THE EFFECTS OF SYSTEMATIC DESENSITIZATION ON TEST ANXIETY OF YOUNG ADULTS IN A RESIDENT LEARNING ENVIRONMENT

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PREFACE

This study is concerned with the effect of a systematic desensitization program of high test anxious students who attended a job corps center. The primary objective is to determine the number of students who graduate as a result of a desensitization relaxation program and a music program. A supplementary analysis is also conducted on the awards the groups received. A t test is used to determine change in scores with the Achievement Anxiety Test for the experimental, control and placebo groups.

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CHAPTER I

INTRODUCTION

Test anxiety and its treatment have been a source of investigation by psychologists and psychiatrists for many years. Test anxiety in students is thought to have originated because of previous experiences of failure in school (Singer & Singer, 1969). However, other significant data indicate that there are many factors involved in the relationship of test anxiety and performance which include sex, age, social class, and intelligence (Osterhouse, 1969). The source of test anxiety may be complex, but almost all theorists agree that to the individual who suffers from the experience, it is both unpleasant and often painful.

From the first day that a child begins school, it is somehow communicated either through peer groups or through teachers that grades are important. It then becomes a matter of pride and concern both for the children and their parents that they make good grades and "pass" academically. Many times neither parents nor teachers are aware of the pressures being placed upon the child to make good grades in order to move from one level to the next. In many instances, tests are administered for the lower grades as well as the upper grades, and children are aware that these tests are the basis for grouping as well as placement in remedial and exceptional classes.

To support the extent of the pressures that are felt by school children in today's socity, Sarason (1960) conducted a study of

elementary and junior high school age children and found that test anxiety is a reality in the lives of children. This culture is so test-conscious that test anxiety as well as all kinds of anxieties has encouraged Rolla May (1969) to call this the "age of anxiety."

Test anxiety can be reduced effectively and economically with the utilization of relaxation and systematic desensitization according to many researchers (Scissons, 1973; Nawas et al., 1970; Wolpe, 1961). However, there have been certain extenuating circumstances that prevailed with the subjects involved in the studies. The subjects were enrolled in colleges and universities noted for their high academic achievement and excellence. A further characteristic of the subjects in most instances, was the economic and ethnic background. These studies were conducted with middle and upper income Caucasian students enrolled in prestigious institutions (Aponte and Aponte, 1971; Cornish and Dilley, 1973; Fishman and Nawas, 1971).

According to Ausubel (1952), the person who suffers from test anxiety usually remains in good contact with his environment even though the anxiety may become debilitating. The anxiety may have adverse or interferring effects on how well the student does in school for instance (Sarason et al., 1960; Spielberger, 1966). The debilitating effects may also include problem solving (Sieber, 1969) and test taking (Wittmaier, 1972).

Normal constructive anxiety, however, is and can be a highly motivating stimulus for achievement. Empirical support has been given to Palermo, Castaneda, and McCandless (1956) in their study which determined that children scoring high on the Children's Manifest Anxiety Scale, were more highly motivated than low-scoring children. As Rolla May (1969,

p. 244) pointed out, this is a constructive way of "assuming one's potentialities and developing one's 'intentionality'." The basis for a healthy development of constructive anxiety is a result of a feeling of having control of one's own life and expectations and being assured that one has the power to do something about what is transpiring.

The subjects used in this study have not benefited from the normal use of motivational strategies of today's schools. In fact, these subjects expected lives of menial work, frequent unemployment, crime, deprivation, and hopelessness. They had lived in families with medium incomes of less than $5,000 per year. Because these subjects have little feelings of control of their destiny, this places them in a different category of study from previous research done with the effects of systematic desensitization and relaxation procedures. With two out of three of the enrollees entering Job Corps Programs across the nation testing below sixth grade reading level, they have also had little success in school achievement (Levitan, 1975).

Basically, research using systematic desensitization has been extensively conducted at the college level and has been proven to be successful in alleviating many fears and anxieties (Allen, 1974; Parker, 1973; Scissons, 1973; Mayton and Atkinson, 1974). Reported investigations into the effects of desensitization procedures with students who are high school age, lower socio-economic level, and drop-outs from school have been very few.

The Problem

The problem underlying this study is that there is no knowledge as to the effectiveness of Wolpe's (1969) desensitization treatment as

applied to high anxiety students matriculating through a national Job Corps Program.

Purpose of the Study

This study is designed to determine if a desensitization program of decreasing test anxiety works with young adults between the ages of sixteen and twenty-one who are not enrolled in college. Studies have shown that students within this age range can be successfully desensitized for test anxiety and their GPA increased Laxer et al., (1969), and Spielberger, C. D. and H. Weitz (1964). This study will investigate the role of test anxiety in the retention and/or attrition of non-college students who are enrolled in the job corps.

College students who have high or low test anxieties have been the focus of many studies and research projects in the past few years (Reister, Stockton, and Maultsby, 1977). Very few reported studies have investigated the non-college students between the ages of sixteen and twenty-one who are members of lower socio-economic groups, although it would appear these groups could benefit from such a program. Passing tests and achieving are important for financial independence of all people, but especially for those who have experienced failure in one way or another. A fear of failure is probably inherent in any academic program designed to augment the opportunities for succeeding in this society, and the ability to pass tests is as important at a job training center as it is at any other institution of learning.

The foci of this proposed study are (1) to ascertain the effects of the treatment in relation to the successful completion of the program by graduation, (2) to compare test anxiety change scores of experimental groups, and (3) to identify specific honors received within groups.

Background of the Population

This section will provide an introduction to the background of the student population at the academic institution where the study was conducted.

The school is a campus like facility known as a Job Corps Center which is administered by the Department of Labor and the Teledyne Economic Corporation. It is a boarding school for students from a specific region of the United States comprised of the states of Oklahoma, Arkansas, North Dakota, New York, Texas, New Mexico, Georgia, Alabama, and Mississippi, but not necessarily limited to these states. Students who attend this school have been referred by social workers and screening counselors in unemployment agencies for retraining in various vocational trades and skills. The school or center enrolls approximately six hundred and fifty students and has a graduating record of about 37% of its entries. To be eligible for enrollment, a student must be employable, have a willingness to retrain for a vocation, be between the ages of sixteen and twenty-one, have permission from his/her parents, and be willing to abide by the rules and regulations as established by the center. Currently, the center enrolls both males and females, but formerly it was all female.

Students enroll at the school for various reasons, but almost all, as indicated by the reports from their entry statement, do so to improve themselves. Many of the students had been searching for jobs but were unskilled; therefore, unemployable. Some were high school dropouts while others had spent as much as two years in college only to drop out disillusioned. Some were unable to cope with parental interference or neglect and sought escape from home. The reasons for entering the center

were as varied and as different as the individuals who attend any other institution or with all human beings.

Admission folders of enrollees were examined to determine the family background of students who enter job corps programs. As a result of this informal investigation, it was found that these students come from homes that are considered as socially disintegrated. This means that the home was usually without one or both parents due to divorce, death, and desertion. Few of the students came from homes with both parents and a viable family life. A small percentage had juvenile court records, and a few were low achievers who had dropped out of school.

For many of the students enrolled at this Job Corps Center this is the first real opportunity they have encountered for success. The need for motivation with emphasis upon "you can do it" is an absolute must for all of them, because the fact that they have volunteered to enter the school indicated a drive to succeed.

The Job Corps program is a National Youth Volunteer Program where the youngsters are expected to do everything possible to improve themselves. These youth have been unsuccessful in their attempts to meld into society due to lack of skills, behavior abnormalities, poor homes and family backgrounds, and disinterest in the existing public schools. Many of them continue to rebel against rules and regulations, and are continually adjusting to the rigidly controlled center. The officials at the center try to aid the student who wishes to phase out of a course or vocation by counseling with him/her and helping him/her to see the relevancy of the program. Counseling is an integral part of the total program.

In an article by David Gottlieb (1967), it was noted that in this type of school the average adolescent entered with

> . . .nine years of formal education with a reading score of 6.7 grade level, 63% with no previous record of delinquent behavior while 27% had committed minor acts of anti-social behavior and 10% had been convicted of more serious offenses.

This statement points out the vital need of special attention and intensive counseling programs (Alden and Hodges, 1965).

If it is determined that the systematic desensitization is a tool that can be utilized to aid in reducing test anxiety for these students, perhaps the attrition rate can be substantially decreased, thereby preparing more young people as contributing members of society.

Significance of the Study

The significance of the study is based partially upon the population for which the research is designed. With over one hundred and twenty-seven Job Corps Centers serving over 65,000 youth in America, and with the recent committment of the United State Government to expand and enhance this enterprise, there is a definite need for expansion of services. A Job Corps Center has special and unique problems that are similar to, but not necessarily the same as those faced by public institutions. A major goal of this type of institution is to retrain and graduate as many of the students as possible. The Center is graded and retains its status in direct proportion to the number of graduates and placements it maintains. Staff and administration are dedicated to this objective and whatever can be done to facilitate this goal is appreciated. Anxieties are very real to most people and could pose serious threats to this particular population of students, especially since they are tested constantly in the programmed courses.

Presently, all students at the Center are given the same kind of treatment with no variation of procedure. Students who are not motivated have a tendency to terminate very early in the program and are returned to the very environment from which they had sought to escape. The counseling program is designed to indoctrinate the system of the Center's program into the student's life style, thereby making the arrangements more agreeable. Most of the personnel feel that almost all students who enter the Job Corps have some type of adjustment problem. A behavior modification program with token reinforcement has been most successful.

In this program, each student receives a sum of money every two weeks. If the student conforms to the established decorum, he/she is rewarded by increased allowances. If the student does not conform, money is deducted from the check. Reductions or incruments may be earned in classrooms or any place else on the Center. Review committees are established and meet once a week to discuss the progress of each corpsmember.

It is believed; however, that the retention rate could be enhanced if there is a specific program which determines the anxiety levels of the student and teaches him/her to deal with the debilitating anxieties on a successful basis. It is the investigator's belief that many of the students could benefit from regularly held sessions of relaxation exercises and systematic desensitization programs.

Definitions

Test Anxiety: This term is operationally defined as a paper and pencil test result utilizing The Achievement Anxiety Test developed by Alpert and Haber (1960).

High Anxiety: A score of thirty-two (32) or above on the AAT- which is one standard deviation above the mean for past research done on the test by Alpert and Haber (1960).

Progressive Hierarchy: A graduated scale of fear arousal moving from the least to the most fear arousal situations in a testing setting.

Progressive Relaxation: A psycho-motor resultant to a taped procedure which is the treatment.

Systematic Desensitization: A treatment consisting of relaxation with fear arousal items during which the subject visualizes the items in a relaxed state.

Educationally Deprived Corpsmembers: This term is defined as a group of young adults who are enrolled in a Job Corps Center.

