-skills courses have been inconclusive. The trend of the more recent studies has been for the results to indicate that study-skills courses do have some effect on improving academic achievement. The improvement is not always statistically significant, however.

The hypothesis that group counseling has a measurable effect upon academic achievement has been rejected in all but two of the studies reviewed. And, due to the limitations of the Sheldon and Landsman<sup>19</sup> study, only the experiment of Spielberger, Weitz and Denny<sup>20</sup> clearly indicates that group counseling measurably improves academic achievement.

No studies have been conducted which evaluate the effects of different types of group counseling where the

	<sup>19</sup> Sheldon and Landsman, <u>op. cit</u> .
•	<sup>20</sup> Spielberger, <u>et al</u> ., <u>op. cit</u> .

content of the group sessions has been the treatment variable.

Experimentation in group counseling is beset with frequent weaknesses in design and methodology which impede consistent results. The most common weaknesses are:

- 1. Failure to use appropriate sampling techniques.
- 2. Failure to control for motivation.
- 3. Failure to use large enough sample sizes from which generalizations can be made.
- 4. Failure to reduce the variance among students in the number of sessions attended.
- 5. Failure to clearly define the treatment variable.
- 6. Failure to isolate the treatment conditions.
- 7. Failure to make follow-up evaluations.
- 8. Failure to provide treatment of reasonable length for changes to occur.

No study reviewed was comparable to the present investigation. Little attention has been given to the variable of content of group counseling sessions, and no researcher has evaluated the comparative effects of a cognitive and an effective group counseling approach to improve academic achievement. This study is designed to make such a comparison. And, in designing and conducting the experiment an attempt has been made to correct the frequent weaknesses which are found in many of the studies reviewed.

# CHAPTER III

# DESIGN AND METHODOLOGY

The experiment is designed to test the relative effectiveness of two types of group counseling experiences on the academic achievement of college underachievers as measured by grade-point average. Randomization, replication, and control are incorporated in the experiment to meet the three essentials of modern design.

# Design

The design of the study is a two-factor treatment plan<sup>1</sup> consisting of a two-way classification with equal frequencies within sub-classes (summarized in Table 3.1).

# Table 3.1

Summary of Basic Design of the Experiment

	•••	unou	Method							
Counselor	Cognitive	Affective	Control Group							
·	Three	Three								
Counselor A	groups	groups	No treatment							
	Three	Three	No creatment							
Counselor B	groups	groups								

Design (New York: The Macmillan Company, 1960).

The twelve counseling groups were divided equally between two counselors and two types of group counseling, cognitive and affective. (The two types of counseling are described later in this chapter.) Students were assigned on a random basis to the various treatment groups. Replication was obtained by duplicating the counseling methods. The third level of the design, the control group, received no treatment, but served to provide data for testing the research hypothesis that group counseling did in fact improve the student's academic performance.

The criterion used to measure the outcome of the experiment was grade-point average for winter and spring terms of the 1962-1963 school year. The winter term gradepoint averages provided an assessment of the effectiveness of group counseling during the term in which treatment was administered. The spring term grade-point averages provided a follow-up assessment of the effectiveness of group counseling three months after completion of the experiment.

# The Population

Of the freshmen who entered Michigan State University fall term 1962, there were 561 students who had obtained a raw score on the total scale of the College Qualification Test<sup>2</sup> of 137 or higher and who had received a fall term

<sup>&</sup>lt;sup>2</sup>The College Qualification Test is published by the Psychological Corporation and consists of three ability tests labeled verbal, information, and numerical. It is administered to all entering freshmen as part of their admission

grade-point average which was below a 2.00. For this particular class, a raw score of 137 falls at the 50th percentile. The grading system used at Michigan State University is based on a four-point system. An average grade of C is equivalent to a 2.00. For the purposes of this study, any student scoring above the 50th percentile on the C.Q.T. and receiving a grade average of less than a C is considered an underachiever.

Letters were sent to the 561 underachieving students during the four-day winter term registration period inviting them to come to the M.S.U. Counseling Center and participate in a group counseling experience (a copy of the letter is included in Appendix A). They were told that the experience was designed to help students who were in academic difficulty and would take place once a week for approximately eight weeks. There were 152 students who returned a card indicating their willingness to participate in the group counseling. Nine of these students sent cards in after the groups. Eight other letters of the original 561 were returned because the student had withdrawn from school.

# Random\_Assignment

The random assignment of subjects to treatment groups was executed in the following way: cards which were returned

to the University and is considered the best present index of college ability used at Michigan State University. (Personal contact with Arvo E. Juola, Evaluation Services, M.S.U.)

by the students to indicate a willingness to participate in group counseling also included a list of times when the groups would meet. Before returning the card, the student was asked to check four or five available hours which might be considered in assigning him to a group. The 143 students who had volunteered during the first week of winter term were alphatetized and then numbered. Using a table of random numbers, the students were assigned to one of the three treatments: cognitive, affective, or control. The assignment to one of the six groups within each treatment was made according to the student's preference, as indicated on his returned card, as often as possible. The two counselors were each assigned three affective and three cognitive groups by the flip of a coin.

There were seven students who could not be available at a time when their treatment groups were scheduled and thus were excluded from the experiment. Two of these were to be assigned to the cognitive groups and five were to join the affective groups. The breakdown of students at the beginning of the experiment is as follows: 45 were assigned to the six cognitive groups, 43 to the six affective groups, and 48 made up the no-treatment control group.

The control group was informed that due to the large number of students who desired to participate and the limited staff available, it was impossible to assign them to groups, but that plans were being made that in the future they too might be able to have the experience.

### Sample

Before describing the characteristics of the 96 students used in the experimental analysis, it is appropriate to account for 40 students who were initially included in the groups but not included in the analysis.

Although the experiment was designed to include eight group sessions, only seven were held; the eighth would have been during final exam week, and it was decided to terminate the experience before the exam period. The students who are included in the analysis attended the groups a minimum of five times. This point was chosen for two The first was that it was a natural breaking point; reasons. most students who were not involved in the experience enough to come at least five of the seven times came only two or three times. The second reason was that if only those students who had attended all seven sessions had been included, the numbers would have been cut below the point where a reasonable analysis could have been made. By using the five to seven criterion, a margin was provided for illness and other prohibiting circumstances.

