

**EFFECTS OF STRESS INOCULATION TRAINING ON
LEARNING DISABLED STUDENTS' ABILITY
TO COPE WITH STRESS**

by

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B.P.E., University of British Columbia, 1977

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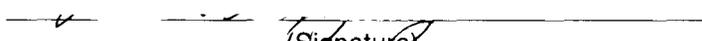
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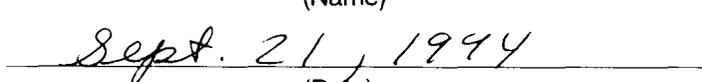
Effects of Stress Inoculation Training on Learning Disabled Student's Ability to Cope With Stress

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ABSTRACT

This study investigated the effects of Meichenbaum's (1985a) stress inoculation training (SIT) on learning disabled (LD) students' levels of state and trait anxiety, global self-esteem, and expression of frustration. Fifteen learning disabled adolescents, enrolled in one of three Career Education for Learning Disabled (C.E.L.D.) tutorial groups, each consisting of five students, participated in the study. These tutorial groups were randomly assigned to three treatment conditions: (a) stress inoculation training; (b) conventional teaching of stress management skills; and (c) no special treatment. Students in the first two groups met for eight weekly sessions over two months. Standardized measures of anxiety, self-esteem, and frustration expression were given to all participants immediately before and after the two months of the study period, and again two months later. In addition, the two experimental groups were administered post-study evaluation questionnaires and a debriefing interview.

The analyses of the standardized measures indicated that both methods of training stress management were effective in producing significant improvement in state and trait anxiety, and in global self-esteem as compared to the untrained students. However, neither of the stress management training approaches appeared to be a clearly superior mode of treatment. Supplementary correlational and regression analyses revealed significant relationships between scores on the dependent measures for state and trait anxiety, and global self-esteem. The overall results of the written questionnaire and debriefing interview showed that students in both experimental groups had a positive opinion of stress management training. Implications of these findings for research and practice are offered.

DEDICATION

To my grandmother.

ACKNOWLEDGMENTS

I would like to thank my husband Bill, my son Kaylan, and my dear friend Irene, for giving me support and encouragement when I needed it.

I would like to thank Dr. Leone Prock and Dr. E. Michael Coles for their guidance and for the confidence they showed in me.

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CHAPTER I

INTRODUCTION

School is the lifework of children and adolescents. Thus factors that interfere with success in school, such as learning disabilities (LD), will cause stress for the student and his or her family. Since children's learning disabilities do not just interfere with reading, writing, and math but also sports, activities with other children, and family relationships, learning disabled children face negative learning experiences and consequently failure every day. In addition, Morganett (1990) proposes that people respond to stress according to their own learning experiences and coping skills, and research suggests that LD individuals often lack the ability to self-generate effective coping and self-monitoring skills (Wong, 1987, 1989). Silver (1992) states that due to failure experiences and lack of coping skills, children with LD are likely to feel frustrated, inadequate, bad or dumb, causing considerable anxiety and stress when these feelings become internalized. When these feelings are internalized, children may develop poor self-esteem and lack confidence in their ability. Lazarus and Folkman (1984) contend that effects of stress are deleterious when external or internal demands exceed or tax the perceived resources of the individual and may be manifested in inappropriate and self defeating behaviours. LD individuals tend to display such behaviours as low frustration tolerance, irritability, hostility, fear of failure, impulsivity and underachievement. These manifestations may interfere with the LD individual's general functioning and academic performance especially in exam situations, resulting in more failure. Thus, a detrimental cycle is established where failure gives rise to more anxiety, which increases the probability of failure, further decreasing self-confidence and self-esteem.

Meichenbaum (1977, 1985a) argues that problems related to stress often occur because the person does not possess, or possesses but does not use, the required coping

coping strategies to manage stressful situations. To assist individuals in acquiring and/or appropriately using coping skills he developed Stress Inoculation Training (SIT) as a procedural framework for teaching stress management skills.

The SIT procedure involves three phases designed to help individuals acquire and utilize a repertoire of coping responses for managing their anxiety in stressful situations. The conceptualization phase educates clients about the cognitive, physiological, and behavioural components of anxiety, the antecedents of their anxiety, and the concept that anxiety consists of several stages rather than a single overwhelming response. During the second phase, skills acquisition and rehearsal, clients learn cognitive and behavioural coping skills to use during the various stages when responding to stressors. The final phase, application and follow-through, involves practicing the new skills in increasingly stressful situations. Emphasis is on refining, applying, and generalizing coping skills. These three phases teach clients the antecedents for anxiety, how to insert coping skills in the chain between the antecedent stimuli and previously automatic emotional responses, and how to practice and generalize these alternative responses during graded stressful situations, both in session and in real life (Meichenbaum, 1977, 1985). Since its introduction, SIT has been used successfully in treating stress reactions with numerous client groups (Meichenbaum, 1985; Meichenbaum & Deffenbacher, 1988).

Investigations of psychological intervention procedures suggested deficits in coping skills for managing stress may be a cause of inadequate performance and dissatisfaction (Cormier & Cormier, 1991). Teaching LD students coping skills for managing stress may therefore improve their school performance and satisfaction. Since according to Wong (1987, 1989), LD students tend to lack the ability to self-generate and/or deploy effective coping skills a treatment procedure, such as SIT, that facilitates acquiring and using coping skills may help them control the stress process more effectively. To test whether the SIT approach is indeed more effective in helping LD students acquire and learn to use stress management skills, this study compares the SIT method to teaching the same skills

excluding the SIT conceptual framework. Teaching information or skills in isolation without a conceptual framework is the most common method of instruction used in secondary schools (Schumaker & Deshler, 1988) and as such should represent an ecologically valid comparison procedure for SIT.

Research Hypotheses

Past research indicating (a) that many LD students develop maladaptive patterns of coping with stress and (b) the effectiveness of SIT as a method for teaching stress self-management techniques, suggested the following hypotheses:

1. That LD students trained in stress management techniques will show greater reductions in anxiety and improvements in self-esteem and frustration expression on post-intervention assessment measures than LD students not taught stress management techniques.
2. That LD students taught stress management techniques using the SIT approach will show greater reductions in anxiety and improvements in self-esteem and frustration expression on post-intervention assessment measures than LD students taught the same techniques excluding the SIT conceptual framework.
3. That the improvement in scores for anxiety, self-esteem and frustration expression will be maintained better at follow-up testing for LD students taught stress management skills using the SIT approach than those taught the same skills excluding the SIT conceptual framework.

Method of Investigation

In order to evaluate the effects of an eight week stress inoculation training program on learning disabled students using a group therapy format, a 3(group) X 3(occasions) repeated measures factorial design was employed. As part of the usual class assignments, which are carried out by computer, fifteen students diagnosed as severely learning disabled and enrolled in the Career Education for the Learning Disabled (C.E.L.D.) program, were assigned on an essentially random basis to one of three, five student, tutorial groups. These groups were then randomly assigned by the experimenter to one of the three treatment conditions described on the next page, by placing the groups timetable blocks (B, G, and C) and condition abbreviations into hats from which they were blindly drawn in matching pairs.

1. Stress Inoculation Training (SIT). Participants in this group met once a week for 55 minutes over a period of 8 weeks. These students were taught stress management skills using Meichenbaum's (1977, 1985) SIT approach .
2. Skills Only (SO). Participants in this group met once a week for 55 minutes over a period of 8 weeks. This group was taught the same stress management skills excluding the SIT conceptual framework.
3. No-treatment (NT). Students in this group took part in all psychometric assessment procedures, but were not exposed to any type of intervention.

All participants were administered the State-Trait Anxiety Inventory-Form Y, the Coopersmith Self-Esteem Inventory-School Form, and the Rosenzweig Picture-Frustration Study-T one week before, one week after, and the eighth week following the last session.

Members of the SIT and SO conditions were also asked to assess their own and their fellow group members level of group participation and evaluate the utility of the interventions.

Definition of Terms

Learning Disabilities. Operational definitions of measurable characteristics of learning disabled students remain a matter of considerable debate. These definitional problems arise, in part from the varying demands of administrators, teachers, and researchers (Hammill, 1990). In 1980, the British Columbia Ministry of Education, responding to increasing knowledge of the field of exceptionality and active parent advocacy, established Severely Learning Disabled (SLD) as a category of exceptionality. Funding for SLD students was then made available through the Special Programs Branch of the B.C. Ministry of Education. Since the participants in this thesis research were diagnosed as severely learning disabled within the B.C. educational system the definition for severe learning disabilities advanced by the Ministry of Education in the Province of British Columbia has been applied. The definition is outlined in the manual of Policies, Procedures and Guidelines for Special Programs and reads as follows:

Learning disabilities is a processing disorder involved in understanding or using symbols or spoken language. These disorders result in a significant discrepancy between estimated learning potential and actual performance. Generally, a discrepancy of two or more years on grade equivalent scores or a similar discrepancy on standardized score comparisons is recognized as significant. This discrepancy is related to basic problems in attention, perception, symbolization and the understanding or use of spoken or written language. These may be manifested in extreme difficulties in

thinking, listening, talking, reading, writing, spelling or computing (Section No. 3.26; see Appendix A).