Assumptions of the Study

1. The Achievement Anxiety Test is a sufficiently valid and reliable instrument to measure and differentiate levels of test anxiety.
2. The progressive hierarchy has been sufficiently examined to be a reliable method for reducing fears.
3. Systematic desensitization as developed by Wolpe and Lazarus (1966) has been investigated and utilized extensively by counselors and psychologists to warrant the use of this system for successfully reducing anxiety.
4. Relaxing procedures as advocated by Jacobson (1958) is a recognized procedure utilized by various professions and is an aid for releasing tension and controlling anxieties.

5. The Task Flow Sheet developed by Bandt (1974) is utilitarian and easily followed by subjects. It follows a procedure readily recognizable by corpsmembers as a routine part of programmed studies as initiated by Job Corps Centers.
6. Graduation from the Job Corps Center is important for the corpsmembers who have become trained and efficient in a marketable skill.
7. Terminations by corpsmembers can be a major cause of concern to the general welfare of the center since this is an important criteria for evaluating the continued existence of these facilities.
8. Extraneous variables are controlled through randomization.

Limitations of the Study

1. The results of the study can be generalized only to the students of this particular center for vocational training or other similar populations as indicated in this study.
2. The reliability of the procedures for systematic desensitization could affect the results of the study if the students fail to follow the instructions of the taped guidelines.
3. The reliability of the Achievement Anxiety Test could affect the results of the study if the student is a poor reader.
4. Teacher evaluations may be subjective because there are no clearly defined task goals for each level of achievement; therefore, the honors reported could be biased.

CHAPTER II

SURVEY OF THE LITERATURE

Introduction

Studies that have investigated the effectiveness of systematic desensitization as treatment for the reduction of test anxiety are numerous. Effects of systematic desensitization procedures utilizing groups as well as with individuals have been more clearly delienated with regard to the college freshman and other college level students. A limited number of studies have shown results with children in elementary school, but the vocational school has been sadly neglected.

Most of the investigators seem to lend substantial support for the procedure, and literature abounds documenting the effectiveness of systematic desensitization in eliminating phobias and reducing anxieties. The procedure is an economical as well as a successful way to reduce fears that are labeled test anxious within a short span of time (Mayton & Atkinson, 1974).

Most studies have been centered around a selected population of academic pursuers who are above average in intelligence and almost all Caucasian. This investigation will focus primarily upon a selected population of non-achievers who have been motivated to improve their conditions. Approximately 78% of the population is black, 18% white, 2% Indian and 2% Mexican-American. With this kind of ethnic background, a more logical conclusion can be drawn with regard to the effectiveness

of systematic desensitization procedures as far as a cross-section of the American population is concerned.

The literature as reviewed in this paper will be divided into four parts: (1) theories of test anxiety; (2) systematic desensitization in academic settings; (3) background of Job Corps Programs as academic institutions; and (4) conclusions.

Theories of Test Anxiety

Schools are struggling to overcome almost insurmountable problems with information becoming obsolete almost as quickly as it is taught. Events are far less stable and predictable than they were even a few years ago. Patterns of behavior that indicate a desire by young people to cope with these unpleasant situations include escaping by running away from home, drug and alcohol abuse, and increased dependence upon external tension reducers. Situations and conditions teach these young adults to become continually more and more anxious all the time (Sarason et al., 1960). As more information is available, the range and scope of tests are becoming broader, and in fact, much more important for a successful career.

Investigators have seen the effects of test anxiety upon youngsters, and have found that this interferes with the ability of the performer to cope causing the individual to experience a debilitating condition (Johnson and Hohn, 1973). Usually this kind of anxiety fluctuates over a period of time and varies in intensity depending upon the situation and condition. Test anxiety differs from the relatively stable personality trait, and occurs as a result of events in school where tenseness over upcoming examinations becomes evident. Physical symptoms may

accompany the worries, fears, and ideas which keep recurring. Muscle tightness, nausea, stiff neck, general or localized pain, respiratory problems, rapid heartbeat, dry mouth, and other symptoms may be indicative of test anxiety (Walker, 1975). When the threat no longer exists, the physical reactions will disappear and the anxiety will be reduced until the next examination time.

Anxiety reactions to tests differ from a longer developmental type of anxiety where the sensory, motor, and physiological experiences flood the nervous system and later become anxiety reactions (Sarason et al., 1960). Yet, it is no less serious a problem since children are dropped from school when they fail too many tests (Guidry et al., 1974). There are many students who "block" on examinations even though they may have studied thoroughly and knew the material before testing. The condition is usually temporary and can be operationalized by instructing the subject to respond to questions about his feelings (Synder et al., 1973).

There is a direct correlation between the amount of test anxiety a student experiences and the responses he makes on an examination (Wittmaier, 1972). In a study by Sarason and others (1958), high anxious boys performed significantly more poorly than their low anxious counterparts, although there were no significant differences between the high anxious and low anxious girls. Further studies by Sarason (1958, p. 295) showed that high anxious boys differed from low anxious boys by not appearing as "academically adequate, showed less task orientation, and in relationships with the teachers manifested greater insecurity."

Palermo and others (1956) studied children's performance in a complex learning task and found that high anxious students when compared with low anxious students, were more apt to do better in simple learning

tasks than in more complex situations such as trial and error learning.

The sufferer from anxiety can remain in good contact with his environment if properly controlled and may even enhance learning if the anxiety is properly channeled. The following quote illustrates how one writer sums up this diametric relationship:

> Since an integral relationship exists between anxiety and learning, further investigations of this relationship promise to be extremely rewarding in elucidating the nature of both phenomena. On the one hand, there is a definite experimental evidence on the infrahuman level that (a) phobic stimuli of low and moderate intensity exert a motivational effect by creating a need for reduction of the discomfort induced by their anticipation, and (b) responses which provide this reduction have reinforcing (rewarding) properties. On the other hand, anxiety has been shown to influence learning and problem solving adversely in human subjects (Ausubel, 1952, p. 537).

The subject of anxiety and its effect upon learning is a complex one. Mowrer (1940) felt that repressed guilt imperfectly infiltrated caused the anxiety one experienced. On the other hand, Ausubel (1952) reflects on anxiety as no more than a reaction that has been acquired due to some form of attack usually upon one's self-esteem. Normal individuals do not display anxiety when their confidence levels are adequate for the situation according to Ausubel (1952); only inadequacy causes anxiety.

Mandler and Sarason (1952) described anxiety as a "drive stimulus" which is a result of two types of responses; one associated with the chore that has been assigned and the other associated with the individual. Meunier and Rule, (1967: p. 498) consider the latter as including "such diverse components as feelings of inadequacy, anticipation of punishment, emotional reaction, and helplessness."

Anxiety as feelings of displeasure and submissiveness (Russell and Mechrabian, 1974), as the result of one's environment (Mechrabian and Russell, 1974), and not as unitary concepts but consisting of two distinct components--state anxiety (A-state) and trait anxiety (A-trait) as defined by Cattell (1957) are definitions of what appears to be a most controversial subject. Martiza and Kallstrom (1974) probe deeper into the theory of Cattell in the following excerpt:

> State anxiety refers to an individual's emotional response to the threat he perceives to be inherent in a particular stimulus situation. Trait anxiety, on the other hand, refers to an individual's tendency to perceive threatening elements across a broad spectrum of stimulus conditions. According to this conceptualization of anxiety, A-state fluctuates over time, varying directly with the intensity of the perceived threat, where A-trait is much less sensitive to short-term environmental change input and hence remains relatively constant (p. 363).

The major findings of Osterhouse (1972) indicate that low test anxiety subjects obtained the highest examination scores when examining classrooms with both high and low anxiety sections. Age, social class, sex, and intelligence of the population under investigation have much to do with the relationship of test anxiety and academic performance (Doyal & Forsyth, 1972; Allen, 1972; Frost, 1969).

In several studies (Sarason et al., 1960; Spielberger, 1966; Heys and Kemmis, 1974), anxiety appears to have interfering effects on cognitive processes and may adversely affect school performance. In an examination of anxiety and classroom performance, Heys (1974) determined that the test situation is highly salient for both situations, but that girls were more likely to show a stronger relationship between anxiety and performance.

In a study by Allen et al. (1974), it was found that for college level students who were given personalized instruction courses, which

correlates with the philosophy of Job Corps type of instruction, students showed no relationship between test anxiety and course performance. Speculation is that in some instances, personalized formats may alleviate test anxiety.

As far as can be determined, more research is needed in analyzing common classroom learning and performance tasks so that whatever influences anxiety has on a particular process may be more logically determined. Global topics such as reading have found conflicting results in the reporting of relationship of anxiety (Cox, 1964; Lynn, 1957; Hill and Sarason, 1966). The problem is presented very adequately by Sinclair, Heys and Kemmis (1974) who state that:

> The present conception, then, calls for researchers to give increased consideration to identifying the various types of coping styles with which individuals react to threat and their influence on particular cognitive processes. Such a consideration should make it possible to predict the influence of anxiety on problem solving (p. 242).

Systematic Desensitization in Academic Settings

The learning theory approach to anxiety has become highly respected by psychologists in recent years, because the theory has been based upon controlled laboratory research. Test anxiety specifically can be included under this theory since it is defined by Sarason et al. (1960), as a learned drive that is situationally evoked, while general anxiety is non-specific and representative of conflict that is unconscious. There are two approaches to the treatment of anxiety in young people; one is psychodynamic using a supportive, interpretive therapy which helps the person understand why he feels anxious, and the second approach centers around symptom reduction. The first approach results in a trusting relationship which helps to reduce anxiety (Allen, 1942).

The second approach teaches the person to relax with a hierarchy of fears related to the anxiety which produces a reduction in the anxiety (Wolpe, 1969).

Wolpe (1961) culminated several years of research on the application of behavior oriented therapy to emotional problems, and named his treatment reciprocal inhibition. The treatment is nearly identical to Mary Cover Jones' desensitization process which involves presenting two conflicting stimuli; the first anxiety-provoking and the second a relaxation-producing stimulus. When these two stimuli are presented simultaneously, reciprocal inhibition process occurs whereby the anxiety response is inhibited by the comfort response (Wolpe, 1964):

> The framing of the reciprocal inhibition principle of psychotherapy . . .is that if a response inhibitory of anxiety can be made to occur in the presence of anxiety evoking stimuli, it will weaken the bond between the stimuli and the anxiety (p. 10).

Jacobson (1938) developed a method of relaxation training where the subject either in an office or in groups, relaxed muscles by tightening and relaxing various muscle groups under the direction of the therapist. Usually one begins the muscle relaxation with the upper extremities and progresses to the feet. The assumption is that one cannot be both relaxed and anxious at the same time.