The three cognitive groups assigned to Counselor A at the beginning of the experiment contained a total of 22 students, seven in two groups and eight in the third. Three of these students failed to attend the group sessions a minimum of five times. Two did not even report for the first session and another was excluded from the analysis

because he was also being seen in individual counseling. This left a total of 16 students in the cell for analysis. Counselor B was assigned three cognitive groups with a total of 23 students, eight in two groups and seven in another. There were 17 from these groups who attended at least five sessions. Of the six excluded from the analysis, three attended fewer than five times, two failed to report to the first session, and one had received two hours of eucationalvocational counseling during the last month of the preceeding term.

The three affective groups led by Counselor A began with a combined total of 22 students; 17 were available for analysis. Two students failed to attend a minimum of five times, two were seeing a counselor on an individual basis, and one was taking a "Methods of Study" course from the Department of Psychology. There were 16 students available for analysis from the affective groups of Counselor B. Of his original 21 students, four attended fewer than five times and one did not report for the first session of counseling.

An examination of the number of students who met the five sessions criterion and who were not involved in other counseling or study programs shows 16 students receiving cognitive treatment from Counselor A, 17 students receiving cognitive treatment from Counselor B, 17 students receiving affective treatment from Counselor A, and 16 students receiving affective treatment from Counselor B. In order to

facilitate the analysis, one student from the cognitive group of Counselor B and one student from the affective group of Counselor A were randomly excluded. Each of the four cells thus contained 16 students.

There were 48 students who had been assigned to the control group at the beginning of the experiment. Four of these students received individual counseling during the term, and two were enrolled in the "Methods of Study" class. From the 42 remaining control subjects, ten were randomly excluded from the experiment in order to establish equal cells in the three levels of treatment.

A slight modification was made in the sample for the analysis of spring term grade-point averages. It was found that one male student in the control group had received individual counseling during spring term and another male student in the control group had dropped out of school at the end of winter term. Two of the original ten students who had been randomly excluded from the control group were randomly selected to replace the ineligible students in the spring term analysis. No changes were necessitated in the cognitive and affective groups.

In Table 3.2 is summarized the number and sex of the students in each treatment group who are included in the analysis. Although there is a disproportion in the number of male and female students, approximately the same ratio, 4.1, existed for the original 561 students who were sent letters.

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Number and Sex of Students in Each Treatment Group Who Are Included In the Analysis

	ويعين في الله عنه المراجع الم	فأجعدوه ومحمد والمتعرفين والمتكر والمتعا	<u>N = 90</u>
Counselor	Cognitive	Affective	Control
A	11 Males 5 Females	13 Males 3 Females	
В	13 Males 3 Females	13 Males 3 Females	24 Males 8 Females
Total	24 Males 8 Females	26 Males 6 Females	24 Males 8 Females

Although assignment of the students to the various treatment groups was on a random basis and pre-experimental equivalence may be assumed, data in Tables 3.3 through 3.5 give further support to the assumption.

Because the criterion used in the experiment is the student's grade-point average, the similarity of academic ability of the students in each treatment group is essential. Table 3.2 is a summary of the group means of the total raw scores obtained on the College Qualification Test.

### Table 3.3

Total Raw Score Means for the College Qualification Test for Each Group and Counselor

	المراجع	<u>N = 96</u>	
Counselor	Cognitive	Affective	Control
A .	153.88	154.38	
Β.	153.31	154.01	153.44
Total	153.60	154.19	153.44

An examination of the total raw score means of the College Qualification Test for each treatment group reveals similarity among the groups. Because there was only a difference of one point between the raw score means of the three treatment groups, no statistical comparison was made, and the groups were treated as being equal on this variable. A total raw score of 154 falls at the 75th percentile. It is clear that the average group scores are in the aboveaverage range of the total 1962 freshman class.

A second consideration in determining the preexperimental equivalence of the groups is the fall term gradepoint average. If post-experimental conclusions are to be drawn attributing differences between groups to a particular treatment, then the groups must be similar at the onset of the experiment. The mean fall grade-point average for each group is reported in Table 3.4.

### Table 3.4

Mean Fall Term Grade-Point Averages for Each Group and Counselor

			N = 96
Counselor	Cognitive	Affective	Control
A	1.3369	1.5556	1 4806
В	1.5318	1.4888	1.4000
Total	1.4344	1.5222	1.4806

Inspection of the data reveals differences among the three treatment groups which, because of random assignment, are assumed to have occurred by chance. To test this assumption, the null hypothesis that there is no difference between treatment groups on fall term grade-point average was tested by analysis of variance.<sup>3</sup>

Before calculating the analysis of variance, the homogeneity of the sample variances was tested by Bartlett's test. The chi-square value of .0027 was so small that the null hypothesis of equal group variability was accepted.

The results of the analysis of variance of the three treatment groups are summarized in Table 3.5. The null hypothesis was accepted, and it was concluded that there were no statistically significant differences between the three treatment groups. Apparently those differences which appear in Table 3.4 are of a magnitude that could be expected by chance variation.

### Treatment

The two types of treatment used in this study evolved from theoretical positions described in the literature regarding possible ways of helping the underachiever. One type of treatment has been labeled, for the purposes of this study, <u>cognitive</u> and is concerned with providing information

<sup>&</sup>lt;sup>3</sup>Allen L. Edwards, <u>Experimental Design in Psychological</u> <u>Research</u> (Rev. Ed.; New York: Holt, Rinehart and Winston, 1960).

### Table 3.5

Source of Variation	SS	D.F.	۷.	F.	Hypothesis Tested
Between Treatment	. 1236	2	.0618	.5863	Accepted
Within Treatment	9.8030	93	。1054		
Total	9.9266				

Analysis of Variance of Fall Term Grade Point Average of the Randomly Assigned Students

and developing special skills which are deemed necessary for adequate performance in school but which are thought to be often lacking in the underachiever. The material explored in the cognitive treatment is quite similar to the material covered in many college orientation or effective-study courses. The second type of treatment has been called <u>affective</u> and deals primarily with emotional needs of the students which are thought to be underlying factors causing underachievement. The issue under examination is not which method of counseling, non-directive, psychoanalytic, etc. is most effective with underachievers, but rather what kind of content or type of material dealt with in the group sessions is most helpful in improving the student's academic standing.