The Career Education for the Learning Disabled (C.E.L.D.) program was developed in the School District of Surrey, B.C. in 1980, to provide support services for secondary students who have been identified as being SLD. Funding for the program was made available through the Special Programs Branch of the B.C. Ministry of Education. Initially C.E.L.D was designed with a strong emphasis on vocational skills and modified academics and students were not expected to fulfill graduation requirements in the regular Secondary School Graduation Dogwood Diploma Program. Over the years with the increased understanding of learning disabilities due to experience and research information the C.E.L.D. program has undergone many changes. The program has been restructured to provide SLD students those support services which will enable them to be successful in the regular program, to graduate with a Dogwood Diploma, and ultimately make career choices in line with their strengths.

The C.E.L.D. program offers skill enhancement (social and academic), learning and compensatory strategies, integration, and subject area support with an emphasis on flexibility to accommodate the heterogeneous needs of the individual students. As the program has changed, so have its goals. The holistic approach to the provision of services for SLD students advanced at the district level is reflected in goals such as helping students to develop appropriate social and behavioural patterns. Since its introduction in 1980 the program has grown to where in September, 1992, approximately 260 students were enrolled in C.E.L.D. programs in twelve secondary schools including the junior secondary where this study was conducted. (For further details on program descriptions and goals at the district and school levels see Appendix A.)

Stress. The development and evaluation of stress management programs has been impeded by the lack of a coherent conceptual definition of stress. There are as many definitions of stress as there are people attempting to define it. However, we have witnessed the promotion of a cognitive phenomenological model of emotion in which stress relationships occur as a result of a transaction between environment and person factors (Lazarus & Folkman, 1984). In this model the perception of stress in the form of a threat, harm/loss, or challenge develops when external or internal demands exceed or tax the perceived resources of the individual resulting in noticeable physiological sensations such as rapid heartbeat, body tension, sweating, or stomach upset.

Meichenbaum (1985) employed the transactional perspective of stress and coping as the underlying theoretical orientation for SIT. Within the framework of SIT, individuals are made aware of the transactional nature of stress and coping, and how their reactions contribute to and maintain stress relationships. How the individual perceives the situation and his/her ability to cope with the demands, plus the perceived consequences of success or failure, will strongly influence the stress process.

Essentially, stress refers to the adjustive demands made upon the individual when facing problems in living with which he/she must cope if he/she is to meet his needs (Coleman, 1973).

Stressor. The term is used in this study to refer what Coleman (1973) described as the specific problems in living with which a person must cope, external and/or internal, that are appraised as taxing or exceeding the resources of the individual. For example, personal goals, people, places or events that evoke the stress response from an individual are considered stressors. Morganett (1990) proposed that stressors can also be thought of in terms of the context in which they occur because an individual can have entirely different responses to the same stimulus events depending on the context (e.g. school, home, or friendship).

Anxiety is currently used to refer to two related, yet logically different, constructs: (1) anxiety is often used to describe an unpleasant emotional state or condition; and (2) anxiety may also refer to relatively stable individual differences in anxiety-proneness as a personality trait.

The concepts of state and trait anxiety were first introduced by Cattell in the 1960's and were elaborated by Spielberger (1983). He described state anxiety (S-Anxiety) as an emotional condition that exists at a given moment in time and at a particular level of intensity, however, it may endure over time when the evoking conditions persist. State anxiety is a transitory condition characterized by subjective feelings of tension, apprehension, nervousness, and worry, and by the temporary activation or arousal of the autonomic nervous system.

Trait anxiety (T-Anxiety) refers to differences between people in the tendency to perceive stressful situations as dangerous or threatening and to respond to such situations with elevations in the intensity of their S-Anxiety reactions. T-Anxiety may also reflect individual differences in the frequency and intensity with which anxiety states have been manifested in the past, and in the probability that S-Anxiety will be experienced in the future. The stronger the anxiety trait, the more probable that the individual will experience more intense elevations in S-Anxiety in a perceived stress relationship (Spielberger, 1983).

Frustration expression refers to the manner in which individuals express their responses to frustration. They may express their feelings of frustration: (1) by concentrating on the frustrating obstacle; (2) by turning their aggression outward or extrapunitively by blaming an outside agent in some way for the frustration; (3) by turning their aggression inward or intropunitively by assuming responsibility for the frustration and acknowledging guilt or shame; or (4) by attempting to solve the problem giving rise to the frustration. How people express their frustration depends on the degree to which

individuals are able to withstand or tolerate frustration without resorting to inadequate modes of reaction (Rosenzweig, 1981).

Significance of the Study

Since the identification of learning disabilities as a category of exceptionality, and subsequent funding for programs such as C.E.L.D., C.E.L.D. staff have attempted to provide the services which will result in success for SLD students at the secondary level. Outcome evaluations of the program at the district level suggested teaching these students how to use specific new learning strategies and/or providing the opportunity to experience success when using those strategies was insufficient. Efficient learning did not seem to depend solely on the acquisition of background knowledge and learning strategies. For many, the students' cognitive and skill deficits seemed to negate any effort expended on their behalf. The C.E.L.D. staff concluded that remedial efforts must focus not only on instructional/task variables but also on personality and behaviour variables in order to help SLD students succeed in high school. It was hoped that the information gathered from this study would justify the implementation of an eight session SIT treatment package, addressing some of the personality and behaviour variables of future students enrolled in C.E.L.D., as a component of an effective intervention program.

Limitations of the Study

Initially twenty-one CELD students had agreed to participate in the study with seven students per treatment group; however, the number of subjects was reduced to fifteen with five students per treatment group due to course conflicts. A number of limitations are

inherent in a quantitative study with only fifteen subjects: (1) the results from some psychometric measure sub-scales may be based on too few test items for statistical analyses; (2) treatment effects must be very robust to show statistical significance; and (3) the generalizability of the results may be limited. In addition, there is less control over extraneous variables in a field setting than in the laboratory. For example, the time frame of the study was affected by a two week delay in the mid-year course change over. Because of that delay, the follow-up assessment corresponded with a rather stressful time for most students, the week before final examinations. Therefore, it is possible the results from follow-up testing may have been adversely affected.

Ecological vs. Laboratory Research

The issue of ecological versus laboratory research is a contentious one, and requires more room to discuss than this paper allows; however, some exposure of the differences is necessary. A laboratory experiment is carried out under specific, controlled conditions. The laboratory researcher tries to eliminate all the extraneous influences that might affect the outcome of the experiment. Myers (1987) stated that the laboratory experiment is the most precise tool we have for measuring the effect of an independent variable as it varies under controlled conditions. The degree of control in a laboratory experiment provides a great deal of precision. However, some researchers such as Hammersley and Atkinson (1991), have argued that this control may exact a high price in terms of lowered external validity and results obtained in the laboratory may have little relevance to our everyday lives. They contended that the ecological experiment also meets the basic requirements of an experiment in that the researcher collects baseline data, manipulates an independent variable, and assesses the outcome on dependent measures. But instead of studying subjects in the laboratory, they are studied in a natural setting. Therefore, this approach has greater

external validity. Hammersley and Atkinson (1991) asserted that these two methods of research should not be treated as incompatible rather ecological experiments can be used to validate findings obtained in the laboratory. They suggested that if results under controlled laboratory conditions have some degree of external validity, we should observe similar outcomes when we manipulate the same independent variables in more realistic settings.

Outline of the Chapters

Chapter Two is divided into three sections. The first part presents a review of the literature on learning disabilities, with an emphasis on research pertaining to the exceptionality of learning disabled individuals. The second section reviews the literature on Stress Inoculation Training, how it was developed, has been researched and the general findings. The final section of the chapter highlights research on techniques and strategies couched in the SIT framework found to be successful interventions with the learning disabled population. Chapter Three describes the methodology used to investigate the effects of teaching LD students stress management techniques and to evaluate SIT as an instructional procedure. Chapter Four reports the findings related to the research hypotheses outlined in Chapter One. The final chapter discusses the conclusions and recommendations arising from the information gathered from the study.

CHAPTER II

LITERATURE REVIEW

The teenage years may be one of the most stressful and anxiety invoking times in peoples' lives because of the many changes and adjustments faced during adolescence. Wills and Shiffman (1985) identified three main categories of stressors. The first category includes major life events that are acute but of relatively short duration, such as an illness, a move to another school, or the death of a loved one. The second consists of the everyday problems of life, such as annoyances stemming from dealing with crowds on a bus or school hallways, waiting in line, or having an argument with a peer. The third, enduring life strain, are the chronic, long-term pressures associated with the performance of roles, such as being a student or a teenage son or daughter. A number of studies investigating the impact of these stressors on adolescents have found that stress during adolescence has a number of negative consequences. Researchers reported that such stress is related to delinquent conduct (Novy & Donohue, 1985), school-related performance (Fontana & Dovidio, 1984), substance use (Mastes & Allison, 1992), classroom burnout (Fimian & Cross, 1986), and self-esteem (Youngs, Rathge, Mullis, & Mullis, 1990). Investigators suggested that although adolescents experience stress from various sources they seem to have, compared to adults, few resources to help reduce it.