Studies done recently indicate that instructions for training in relaxation can be presented to groups by means of a tape recorder with no apparent loss of the effective treatment (Allen, 1973; Freeling and Shemberg, 1970; Mann, 1972). A study conducted by Suinn (1968) yielded results that test anxiety could be alleviated through taped systematic relaxation exercises with groups.

Previously, it had been felt that the subject should construct an individual anxiety hierarchy. This was possibly the most "difficult and taxing procedure in the desensitization technique" (Wolpe and Lazarus, 1966; p. 66). Recent investigations by Ihli and Garlington, (1969), Cornish and Dilley (1973), and Fishman and Nawas (1971) assigned the subjects a composite hierarchy and reported reduction in self-reported test anxiety. The use of individually designed test anxiety hierarchies may not be necessary.

In a study by Cornish and Dilley (1973), three methods of reducing test anxiety were investigated; systematic desensitization, implosive therapy, and study counseling. Tapes were utilized in the study of undergraduate students at the University of Wisconsin. The subjects were administered an interview and randomly assigned into four groups; a study skills group, a systematic desensitization group, an implosive therapy group, and a no-treatment control group. The results indicated that systematic desensitization is more effective than either implosive therapy or study counseling. Cornish utilized a composite test anxiety hierarchy designed and used by Allen (1971).

Biggs and Felton (1973) researched a group of collegiate low achievers who were ethnic minorities and test anxious. They found significant differences of mean scores between the pre-test and posttest scores on the Taylor questionnaire following systematic desensitization. The most pressing problem as far as these investigators could determine was actually measuring levels of test anxiety with black students. Very little background information existed with the various ethnic groups.

Aponte and Aponte (1971) investigated the use of systematic desensitization without simultaneous presentation of aversive scenes with

relaxation training. Seventy (70) subjects who were freshman college students were administered an anxiety scale and matched on their ACT scores, size of high school, field of study and were all classified as high anxious. They were randomly divided into four groups; pre-programmed systematic desensitization where muscle relaxation is paired simultaneously with aversive stimuli, imagining of aversive stimuli preceded by muscle relaxation, only muscle relaxation and no treatment. The results indicated that there were no significant main effects between groups; however, groups one and two showed significant improvement in grades.

Freshman students in a psychology class were studied by Cohen (1969) to ascertain the factors of group interaction and progressive hierarchy presentation as they relate to the desensitization of test anxiety, interaction and non-interaction hierarchy conditions. The group discussions allowed the students to talk about anxiety-provoking topics in a non-threatening supportive environment. The experimental groups reduced anxiety, achieved greater increase in grade point averages, and the interaction about fears helped the students.

Excessive anxiety in relation to examination situations may not only have serious consequences for the individual concerned, but also may constitute a source of contagion in his academic community. With this concept in mind, Creighton and Jehu (1969) invited thirty-five (35) college students who suffered from examination fear to participate in a systematic desensitization or psychotherapy group. Twenty-three (23) accepted and were randomly assigned into the two groups. Twelve sessions of each were administered as treatment with no significant difference reported between the systematic desensitization or the psychotherapy group.

Using Emery & Krumboltz (1967) individualized hierarchy, Donner and Guerney (1969) studied forty-two (42) test anxious female students and divided them in two groups; an automated desensitization program and a control group who were told they were on a waiting list. These students were evaluated and compared without counseling and the importance or non-importance of the therapist being in the room. The sessions were taped and administered automatically. The results showed an improved grade point average for the experimental group.

Freeling and Shemberg (1970) tested the relationship between visual imagery and relaxation in the reduction of test anxiety. Twenty-eight (28) test anxious subjects were randomly assigned to relaxation group, visual imagery group and systematic desensitization group. The systematic desensitization sessions with twenty-five minute taped sessions met six times. They were also told to practice fifteen to thirty minutes per day. The visual imagery group met six sessions and were told to develop anxiety hierarchy item ranking procedures. These scenes were then imagined at each session. The relaxation group met six times and received training in progressive relaxation at each session. The result showed no significant differences in the two groups.

Osterhouse (1972) compared the effectiveness of systematic desensitization and study skills training for two types of test-anxious students. Students were selected on the basis of a score of forty-one (41) on the Inventory of Test Anxiety (Osterhouse, 1969), and were classified as either high emotional or high worry subjects. Fifty-three (53) students were invited to participate with thirty-six (36) actually involved. It was not clear in the study about the assignment of subjects to treatment except that each group of five high-emotionality

and high-worry subjects were assigned to two therapists; one for desensitization and one for study skills group. There was a control group also. Results indicated academic gains were not significantly different for any group. There was improvement in the high emotional group examination scores. This was attributed to the fact that high emotional students usually put off study until it is absolutely necessary and experience tension as a result. Treatment procedures may have reduced anxiety associated with this last minute preparation.

In a study on relaxation training, Reinking and Kohl (1975) researched four types of relaxation training: (1) classic Jacobson-Wolpe instructions, (b) electromyograph (EMG) feedback, (c) EMG feedback plus Jacobson-Wolpe instructions, and (d) EMG feedback plus a monetary reward. Electromyograph groups relaxed only the forehead tension which is remarkable specific (Basmajian, 1967). The subjects were undergraduates enrolled in a psychology class and were randomly assigned to the four groups. The sessions were all held in the experimenter's room where control of the feedback environments were maintained. Results showed that the effect of relaxation training on an essentially normal population is beneficial. All groups increased their level of relaxation, but EMG groups were superior in speed of learning and depth of relaxation to Jacobson-Wolpe groups, but the control group did not master relaxation at all.

In a study to determine the applicability of standardized, semi-automatic systematic desensitization methods of groups, Fishman and Nawas (1971) used voluntary introductory psychology students who had some phobia of five animals; beetles, non poisonous snakes, rats, mice and spiders. Thirty (30) subjects were selected following a screening

process and randomly assigned into one of three groups; desensitization, pseudodesensitization, and no treatment. One group received a session of training deep muscular relaxation as purported by Jacobson (1964) and five desensitization tapes. The only difference between the pseudo-desensitization group and the desensitization group was in the area of imagery. Subjects were exposed to the same relaxation suggestions but the episodes were paired with snake irrelevant scenes previously scaled as being neutral in affective tone. There was little significant difference in the scores of the desensitization group at the .02 level of significance for both the pseudodesensitization and the no-treatment groups. Working with groups can be successful using the methodology of systematic desensitization as long as all variables are controlled.

During the desensitization period, subjects are imagining scenes from the anxiety hierarchy that have been developed either as a group or as individuals. The group relaxes and begins with a scene that provokes no fear and progresses to one that elicits fear or the threat of danger to oneself. The therapist determines beforehand the duration of each item usually no more than five seconds in duration. Also one must take into consideration the length of the interval between scenes and number of desensitization sessions. The number of sessions have varied from two (Suinn, 1970) to twenty (Laxer and Walker, 1970).

Job Corps Background

The Job Corps program was established by the Economic Opportunity Act of 1964 as a residential training program for youth who were disadvantaged and unable to find suitable employment. The main purpose of Job Corps Centers is to prepare young people ages sixteen through

twenty-one for employment and to enhance their opportunities to become worthwhile citizens. The curriculum not only encompasses broad vocational training, but prepares the corpsmember to read, be a better consumer, how to get and keep a job, and how to get along with people.

Because the Job Corps is such a complex system of combining activities of residential living, academic training and vocational training, broad behavioral objectives and performance criteria are interrelated and supportive of each other. This system is dedicated to turning out a finished product who is trained and prepared for the challenges of the kind of society evident today. According to the Office of Economic Opportunity's Instructional Systems Development Manual (1968), a corpsmember at the end of his stay should be able to demonstrate the following behavioral characteristics:

a. The minimum, specific vocational skill and knowledge needed at the entry level to a distinct job cluster.

b. The minimum, specific physical, emotional, and social skills and knowledge in group and individual living needed to sustain him in his entry level job.

c. The minimum, specific academic skill and knowledge that directly meet the reading, writing, speaking, listening, and arithmetic needs of his entry level job.

d. And ideally, though secondarily, the broader and more generalizable vocational, social, and academic skill and knowledge needed for his future advancement and growth in his chosen occupation and as an individual (p. 2).

The most important aspect of Job Corps training is in the area of forming correct work habits and attitudes. In a study done by Gottlieb (1967), it was found that disadvantaged youth do want to be middle class, but obstacles such as academic background, poor home conditions and deficiences of both mental and physical health make it difficult to become a part of the American dream. This study was done with 1,327

corpsmembers who were both Negro and Caucasian. According to the data collected, these youth were most likely to observe the mother as the most influential adult person in their lives. They desired nice homes, good jobs and pleasant surroundings and preferred neighborhoods where their children could be raised safely. Goal setting was a principle deficiency, and the youth found few adults who could aid them in clarifying goals necessary to achieve their desires.

In a study by Koontz and Maddox (1972), it was determined that the Job Corps has designed a "unique curriculum that equips a corpsmember for a job in a short span of time." Classes are small with the curriculum designed to accommodate the student through programmed instruction on an individual basis. Evaluation is done by a performance based system whereby each student can assess his progress.

All aspects of the program are focused directly to specific job training. On the job training is most desirable. Methods and content of the instruction is distinctly job oriented rather than classroom oriented. Diagnostic tests which are given when the corpsmember arrives on center, are used to determine the proper level of instruction in math and reading (Alden and Hodges, 1965). The student is paid from thirty dollars to fifty dollars per month for his efforts based upon the evaluations of instructors who determine the pay status through P/Pep Panels. The educational goals are centered around passing the General Educational Development Test (GED) for high school graduation and completion of a vocation (Robinson, 1965).

Alden and Hodges (1965) noted that corpsmembers found failure in the public school classroom, but are given an opportunity at Job Corps Centers to experience success in small individualized classrooms.

The training program is a hope for the poor who face a grim future without a marketable skill. "Skilled jobs in our country go without qualified applicants while unemployment rates soar" (Alden & Hodges, 1965; p. 306). The challenge lies in the ability of the dedicated staff to work with the corpsmembers in helping them to see a better way.

Donald W. Robinson (1965) further describes the characteristics of this school's population in the following manner:

> Students are grouped by date of arrival and their tested abilities are attained. Instruction is administered on a non-graded four-track system, with a preponderance of individualized instruction and continuous individualized testing.
>
> The educational goals include passing the General Educational Development tests for high school graduation, and competence in a vocation . . .Although most of the enrollees have not achieved beyond the sixth grade level, there are occasional surprises, including the twenty-five who have been identified as having almost the equivalent of a high school education now. This poses the immediate prospect of expanding the curriculum to include academic work at the eleventh, twelfth, and thirteenth grades.
>
> The discovery that some students are farther advanced than they or anyone else had realized supports the pattern of their identification as school failures. Many of them learned long ago to respond in a way that would not upset the image they and others had of them. The result is cheating in reverse, a common phenomenon in the schools and one deserving of far more attention than it receives (pp. 40-41).