Seven topics for each type of treatment were selected from the literature on underachievement. The cognitive treatment which was designed to deal with specific intellectual problem areas related directly to scholastic achievement included the following topics: examination of vocational objectives, patterns of interests, interest and personality test interpretation, developing a study schedule, reading habits, techniques in preparation for exams, and techniques in taking exams.

In contrast with the cognitive emphasis, the affective treatment stressed seven topics dealing with personal problems and personality dynamics which are hypothesized to be related to underachievement. These problem areas are: feelings of hostility, unconscious motivation, feelings of depression, pressure from outside sources, feelings about self, family relationships, and feelings of guilt.

The method of counseling used by the group leaders to effect the two types of treatment would be best described as eclectic with the specific techniques being determined primarily by the nature of the material under discussion. For example, the cognitive groups were often leader-centered with the counselor frequently giving factual information while the affective groups, working with material heavily laden with emotion, included more exploration and interpretation by the group members themselves.

Due to the eclectic nature of the method of counseling, a few broad guidelines were developed to assist the counselor in understanding his role in the group and assuring accomplishment of the treatment objectives. In the cognitive

groups the leader introduced the topics for discussion and determined the time spent on each topic. The leader encouraged cognitive discussions of the prescribed topics by responding to content rather than affect and by shifting emphasis away from any of the emotional areas outlined for the affective group. Interpretation was acceptable but was primarily of cognitive material. The leader was given freedom to suggest specific learning situations and group experiences. such as interest testing, discussion of case studies, and period of practice on certain study techniques from which the group members could draw insights.

The following two excerpts, taken from tape recordings of two cognitive group sessions, will illustrate the content and counselors' role in the cognitive experience.

#### Excerpt I

Student 1:	"Yehjust messed up on a chem exam."
Student 2:	"In Chem 112?Know what ya mean, I couldn't pass one of those beasts if I had to."
<b>A</b>	license of the newlyne benders therein a with

- Counselor: "Sounds as if you're having trouble with chemistry exams, I wonder how you'd go about studying for them. We talked about essay--"
- Student 2: "But these aren't essay, you have to approach them from another angle."

### Excerpt II

- Student 1: "Ya know, if I'd get out of engineering I'd be a lot better off. I--"
- Student 2: "Boy, you're right; I think that's half my problem. Do high marks over here in-a--group eight mean that you'll do ok in business--say marketing?"
- Student 3: "No, that's more like selling, group nine."
- Counselor: "You're interested in the business area, aren't you, Don? That's quite different from math. You're in business administration, Carl; what is it like?"

In the affective groups the leader allowed the discussion to follow the lines determined by the group when they were in accordance with one or more of the prescribed treatment topics. He often interceded with clarification, summarization, and direction when it was necessary for continued productivity. The designated topics were continually under consideration as the leader responded primarily to affect and the emotionally laden material presented by the students. He was given the freedom to remain silent, pursue individual and group dynamics, or make extensive interpretation of affective material.

Excerpts III and IV are taken from two affective group sessions.

#### Excerpt III

- Student 1: "Got another letter from my mother today. I wish she'd get off my back--so damned concerned about my grades."
- Student 2: "Ignore her. When my ol'lady gets bitchy I--"

- Student 3: "No you don't, you sit and take it like the rest of us!"
- Counselor: "You sound disgusted, Paul. Can you tell us a little more how you feel about this-a--not doing anything or--a pressure?"

# Excerpt IV

- Counselor: "You've been real quiet, Sandy, can you tell us about it?"
- Student 1: "No--I--it's just that things are--I feel like the way you did last week, Barbara. I'm never going to make it."
- Counselor: "You're really feeling low--like giving up?"
- Student 1: "Yeh."

20 second pause

Counselor: "These feelings of depression seem to be pretty common among all of us. Can we localize 'em?"

# Counseling Setting

Ten of the 12 counseling groups held their group sessions in a conference room which is designed for small group work in the Michigan State University Counseling Center. Due to a scheduling conflict of the conference room, one counseling group met in a group counseling room in the College of Education building and another group met in the Counseling Center office of one of the counselors. All three rooms were free from outside distractions.

The students in all groups sat in a circle facing one another. The conference room had a table in the center around which the students sat, but the other two rooms were to small to include a table. Seats were not assigned, but most students sat in the same chairs each week unless the group leader happened to sit in their accustomed place.

During two sessions of each group, a tape recording was made for counselor use in evaluating the similarities and differences between the two counselors and between the two types of counseling.

# The Counselors

Both of the counselors of the investigation were doctoral candidates with majors in counseling psychology. At the time of the investigation one counselor was an assistant instructor in the Counseling Center and the other was an assistant instructor in the Department of Guidance and Personnel Services. One of the counselors has had a total of six years teaching and counseling experience at the high school and college levels; the other counselor has had a total of three years of college teaching and counseling experience.

# Consistency and Verification of Counseling

Because an essential element of the design is replication, it was necessary that the two types of group counseling be followed by both counselors. Further, the design demands that the content of the group sessions be different between the two counseling treatment groups.

The objectives of the two different types of treatment and the functions which the counselors were to perform were thoroughly discussed and agreed upon by the two counselors before the initial sessions. To assure similar and appropriate treatment, the counselors met biweekly during the seven weeks of treatment to review objectives, listen to group tapes, and discuss problems which arose in any of the groups.

Although the counselors were in agreement that the cognitive and affective groups actually received the prescribed treatment, an assessment of the students' opinions about the type of experience they felt they had was obtained by administering a one-page treatment survey at the end of the seven group sessions. (A copy of the treatment survey may be found in Appendix A.)

The survey consisted of fourteen topics or content areas which were to be available for discussion in the two types of groups. Seven from the cognitive groups were interspersed with seven from the affective groups. The survey was presented to each student with instructions to check seven items which best describe what was discussed in his group. The opinions of each student were scored as a cognitive experience if more than half of the items checked were cognitive and as an affective experience if more than half of the items checked were affective.

Table 3.6 is a summary of the results of the treatment survey. It can be noted that the two types of counseling were followed by both counselors and that there was complete agreement among students in each treatment group that their experiences were primarily cognitive or primarily affective according to the design of the experiment.