Section I - The Learning Disabled Adolescents

It would appear that adolescence can be a particularly vulnerable period for stress in any person's life and this may be especially true for those with learning disabilities (LD). As learning disabled adolescents enter the junior high school environment, they are

expected to cope with rigorous academic demands. These students experience varying degrees of success both academically and socially (Bursuck, 1989) and there often exists a large gap between academic expectations and student performance. Findings from King's (1986) large-scale survey of students in Ontario revealed that a major source of stress between students and their parents was the difference in expectations for academic achievement. In addition, a growing body of research suggests that low achievement influences motivation, attribution, locus of control, self-concept, behaviour functioning, and social status (Alley & Deshler, 1979; Bursuck, 1989; Eliason & Richman, 1988; Gregory, Shanahan & Walberg, 1986; LaGreca & Stone, 1990; Renick & Harter, 1989). Conversely, personality and behaviour variables such as social skills, attributions, locus of control, motivation, anxiety, self-concept, classroom behaviour, and learned helplessness have been studied with a view to account for poor school achievement and high drop-out rate of LD students (Ayres, Cooley, & Dunn, 1989; Cooley & Ayres, 1988; Bender, 1987; Bender & Smith, 1990; Jones, 1985; Levin, Zigmond, & Birch, 1985; Margalit & Shulman, 1986; McKinney, 1989; Sabatino, 1982; Schumaker, Hazel, Sherman, & Sheldon, 1982; Tollefson, Tracy, Johnson, Buening, Farmer, and Barke, 1982; Vaughn, Zaragoza, Hogan, & Walker, 1993). Although researchers have been unable to establish causal relationships between achievement and personality and behaviour variables several domains of deficit have been demonstrated that should be considered when planning an effective intervention program for learning disabled adolescents.

Academic Deficit

The major characteristic used to describe the otherwise heterogeneous learning disabled population is their lack of academic success (Bursuck, 1989; LaGreca & Stone, 1990). The lack of academic success by LD students is so well documented that it has

become a primary means of identifying students who have learning disabilities. Definitions of learning disabilities usually include phrases such as "a significant discrepancy between estimated learning potential and actual performance" where a discrepancy of two or more years on grade equivalent scores or a similar discrepancy on standardized score comparisons is recognized as significant (Appendix A). It follows that the first attempts at intervention focused on specific skills in academic remediation (Hallahan, Kauffman, & Lloyd, 1985). The results of addressing academic deficits alone, however, was not satisfactory (Deshler, Schumaker, Lenz, & Ellis, 1984; Stevens & Pihl, 1983). Gains were often minimal and transitory, and failed to produce concomitant increases in school success. It appears that improving specific cognitive skills is a necessary but insufficient component of adequate intervention for the learning disabled adolescent.

Affective Deficits

Because of their prolonged experience of school failure, learning disabled adolescents are at considerable risk for developing affective problems. There is increasing evidence that LD students, in addition to deficient academic achievement, exhibit a variety of maladaptive affective responses in the classroom that can further hinder efforts to improve their academic performance (Bender, 1987; Torgesen & Licht, 1983); and the theoretical model presented by Weiner (1979), proposes that the type of attributions students make will affect their level of motivation. Weiner (1979) suggested people's reaction to failure appears related to whether they attribute their lack of success to factors within or beyond their control. The term "locus of control" describes the feelings of individuals as to the placement of responsibility for the consequences of their actions. Internal locus of control refers to the attribution of success or failure to factors the individual has the power to change. Generally, effort or attitude towards the task are factors

the person can change. On the other hand, external locus of control describes the attribution of success or failure to factors the individual cannot change such as ability level, luck, and task difficulty. People who attribute failures and successes to external factors will be less persistent in their approach to learning new tasks. These individuals were labeled learned-helpless.

Torgesen and Licht (1983) offered a conceptualization of learning disabled students that is consistent with Weiner's (1979) model. They described LD students as inactive learners, who have depressed expectations of success and feel less control over their own success and failures than their non-exceptional peers. When LD students feel convinced, due to repeated failures, that their efforts will have no effect on the outcome of a task, they can become debilitated by that failure and exhibit learned helplessness. This learned helplessness is reflected in decreased effort and concentration, a deterioration of problem-solving strategies, and low frustration tolerance. In addition, Licht & Dweck (1984) found helpless children placed less emphasis on effort as a cause of success or failure, and took less personal responsibility for either positive or negative results than did persistent subjects.

Research on attributions for academic success and failures, while not consistent, suggests that LD students tend to make attributions for their academic experiences that are not conducive to success in the classroom. LD students were reported as more likely to attribute academic failures to a lack of ability and less likely to attribute academic success to effort or ability than were normally achieving students (Ayres et al, 1989; Cooley & Ayres, 1988; Horn et al, 1983; Jacobsen, Lowery, & Ducette, 1986). Ayres et al. (1989), Cooley and Ayres (1988), and Tollefson et al. (1982) used the Intellectual Achievement Responsibility Questionnaire (IAR) to compare attributions of success and failure for school experiences of LD and non-LD adolescents. Results from Tollefson et al. (1982) indicated no significant differences between the two groups. These results were not replicated by Cooley and Ayres (1988) and Ayres et al. (1989). They found LD students

more likely to attribute failures to external factors or to stable (ability) factors, both of which can be seen as beyond personal control. LD adolescents were also seen by their teachers as significantly less persistent than their normally achieving peers on academic tasks. The latter findings supported the results by Jacobsen et al. (1986) that LD students attributed failure more to lack of ability and took less responsibility for their success, crediting it to luck or ease of task, than did normally achieving subjects. Learning disabled individuals seem to have a more external locus of control than normally achieving students and appear to lack persistence in their efforts consistent with the learned-helplessness pattern hypothesized by Weiner (1979) and the inactive learner described by Torgesen and Licht (1983).

In taking less personal responsibility for their achievement, it is possible learning disabled students' feelings of self-esteem decreases relative to their perceived lack of success. Agreement prevails among professionals in the field of learning disabilities that many students with LD suffer from lowered self-concept as part of a generally poor emotional adjustment (Silver, 1992). This view is supported by research on the LD population where learning disabled students generally report lower self-concepts than peers whose achievement is satisfactory (Ayres et al., 1989; Cooley & Ayres, 1988; Jones, 1985; LaGreca & Stone, 1990; Omizo, Amerikaner & Micheal, 1985; Raviv & Stone, 1991; Sabatino, 1982). For example, Jones (1985) found deficits both in global and in specific aspects of self-concept in LD students compared to normally achieving students. LD students perceived their physical characteristics, intelligence and school status to be significantly inferior. In addition, Cooley & Ayres (1988) demonstrated that students with lower self-concepts were more likely to make maladaptive academic attributions (success due to external factors and failure due to lack of ability). These results were replicated and extended by Ayres et al. (1989). They found low self-concept and maladaptive attributions in LD adolescents were also related to lowered motivation and lesser persistence in the face of challenging tasks.

Although evidence suggests a relationship between attribution style, self-concept, persistence and academic success, it is difficult, if not impossible, to pinpoint cause and effect. In reality the relationship may be interactive. If failure is believed to be due to lack of ability, and therefore beyond the individual's control, why should the person persist? Diminished motivation, effort and persistence is likely to lead to a continued lack of success, which is likely to lead to low self-esteem and Cooley & Ayres (1988) showed that students with low self-concept are more likely to attribute failure to lack of ability.

Sabatino (1982) suggested that as LD students attempt to learn, and do not succeed, they lower their expectations for future success and a generalized fear of failure dominates their attitudes and behaviours. He concluded that when there is a failure to achieve, the resultant loss of self-esteem triggers a chain of emotional maladjustments, from inappropriate responses based on improperly interpreted social cues, to externalization of locus of control, to decreased achievement motivation, resulting in the pattern of learned helplessness described by Weiner (1979). The consequence is a student who generally:

- a) feels non-competitive and is fearful of failure in academic settings,
- b) feels inadequate in response to the expectations of others, having limited feelings of self-worth,
- c) feels anxious, responding on an aggressive-passive behavioral continuum in a rigid, inappropriate manner, evidencing a self-fulfilling prophecy of continued misconduct (Sabatino, 1982, p. 77).

The literature indicated that LD students' perceptions of themselves and their abilities were often negative compared to the perceptions held by their non-LD peers and that there seems to be a reciprocal relationship between self-concept and academic achievement. In addition, when studying the relationship between self-concept and trait anxiety and school achievement and trait anxiety, negative correlations usually were

reported (Jones, 1985; Margalit & Zak, 1984; Patten, 1983). Results suggested that the higher the level of trait anxiety, the lower the level of achievement and self-esteem. Jones (1985) and Patten (1983) contended, if the self-concept of LD students were improved, anxiety levels and achievement motivation would also improve. On the other hand, Margalit & Zak (1984) suggested that relieving the LD students' anxiety related to feeling like a pawn (feeling like they have little or no control over their fate) would allow them to feel more in control of their fate and improve self-satisfaction. This improvement in self-satisfaction would subsequently improve the students' self-esteem. They believed the impact of focusing on improving self-esteem without first reducing anxiety would be limited since individuals with high anxiety may have difficulty concentrating and remembering. They also believed that the efficiency of cognitive processes involved in learning is also lowered by feelings of anxiety which leads to lower achievement negating any gains in self-concept.