From the research that has been reported, untold numbers of youth have gone through the training program. In 1968, a study by Parker indicated that the average male has had 8.8 years of schooling; the average female, 9.8 years with reading levels about 5.0 and math levels approximately the same average. Small towns accounted for about 37% of the enrollees with large cities providing the largest percentages. Of the 109,610 youth who had completed a Job Corps Program in 1967, 70% were either on jobs, in military, or in college. The program continues to emphasize placement as a major component.

The Job Corps is a program that has provided dropouts the chance to be motivated. Students are given immediate reinforcements; programs are innovative and individualized. The enterprise appears to be working. Poor students do have the desire to join the ranks of middle class society; they need and want a second chance, and job corps are providing the chance.

Summary

Dollard and Miller (1950) were pioneers in the social learning theory of behavior when they postulated the idea that anxiety and the response to these fears are of a social context occuring under simple learning conditions. Since this is a behavioristic concept, a therapist can deal with anxiety as an independent variable rather than as an intervening one. Measurement of anxiety is extremely complex, but studies have been conducted recently using diverse numbers of pencil and paper tests that have satisfactorily produced some results.

Since anxiety can be defined as learning, then it follows that it can be unlearned. Therapy involves unlearning, eliciting stimuli that condition, extinct and decondition anxiety. Joseph Wolpe and A. Lazarus (1966) established some principles of learning based upon the technique developed by Jacobson (1938) which involves progressive relaxation and systematic desensitization.

With the possiblity of inducing a relaxed state through periods of physical exercise, Jacobson (1938) found that it was almost impossible for a person to remain in a state of anxiety and become progressively more relaxed. The concept was further extended by Wolpe (1958) with his popular term "reciprocal inhibition." Without the

original theory that anxiety states and phobias are merely learned habits, this idea would be without grounds for further study.

Treatment programs of deconditioning consists of developing a hierarchy of the anxiety producing situations and ranking them into a lesser to most degreed fashion. Then leading the subject into an almost hypnotic state of induced total relaxation, introducing on the periphery of awareness the anxiety-producing stimulus in its mildest form, the person is treated for the anxiety. Wolpe (1961) gives the method of systematic desensitization in three steps: (a) training in deep muscle relaxation; (b) the construction of anxiety hierarchies, and (c) counterposing relaxation and anxiety-evoking stimuli from the hierarchies.

Studies reported in this paper have determined that systematic desensitization can be an effective way of reducing test anxiety. Group sessions with taped instructions have been shown to be as effective as individually client centered instructional sessions for improving academic performance of students.

As a result of the literature reviewed, the following questions are being studied in this paper:

1. Does either selected music or systematic desensitization lead to a greater reduction in the test anxiety of the selected groups of Job Corps students?
2. Will the experimental procedures affect the retention and graduation data of the various groups?
3. Will there be a difference in the number of honors received by one group or the others?

CHAPTER III

DESIGN AND METHODOLOGY

According to Reister, Stockton, and Maultsby (1977), anxiety is most prevalent in cases where there is the possibility that failure is evident. Students who are being involved in this study have experienced failure of one kind or another throughout their lives. The target behavior in this study is centered upon test taking anxiety.

Subjects

Subjects for this study were students between the ages of sixteen and twenty-one who were attending a Job Corps Center. Since the Center enrolls five females for every one male, the composition of the subjects reflects more females than males. The importance of test taking for the target group is emphasized from the first day the students arrive on the campus of the Job Corps Center (refer to Chapter I). One of the first tasks of entering corpsmembers is to complete a battery of reading and arithmetic tests which are designed for student placement. It was observed by this experimenter that on these occasions, there were many of the students who showed obvious signs of tenseness, or great concern. Other students appeared to take the tests in normal stride with little or no emotion.

The subjects for the study were obtained by administering a modified version of the AAT to three hundred and twenty (320) new

enrollees over a three month period as a regular part of their orientation. The sample mean for those who took the test was 27.39. A score of thirty-two (32) was designated as a cut-off for high anxious students, and those who scored above this number totaled ninety-four (94) out of the three hundred and twenty (320). The high anxious students totaled 29% of the total sample.

The score of thirty-two (32) used as the cut-off for high anxious is based upon past research done on the test by Alpert and Haber (1960) and is one standard deviation above the mean. A preliminary reliability of the instrument was done with college students enrolled in several graduate educational psychology classes. Test-retest reliability was found to be equivalent to previous data gathered by Alpert and Haber (1960) of .83 and .87 for the AAT+ and AAT- respectively.

S's were randomly assigned into three groups; a systematic desensitization group, a placebo group that listened to music, and a control group that received no treatment.

These subjects represent families that are economically deprived who may reside in either large cities or rural areas. These young adults enter the Job Corps Centers with the hope of improving their condition through obtaining a skill for a job placement. Before entering the Center, the students would have gone to an employment agency in their home town to look for a job. A counselor would have advised the student to try the Job Corps for better career opportunities.

It can safely be said that the students who enter Job Corps programs are somewhat motivated. Since they have been searching for employment, and since they did make a decision to travel miles to train for a vocational skill, it is evident that they are motivated. Before

entering the Center, these students were probably less inclined to forego immediate pleasure in order to obtain future goals. Most noticeable when observing the behavior of the corpsmembers is the aggressiveness exhibited toward peer groups while demonstrating somewhat a passive attitude toward authority figures.

It usually takes about six weeks to adjust to the routine outlined by the Center. If the student is determined enough, there is a great opportunity to learn discipline, study skills, interpersonal relations, and a vocational skill.

Procedures

Every three weeks a group of from twenty-five (25) to one hundred (100) corpsmembers enter the Job Corps Center. These students are given orientation sessions for approximately two weeks before they are assigned to classes or career programs. During this time the students are tested in reading, mathematics and other areas. The anxiety instrument, The Achievement Anxiety Test, was administered to all new students as a part of the regular orientation.

Based upon the ATT- pre-test scores, sixty (60) high anxious students were randomly assigned to the three experimental groups by placing all names in a box and putting them into a group as their names appeared. The students were then contacted by sending a note to the teacher and asking them to report to the office of the Basic Education Supervisor at the hour indicated on the slips. The two treatment groups were told in small groups the purpose of the special classes, the time of day that the classes would meet and the place of the meeting.

To diminish possible errors, all S's were treated in the same classroom which was situated within easy access of the office of the supervisor for the convenience of the college graduate who helped with the program. To eliminate possible bias on the part of the experimenter (Rosenthal, 1967), a college graduate who was employed at the Center read the instructions, operated the tapes and administered the follow-ups.

Each subject met in small groups once a day for five days with no more than ten subjects for each session. The sessions were held either at 10:00 a.m. or at 2:00 p.m. for forty-five minute sessions each. For both groups that received treatment, it was necessary to hold group sessions in this manner because the corpsmembers were off center for their vocation either all morning or all afternoon. All S's attended all sessions as scheduled.

Treatment

Systematic Desensitization sessions were pre-recorded on tape and were played on a cassette tape recorder within a half-darkened windowless room. The sessions were taped in order to reduce experimental bias and to standardize the treatment. The students were told to relax and follow the programmed instructions. Prior to the relaxation instructions, the S's were instructed to list some situations that they could visualize clearly which caused fear. These situations were arranged in a SD hierarchy (see Appendix A). The relaxation exercises were then begun. The S's were told to relax while listening to the tapes and imagine themselves in the least anxiety-producing situation on the list. They were told to move through the list with the relaxation exercises

until none of the items produced anxiety. These were the instructions given to the experimental group:

The program you are now about to participate in is designed to reduce the anxiety you feel or the fears you have in school testing situations. Most of the people who have participated in a program such as this one have said that their anxiety was reduced significantly. Some have done a lot better in their classwork.

Participants in the program will meet in small groups for five sessions of approximately forty-five minutes each. Only about sixty students will be able to participate.

In order for this program to help you, you must complete the entire five sessions. If you have any questions, please let me know. (See Appendix C for relaxation instructions.)

A schedule was made for the groups who were using the desensitization sessions. The schedule for the desensitization sessions were as follows:

Day 1	Session 1	Subjects told purpose of short term class and directions were read from the systematic anxiety reduction sheet. Charts were devised from the hierarchy and the subjects were taught the method of relaxation. Tape 1 was played which consisted of the relaxation exercises of steps one and two (see Appendix C).
Day 2	Session 2	Tape 2 was played with the subjects being reminded that they are to imagine the scenes from the SD hierarchy. They were also told to practice at home the exercises. This tape consisted of relaxation exercises steps three and four (see Appendix C).
Day 3	Session 3	Tape 3 was played with subjects continuing the SD chart and relaxation exercises. Tape 3 was composed of steps five and six (see Appendix C).
Day 4	Session 4	Tape 4 which consisted of steps seven and eight was played with S's using imagery and relaxation exercises (see Appendix C).
Day 5	Session 5	Tapes 5 and 6 were played in parts. The relaxation exercises were continued. This tape consisted of repetitions of earlier steps and steps nine and ten (see Appendix C).

The placebo group was told that their sessions were for the same purpose, that of reducing text anxiety. They were told to relax, were given the same SD hierarchy as the experimental group, the same kind of schedule, but were listening to selected music instead of relaxation instructions. They were given no additional stimuli but were only told to listen attentively to the music that was taped for the five sessions.

The control group received no treatment, but were administered the AAT as a group. The tests were scored by student workers who were not familiar with the nature of the study or with the instruments for purposes of establishing reliability.

Instrumentation

Achievement Anxiety Test

The Achievement Anxiety Test (AAT) was developed by Alpert and Haber (1960) to measure the relationship of anxiety and performance as opposed to other anxiety instruments that were more concerned with anxiety and aptitude. It was appropriate to use an instrument of this type since intellectuality is not necessarily a requirement for success at a Job Corps Center, but rather a desire to perform. The debilitating scale of the AAT predicts significantly the grade-point average of college students and is therefore a reliable instrument for predicting academic performance. The following means and standard deviations for the facilitating and debilitating scales of the AAT were found; (AAT+) $M = 27.28$, $SD = 4.27$; for the (AAT-) $M = 26.33$, $SD = 5.33$. This instrument was administered to three hundred and seventy-nine (379) freshman students at Stanford University with academic performance indices being intercorrelated to study the relationship. The instrument was revised

by the examiner for the benefit of subjects at Job Corps whose reading ability ranges from grade level three to high school and above. The revised instrument was administered to ninety (90) students enrolled in educational psychology classes.

The test contains twenty-six items which are divided into facilitating anxiety scale (nine items), debilitating anxiety (10 items), and neutral feelers (seven items). The AAT is an anxiety scale that deals with the subjects' feelings about a variety of scholastic situations.

All AAT- items refer directly to reactions to tests and test situations and are responded to on a one to five scale with higher scale values representing higher levels of test anxiety.