# Table 3.6

	Couns	elor A	Counselor B		
Type of Treatment	Cognitive Experience	Affective Experience	Cognitive Experience	Affective Experience	
Cognitive Groups	16	0	16	0	
Affective Groups	0	16	ο	16	

Cognitive and Affective Experience Scores by Treatment Groups to the Treatment Survey

### The Null Hypotheses

The basic research hypotheses of the investigation are broadly stated in Chapter I. A more specific formulation of these hypotheses as they relate to the design of the experiment considers the counselor variable and interaction factor.

<u>One-way Analysis of Variance of Winter Term Grades</u>. The analysis of the winter term grade-point averages of the students in the cognitive, affective, and control groups is made by a one-way analysis of variance. Null Hypothesis One: There are no differences in academic achievement at the completion of the experiment between the students who have experienced group counseling and the students who did not participate in group counseling.

# Two by Two Analysis of Variance of Winter Term Grades. The

analysis of the effects of two types of counseling, two counselors, and an interaction between type of counseling and counselor on the winter term grade-point average of the students receiving group counseling is made by a  $2 \times 2$ analysis of variance.

- Null Hypothesis Two: There are no differences in the academic achievement of the students at the completion of the experiment attributable to different types of counseling.
- Null Hypothesis Three: There are no differences in the academic achievement of the students at the completion of the experiment attributable to different counselors.
- Null Hypothesis Four: There are no differences in the academic achievement of the students at the completion of the experiment attributable to an interaction between type of counseling and counselor.

One-way Analysis of Variance of Spring Term Grades. The

analysis of the spring term grade-point averages of the students in the cognitive, affective, and control groups is made by a one-way analysis of variance.

> Null Hypothesis Five: There are no differences in academic achievement three months following the completion of the experiment between the students who have experienced group counseling and the students who did not participate in group counseling.

Two by Two Analysis of Variance of Spring Term Grades. The

analysis of the effects of two types of counseling, two

counselors, and an interaction between type of counseling and counselor upon the spring term grade-point average of the students receiving group counseling is made by a 2 x 2 analysis of variance.

- Null Hypothesis Six: There are no differences in the academic achievement of the students three months following the completion of the experiment attributable to different types of counseling.
- Null Hypothesis Seven: There are no differences in the academic achievement of the students three months following the completion of the experiment attributable to different counselors.
- Null Hypothesis Eight: There are no differences in the academic achievement of the students three months following the completion of the experiment attributable to an interaction between type of counseling and counselor.

# Statistical Treatment

The analysis of variance is the appropriate technique to test the null hypotheses of the present study. It is designed to differentiate variation between the number of means according to different causes and to interpret the significance of the variation.<sup>4</sup> Prior to testing the hypotheses, a major assumption of the analysis of variance model, homogeneous sample variances is tested by calculating Bartlett's test of homogeneity of variance.<sup>5</sup>

> 4 Ray, <u>op. cit</u>. <sup>5</sup>Edwards, <u>op. cit</u>.

It was decided that, because of the limited sample size, a more meaningful test of the first and fifth hypotheses could be made if the six counseling groups within each treatment level were combined to make a total of 32 students in each major group. A one-way analysis of variance is employed to compare the three treatment level effects. The data for the other six hypotheses were obtained by combining the three counseling groups receiving similar treatment from the same counselor. This procedure gives four cells with 16 students in each cell. A 2 x 2 analysis of variance is employed for comparison of the effects of treatment, counselor, and interaction. The control group is not included in the analysis of hypotheses two, three, four, six, seven, and eight.

When the experiment was designed, the level of significance for rejecting or accepting the null hypotheses was set at the 5 per cent level of confidence. It was also decided that the results from Bartlett's test of homogeneity of variance would be accepted or rejected at the 5 per cent level of confidence.

# Summary

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The experiment is based on a two-factor treatment plan. Twelve counseling groups were equally divided between two counselors who each led three groups in a cognitive counseling experience and three groups in an affective counseling experience. The design contained randomization, replication, and control.

The analysis of variance is the statistical technique used to analyze the data. By this method it is possible to assess the variation due to the specific causes and to analyze the effects of two or more variables and their interaction at one time. The 5 per cent level of confidence was chosen for accepting or rejecting the null hypotheses and the results of Bartlett's test of homogeneity of variance.

# CHAPTER IV

# ANALYSIS OF EXPERIMENTAL RESULTS

Chapter IV is a report of the analysis of the winter and spring term grade-point averages which were computed for each of the 96 students in the sample. Each of the eight experimental null hypotheses are tested by an analysis of variance technique which was reported in Chapter III.

Analysis of Variance of the Winter Term Grade-Point

# Averages

The first four null hypotheses, which are concerned with the immediate effects of treatment, are tested by the analysis of variance of the winter term grade-point averages.

# Hypothesis One

Hypothesis one is restated in null form:

1. There are no differences in academic achievement at the completion of the experiment between the students who have experienced group counseling and the students who did not participate in group counseling.

The students in the six counseling groups within each treatment were combined to make a total of 32 students in each treatment group. The first hypothesis is tested by comparing winter term grade-point average means of the cognitive, affective, and control groups.
Bartlett's test of homogeneity of variances resulted in a non-significant chi-square value of .0817. The assumption of equal variance is verified and the use of analysis of variance is justified. The results of the analysis are summarized in Table 4.1.

# Table 4.1

Analysis of Variance of Winter Term Grade-Point Averages for the Cognitive, Affective, and Control Groups

Source of Variation	Sum of Squares	d.f.	Mean Squares	F	Hypothesis Tested
Between Treatments	2.3115	2	1.1558	3.7538	Rejected
Within Treatm <b>ents</b>	28.6352	9 <b>3</b>	. 3079		
Total	30.9467	95			

Inspection of the table reveals an F value of 3.7538 which is significant at the .05 level. The hypothesis that there are no differences in academic achievement at the completion of the experiment between the students who have experienced group counseling and the students who did not participate in group counseling is rejected. Differences as large as these would occur by chance less than five times in one hundred.

In order to determine how the three groups differ, Duncan's New Multiple Range Test described by Edwards<sup>1</sup> for

<sup>&</sup>lt;sup>1</sup>Edwards, <u>op. cit</u>.

use in making multiple comparisons in the analysis of variance is employed. This test is used to determine which of the differences between the three means are significant and which are not. The .05 level of confidence was again established as the criterion for evaluating the differences. The results of Duncan's New Multiple Range Test are found in Table 4.2.