Heightened levels of debilitating general anxiety, and depressed strategies for dealing with normal stress have been demonstrated in LD children, adolescents and adults (Gregg, Hoy, King, Moreland, & Jagota, 1992; Margalit & Shulman, 1986; Stein & Hoover, 1989; Stevens & Pihl, 1983). Margalit and Shulman (1986), for example, reported that LD students manifested high and stable levels of anxiety (Trait anxiety) as compared to their non-exceptional peers. Interestingly, the LD students did not experience more State anxiety than the non-LD students. They suggested the LD group may exhibit some kind of "deafness" to their own difficulties and may not experience the anxiety that accompanies lower levels of functioning in stress related situations. Trait anxiety, however, may be conceived as an indicator of maladjustment (Spielberger, 1983). Higher levels of trait anxiety have been shown to be related to major inaccuracies in the cognitive process and may lead to the distortion of reality testing (Eysenck & Berkum, 1992). Deficits in perceptual processing may interfere with the ability to evaluate different situations accurately, leading to defensiveness. Eysenck and Berkum (1992) suggested that

defensiveness represents a generalized style of approaching stress with an unconscious evaluative bias to deny problems. Using a personality inventory, Gregg et al. (1992) found that LD adults exhibited profiles similar to maladjusted individuals known to have been under extreme short and long term stress without effective coping mechanisms. Apparently cognitive deficits may hamper LD individuals' adaptational processes for working through stress effectively throughout their life time.

Cognitive Deficits

Torgesen and Licht (1983) characterized LD individuals as inactive/maladaptive learners with motivation and metacognitive variables as underlying mechanisms. Wong (1986, 1987, 1989) proposed LD students may be unable to employ appropriate strategies to specific tasks, due to metacognitive deficits, regardless of the fact that they may have useful strategies in their repertoire. Metacognition refers to all the skills and abilities that encompass one's knowledge and understanding about one's own cognitive and thinking abilities and processes and to the active monitoring and consequent regulation and orchestration of these processes (Wong, 1987, 1989). Cardelle-Elawar (1990) likened what educators refer to as "study skills" to cognitive strategies and stated that metacognitive strategies were the techniques, principles, or rules used by an individual to monitor the effectiveness of cognitive strategies employed in the acquisition, manipulation, integration, storage and retrieval of information across situations and settings. LD students have been found to exhibit inefficient study skills, poor time management, lack of organization, and inattentive behaviours such as restlessness and distractibility (Gregory, Shanahan, & Walberg, 1986; Sherbenou & Holub, 1982). The inefficient study skills indicate a lack of cognitive strategies and poor time management, lack of organization, and inattentive behaviours reflect a deficiency in metacognitive strategies.

Maintenance and generalization of newly acquired strategies requires the presence of higher order executive processes, such as strategy selection and monitoring (Wade and Reynolds, 1989). These processes, however, may be underdeveloped in many LD students. Lorschach and Gray (1985) found that students with learning disabilities did not spontaneously use metacognitive strategies to aid comprehension. Moreover, Wong and Wilson (1984) suggested that children with LD had not used organized and goal-directed strategies that could help with task completion and comprehension of written material. Kotsonics and Patterson (1980) examined comprehension-monitoring in LD and normally achieving students. Using a game-learning task, they found greater comprehension-monitoring deficiencies in LD students than in non-LD students. They suggested the former were inefficient in the selection of appropriate strategies and did not effectively monitor their own comprehension of new information, supporting the existence of a general deficit in metacognitive strategies in LD students. Deficits in metacognitive strategies in LD adolescents may also be reflected in poor problem solving skills. Slife, Weiss, and Bell (1985) measured knowledge about problem-solving skills by having students predict how well they would do on a particular set of arithmetic problems. LD students were found to be significantly less accurate at predicting their performance than regular students. The authors suggested that the LD's poor judgement was due to deficiencies in various self-regulatory skills, including planning, monitoring, checking, and error recognition. Evidence indicates that unlike their more successful classmates, LD students do not select different strategies for easy and for difficult tasks; they do not accurately evaluate the probable difficulty of a task, self-question to monitor performance, or notice their own errors.

A lack of alternative cognitive strategies has also been suggested as an explanation of the impulsive behaviour of learning disabled students (Learner, 1989; Hallahan, Kauffman, & Lloyd, 1985; Silver, 1992). Researchers have found that LD students often respond in an impulsive style that may be detrimental to school performance (Blackman &

Goldstein, 1982). In a matching-figures task, they drew lines from one object to another without first inspecting the page. Impulsive students seem to come to decisions too quickly, without sufficient time for thought between the stimulus and the response. Their teachers contended that LD students often spoke without considering their thoughts and raced through written assignments without monitoring right or wrong answers. It may be possible that LD students respond impulsively because they do not have other ways readily at hand for coping with the learning task.

The LD adolescent has been the main focus of the research of the University of Kansas Institute for Research in Learning Disabilities. A profile of the LD adolescent emerged from this research. The following statements represent characteristics of the LD student as they relate to the demands of the high school setting (Schumaker, Deshler, & Ellis, 1986):

- (1) academic and cognitive factors are the most powerful in differentiating LD from low-achieving adolescents;
- (2) given current programming practices, LD adolescents demonstrate a plateauing of basic skills across the high school grades;
- (3) LD adolescents demonstrate deficiencies in study skills and learning strategies;
- (4) many LD adolescents exhibit immature executive processing both academically and socially.

In light of the characteristics exhibited by LD adolescents these researchers developed a Strategies Intervention Model (SIM) that emphasizes the importance of teaching the appropriate strategies for planning, direction, and monitoring one's own learning and behaviour (Schumaker et al., 1986). They argued when planning intervention programs for LD adolescents one must incorporate methods to teach these students how to learn rather than to teach them specific skills and content. Furthermore, Hiebert, Wong, and Hunter (1982) suggested that remedial teachers can work on building positive affect and hopeful expectations by promoting positive cognitions. They contended the debilitating

habit of LD children and adolescents of emitting negative cognitions such as "I can't do this" and "I know I'll fail" when presented a task may be interactive with low academic self-concept and/or academic expectation.

Social Deficits

Most authorities agree that LD individuals often exhibit a lack of social skills and social incompetence (Hallahan et al., 1985; Silver, 1992). Schumaker and Hazel (1984a) defined a social skill as "any cognitive function or overt behaviour in which an individual engages while interacting with another person or persons" (p. 422). Such actions include empathizing with others, using social cues and physical expressions such as eye contact and changing facial expressions with or without verbalization. More important, social competence includes knowing the appropriate time and place to use these actions. The evidence of depressed social skills and social competence in LD children and adolescents comes not only from anecdotal descriptions and reports by teachers and parents but from research as well. Most descriptions of LD students include references to behaviour that is irritating to adults and to problems in relating to peers (Silver, 1992). Observational studies and research involving other estimates of social relations appear to confirm the social difficulties of individuals with LD (Bryan, 1986a; Deshler & Schumaker, 1983; LaGreca & Stone, 1990; Pearl, Donahue, & Bryan, 1986; Schumaker & Hazel, 1984a; Vaughn, Zaragoza, Hogan, & Walker, 1993). The results indicated that many LD students (1) were rated by adults as having socially inappropriate behaviours, (2) were not well liked by their peers and did not relate to them well, and (3) showed evidence of faulty social cognitions.

Students with LD consistently have been shown to be less socially accepted and/or more rejected than their non-LD peers. A series of studies reported by Bryan (1986a) and Pearl et al. (1986) found that both adult (teacher and parent) ratings and behavioural

observation differentiated LD from non-LD children. LD pupils were rated as less cooperative, less attentive, less able to organize themselves, less able to cope with new situations, less socially acceptable to others, and less tactful than their classmates. In the classroom setting, they were observed to behave differently in that they were more "off-task", more distractible, more easily frustrated, initiated more interactions with the teacher, and engaged in more nonproductive activity. In conversation, LD students made more nasty and competitive statements and received more rejections than non-LD peers. When working with a partner, they tended to resist the initiatives of the partner for cooperative work and generally were not well accepted by their classmates. In social settings, LD children were involved in more negative interactions, ignored more by teachers and peers, and perceived as less socially skillful. They were described as either deferential or hostile. These authors suggested LD individuals often act in a socially inappropriate manner and are at risk for social neglect and rejection.

Similarly, Gresham and Reschly (1986) found that LD students were more negatively viewed by their parents and teachers and less popular with their peers. The poorer social skills of these students were pervasive in nature. According to teacher, peer, and parent ratings, LD students were seen as deficient in interpersonal, self-related, and task-related skills such as accepting authority, helping others, expressing feelings, completing tasks, and working independently. Baum, Duffelmeyer, and Geelan (1988) found that these deficits were consistently reported in elementary, junior high, and senior high school records of LD students. Also, Gregg et al. (1992) found that difficulties with social skills and acceptance continued to be problems for LD adults. In addition, results from a four year longitudinal study conducted by Vaughn et al. (1993) showed students with LD consistently exhibited significantly lower social skills and higher levels of behaviour problems than their non-LD peers. They suggested that when compared with low, normally or high achieving peers, LD students more closely resemble low achieving students with regard to social behaviour. LaGreca and Stone (1990), however, contended

that even when LD students were matched with other lower achievers, they were significantly and accurately differentiated in lower peer acceptance and fewer positive peer nominations. They were perceived by teachers to have fewer social skills and more conduct problem than other low achievers. LD girls were also rated as more anxious than girls in the low achieving or average achieving groups. Their findings supported the results obtained by Bursuck (1989) that LD students were less accepted by peers and teachers than other lower achievers. Because Vaughn et al. (1993) focused on young children (5 to 8 year olds) and LaGreca and Stone (1990) and Bursts (1989) on adolescents (11 to 16 year olds) it is possible that the LD students' social deficits become more prominent as they get older.