Follow Up

A follow up was done on the subjects who participated in the study by the college graduate who had aided previously in the research. This was done through researching files and programs of assemblies at the Center. The follow up was designed to list the number of terminations, graduates, and honors or awards received. The AAT was administered a second time immediately following the sessions and scores were analyzed.

Design

The design used for this study was a multigroup pre-test/posttest design where subjects were randomly assigned to three groups, data collected from the pre-test (the AAT-), each group exposed to a different treatment condition, and posttest data collected from each subject.

A diagram of the design is as follows:

R	O	X_1	O	(Systematic Desensitization)
R	O	X_2	O	(Placebo Group)
R	O		O	(Control Group)

The diagram presented is for the pretest-posttest control group design. The diagram shows that: (1) three groups are involved in the design because of the three rows of symbols; (2) the subjects were randomly assigned to the three groups (R in each row); (3) each group is measured or observed in the same way before the treatment is applied to two groups (the first column of O's); and (4) two groups receive experimental treatments consisting of systematic desensitization with relaxation in one group and music in the other group; one group receives no treatment (X_1 and X_2 in the first two rows) and a blank space in the third. All groups were tested again (last O in column).

Summary

This chapter has presented the design and methodology used in the study. Subjects chosen for the study were Job Corps students between the ages of sixteen and twenty-one. These students were randomly assigned in groups based upon a test score that placed them in the high anxiety category. The groups were composed of twenty (20) subjects each and were classified as Group A, experimental; Group B, control; and Group C, placebo.

The experimental group and the placebo group were each administered a treatment of systematic desensitization with relaxation and with music respectively. The control group received no treatment. All groups were administered the AAT immediately following the treatment.

CHAPTER IV

TREATMENT OF DATA

Introduction

This chapter will present a description of the statistical treatment of the data and a statement of the results of the study. The primary concern of the study was to determine if a desensitization program affected the way subjects scored on an Achievement Anxiety Test and the graduation or termination from the program.

The study dealt with subjects who had scored in the debilitating range of high anxiety on the Achievement Anxiety Test and were divided into three groups. The experimental group received treatment through relaxation techniques developed by Wolpe and Lazarus (1970). The placebo group was given identical instructions but only listened to taped music. The control group received no treatment.

Scores from the ATT- administered as both a pre- and posttest were analyzed for statistical differences. In the statistical analysis, Group A will always be designated as the experimental group. Group B as the control group, and Group C as the placebo group.

The following symbols were used in this chapter to designate the statistical data described:

X_a = raw scores for experimental Group A

$\overline{X}_a$ = mean scores for experimental Group A

X_b = raw scores for control Group B

$\overline{X}_b$ = mean scores for control Group B

X_c = raw scores for placebo Group C

$\overline{X}_c$ = mean scores for placebo Group C

$(X - \overline{X})$ = square of deviation scores

Analysis of Data

The Achievement Anxiety Test developed by Alpert and Haber (1960) as an anxiety instrument designed to coorelate significantly with academic performance, was administered to all subjects. The debilitating anxiety scale consisting of ten items was scored for both pre and posttest. Raw scores from this test are presented in Table I for the pre-test and for the posttest. The scores ranged from thirty-two (32) to forty-four (44) for all groups for the pre-test and from twenty (20) to forty-three (43) for all posttest scores of the group.

Means and standard deviations of pre and post treatment were computed; differences between means were analyzed by use of a t test for independent samples. Table II shows the three groups that were randomly assigned into the experimental group, the control group and the placebo group. Each of these groups were administered the Achievement Anxiety Test on two occasions as a pre- and posttest. The posttest followed the treatment of the experimental group and the placebo group. The names of the groups are listed in the first column, the pre-test means score for each group in the second column and the corresponding standard deviation for each group is in the third column.

TABLE I

ACHIEVEMENT ANXIETY TEST
(Pre and Posttest Raw Scores)

SUBJECTS	GROUP A		GROUP B		GROUP C	
	Pre	Post	Pre	Post	Pre	Post
1	41	27	32	28	35	31
2	38	36	39	31	35	28
3	33	29	33	27	35	34
4	40	26	36	30	35	29
5	40	34	39	33	33	26
6	38	33	37	36	35	27
7	36	29	40	26	41	36
8	42	36	39	35	39	33
9	41	43	33	28	38	38
10	32	35	35	28	39	31
11	42	31	41	31	33	26
12	43	35	39	31	39	33
13	42	31	36	25	35	20
14	44	32	40	36	40	36
15	38	24	40	23	32	32
16	32	27	38	29	36	22
17	39	32	32	29	32	37
18	32	28	33	38	41	23
19	42	29	44	35	32	36
20	42	32	34	26	40	39
TOTAL	777	629	740	605	725	617

n = 20

The fourth and fifth columns present the means and standard deviations for the three groups at the post time period.

TABLE II

ACHIEVEMENT ANXIETY TEST
(Means and Standard Deviations For
Groups A, B, and C)

Groups	Pre Test AAT-		Posttest AAT-	
	M	SD	M	SD
Experimental--A	38.85	3.9153	31.45	4.3826
Control--B	37.00	3.4182	30.25	4.1406
Placebo--C	36.25	3.6709	30.85	5.5561

N = 20 for all groups

The formula for computing the SD is as follows:

$$SD = \sqrt{\frac{\Sigma X^2}{n - 1}}$$

Where:

SD = standard deviation

$\sqrt{\ }$ = square root of entire operation

ΣX^2 = sum of the squared deviations from the mean

n - 1 = the total number of test scores minus 1

The format of Table III reports the results of the three t tests from the three groups for the pre-test of the Achievement Anxiety Test.

The *t* test was used to compare the Experimental Group A with Control Group B; to compare Experimental Group A with Placebo Group C; and to compare Control Group B with Placebo Group C. The *t* test was made to determine if the groups were equal on the pre-test. There were no significant differences in the pre-test scores except with Groups A and C. These groups showed a slight difference at the .05 level of significance with thirty-eight degrees of freedom.

TABLE III

ACHIEVEMENT ANXIETY TEST
(A Statistical Comparison of Groups A, B, and C on the Pre-Test)

Groups	M	SD	t	
Groups A & B	37.92	3.6754	1.5924	NS at .05
Groups A & C	37.55	3.5358	2.3256	S at .05
Groups B & C	36.62	3.2676	.7285	NS at .05
N = 40 (Groups combined)		(df = 38)	.05 = 2.021	

Table IV reports the results of the three *t* tests for the post-test of the AAT. The *t* test was used to compare experimental Group A with Control Group B; to compare Experimental Group A with Placebo Group C; and to compare Control Group B with Placebo Group C. The data indicate that there are no significant differences in the posttest of the three groups. The names of the groups are listed in the first column for the

pre-test and the posttest tables. In the second column the means score for groups combined are found, and in the third column the standard deviations for groups combined are found. The fourth column contains the statistical findings of the t test. The fifth column indicates whether the findings were significant at the .05 level with thirty-eight degrees of freedom.

TABLE IV

ACHIEVEMENT ANXIETY TEST
(A Statistical Comparison of Groups A, B, and C on the Posttest)

Groups	M	SD	t	
Groups A & B	30.85	4.2633	.8920	NS at .05
Groups A & C	31.15	5.0039	.3795	NS at .05
Groups B & C	30.55	4.8997	.3873	NS at .05
N = 40 (Groups combined)		(df = 38)	.05 = 2.021	

The data indicated that there was no significant change in score from the pre-test to the posttest on the AAT- for comparison of groups A, B, and C.

Table V reports the results of the three t tests for the pre and posttest within groups. The t test was used to compare experimental Group A on the pre and posttest; to compare Control Group B on the pre

and posttest; and to compare Placebo Group C on the pre and posttest of the AAT-.

TABLE V

ACHIEVEMENT ANXIETY TEST
(A Statistical Comparison Within
Groups A, B, and C)

Groups	M	SD	t	
Groups A & A	35.15	4.1557	5.6428	S at .05
Groups B & B	33.62	3.7965	5.6250	S at .05
Groups C & C	33.55	4.5023	3.7996	S at .05
N = 40 (Groups combined)		(df = 38)	.05 = 2.021	

The data indicated that there was a signficant change in scores from the pre- to the posttest on the AAT- when comparing groups with themselves. Group A with a 5.6428 *t* score is greater at the .05 level of significance with thirty-eight degrees of freedom. Group B with a 5.6250 *t* score is greater at the .05 level of significance as is Group C with a 3.7996 *t* score. All groups showed a gain score which indicates a change in anxiety levels.

Graphic presentations of the raw scores are shown in Figure 1, Figure 2, and Figure 3 for Groups A, B, and C on the pre and posttests of the AAT-. The subjects were ranked from low to high and charted