#### Table 4.2

Duncan's New Multiple Range Test of Winter Term Grade-Point Averages for the Cognitive, Affective, and Control Groups

	Means	A Control 1.9066	B Cognitive 2.1203	C Affective 2.2856	Shortest Significant Ranges
A	Control 1.9066		.2137	• 3790*	$R_2 = .2775$
в	Cognitive 2.1203			. 1653	$R_3 = .2919$
C	Affective 2.2856				

\*Significant at the .05 level.

An examination of the means reported in Table 4.2 indicates that the mean for the cognitive group is higher than the mean of the control group but not as high as the mean of the affective group. The difference between the mean of the affective group and the mean of the control group is large enough to be significant at the .05 level of confidence. There were no other differences which were significant. The results of the analysis of variance and Duncan's test indicate that the students who received affective group counseling made significantly higher grades than the students in the control group but not significantly higher grades than the students who received cognitive group counseling.

# Hypotheses Two, Three, and Four

These hypotheses are restated in null form:

- 2. There are no differences in the academic achievement of the students at the completion of the experiment attributable to different types of counseling.
- 3. There are no differences in the academic achievement of the students at the completion of the experiment attributable to different counselors.
- 4. There are no differences in the academic achievement of the students at the completion of the experiment attributable to an interaction between type of counseling and counselor.

These three hypotheses are tested by a 2 x 2 analysis of variance design. The three sub-groups receiving similar treatment from the same counselor were combined. This procedure gave four cells in the design with 16 students in each cell. The control group was not included in the analysis.

Bartlett's test of homogeneity of variance of the winter term grades resulted in a chi-square value of .2281 which is non-significant. The assumption of equal variance is met and the analysis of variance is permitted. The results of the analysis are summarized in Table 4.3.

Table 4	ŀ.	-3
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Source of Variation	Sum of Squares	d.f.	Mean Squares	F	Hypotheses Tested
Between Treatment	•4372	1	.4372	1.5303	Accepted
Between Counselor	.0385	1	.0385	.2348	Accepted
Interaction	.0185	1	.0185	.0648	Accepted
Error	17.1403	60	.2857		
Total	17.6345	63			

Analysis of Variance of Winter Term Grade-Point Averages for Treatment, Counselor, and Interaction Effects

The null hypotheses two, three, and four are accepted. The grade-point average differences, which are indicated by the three F values in Table 4.3, between students of different treatment conditions are so small that they are attributed to chance variation rather than to different types of counseling, to different counselors, or to an interaction of type of counseling and counselor.

Analysis of Variance of the Spring Term Grade-Point

#### Averages

The remaining four hypotheses, which are concerned with the effects of treatment three months after the experiment, are tested by the analysis of variance of the spring term grade-point averages.

# Hypothesis Five

Hypothesis five is restated in null form:

5. There are no differences in academic achievement three months following the completion of the experiment between the students who have experienced group counseling and the students who did not participate in group counseling.

The procedures followed in testing hypothesis five are identical to those used to test hypothesis one. The students in the six counseling sub-groups within each treatment were combined to make a total of 32 students in each treatment group. The fifth hypothesis is tested by comparing the spring term grade-point average means of the cognitive, affective, and control groups.

The homogeneity of variances was checked by use of Bartlett's test. The chi-square value of .1577 indicates that the variances are homogeneous and the analysis of variance is permitted. The results are summarized in Table 4.4.

# Table 4.4

Analysis of Variance of Spring Term Grade-Point Averages for the Cognitive, Affective, and Control Groups

Source of Variation	Sum of Squares	d.f.	Mean Squares	F	Hypotheses Tested
Between Treatments	. 1076	2	.0538	.2168	Accepted
Within Treatments	23.0946	9 <b>3</b>	.2483		
Total	23.2022				

An examination of the table indicates an F value which is so small that the differences in grade-point averages between the students in the cognitive, affective, and control groups are likely to have occurred by chance. Therefore, the null hypothesis that there are no differences in academic achievement three months following the completion of the experiment between the students who have experienced group counseling and the students who did not participate in group counseling is accepted. Although there are significant grade-point average differences between the students in these three groups at the completion of the experiment as shown in Tables 4.1 and 4.2, no significant differences exist three months following the period of treatment.

# Hypotheses Six, Seven, and Eight

These hypotheses are restated in null form:

- 6. There are no differences in the academic achievement of the students three months following the completion of the experiment attributable to different types of counseling.
- 7. There are no differences in the academic achievement of the students three months following the completion of the experiment attributable to different counselors.
- 8. There are no differences in the academic achievement of the students three months following the completion of the experiment attributable to an interaction between type of counseling and counselor.

The procedure for testing these three hypotheses is identical to the procedure used in testing hypotheses two, three, and four. A 2 x 2 analysis of variance design is used.

Three sub-groups receiving similar treatment from the same counselor were combined to give four cells in the design with 16 students in each cell.

The chi-square value of .5924 obtained by Bartlett's test of homogeneity of variance of spring term grade-point averages is non-significant and the assumption of homogeneous variances is supported. The results of the analysis of variance of the spring term grades, which is designed to test hypotheses six, seven, and eight, are reported in Table 4.5.

#### **Table 4.5**

Analysis of Variance of Spring Term Grade-Point Averages for Treatment, Counselor, and Interaction Effects

Source of Variation	Sum of Squares	d.f.	Mean Squares	F	Hypothesis Tested
Between Treatment	.0588	1	.0588	.2689	Accepted
Between Counselor	. 1024	1	. 1024	.4682	Accepted
Interaction	.4796	1	.4796	2.1929	Accepted
Error	13.1202	60	.2187		
Total	13.7610	63			

The three null hypotheses of no differences between different types of counseling, no differences between different counselors, and no differences between type of counseling and counselor are accepted. The F values reported in Table 4.5 for the three variables are smaller than the criterion value of 4.00 and it is concluded that any differences which exist between the grade-point averages of the students in the various treatment conditions are attributable to chance variation.

Fall, Winter, and Spring Term Grade-Point Average Means

The analyses of the winter and spring term grade-point averages of the students in the three treatment groups have been reported in the preceding pages. The analysis of variance tables which are employed to report the results of the analyses preclude presentation of the grade-point average means of the groups which are being examined. The fall, winter, and spring term grade-point average means for the students in the cognitive, affective, and control groups are reported in Table 4.6.