An important factor relating to social competence may be the perception of the LD students' own peer status. Studies have shown that not only were mainstreamed LD students significantly less socially accepted than their classmates, they were also less accurate than their classmates in assessing their own personal status within the classroom (Bender & Golden, 1988; Kistner, Haskett, White, & Robbins, 1987; Sabornie, Marshall, & Ellis, 1990). Lack of perception of poor status may have the effect of removing the need to adjust their interaction with peers in order to foster positive relationships. Deshler & Schumaker (1983) reported that LD adolescents were less attuned to the affective states of others, more egocentric and less able to accurately comprehend nonverbal communication. They noted that LD students were often unaware of the impact of their behaviour on others. Perlmutter (1986) suggested that LD pupils have the necessary social behaviours in their repertoires, but lack motivation and cognition to apply appropriate behaviours when necessary. Schumaker and Hazel (1984b), however, contended that LD students' social problems originate from performance deficits (i.e., inability to discriminate cues in the environment that signal certain social behaviours), skill deficits (i.e., lacking ability to perform specific social skills), and behaviour excesses (i.e., frequently exhibiting undesirable social behaviours). It would appear that LD individuals' poor relationships

with peers and adults may at least in part be due to their misperceptions of both their own behaviour and social situations. In planning interventions, it is important to realize that when LD students are taught social skills they must also be taught to see the need to change their behaviour and to be motivated to do so.

Behavioural Deficits

Researchers studying LD students have identified deficits in the classroom behaviour that may be incompatible with learning in mainstream classes. Using meta-analysis, Bender and Smith (1990) reviewed the results of 25 studies that compared the classroom behaviour of children and adolescents with LD to students without LD. Both observational and teacher rating data demonstrated significant behavioural deficits for LD students compared to their non-LD peers in five overall areas: on-task behaviour, off-task behaviour, conduct disorders, distractibility, and shy/withdrawn behaviour. They found that the differences reported between LD and non-LD students in these areas for both observational and teacher rating data seemed to cluster around one standard deviation. Bender and Smith (1990) suggested these results presented a negative picture of the behaviour of LD students and that behaviour problems represented a major impairment on the pupils' ability to master the learning tasks in the classroom.

Although similar patterns of behaviour problems emerged from longitudinal and cross sectional studies involving students with LD, the problems most prevalent at a given time may vary according to age and sex (Epstein, Bursuck, & Cullinan, 1985; Epstein, Cullinan, & Lloyd, 1986; McKinney, 1989; McKinney & Feagans, 1984). Epstein and his colleagues, for example, factor-analyzed responses from teacher completed behaviour rating scales on male and female students with LD ranging in age from 6 to 18 years. Age and sex comparisons were made between groups of younger (aged 6-11 years) and older

(aged 12-18 years) male and female students. The factor-analyses of the gathered data revealed four main factors for each group and reported in their statistical order. The four main factors that emerged for younger LD boys were labeled: conduct problem, anxiety, social incompetence, and attention deficit; and for older LD males: conduct problem, anxiety-withdrawal, socialized delinquency, and immaturity/inattention. For younger LD girls the four factors consisted of: conduct problem, personality problems, attention deficit, and nervousness; and for LD older females the factors were: aggression/delinquency, social inadequacy, attention deficit, and anxiety. The differences in the factor labels reflected the loading changes of the 55 items that were rated. Several of the items such as restlessness loading on attention deficit with younger LD boys appeared on the conduct problems factor with the older LD males. Also items such as anxiety, hypersensitivity, and oddness that loaded on the anxiety factor for older LD females had loaded on the personality problem factor for younger LD girls. Results indicated that according to their teachers, LD children and youth are generally characterized by behaviour problems. High loadings for anxiety related items (i.e., restlessness, distractibility, nervousness, tension, and inattentiveness) were consistent for both younger and older LD students but they were associated with different factors dependent on the subjects' sex and age. Epstein et al. (1986) suggested that items loading on different factors may reflect developmental changes in LD students' behaviour pattern or application of different standards to the behaviour of younger and older LD students. However, overall items related to anxiety, loaded higher for boys than girls indicating that LD boys may experience greater feelings of anxiety than LD girls.

Working with elementary children, McKinney and Feagan (1984) observed relative to their peers, LD student still presented the same maladaptive behaviour pattern in year three as they did in year one. LD children in the regular classroom during academic activities were less task oriented, more distractible, more easily frustrated, and more dependent/aggressive especially when frustrated than their non-LD peers. They also interacted more with their classroom teachers. McKinney (1989) contended not only is

there evidence that the repeated failure experienced by many LD children leads to social, emotional and behavioural difficulties, but also that children identified as LD in elementary grades are at risk for later conduct and personality disorders. In addition, feelings of anxiety arising from the stress of those early failures may contribute to the LD students' maladaptive behaviour pattern since it is very similar to the behaviour profile described by Gregg et al. (1992) for individuals who are habitually anxious from exposure to long term stress.

In summary, the literature indicates that LD students bring with them to high school an array of personality and behavioural variables that can affect their school success both academically and socially. Many factors such as the ability to cope with stress, social skills, self-concept, locus of control, executive functioning, and problem behaviours may have more bearing on school success than does academic achievement. The LD students appear to lack the ability to effectively cope with stress reflected in their tendency to exhibit high levels of trait anxiety (Margalit & Shulman, 1986; Stein & Hoover, 1989; Stevens & Phil, 1983). When studying the relationship between trait anxiety and self-concept using learning disabled subjects, negative correlation usually were reported (Jones, 1985; Margalit & Zak, 1984; Patten, 1983). In addition, Mckinney and Feagan (1984) and a series of studies by Bryan (1986a) and Pearl et al. (1986) reported that LD students tended to be less task oriented, less tactful, less sociable, more distractible, more easily frustrated, and more dependent/aggressive especially when frustrated, than their non-LD peers. These maladaptive behaviours have also been linked to individuals known to have been under extreme short and long term stress without effective coping mechanisms (Gregg et al, 1992). Research has shown that LD students often lack the ability to self-generate effective coping and self-monitoring skills (Wong, 1987, 1989). Johnson (1986) suggested that individuals without effective coping mechanisms may become easily frustrated when face with a challenging tasks or stressful situations. Due to failure experiences and lack of coping skills LD adolescents are likely have low frustration tolerance and are likely to

express their feeling of frustration in a socially inappropriate manner (Silver, 1992). Studies have found that LD individuals tend lack social acceptance by teachers and classmates (Deshler & Schumaker, 1983; LaGreca & Stone, 1990; Vaughn et al, 1993). The lack social acceptance by teachers and classmates may be reflect the LD adolenscent's inability to effectively express or cope with frustrations. It would appear helping LD students to succeed in high school must involve addressing not only the academic lags of these students but also the personality and behaviour variables of these students. It may be valuable, therefore, to include stress management as part of an effective intervention program for LD adolescents.

Section II - Stress Inoculation Training (SIT)

Background

During the past two decades, there has been a proliferation of research and clinical applications of cognitive-behavioural modification approaches. Cognitive-behaviour modification (CBM) has become a rubric that is applied to a wide variety of therapeutic approaches based on a central premise that cognitions, behaviours, and emotions are highly interdependent (Turk, Meichenbaum, & Genest, 1983). CBM methods represent an integration between techniques that directly target cognitions and emotions combined with behavioural management techniques. There is an underlying assumption that affect and behaviour are largely determined by the way in which the individual perceives the world (Turk et al., 1983). Whether termed cognitive strategy training, problem solving, self-control procedures, coping skills training, or self-statement modification, CBM therapy approaches share three major characteristics (Hallahan, Kneedler, & Lloyd, 1983). First,

the training programs provide direct instruction in specific skills. The objectives of training are specified, the relevance of the strategies and techniques to be employed are explained and modelled for the trainees. Second, the use of self-instruction is an essential component of CBM interventions. Overt speech is faded to covert (internal) speech as individuals become more familiar with the strategy steps. Third, trainees are considered active participants in the learning process and are made aware of the relationship between their actions and task outcome. They are responsible for many aspects of the program such as self-evaluation and self-reinforcement. CBM approaches tend to be active, time-limited and fairly structured, with an emphasis on a collaborative relationship between clients and their counsellors.

CBM has emerged as a promising method for enhancing the learning potential of exceptional students (Harris, 1982; Meichenbaum, 1977, 1980). Ryan, Weed, and Short (1985) believed this approach to be particularly promising for helping LD students because it addresses two of their key difficulties - self regulation of strategy use and motivation. Wolpe contended that the clinical status of a method should be judged by how quickly, completely, and enduringly it brings about positive change (Wolpe, Salter, & Reyna, 1964). Lovitt (1989) suggested the promise of CBM approaches rested with their ability to produce generality and durability, the long-term effects that behaviour modification programs were not showing with LD students. He suggested that although continued research is needed to improve these approaches, the studies to date have given a great deal of credibility to the use of CBM methods with LD individuals. In comparing the relative efficacy of medicine, behaviour modification, and CBM training as interventions for children with learning disabilities, Lovitt (1989) concluded that all were effective in different areas, but CBM training appeared to offer the greatest possibility of transfer of training or generalization. According to Lovitt (1989), the major contributor to the CBM approach, as it relates to learning disabled youngsters, has been Donald Meichenbaum at the University of Waterloo in Ontario, Canada.