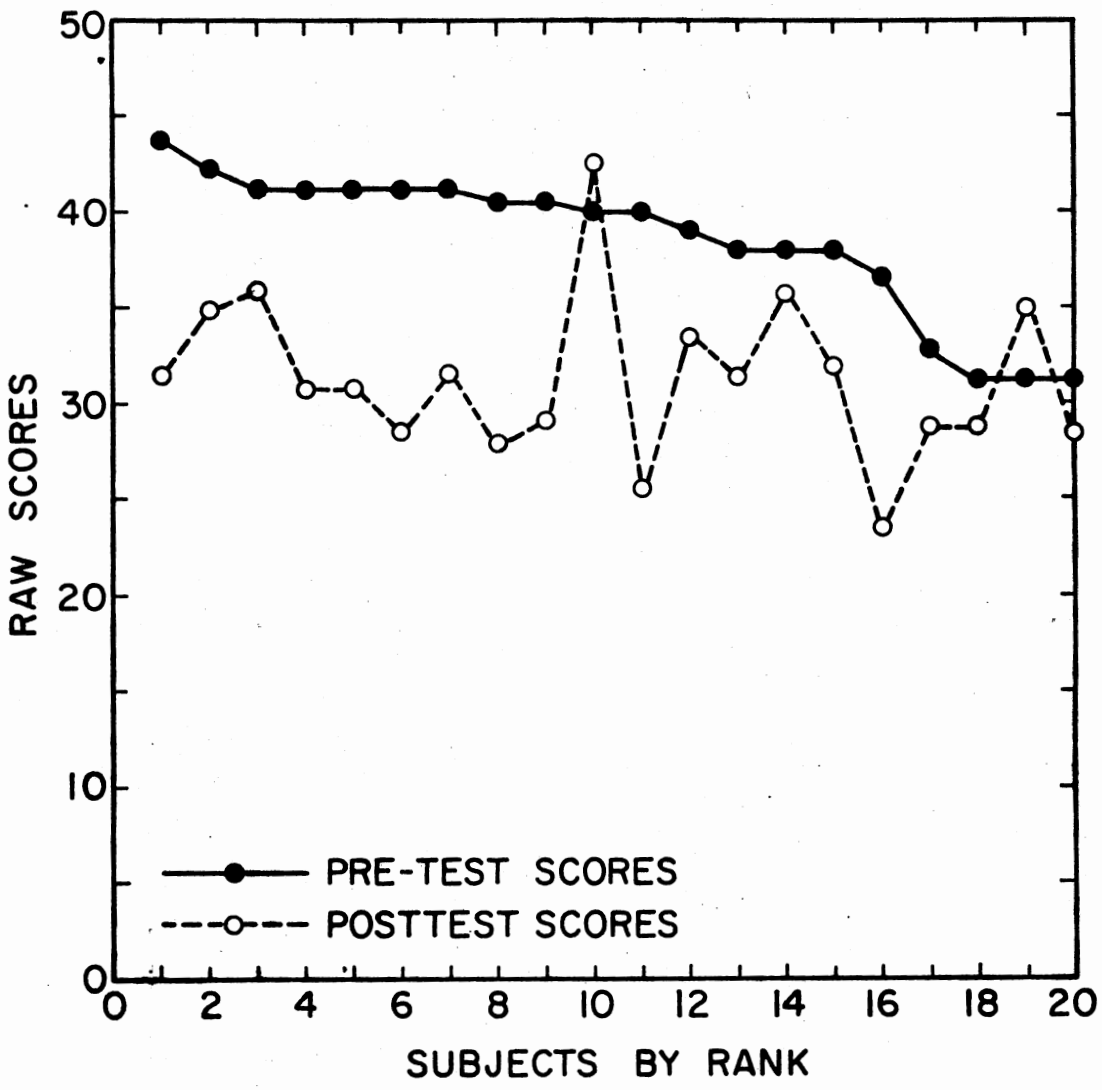

Figure 1. Achievement Anxiety Test (A Comparison of Pre- and Posttest Raw Scores of Group A by Rank)

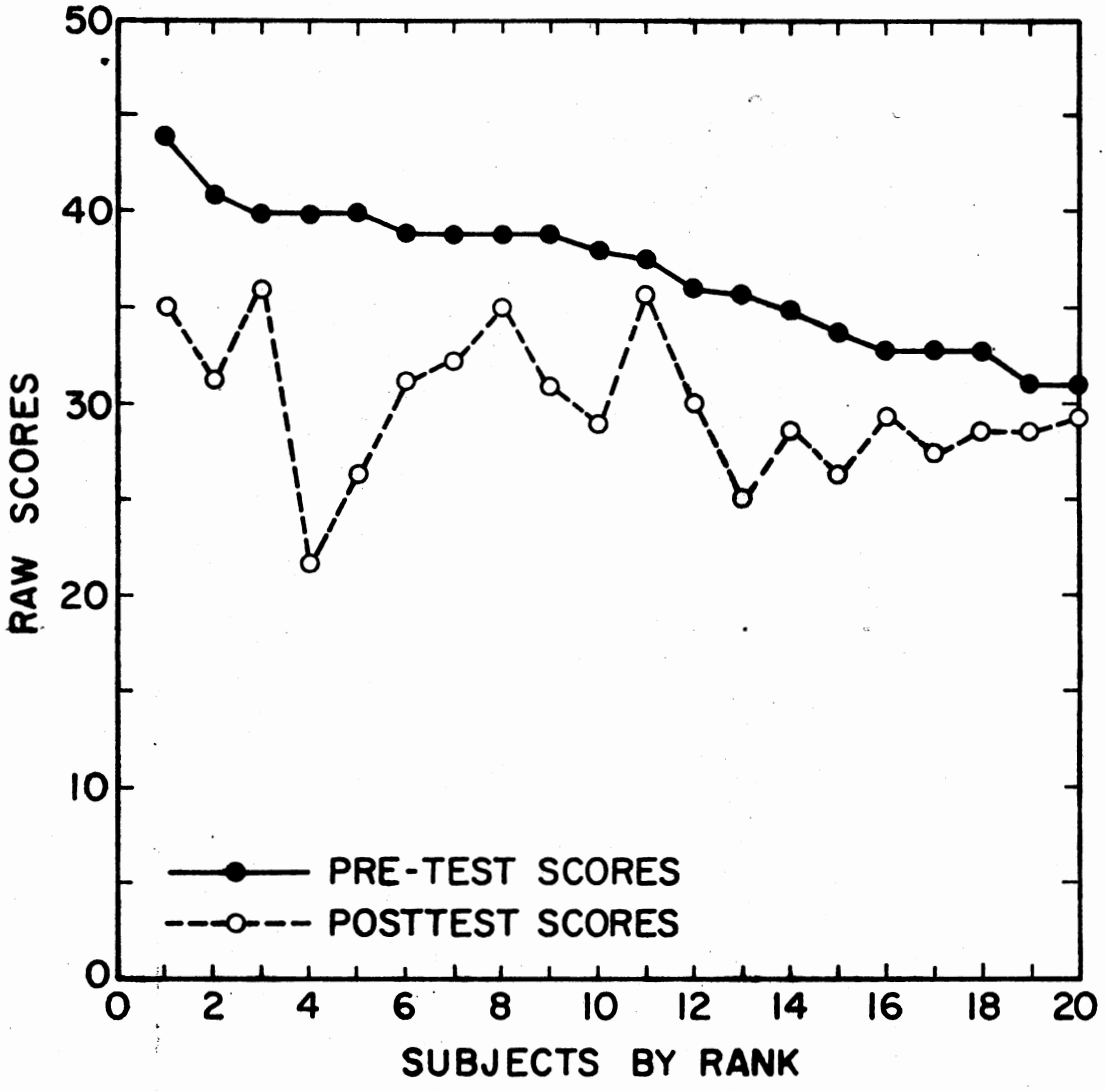

Figure 1. Achievement Anxiety Test (A Comparison of Pre- and Posttest of Group B by Rank)

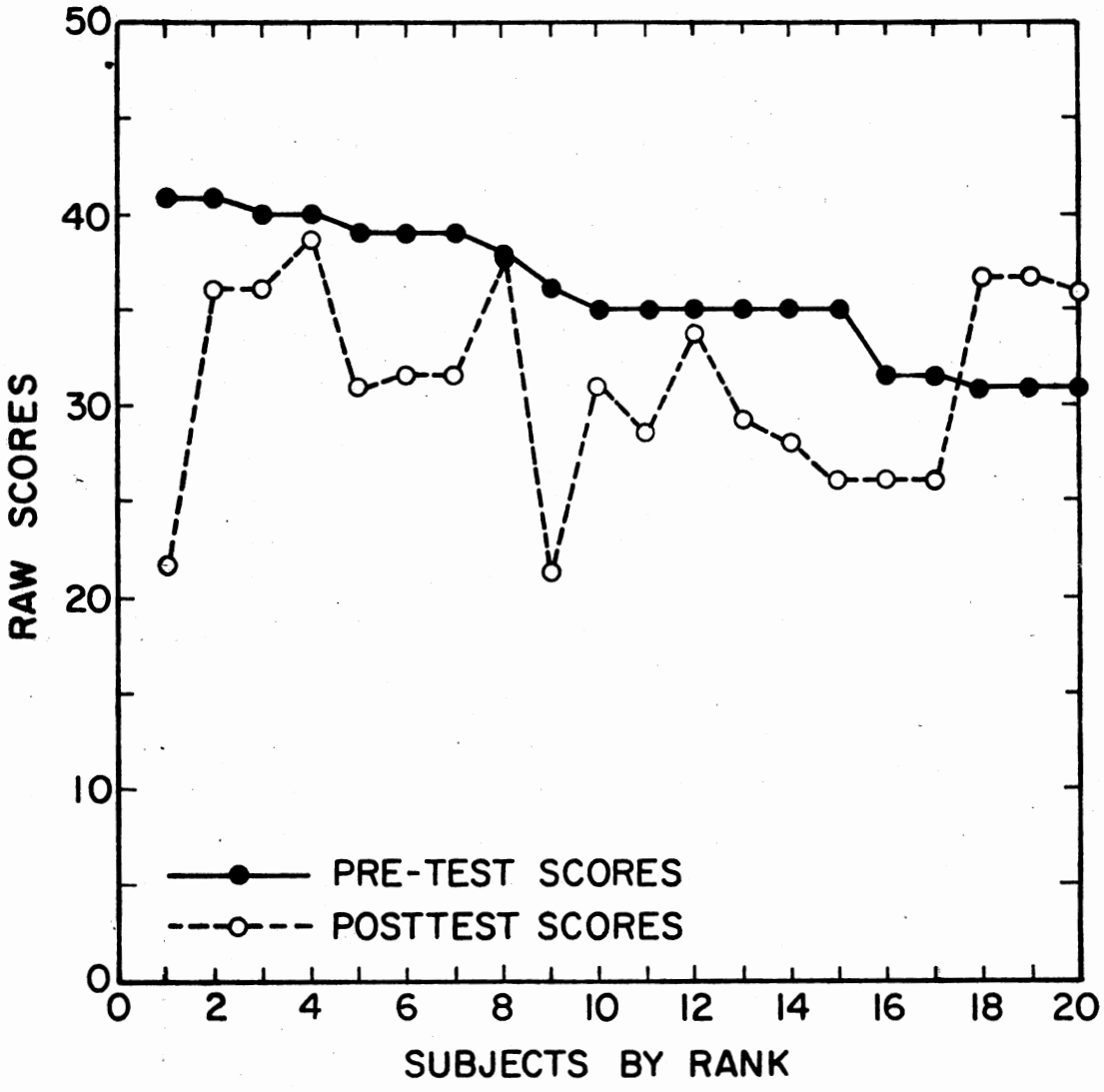

Figure 2. Achievement Anxiety Test (A Comparison of Pre- and Posttest Raw Scores of Group C by Rank)

for change of score on the graphs. In almost all cases, there was a change in score for the participants.

Table VI details the subjects from Groups A, B, and C, who were either graduated or terminated from the program. This data allow an evaluation of the purpose of the Job Corps Program which is to prepare students in a skill for employability. One-half of the subjects in Group A were graduated while a little more than one-half from Group B graduated. Group C had the fewer graduates. This data indicate that there is little difference in the groups for the systematic desensitization, the placebo, or the control groups.

TABLE VI

GRADUATION OF SUBJECTS

Subjects	Group A	Group B	Group C
1	T	T	T
2	G	G	T
3	G	T	G
4	T	T	G
5	G	T	T
6	T	T	T
7	G	G	T
8	T	G	G
9	T	T	T
10	G	T	T
11	G	G	T
12	T	T	T
13	T	G	G
14	T	G	T
15	T	G	G
16	G	G	G
17	T	G	G
18	G	G	G
19	G	G	T
20	G	T	T
Totals	Graduated 10 Terminated 10	Graduated 11 Terminated 9	Graduated 8 Terminated 12

T = Terminated, G = Graduated

Table VII shows the honors and awards received by the subjects in Groups A, B, and C. The following awards are usually given to the corpsmembers based upon the criteria described:

Corpsmember of the month: This award is made for outstanding scholarship, leadership, and cooperation of the student. Each department presents a trophy to the student who receives the highest vote of the staff members in the department.