Table 4.6

	Treatment					
Term	Cognitive	Affective	Control			
Fall	1.4344	1.5222	1.4806			
Winter	2.1203	2.2856	1.9066			
Spring	2.2115	2.1509	2.1334			

Fall, Winter, and Spring Term Grade-Point Average Means for the Students in the Three Treatment Groups

An inspection of the grade-point average means reported in Table 4.6 reveals an improvement in winter term grade-point averages over fall term grade-point averages by all three groups. Both treatment groups improved more than the control, and the difference between the affective and the control groups was significant. Three months after treatment, however, the differences between the grade-point averages of the groups had decreased so that a significant difference between any of the groups was not found.

# Summary

An analysis of variance was conducted on the winter and spring term grade-point averages in order to test the eight null hypotheses. The first null hypothesis was rejected, the remaining seven were accepted.

Duncan's New Multiple Range Test for making multiple comparisons was employed to further test the first hypothesis. It was concluded that the grade-point averages of students receiving affective group counseling were significantly higher upon completion of the experiment than those of students who received no counseling. There were no significant differences in grade-point averages at the completion of the experiment between the students in the cognitive and affective groups or between the cognitive and control groups. The analysis of the grades three months later revealed no significant differences between grade-point averages of the students in any of the three groups. The difference which was noted in the winter term grade-point averages was not present in the spring term grade-point averages.

When the analyses of type of treatment, counselor, and interaction variables were examined, it was concluded that no significant differences existed in the grade-point averages of the students in the different treatment conditions upon completion of the treatment or three months following completion of the experiment which could be attributed to differences in the type of counseling, to the different counselors, or to interaction between types of counseling and counselor.

#### CHAPTER V

# SUMMARY, CONCLUSIONS, DISCUSSIONS, AND RECOMMENDATIONS

# Summary

The problem of this study was to investigate the effects of two types of group counseling experiences on the academic achievement of college underachievers.

The subjects of the investigation for analysis purposes were 96 volunteers from a population of 561 freshman college students who were judged to have high ability for college achievement but who received unsatisfactory grades in their first term at the university.

The basic hypotheses of the study were:

- Hypothesis I The academic achievement of students who have experienced group counseling will be greater at the completion of the experiment and three months following the completion of the experiment than the academic achievement of students who did not participate in group counseling.
- Hypothesis II There will be differences in academic achievement at the completion of the experiment and three months following the completion of the experiment between students experiencing two types of group counseling.

The two types of group counseling used to test the hypotheses of the investigation evolved from two theoretical positions described in the literature regarding possible

methods of helping the underachiever. One type of treatment has been labeled, for the purpose of the study, cognitive, and was concerned with providing information and developing special skills which are deemed necessary for adequate performance in school but which are thought to be lacking in the underachiever. The material explored in the cognitive treatment was quite similar to the material covered in many college study-skills courses. The second type of treatment was called affective and dealt primarily with emotional problems and personality dynamics of the students which are thought to be underlying factors causing underachievement. The material explored in the affective treatment included discussions of feelings of depression, unconscious motivation, and expression of hostility.

The design of the investigation is based on a twofactor treatment plan. Twelve counseling groups were equally divided between two counselors who each led three groups in a cognitive counseling experience and three groups in an affective counseling experience. In addition to the two treatment groups, a third group was included in the experiment to serve as a control.

Assignment of the students to the three treatment groups, cognitive, affective, and control, was accomplished by use of a table of random numbers. The students to receive cognitive or affective group counseling were assigned to one of the counseling groups within their treatment

according to available time on their course schedule. The two counselors used in the investigation were each assigned three counseling groups from each treatment by the flip of a coin. The students in the control group received no counseling.

The students included in the analysis attended from five to seven group counseling sessions which were held winter term 1963. Eleven of the 12 counseling groups met once a week in the Michigan State University Counseling Center. The other counseling group met once a week in a special group counseling room in the College of Education building.

There were 40 students from the original 136 who were not included in the analysis. Five students failed to attend the first counseling session, 12 students failed to attend a minimum of five counseling sessions, 11 students were concommitantly receiving individual counseling or attending a study-skills course, and two students from the treatment groups and ten students from the control group were randomly excluded in order to obtain equal size treatment samples. There were 96 students included in the analysis, 32 from each treatment and 32 from the control.

The winter term grade-point averages were the criterion of academic achievement at the completion of the experiment. The spring term grade-point averages were the criterion of academic achievement three months following the

administration of the treatment. In a check of the pretreatment equivalence of the groups, an analysis of variance of the fall term grade-point averages of the three groups revealed no significant differences between the groups on academic achievement. The means of the total raw scores on the College Qualification Test for the three groups were examined and judged to be equivalent.

In order to establish that those students receiving group counseling actually discussed the material designated for the particular treatment to which they were assigned, a treatment survey was administered at the conclusion of the last group session. The results of the treatment survey revealed that the two types of counseling were appropriately followed by both counselors and that there was complete agreement among students in each treatment group that their experiences were primarily cognitive or primarily affective according to the design of the experiment.

The analysis of variance was used to test the hypotheses of the investigation. The assumption of homogeneity of variances was tested by Bartlett's test for each analysis of variance. It was decided when the investigation was designed that the Bartlett's test and the null hypotheses would be rejected or accepted at the 5 per cent level of confidence. In every analysis the variances were found to be homogeneous.

The first four null hypotheses were designed to test the effect of treatment immediately after completion of group counseling. The first null hypothesis that there are no differences in academic achievement at the completion of the experiment between the students who have experienced group counseling and the students who did not participate in group counseling was rejected. The significant F of the analysis of variance of grade-point averages of the students in the cognitive, affective, and control groups justified the use of Duncan's New Multiple Range Test for determining how the three groups differed. It was found that the students who received affective group counseling made significantly higher grades than the students in the control group, but not significantly higher grades than the students who received cognitive group counseling. There were no other differences which were significant between the three groups.

The second, third, and fourth null hypotheses that there are no differences in the academic achievement of the students upon completion of the experiment attributable to different types of counseling, to different counselors, and to an interaction between type of counseling and counselor were accepted. The differences which occurred were too small to be significant.

The second set of four null hypotheses were posited for follow-up evaluations three months after the treatment had been given. The fifth null hypothesis that there are no

differences in academic achievement three months following the completion of the experiment between the students who have experienced group counseling and the students who did not participate in group counseling was accepted. No significant differences were found between the cognitive, affective, and control groups three months after treatment.