Meichenbaum (1980) stated the primary impetus for the development of CBM was the increasing evidence that available treatments for students with learning and behavioural problems, especially behaviour modification procedures, had not fostered changes that were generalizable and durable. Secondly, there appeared to be increasing evidence that underlying attributes such as verbal development, problem solving and strategy selection abilities were primarily responsible for many social and academic behaviours, and that youth with LD had often not developed those attributes. His goal, therefore, was to teach children to spontaneously generate and employ cognitive strategies and self-instructions, to use verbal statements and images that prompt, direct, or maintain behaviours. Towards this aim Meichenbaum pioneered the use of self-instruction methods with the learning disabled (Hallahan et al., 1985).

In developing the self-instructional procedure Meichenbaum relied a great deal on the earlier works of the Soviet language development researchers Luria (1961) and Vygotsky (1962), who viewed language as playing a critical role in children's overall cognitive development. More specifically, Meichenbaum and Goodman (1971) focused on Luria's hypothetical developmental sequence normal children go through in controlling their behaviour. They described the following three stages of development: (1) the speech of others, usually adults; (2) children's overt speech directed at themselves; and (3) the children's covert speech or inner speech becomes self-governing. The last stage, inner language, is what enables individuals to perform higher-level cognitive operations. Based on these theoretical stages of speech development, a treatment paradigm was developed and successfully used by Meichenbaum and Goodman (1971) to train impulsive children to talk to themselves as a means of developing self-control. Results showed these children significantly improved their performance on the Porteus Maze, performance I.Q. on the WISC, and increased cognitive reflectivity on the Matching Familiar Figures Test. The improved performance became evident in a one-month follow-up and no further testing was reported.

The following training sequence developed by Meichenbaum and Goodman (1971) has served as a prototype for many subsequent self-instructional efforts:

1. The adult performs the task while verbalizing aloud (cognitive modelling):
 - a). questions about the task;
 - b). self-guiding instructions on how to solve the task;
 - c). self-reinforcement
 - d). self-evaluation of performance.
2. The child performs the task while the adult instructs aloud (overt, external control).
3. The child performs the task while verbalizing aloud (overt, internal control).
4. The child performs the task while verbalizing in a whisper (faded, overt self-guidance).
5. The child performs the task while verbalizing covertly (covert self-instruction).

In short, the self-instructional training used by Meichenbaum and Goodman (1971) gradually moved the process of teaching from an external agent (instructor) to the learners themselves.

The self-instructional paradigm has been used successfully to establish inner speech control with children who displayed a variety of problems such as hyperactivity.

aggressiveness, and disruptive behaviours (Harris, 1982). According to Meichenbaum (1977), the research on self-instructional training revealed that the probability of obtaining generalization and persistence of treatment effects was improved when a client's cognitions were closely attended. He found operant training procedures could be improved by explicitly including self-instructional training. It would follow, Meichenbaum suggested, that altering behaviour therapy procedures by including a reorganization and a restructuring of the clients' cognitions should enhance their efficacy (Meichenbaum, 1977).

Meichenbaum and his colleagues launched into a program of treatment studies to test the above hypothesis (Meichenbaum, 1977). In general, he reported that the results were promising. When the standard behaviour therapies such as desensitization, modelling, and aversive conditioning were augmented with self-instructional training, greater treatment efficacy, more generalization and greater persistence of treatment effects were obtained. Meichenbaum concluded that subjects were learning a set of coping skills that could be employed under stressful situations rather than undergoing only straight behaviour modification. This conclusion suggested to Meichenbaum the clinical potential of systematically teaching such coping skills as an approach that integrated the cognitive dimension with behavioural treatments for reducing the negative effects of stress (Meichenbaum, 1977).

Meichenbaum (1977) stated that the stress inoculation training (SIT) procedure can be viewed as a by-product of the research conducted to test the hypothesis that altering behaviour therapy procedures to include the reorganization and restructuring of clients verbal statements would enhance their efficacy. Meichenbaum relied on a cognitive-emotional theory of anxiety and learning approaches to assemble different procedures that had been successfully applied in a number of different problem areas. In other words, in its early conception SIT referred to a relatively specific set of operations for teaching both physical and cognitive coping skills for anxiety reduction.

In order to evaluate the efficacy of this approach Meichenbaum and Cameron

(1972a, cited by Meichenbaum, 1977) used SIT to help clients with severe phobic reactions to manage anxiety in stressful situations. The treatment began with an educational phase that clarified the cognitive, affective and physiological components of the client's avoidant behaviour. The experimenters presented the Schachter model of emotion. In Schachter's two-factor theory, anxiety consists of heightened physiological arousal and anxiety engendering thoughts and images. Clients were encouraged to view anxiety as a reaction involving negative self-statements, images, and physiological arousal. It was suggested to the clients that learning two skills, coping self-statements and self-directed relaxation, would help in alleviating their problem. In the next phase, skills-training, self coping statements and relaxation skills were learned and rehearsed through self-instruction. During the final phase, application, the clients actually tested out the skills in a stressful laboratory situation consisting of the administration of unpredictable electric shocks. The results indicated that SIT was more effective than imaginal systematic desensitization, which was the standard treatment for phobia at this time. During the debriefing interviews, however, subjects expressed concerns that even though they had received coping skills training they may still be overwhelmed by fear. It appeared that anxious or phobic individuals tended to view their anxiety as one large, continuous reaction that had a certain beginning and end. Meichenbaum and Cameron (1972a, cited by Meichenbaum, 1977) concluded that people who interpret their reactions this way may perceive the reaction as too difficult to change because it is so massive and overwhelming.

To address these feelings of becoming overwhelmed, Meichenbaum and Cameron (1972b, cited by Meichenbaum, 1977) expanded the educational phase in a study with multiphobic clients. Clients were encouraged to conceptualize their phobic or stress reactions in a series of four stages rather than as one massive phobic reaction: (1) preparing for a stressful, painful, provoking situation; (2) confronting and handling the situation or provocation; (3) coping with critical moments or with feelings of being overwhelmed or agitated during the situation; and (4) rewarding oneself after the stress for

using coping skills in the first three stages. They found when clients practiced ways of coping with their reactions at each of the four stages, their fears (ie., fear of losing control or being immobilized) were alleviated. The clients were then able to become sensitive to the early cues that signaled the onset of anxiety and learn to short-circuit the impending threat. Results by Meichenbaum and Cameron (1973a, cited by Meichenbaum & Cameron, 1983) indicated that the revised SIT procedure was superior to systematic desensitization and two other anxiety-relief treatments in reducing avoidance behaviour and in promoting treatment generalization in multiphobic clients. In addition, Novaco (1975) found that, for anger control, the entire SIT procedure was more effective than the use of only coping thoughts or physical relaxation. He suggested one of the advantages of SIT, compared with either cognitive restructuring or relaxation, is that both relaxation and cognitive coping skills are learned and applied as part of the procedure.

The general stress inoculation paradigm consisting of the educational, skills-training, and application phase sequence was soon applied in laboratory and clinical settings for treating phobias and other anxiety-related problems such as pain, anger, aggression, and alcohol abuse (Meichenbaum & Cameron, 1983). The specific operations, however, conducted during the course of treatment tended to be adjusted depending on the particular population treated. The content of the educational phase, the specific skills taught and the nature of the skills application were geared to the target problem.

Subsequently, SIT was broadened to include other strategies for anxiety reduction that had been proven successful in research and based on developments in cognitive psychology (Meichenbaum, 1985a). These various strategies could then be offered to clients in cafeteria-style. Clients were encouraged to pick out particular coping tools that were best for them and individually tailor their coping responses. In order to facilitate flexibility, a variety of therapeutic techniques were woven into training. These included didactic training, discussion, modelling, self-instructional and behavioural rehearsal, and reinforcement. Thus, the stress inoculation training paradigm (the educational, skills-

training and application phase sequence) became a framework for integrating familiar (or innovative) assessment and treatment procedures. SIT no longer denoted a specific set of operations. In addition, as SIT evolved with the integration of greater emphasis on the modification of cognitive processes and cognitive structures, the modification of cognitive events (self-statements) became only one of the strategies used to affect change. Although the altering of self-statements through self-instruction was retained as a strategy to effect change, it was no longer central to the SIT procedure (Meichenbaum & Deffenbacher, 1988). It also became apparent as SIT incorporated many widely used cognitive and behavioural treatment procedures that were outside the domain of the cognitive-emotional theory of anxiety that a larger theoretical base for SIT was needed (Meichenbaum & Cameron, 1983).

According to Meichenbaum and Cameron (1983), the transactional perspective was the most plausible single unifying theoretical rationale to tie together the diverse treatment components (e.g., relaxation training, reframing, expression of affect, perspective taking) of the SIT procedural framework. The transactional model of stress was developed largely by Richard Lazarus and his colleagues (Lazarus & Folkman, 1984). The transactional perspective advocated that stress occurs in the face of challenges or demands that strain or exceed the resources of the individual or for which one does not have readily available (automatic) adaptive responses. Central to the transactional model are the concepts of cognitive appraisal and responses. From the transactional view, a stressful transaction originates with a primary appraisal that a situation demands a response that will effectively reduce or avoid physical and/or psychological harm, and a secondary appraisal that no adequate response is available within the person's repertoire. The person then either attempts a response, or fails to respond altogether. The response or the lack thereof has environmental repercussions by altering the situation, resulting in an ongoing series of appraisals, responses, and situational transformations. Lazarus and Folkman (1984) proposed that the transactional cycle is broken and ceases to be stressful when the person

judges the danger to have passed. This break can occur either spontaneously or because an effective coping response has neutralized the stressful situation. The emphasis in the transactional perspective is on the complex interplay between the individual and the situation that determines onset, magnitude, duration and quality of the stressful episode. The transactional model of stress postulates that people both influence and respond to their environments.