Perfect Attendance Award: This award is given to those corpsmembers who attend class without missing days or having unexcused absences.

Certificate of Achievement: These awards are given by the vocational departments for outstanding achievement.

Student Government Awards: This award is given for dedicated student leadership in the Student Government Association.

Mr. & Miss Dorm: Corpsmembers vote for the male or female who exemplifies the most helpful attitude in the dormitories.

Basic Education Awards: These awards are given for completion of levels in the educational area (math, reading, world of work, interpersonal relations).

TABLE VII

HONORS AND AWARDS

Honor	Group A	Group B	Group C
Corpsmember of the Month	1	1	
Perfect Attendance	1	1	2
Certificate of Achievement	5	1	2
Student Government Award	1		1
Mr. Dorm			1
Miss Dorm	1		
Basic Education Award	2	2	1
Totals	11	5	7

Summary

The Achievement Anxiety Test was administered to entering students at the Job Corps to determine the test anxiety levels. The AAT- was scored and subjects were randomly assigned into three groups, Group A, the Experimental group; Group B, the Control Group; and Group C, the Placebo Group. Treatment was given to Groups A and C in the form of systematic desensitization and music respectively. Group B received no treatment.

All groups were given the AAT again and scored to determine the change in scores. The scores of the three groups were statistically compared using the t test with the .05 level of significance as the criterion. The results showed no significant difference in the posttest scores between groups; however, there was a significant difference in the pre and posttest for each of the groups.

Further data were collected on the subjects who graduated or were terminated from the program. This data indicated that as far as was observable, all groups were about the same in the number of graduates from the program.

Even though the data collected appeared to show more honors and awards received by the Experimental Group A and the Placebo Group C, it was observed that all groups were about equal in their results in spite of treatment or non-treatment.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Test anxiety is one of the most chronic problems that students are faced with in today's society. Seldom does one matriculate through high school or college without having at least one experience of severe anxiety prior to taking a very important test. Since this is such a common occurence among students, many investigators have researched the effects as well as how to reduce test anxiety.

The studies that were investigated in this paper were confined to the theories of anxiety, systematic desensitization in academic settings, and Job Corps background. It was found that test anxiety has been researched extensively on the college level, and some work has been done on the elementary school level, but very little has been done with school age individuals who are enrolled in special kinds of institutions such as Job Corps Centers. It was also found that little is known about anxiety in various ethnic groups.

The subjects for this study were students at a Job Corps Center. These types of centers are located throughout the United States within cities and rural areas. There has been a major thrust by the Federal Government in support of the Job Corps programs because of the students who have successfully been placed in meaningful vocations. A large percentage of these students eventually enroll in college and receive

degrees. The program is based upon the theory that potential tax dependents can become tax payers through training.

This study was conducted with the purpose of helping Job Corps students adjust to a problem that had not been previously incorporated in the structure of the counseling program. These students come from diverse backgrounds which include poverty, neglect, abuse, failure and sometimes behavior problems. Because they have entered the Job Corps program, these students indicate a desire for self-improvement and upward mobility. If test anxiety proves to be a deterrent in successful matriculation through the program, a desensitization and relaxation program could provide additional alternatives for approaches in counseling sessions.

The purpose of this study was to investigate a systematic desensitization program and a music program to determine if one or the other might help the Job Corps students get through the vocational training program better by reducing anxiety. Change scores in the Achievement Anxiety Test were compared between the experimental groups and within the groups to see if there were significant differences using the *t* test. As a secondary concern of this study, awards, honors, and graduation from the program were investigated since these are major concerns of the Job Corps Center and indices for success.

The initial process in the methodology of this study was to include the Achievement Anxiety Test in the total orientation program administered to all Job Corps entry level students. Students who scored above thirty-two (32) on the AAT- were randomly assigned into three groups consisting of an experimental group, a control group and a placebo group. Twenty (20) students were assigned to each group.

The experimental group was labeled Group A and received a treatment of systematic desensitization which is relaxation taped exercises paired with a progressive heirarchy. Group B, the control group, received no treatment. Group C, the placebo group, received treatment of music paired with the same progressive heirarchy used with the systematic desensitization group. All groups were retested with the ATT.

Data was collected and analyzed on the pre and posttest of the AAT-, termination or graduation of the subjects, and awards or honors received by the participants. The AAT- was hand scored and the t test was calculated at the .05 level of significance to determine change in scores.

Conclusions

The results of this study should be viewed with consideration of previous research on test anxiety. Test anxiety fluctuates over a period of time and varies in intensity depending upon the situation and condition. As students become more comfortable with their surroundings and begin to feel more adequate academically, test anxiety will decline in intensity and frequency. Based upon Ausubel's (1952) findings, when people have adequate confidence levels, test anxiety should disappear.

Results from the study support the previously cited theories. Group scores on the AAT- posttest were not significantly different. The systematic desensitization sessions nor the music group had any effect upon the change in scores between groups on the AAT-. There was however, a significant change in scores within groups.

The questions that were being studied in this paper, and the results of each question are discussed as follows:

1. Does either selected music or systematic desensitization lead to a greater reduction in the test anxeity of the selected groups of Job Corps students?

   There were no significant differences between the SD group, the control group and the placebo group at the .05 level of significance.

2. Will the experimental procedures affect the retention and graduation data of the various groups?

   In actual terms of numbers graduating, the control group had one more to graduate than Group A and two more to graduate than Group C. One group was not significantly greater than any other group.

3. Will there be a difference in the number of honors or awards received by one group or the others?

   The experimental Group A received more honors than either Groups B or C.

Although no significant differences were found in the data for the Achievement Anxiety Test, it would appear the treatment was successful in alleviating some anxiety. Interpersonal skills and relationships with peer groups and staff members are important indicators of future successes in vocational endeavors. Even though more subjects graduated from the Control Group B, they received fewer honors and awards than either Groups A or Group C.

Significantly, it should be noted that all groups showed some change in scores for test anxiety on the pre and posttest for the AAT-.

It is believed that this can be attributed directly to the format of the Job Corps Program rather than to either form of treatment. It should be pointed out, however, that the experimental Group A and Placebo Group C were greater in variability of scores than Group B.

As a result of the students having an opportunity to participate in a programmed instruction experience, it would appear that the exposure to successful ventures within an academic and vocational setting has helped to reduce the test anxiety. Findings in this study suggest that students should be given clearly defined and measureable objectives and goals, parameters and milestones for success with built in reward systems for effective learning and reduction of test anxiety. Confidence eliminates fear of failure and success reinforces itself.

Recommendations

As a result of this study, the following recommendations are made:

1. The study should be made within a few days of the arrival on center of the Job Corps students before they have had an opportunity to experience programmed instructions.
2. A more detailed study should be made to study the effectiveness of the Job Corps Program in reducing anxiety. This study would or should include a comparison of anxiety levels at the beginning and end of the Job Corps experience.
3. A study is recommended using the Job Corps programmed instructions or similar instructions with public school individuals within the same age group to determine if the environment is a contributing factor to the reduction of text anxiety.

4. The music could have been selected from choices that are popular among this age group. Perhaps rock or rhythm and blues would produce different results. This is an interesting alternative to explore since music has become such an intricate part of our society.

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APPENDIX A

SD HIERARCHY

1. Walking through a shady park on a cool clear day.

2. Packing your clothes while at home before coming to Job Corps.

3. Sitting in the hut during orientation.

4. Listening to all the different rules and regulations from various speakers during orientation.

5. Attending the first class of your vocation of HEP.

6. Over-sleeping in the dormitory and having an RA awaken you.

7. Serving your first Wednesday night and weekend restriction.

8. Taking your first reading class.

9. Entering the first math class.

10. Sitting in the library, waiting for the instructor to announce the date of the exam, one month in advance.

11. Lying in bed beginning to go to sleep the night before the exam.

12. Waking up and getting dressed on the morning of your GED test or SAT test.

13. Entering the library to take the exam, sitting down and waiting for the test to begin.

14. Reading the first question on the test, and skipping over it because you cannot answer it.

15. Reading the second question on the exam and answering it quickly and successfully.

16. Returning to a question you skipped in the middle of the exam and answering it successfully.

17. Leaving one or two questions blank on your exam because you ran out of time.

18. Handing in your test paper at the end of the test and leaving the room.

APPENDIX B

ACHIEVEMENT ANXIETY TEST

NAME_____

AGE_____

SEX_____

RACE_____

Directions: This test deals with your feelings about a number of school situations. Read each statement and decide to what extent it applies to you. Circle the number in the appropriate column under the heading which best describes the frequency you experience the feelings described by the statements. Do no ponder the questions, work as rapidly as possible since your first inpression is usually accurate. Answer every item.

		almost never	rarely	occasionally	often	almost always
1.	I do not do well on a test because I get nervous.	1	2	3	4	5
2.	I work better when someone makes me work, or when the work is very important.	1	2	3	4	5
3.	When I do poorly in a class, my fear of a bad grade makes me do worse.	1	2	3	4	5
4.	I love to eat.	1	2	3	4	5
5.	When I have not studied for a test, I get upset, and do less well than I could have done.	1	2	3	4	5
6.	The more important the examination, the less well I do.	1	2	3	4	5
7.	I spend more than ten minutes a day reading the newspaper.	1	2	3	4	5
8.	I think about what I will be doing ten years from now.	1	2	3	4	5
9.	While I may (or may not) be nervous before taking an exam, once I start, I seem to forget to be nervous.	1	2	3	4	5
10.	When I am taking a test, I forget many of the answers and remember them when the test is over.	1	2	3	4	5

		almost never	rarely	occasionally	often	almost never
11.	I do better on a test when I am nervous.	1	2	3	4	5
12.	Nothing bothers me when I start a test.	1	2	3	4	5
13.	I spend an hour a day talking with my friends about classes and teachers.	1	2	3	4	5
14.	In courses in which the total grade is based on one exam, I seem to do better than other people.	1	2	3	4	5
15.	I find that my mind goes blank at the beginning of an exam, and it takes me a few minutes before I can function.	1	2	3	4	5
16.	I look forward to exams.	1	2	3	4	5
17.	I worry so much about an exam, I really don't care how I do by the time I start.	1	2	3	4	5
18.	I cannot do as well on timed tests as the rest of the group under similar conditions.	1	2	3	4	5
19.	I can "cram" the night before a test and learn enough material to pass even though this does not work for most people.	1	2	3	4	5
20.	I enjoy playing jokes on others.	1	2	3	4	5
21.	I like a hard test more than an easy one.	1	2	3	4	5
22.	If teachers ask me, I tell them my feelings about how they conduct their classes.	1	2	3	4	5
23.	When I first read a question, I must go back over it before it makes sense.	1	2	3	4	5
24.	The more inportant the exam or test, the better I seem to do.	1	2	3	4	5
25.	I would like to work and make money instead of being a student.	1	2	3	4	5

	almost never	rarely	occasionally	often	almost always
26. When I don't know a difficult question at the beginning of a test, I get upset and the easy questions are missed.	1	2	3	4	5

Modified version of Alpert, Richard and R. N. Haber, Achievement Anxiety Test, from "Anxiety in Academic Achievement Situations," Journal of Abnormal and Social Psychology. 61 (1960), 207-215. Used with permission.