The sixth, seventh, and eighth hypotheses that there are no differences in the academic achievement of the students three months following the completion of the experiment attributable to different types of counseling, to different counselors, and to an interaction between type of counseling and counselor were also accepted. The follow-up data revealed no significant differences due to any of the three variables.

# Conclusions

The analysis of the data permits the following conclusions:

- The students who experienced five to seven sessions of affective group counseling earned significantly higher grade-point averages during the term in which the counseling occurred than students who received no counseling.
- 2. No significant differences were found for the term in which group counseling was experienced or three months after counseling between the gradepoint averages of students who received <u>cognitive</u>

group counseling and the students who received <u>affective</u> group counseling.

3. Three months after the experiment no significant differences in grade-point averages were found between students who experienced a cognitive or affective type of group counseling or between students in either treatment group and students who received no counseling.

#### Discussion

The study was designed to answer questions about the effectiveness of two different types of material which might be discussed during group counseling sessions with underachievers. The use of the cognitive approach was based upon the theory that the underachiever needs to improve scholastic skills such as study habits, techniques of test taking, and reading proficiency. The affective approach, which is concerned with such subjects as self concept, feelings of hostility, and family relationships was developed from the theory that underachievement is related to underlying emotional problems and personality dynamics.

Any conclusions based upon the results of the experiment regarding the effectiveness of these two approaches are tentative and in need of further experimental evidence. The students receiving the affective experience significantly improved their grades more when they were receiving treatment

than the students in the control group. An examination of the data reveals that some improvement in winter term gradepoint averages over fall term grade-point averages was made by all three groups. Both treatment groups improved more than the control; the differences between the affective and control groups were large enough to be significant, but the differences between the cognitive and control groups were not. When the two treatment groups were compared, the differences between them were not large enough to be significant.

The spring term data revealed that the students in the affective group had maintained, but not increased, the gradepoint averages which they had obtained winter term while the students in the cognitive and control groups had continued to improve their grade-point averages. By the end of spring term all three groups had greater than a 2.00, or C, grade-point average and there were no significant differences between them.

A number of questions are raised by the results of the study. If the period of treatment was longer, would improvement in the grade-point averages of the students in the affective group continue? A five-to seven-session treatment period is a short time to work through the psychodynamic problems which are hypothesized to be causes of underachievement. And, students in four of the six affective counseling groups expressed a desire to continue the experience throughout the following term.

Is it possible that the nature of the affective group satisfied dependency needs of the freshman students and that no real change took place? For freshman students at a large university, the content of the group counseling experience may be of secondary importance. The primary value may be the opportunity of identifying with a small group of students. If academic improvement is related to satisfied dependency needs, experiences in affective group counseling will be more helpful to the students than those available in cognitive group counseling where the expression of affect and personal involvement is not encouraged or required.

Will the study-skills and educational information gained by the students in the cognitive group have a continuing effect upon academic achievement? Non-significant gradepoint average gains were made during both winter and spring terms; it is possible that as the skills and information become more a part of the student's academic life, a greater congruence between achievement and ability is obtained. This question can only be answered by periodic follow-up evaluations throughout the college career of the student.

Do underachieving students have different types of personality patterns which may serve as guide-lines in determining the type of group counseling experience that will be most beneficial for each student? Twelve of the original 136 students failed to attend a minimum of five group counseling sessions, yet they all had attended at

least one. If the experience had been different for the 12 students, they may have become more involved. Even among the students who attended the sessions regularly, there may have been some who would have benefited more from another type of experience. The effectiveness of group counseling for helping the underachiever will be enhanced when the type of experience which is most appropriate for the needs of each student is provided.

Is it possible that the study did not examine the effects of two types of group experiences but rather the effects of promising a group experience and then withdrawing the opportunity to receive the experience? No assessment was made of the effects of informing the control group that the group experience was no longer available to them due to the large number of students who desired the experience and the limited staff available to conduct the experiences.

#### Recommendations

It is suggested that the study be replicated to further test the effectiveness of the cognitive and affective group counseling approaches in improving academic achievement of college underachievers. Additions to the present study which are suggested for inclusion in the design of the replication study are:

> 1. A period of treatment which exceeds the five to seven session period of this study to determine if the academic achievement of the students

will continue to improve with extended treatment.

- Personality evaluations for determining patterns and dynamics of individuals who might benefit more from one type of treatment than from another.
- 3. Measures of behavior and personality change which are hypothesized to be related to the two types of treatment.
- 4. Follow-up evaluations two and three years after the group counseling experience to determine possible gains which may not be apparent immediately after treatment.
- 5. A third type of group counseling which combines both study-skills material and personal-emotional material.

# BIBLIOGRAPHY

- Anderson, R. L. "An Experimental Investigation of Group Counseling with Freshmen in a Woman's College." Unpublished Ph.D. Dissertation, New York University, 1956.
- Baymur, F. B., and Patterson, C. H. "A Comparison of Three Methods of Assisting Underachieving High School Students," Journal of Counseling Psychology, 1960, 7, pp. 83-9.
- Blake, W. S., Jr. "Study-Skills Programs," Journal of Higher Education, 1955, 26, pp. 97-9, 114.
- Book, W. F. "Results Obtained in a Special Course Given to College Students," <u>School and Society</u>, 1927, 26, pp. 529-34.
- Broedel, J., <u>et al</u>. "The Effects of Group Counseling on Gifted Underachieving Adolescents," <u>Journal of Counsel-</u> <u>ing Psychology</u>, 1960, 7, pp. 163-70.
- Caplan, S. W. "The Effects of Group Counseling on Junior High School Boys' Concepts of Themselves in School," Journal of Counseling Psychology, 1957, 4, pp. 124-8.
- Carter, H. D. "Mechanics of Study Procedure," <u>California</u> Journal of Educational Research, 1958, 9, pp. 8-13.
- Chahbazi, P. "Analysis of Cornell Orientation Inventory Items of Study Habits and Their Relative Value in Prediction of College Achievement," Journal of Educational Research, 1957, 51, pp. 117-28.
- Crawford, C. C. "Some Results of Teaching College Students How to Study," <u>School and Society</u>, 1926, 26, pp. 471-2.
- DeWeese, H. L. "The Extent to Which Group Counseling Influences the Academic Achievement, Academic Potential, and Personal Adjustment of Predicted Low-Achieving First Semester College Freshment." Unpublished Ed.D. Dissertation, University of Illinois, 1959.