Since the SIT framework had become so broadly inclusive, without the transactional perspective, SIT could be viewed as an eclectic metaframework for identifying issues or processes that seem to be involved in anxiety-based disorders. With the transactional underpinning in place, Meichenbaum (1985a) contended one can see that SIT is designed to enlist clients in a collaborative relationship to perform a situational analysis and to consider which other situations are similarly stressful and to answer the following questions. Where else do clients have similar thoughts and feelings? What is common across these situations? Do certain commonalities or themes emerge as they compare these various stressful encounters? Are the clients more prone to appraise certain events, even ambiguous situations, in certain ways, thus contributing to their own stress level? In short, what is the nature of the cognitive structures that influence the content of their cognitive events and cognitive processes? SIT helps clients become aware of the transactional nature of stress and coping and how their reactions can contribute to and help maintain their stress reactions. In this way, the clients can come to see the transactional perspective that underlies the SIT procedure (Meichenbaum, 1985a). During its early stages of development SIT counsellors could be viewed as technicians who carried out a prescribed, specific set of operations which were primarily based on empirical data. As SIT evolved, however, the counsellor's role changed to that of a creative problem-solver who was faced with the challenge of developing interventions specifically tailored to the requirements of individual clients or target groups.

Meichenbaum (1985a) argued as SIT evolved that the initial labels for the three

phases of the procedure (educational, skills-training and application) were misnomers because the entire SIT procedure is educational in nature. Subsequently, he renamed the initial stage the conceptualization phase. Meichenbaum contended that this was more accurate since the primary focus of this stage was now establishing a collaborative relationship with clients and on helping them to better understand the nature of stress; its effect on emotion and performance; and to reconceptualize it in transactional terms. The second phase was renamed skills acquisition and rehearsal, during which clients develop and rehearse a variety of coping skills, primarily within session (in vitro) and gradually in real life (in vivo). He expressed reservations about this label in that it should not obscure the possibility that some clients may already have coping skills within their repertoires. In such cases the task of the counsellor is not to teach new coping skills per se but to collaboratively recognize and remove inhibitory factors which impede their implementation. The third phase was now called application and follow-through. This was to highlight the need for counsellors to consider the important role of booster sessions, follow-up assessments, the need to adopt a future orientation, in terms of relapse prevention, and the need to extend training programs into the future. Subsumed under this phase were both imaginal and behavioural rehearsal, rehearsal in vitro and performed graded personal experiments in vivo (Meichenbaum, 1985a).

Meichenbaum (1985a) described stress inoculation training as a type of psychological protection that functions in the same way as a medical inoculation that provides protection from disease. According to Meichenbaum, SIT was designed to build psychological antibodies or coping skills, and to enhance resistance through exposure to stimuli that are strong enough to arouse defenses without being so powerful as to overcome them. In this way, clients can (1) develop a sense of learned resourcefulness through experiencing success in coping with manageable levels of stress, and (2) build a prospective defense composed of skills and positive expectations that will help them deal effectively with even more stressful situations. He suggested SIT provides individuals with

a proactive defense to not only resolve specific immediate problems but also to apply to future difficulties. A parallel can be drawn between SIT and Rational-Emotive Therapy (RET) developed by Ellis (Mahrer, 1967) in so far that both treatments aim to provide individuals with proactive skills for continued effective coping after treatment. According to Meichenbaum, however, continued effective application of coping skills is best accomplished when skill acquisition takes place in collaboration between counsellor and client not by the Ellis's "hard sell" approach used in RET (Meichenbaum, 1977). The client must feel they are active participants and contributors if lasting changes are to occur.

Meichenbaum (1985b) maintained there is a natural relationship between cognitive-behavioural training and affect, and that association should be recognized. He argued that a sense of resourcefulness was particularly important for those individuals who feel helpless since they tend to attribute failures to the lack of ability and view them as insurmountable. Mastery-oriented individuals, in contrast, tend to emphasize motivational factors and to view failure as surmountable. Meichenbaum also noted that poor performance under stress may lead to affective disturbance and negative self-statements giving rise to further poor performance as the cycle continues. It is reasonable to imagine, therefore, that a proactive defense against stress and positive expectations should impact positively on performance and affect in stressful situations (Meichenbaum, 1985b). Because behaviour, affect, and cognition are interactive, Meichenbaum suggested that when planning a SIT program for a particular population one must take into account their emotional functioning, and the accompanying images, self-statements, attributions, appraisals, and expectations.

SIT Research - General Findings

Although the SIT approach has increasingly paid attention to the modification of cognitive processes and structures, most of the outcome research involves the simpler SIT

that focused primarily on cognitive events (Meichenbaum, 1985a). With this limitation in mind, the published results for SIT are promising. The SIT regimen has been applied on a treatment and preventative basis to a wide variety of clinical and non-clinical populations (Johnson, 1986; Meichenbaum, 1985a; Meichenbaum & Deffenbacher, 1988). According to Meichenbaum (1985a), his review of SIT research revealed that successful treatments varied in length from as short as one hour with patients about to undergo surgery to forty one-hour sessions administered to psychiatric patients or to those with chronic clinical problems such as back pain. In most instances, however, SIT training consisted of 8 to 15 sessions, plus booster and follow-up sessions faded over a 6 to 12 month period.

Studies have shown SIT effectively reduced anxiety in various clinical and occupational populations such as chronically anxious or aggressive children, adolescents, and adults; individuals with anger control problems; rape and terrorist victims; burn patients; medical outpatients; probation officers; military recruit trainees; and teachers (Bristine & Frieden, 1984; Cecil & Forman, 1990; Cragan & Deffenbacher, 1984; Hains, 1992; Hains & Szyjakowski, 1990; Kane & Kendall, 1989; Long, 1985; Novaco, 1980; Novaco, Cook, & Sarason, 1983; Wernick, 1983). Cecil and Forman (1990), for instance, assigned 54 regular classroom teachers to one of the following three treatment groups: coworker support, SIT based on Meichenbaum's 1977 model, or no-treatment control. Both treatment groups met once a week for 90 minutes over a six week period. They found that SIT was an effective method for reducing teachers' self-reported anxiety and for enhancing coping skills, whereas the coworker support group was not. Hains and Szyjakowski (1990) working with a group of over-anxious adolescents used a SIT treatment based on Meichenbaum's 1985 model. Results showed that the training group experienced significant reductions in levels of anxiety and anger, improvement in self-esteem, and an increase in the number of reported positive cognitions in response to a hypothetical situation. These treatment gains were maintained at a ten week follow-up. These authors suggested, that training adolescents to implement effective cognitive

restructuring and self-instruction while facing stressful situations has potential benefits that extend beyond the reduction of stress and anxiety to include such areas as anger control and improved self-esteem.

The literature indicated that various stress reactions such as performance anxiety associated with speech (Fremouw & Zitter, 1978), music (Sweeney & Horan, 1982), athletics (Crocker, Mace & Carroll, 1985; Hytten & Jensen, 1990), and test taking (Kooken & Hayslip, 1984; Meichenbaum, 1972) have also been successfully treated with SIT. For example, Kooken and Hayslip (1984) evaluated the efficacy of stress inoculation as compared to an equally credible attention-placebo treatment and waiting-list control group for alleviating self-reported test anxiety in older students aged 50 - 67 years. They found that the SIT group experienced a greater decline in test anxiety than the other two groups and concluded that an SIT program would be beneficial for adults re-entering the academic arena.

The SIT procedure has also shown to be helpful with anxiety-related medical problems such as dental phobias (Mosest & Hollandsworth, 1985), Type A behaviour (Roskies, 1983), preoperative anxiety in patients (Wells, Howard, Nowlin, & Vargas, 1986), and preoperative anxiety in parents of children who are undergoing painful medical procedures (Jay & Elliot, 1990). In addition, SIT was at least as effective as or produced significantly greater positive change on some variables than other therapeutic interventions such as exposure, implosion, cognitive skills training, systematic desensitization (Meichenbaum, 1977, 1985a; Meichenbaum & Deffenbacher, 1988) and assertion training and support psychotherapy (Resick, Jordan, Girelli, Hutter & Dvorak, 1988). The study by Resick et al. (1988) investigated the effectiveness of three types of brief therapy: SIT, assertion training, and supportive psychotherapy in ameliorating long-term reactions in rape victims. Their study was designed to test the efficacy of brief therapy (six 2-hour sessions) and to compare the effectiveness of the above three types of therapy using a group format for the problems experienced by sexual assault victims. Results indicated that brief therapy

was effective in producing lasting improvements, particularly with fear and anxiety in sexual assault victims as compared to no improvements shown over a six week waiting period. These authors concluded that although the treatment effects were better maintained for the SIT group, all three types of therapy effectively ameliorated long-term reactions in rape victims (Resick et al., 1988). The evidence suggests, then, that the SIT framework may provide an effective intervention for many different anxious or stressed groups that can be used as a general approach or a part of an overall therapy regimen.