APPENDIX C

PROGRESSIVE RELAXATION

RELAXATION TAPE

This program is designed to reduce test anxiety. It is based upon the principle that you cannot be relaxed and anxious at the same time. What I will do is first give you some training in deep muscle relaxation so that you will learn to relax more completely than you have before. Then, I will teach you to relax in situations that have previously caused you anxieties. It will be good if you can practice these relaxations at home. This will help you to become used to relaxing fully and you will be able to do it much faster. After I have taught you how to relax, I will ask you to imagine various scenes. It is important that you visualize each scene as clearly and as vividly as possible. The scenes presented today in our first session are fairly routine. This will get you used to the idea of visualizing the scenes and then relaxing. Later there will be scenes dealing more directly with test anxiety.

I would now like for you to settle back in your chair and make yourself as comfortable as possible. Settle back as comfortably as you can. Let yourself relax to the best of your ability.

PROGRESSIVE RELAXATION

Step 1: The Hands

Clench your right fist; hold it tight for 5 to 7 seconds; feel the tension in your hand and forearm. Relax your hand. Appreciate the contrast between the tensed and relaxed state.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Clench your left fist; hold it tight for 5 to 7 seconds; feel the tension in your hand and forearm. Relax your hand. Appreciate the contrast between the tensed and relaxed state.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Clench both fists; hold them tight for 5 to 7 seconds; feel the tension in your hands and forearms. Relax both hands. Appreciate the contrast between the tensed and relaxed state.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Step 2: The Arms

Bend both elbows, tense the biceps, hold that tension for 5 to 7 seconds; study the tension. Straighten arms and relax. Appreciate the difference between the tensed and relaxed state. Be sure when you are relaxing the arms that they are in a comfortable position for you, possibly hanging loosely from your sides.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Stretch your arms as far out in front of your body as possible. Tense the tricep muscles in the back of the arms; hold this tension for 5 to 7 seconds. Relax. Appreciate the contrast, and let your arms feel comfortably heavy.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Step 3: The Head

Notice how the arms and hands are relaxed, enjoy this relaxation. Experience it fully. With your hands and arms completely relaxed wrinkle your forehead. Note the tension. Wrinkle it tighter; hold the tension for 5 to 7 seconds.

Relax. Appreciate the contrast. Notice that the scalp feels smooth and relaxed.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Frown and crease your brows. Note the tension. Tighten the frown; hold the tension for 5 to 7 seconds.

Relax. Appreciate the contrast. Notice that the forehead is smooth, relaxed.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Close your eyes tightly. Exert more pressure. Tighter and tighter. Hold the tension for 5 to 7 seconds.

Relax. Appreciate the contrast.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Clench your jaw by biting your teeth together. Study the tension. Bite harder; hold the tension for 5 to 7 seconds.

Relax. Appreciate the contrast.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Press your tongue hard against the roof of your mouth. Notice the tension; hold the tension for 5 to 7 seconds.

Relax. Appreciate the contrast.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Press your lips tightly together. Study the tension. Press your lips tighter; hold the tension for 5 to 7 seconds.

Relax. Appreciate the contrast.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Notice that your face, scalp, and head all feel much more relaxed, your arms and hands are becoming looser and looser, you are more and more deeply relaxed all over.

Step 4: The Neck

Now concentrate on your neck muscles. Hold your head as far back as you can. Feel the tension spread through your neck. Hold the tension for 5 to 7 seconds.

Relax. Appreciate the contrast.

While relaxed, roll your head to the left. Notice it feels comfortably heavy. Now roll your head to the right. It now feels heavier and even more relaxed.

Repeat the exercise and study the contrast. Pause. Repeat a third time.

Press your chin to your neck. Study the tension. Press tighter. Hold the tension for 5 to 7 seconds.

Relax. Appreciate the contrast.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Return your head to a comfortable position. Notice that your head and face are relaxed. Your jaw is loose, and your arms and hands are loose and heavy. Allow yourself to relax more and more.

Step 5: The Shoulders

Shrug (raise) your shoulders firmly. Observe the tension. Hold the tension 5 to 7 seconds. Relax. Note how the relaxation is spreading to your back, and how relaxed your neck and throat is.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Relax the entire body. Breathe easily in and out. Notice how the relaxation increases as you exhale.

Take a deep breath. Hold your breath for 5 to 7 seconds. Exhale and relax. Notice how the relaxation is spreading throughout your entire body.

Step 6: The Abdominal Muscles

Contract your abdominal muscles. Observe the tension. Tighten them more. Hold the tension for 5 to 7 seconds.

Relax and notice the general feeling of relaxation.

Breathe normally and easily 10-15 seconds. Pause.

Repeat and study the contrast. Pause.

Repeat a third time.

Step 7: The Lower Back

Arch your lower back. Make it quite hollow. Study the tension. Arch your back further. Hold the tension for 5 to 7 seconds.

Relax. Appreciate the contrast.

Let go of all contractions in your body.

Notice that your shoulders, arms, and head are all comfortably heavy and relaxed.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Step 8: Buttocks and Thighs

Press your heels down as hard as you can. Study the tension in your thighs. Press harder.

Relax. Appreciate the contrast.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Tighten your buttocks. Observe the tension. Hold the tension 5 to 7 seconds.

Relax and notice the contrast. Notice the relaxation has spread to your hips and thighs. Your back and shoulders are comfortably limp.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Step 9: The Lower Legs and Feet

Press your toes down and away from your face. Study the tension in your calf muscles. Press harder; hold the tension 5 to 7 seconds.

Relax and appreciate the contrast.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Bend feet toward your face. Study the tension in your shins. Tighten the stress. Hold the tension from 5 to 7 seconds.

Relax and appreciate the contrast.

Notice your feet and ankles are relaxed. So are your calves, shins, knees, thighs, buttocks, and hips. Your entire lower body feels relaxed. Each area is becoming more and more relaxed.

Pause 10-15 seconds.

Repeat and study the contrast. Pause.

Repeat a third time.

Step 10: Increasing the Relaxation

Your legs and feet are comfortably loose and limp. Your stomach, waist, and lower back are becoming more and more relaxed. Your upper back, chest, shoulders, arms, and even your finger tips, feel more and more relaxed.

Your head is comfortably heavy and relaxed.

Your neck, throat, and jaw are loose, your face is smooth and relaxed. Inhale deeply. Slowly, very slowly exhale. Take 2 or 3 long, deep, relaxing breathes. Notice that you become more relaxed and comfortably heavy with each one. Each time you exhale you feel more and more relaxed. Notice the relaxation in each part of your body. Think about raising your arm or speaking.

Concentrate on the effort it would take to do either of those things. Enjoy the relief of knowing you do not have to raise your arm, or speak, or otherwise disturb your comfortable feeling of relaxation. You should now feel quite generally relaxed.

Used with permission from Bandt, P. L., N. M. Meara and L. D. Schmidt. A Time to Learn: A Guide to Academic and Personal Effectiveness. New York: Holt, Rinehart, and Winston, Inc., 1974.

APPENDIX D

ACHIEVEMENT ANXIETY TEST SQUARE OF DEVIATION SCORES

S's	Group A		Group B		Group C	
	Pre	Post	Pre	Post	Pre	Post
1	4.6625	19.8025	25	5.0625	1.5625	.0225
2	.7225	20.7025	4	.5625	1.5625	8.1225
3	34.2225	6.0025	16	10.5625	1.5625	9.9225
4	1.3225	29.7025	1	.0625	1.5625	3.4225
5	1.3225	6.5025	4	7.5625	10.5625	23.5225
6	.7225	2.4025	0	33.0625	1.5625	14.8225
7	8.1225	6.0025	9	18.0625	22.5625	26.5225
8	9.9225	20.7025	4	22.5625	7.5625	4.6225
9	4.6625	133.4025	16	5.0625	3.0625	51.1225
10	46.9225	12.6025	4	5.0625	7.5625	.0225
11	9.9225	.2025	16	.5625	10.5625	23.5225
12	17.2225	12.6025	4	.5625	7.5625	4.6225
13	9.9225	.2025	1	27.5625	1.5625	117.7225
14	26.5225	.3025	9	33.0625	14.0625	26.5225
15	.7225	55.5025	9	52.5625	18.0625	1.3225
16	46.9225	19.8025	1	1.5625	.0625	78.3225
17	.0225	.3025	25	1.5625	18.0625	37.8225
18	46.9225	11.9025	16	60.0625	22.5625	61.6225
19	9.9225	6.0025	49	22.5625	18.0625	26.5225
20	9.9225	.3025	9	18.0625	14.0625	66.4225
Total	291.3300	364.9500	222	325.7500	183.7500	586.5500

APPENDIX E

SYSTEMATIC ANXIETY REDUCTION

INSTRUCTION CHART

Directions: This chart will help you to reduce your fear of test taking. If you will use these instructions, you will be able to acquire better study behavior which will help you in your vocation.

Instructions	Workspace and Progress
1. List in the workspace one of the situations from the SD sheet that you can visualize clearly and which is a source of anxiety to you. This is a situation you desire to improve.	1.
2. List 10 other situations from the SD sheet which are related to the target behavior as you see it.	2.
3. Relax (listen to the tapes so that you will know how to relax).	3.
4. While relaxed imagine yourself in the least anxiety-arousing situation on your list.	4.
5. Continue to imagine the situation for 10 to 15 seconds.	5.
6. Stop imagining the situation and continue relaxing. If you become the least bit anxious while you are imagining yourself in the situation, return to number 3 and continue relaxing for at least one minute. If you can relax and imagine yourself in this situation two times in succession without being anxious, you are ready to proceed to the next situation on your list.	6.
7. While relaxed, imagine the next higher anxiety arousing situation on the list. Repeat 5 and 6.	7.

VITA 2

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Doctor of Education

Thesis: THE EFFECTS OF SYSTEMATIC DESENSITIZATION ON TEST ANXIETY OF YOUNG ADULTS IN A RESIDENT LEARNING ENVIRONMENT

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