- Diener, Charles L. "Similarities and Differences Between Over Achieving and Underachieving Students," <u>Personnel</u> <u>and Guidance Journal</u>, 1960, 38, pp. 396-400.
- Duncan, D. R. "Effects of Required Group Counseling with College Students in Academic Difficulty." Unpublished Ed.D. Dissertation, University of Florida, 1962.
- Educational Policies Commission. <u>Manpower and Education</u>. Washington, D. C.: National Education Association of the United States of America Association of School Administrators, 1956.
- Edwards, Allen L. <u>Experimental Design in Psychological</u> <u>Research</u>. Revised Edition. New York: Holt, Rinehart and Winston, 1960.
- Entwisle, D. R. "Evaluations of Study-Skills Courses: A Review," Journal of Educational Research, 53 (March, 1960), pp. 247-51.
- Farquhar, W. W. "An Investigation of the Relationship of Three Teaching Methods to Student Behavior in a How To Study Course." Unpublished Ph.D. Dissertation, University of Minnesota, 1955.
- . <u>Motivation Factors Related to Academic Achievement</u>. Cooperative Research Project 846 (January, 1963). East Lansing: Office of Research and Publications, College of Education, Michigan State University.
- \_\_\_\_\_, Payne, D. A., Chubb, W. H., and Thorpe, M. D. "Summary of Characteristics of Over- and Underachievers." East Lansing, Michigan: Michigan State University. (Unpublished paper.)
- Kirk, Barbara. "Test versus Academic Performance in Malfunctioning Students," <u>Journal of Consulting Psychology</u>, 1952, 16, pp. 213-6.
- Krumboltz, J. D., and Farquhar, W. W. "The Effect of Three Teaching Methods on Achievement and Motivational Outcomes in a How-to-Study Course," <u>Psychological Mono-</u> graphs, 71:14, 1957.
- Maroney, K. A. "Effectiveness of Short-Term Group Guidance with a Group of Transfer Students Admitted on Academic Probation." Unpublished Ed.D. Dissertation, North Texas State University, 1962.

- Marx, G. L. "A Comparison of the Effectiveness of Two Methods of Counseling with Academic Underachievers." Unpublished Ph.D. Dissertation, State University of Iowa, 1959.
- McCarthy, M. V. <u>The Effectiveness of a Modified Counseling</u> <u>Procedure in Promoting Learning Among Bright Under-</u> <u>achieving Adolescents</u>. Research Project ASE-6401. Washington, D. C.: Department of Health, Education and Welfare, 1959.
- Mullan, H. and Rosenbaum, M. <u>Group Psychotherapy: Theory</u> and <u>Practice</u>. New York: Free Press of Glencoe, 1962.
- Ray, William S. <u>An Introduction to Experimental Design</u>. New York: The Macmillan Company, 1960.
- Robinson, Francis P. <u>Effective Study</u>. Revised Edition. New York: Harper and Brothers, 1961.
- Roth, R. M. and Meyersburg, H. A. "The Non-Achievement Syndrome," <u>Personnel and Guidance Journal</u>, 1963, 41, pp. 535-46.
- Sheldon, W. D., and Landsman, T. "An Investigation of Nondirective Group Therapy with Students in Academic Difficulty," Journal of Consulting Psychology, 1950, 14, pp. 210-5.
- Speegle, P. T. "The Effectiveness of Two Techniques of Counseling with Students on Academic Probation. Unpublished Ed.D. Dissertation, North Texas State University, 1962.
- Spielberger, Charles D. "The Effects of Manifest Anxiety on the Academic Achievement of College Students," <u>Mental Hygiene</u>, 1962, 46, pp. 420-6.
- <u>, et al</u>. "Group Counseling and the Academic Performance of Anxious College Freshmen," <u>Journal of</u> <u>Counseling Psychology</u>, 1962, 9, pp. 54-61.
- Taylor, R. G. "Summary of Personality Characteristics of Over (and high)- and Under (and low)- Achievers." East Lansing, Michigan: Michigan State University. (Unpublished paper.)
- Winborn, B. and Schmidt, L. G. "The Effectiveness of Short-Term Group Counseling Upon the Academic Achievement of Potentially Superior but Underachieving College Freshmen," Journal of Educational Research, 1962, 55, pp. 169-73.

Wrenn, G. Gilbert. "Aiding the Fit," Journal of Higher Education, 1935, 6, pp. 357-63. APPENDIX A

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December 31, 1962

Dear

You are one of a group of students whose academic performance has not reached the level we would have expected from your orientation test scores. It is recognized that many factors may be involved in your performance. The factors frequently listed by other students who have been in academic difficulty are study techniques, reading skills, personal problems and family relationships. We here at the Counseling Center are certain that counseling can be of significant aid in helping you deal with some of these problem areas providing you are willing to make an honest effort. We have therefore arranged a group counseling experience similar in nature to those which have shown encouraging results at a number of other large universities.

The experience we are suggesting requires that you attend a small discussion group one hour a week for eight weeks during this Winter term. The group will meet at the Counseling Center and will be composed of freshmen students having similar difficulties. It will be led by one of our counselors.

As you decide to join one of our groups, we would like to point up the necessity of continuing throughout the whole eight weeks as the helpful group experience is dependent upon a sustained attendance of each member.

Please indicate on the enclosed form the hours which you will be available for counseling and return it to us <u>as soon</u> as you have completed registration. For those who live on campus, the return envelope needs no postage; just hand it to the receptionist in your residence hall and have him put it in the "campus mail." You will be contacted by us as to the hour which best fits both of our schedules.

Sincerely yours,

/s/ Rowland R. Pierson

Rowland R. Pierson Acting Director

RRP/cj

# Treatment Survey

Name:

The purpose of this survey is to determine your opinions about the group experience. Please check seven items out of the following list which best describe what was discussed in your group.

> Examination of vocational objectives Techniques in taking exams Feelings of depression Patterns of interest Family relationships Feelings of hostility Techniques in preparation of exams Reading habits Unconscious motivation Test interpretation Feelings of guilt Developing a study schedule Pressure from outside sources Feelings about self.

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