Characteristics of SIT Studies

A review of the experimental designs, dependent measures and treatment procedures utilized in previous SIT research indicated that some form of pre-post factorial design may be the most appropriate to evaluate the effectiveness of SIT for ameliorating stress and anxiety in different populations. Group and Time were the most preferred factors with the dependent variables derived from some universal self-report measure of anxiety and specific measures appropriate for the population studied or the hypothesis being tested.

The examination of the types of dependent measures used in assessing the effectiveness of SIT was most informative. For example, the State-Trait Anxiety Inventory was the most successfully used general self-report measure of anxiety which comments favourably on its' reliability and validity for this purpose. However, some of the specific measures (eg. observational and physiological) that were not successful in differentiating between treatment groups may not be appropriate for evaluating the effectiveness of a cognitive-behavioural modification therapy such as SIT which primarily focuses on effecting change in the cognitive domain. This highlighted the importance of selecting instruments that have proven reliable and valid for measuring the experimental treatment being evaluated and that they are appropriate for the population under investigation. In

addition, analyses by means of MANOVAs or MANCOVAs, followed by ANOVAs or ANCOVAs and multiple comparisons where appropriate were the least complex and most successfully used in assessing information obtained from the self-report measures (cognitive data).

When comparing the SIT treatment procedures used in different studies, it became apparent that the assessed effectiveness of treatment was clearly related to treatment quality and especially length of exposure. For example, the 3 1/2 hrs SIT treatment (Moses and Hollandsworth, 1985) and the three sessions of unknown duration presented by Kooken and Hayslip (1984) were shown to be less effective than the longer and more comprehensive versions provided by Cecil and Forman (1990), and Resick et al (1988) in reducing anxiety. Although the way the three phases of SIT training (conceptualization, skill acquisition and rehearsal, application and follow-through) were conducted varied, depended upon the length of the training and the nature of the population, certain common elements emerged. These included:

1. teaching clients the role that cognitions and emotions play in engendering and potentiating stress;
2. training in the self-monitoring of stress-engendering thoughts, images, feelings, and behaviours;
3. training in the fundamentals of problem solving (e.g. problem definition, anticipation of consequences, evaluating feedback);
4. modeling and rehearsal of instrumental and palliative modes of coping (e.g. relaxation, self-instruction, communication skills, self-monitoring, and positive self-evaluation);

5. graded in session (role plays) and in real life behavioural assignments that become increasingly demanding.

Section III - Successful Interventions with the Learning Disabled Population

A number of the techniques and strategies described above that are couched in the SIT framework have been proven successful interventions with the LD population. For example, attributional retraining (Borkowski, Weyhing & Carr, 1988); specific skills training (Ellis, Deshler & Schumaker, 1989); teaching self-management skills (Shapiro, 1989); relaxation training (Margolis, 1990; Zieffle & Romney, 1985); self-monitoring (Hallahan & Sapona, 1983; Prater, Joy, Chilman, Temple & Miller, 1991); modeling (Smith & Lovitt, 1975); role-playing (Schumaker & Ellis, 1982); and teaching problem solving (Deshler & Schumaker, 1986) have been successfully employed with the LD population. The technique most widely used with LD individuals, however, has been self-instructional training. For example, academic problems of the learning disabled such as listening comprehension (Schunk & Rice, 1984); poor spelling skills (Graham & Harris, 1989); and handwriting performance (Kosiewicz, Hallahan, Lloyd & Graves, 1982) have been successfully mediated using self-instruction training with LD students.

Self-instruction training, also called self-statement modification, has been applied effectively to interpersonal behaviour as well as paper-and-pencil tasks (Dush, Hirt & Shroeder, 1989). Dush et al. (1989) performed a meta-analysis of 48 outcome studies that applied self-statement modification to childhood behaviour disorders. They reported that collectively, self-statement modification outcomes surpassed no treatment and placebo

treatments by approximately one half of a standard deviation, when all measures used with these children were averaged. According to Dush et al. (1989), this is lower than the range of aggregate performance of psychotherapy observed in other meta-analyses. It was noteworthy, however, that measures of anxiety, produced the largest effect (.92). Dush et al. (1989) suggested that although the objective of self-statement modification was to help these children improve a specific target behaviour, it also appeared to help them to cope better with stress and anxiety. It is possible, then, that the success of self-instruction with LD students is at least in part due to the reduction of the negative impact of stress and anxiety. In addition, when comparing treatment procedures, Dush et al. (1989) found self-statement modification was most effective when it was combined with other techniques such as behavioural rehearsal, imagery, relaxation training, problem-solving training, role-playing, and group discussion. They concluded that self-statement modification treatment outcomes may be improved if it is augmented with other techniques. It would appear that SIT, which integrates various cognitive skills and relaxation skills with other therapeutic techniques holds more promise for alleviating the negative stress reactions than the training of individual skills.

Johnson (1986) argued, for those youths who have difficulty managing stress, the training of various cognitive and behavioural coping strategies as part of an intervention package would likely have a positive impact in terms of alleviating the negative consequences of stress reactions. When one considers the stress-evoking failures LD individuals face each day of their lives, their demonstrated domains of deficit, and their tendency to exhibit high trait anxiety, SIT may be a valuable approach for teaching LD adolescents a variety of cognitive and behavioural skills for coping with stress.

CHAPTER III

METHOD

The purpose of this study was to assess the effects of a stress inoculation training program on learning disabled students' anxiety, self-esteem and frustration expression as compared to a skills only stress management training program and no training at all. Based on the review in Chapter Two of the experimental designs utilized in previous stress inoculation training research a 3(group) X 3(occasions) repeated measures factorial design was employed (see Appendix F).

Subjects

Selection Criteria. Participants selected for the study were junior high-school students who had been identified as severely learning disabled in accordance with provincial guidelines (see Appendix A). These students were reported to have a history of learning problems, and to have received specialized help throughout the elementary grades. All students were presently receiving assistance in the Career Education for the Learning Disabled (CELD) resource room.

In order to protect confidentiality of SLD students, diagnostic records could not be obtained and consistent procedures used for the identification of the SLD students under question cannot be assured. As such, homogeneity of participants cannot be assumed. Despite this constraint, assurances were given by school district personnel regarding the identification of each student as severely learning disabled and students were described by their teachers as experiencing emotional problems in coping with the demands at the high school level.

Description. Fifteen students, one female and fourteen males, attending the same junior high school in Surrey, British Columbia, participated in this study. The school served students from a variety of backgrounds for grades eight, nine, and ten. Participants ranged in age from 14 years, 3 months to 16 years, 3 months, with a mean age of 15 years and 1 month. Table 1 outlines characteristics of students in three treatment groups.

Instruments

Beitchman and Corradini (1988) reviewed research concerning problems inherent in using the traditional teacher and parent rating scales to assess various aspects of children's psychological lives. The potential effects of reporter bias and the diversity of child behaviour in different environments were cited as major sources of variance that contribute to sizable differences in data derived from parent and teacher reports. Because of the limitations of teachers and parents as informants, they concluded, it is probable that children would be better able to describe their own behaviour and report on their internal feelings in different situations than would external observers such as their parents and teachers. Based on this conclusion and because participants were in their teens, self-report questionnaires were used as dependent measures rather than parent and teacher reports.

Selection Criteria for the standardized self-report questionnaires selected as dependent measures consisted of three components: (1) they were reported as having reliability and validity for assessing either anxiety, self-esteem, or frustration expression; (2) the wording was suitable for junior high school students; and (3) the method of organizing the questions and response options was user friendly for SLD individuals.

TABLE 1

Characteristics of Students in the Study

Group	Subject #	Age (yr.) ^a	Sex	Grade Placement
SIT	1	15.10	M	8/9
SIT	2	14.8	F	8
SIT	3	14.5	M	8
SIT	4	15.6	M	9
SIT	5	14.25	M	8
SO	6	16.17	M	10
SO	7	16.00	M	10
SO	8	16.25	M	10
SO	9	15.6	M	9
SO	10	15.5	M	9
NT	11	15.3	M	9
NT	12	14.25	M	8
NT	13	14.8	M	8
NT	14	14.50	M	8
NT	15	15.25	M	8/9

Note: SIT is the Stress Inoculation Training Group

SO is the Skills Only Group

NT is the No Treatment Group

a MEAN AGE; SIT - 14.9; SO - 15.9; NT - 14.8

The State-Trait Anxiety Inventory-Form Y (STAI) (Spielberger, 1983) is a self-report measure of anxiety. It consists of two 20-item scales designed to assess anxiety as an emotional state (S-Anxiety) and individual differences in anxiety proneness as a personality trait (T-Anxiety). The S-Anxiety Scale evaluates immediate feelings of apprehension, tension, nervousness, and worry. The T-Anxiety Scale assesses how people generally feel and evaluates the relatively stable individual differences in anxiety-proneness.

In the manual for the STAI, Spielberger (1983) reported the median test-retest reliability coefficients for the T-Anxiety and S-Anxiety scales for high school students as .695 and .468, respectively. The relatively low stability coefficients were expected for the S-Anxiety scale because a valid measure of state anxiety should reflect the influence of unique situational factors that exist at the time of testing. The internal consistency for both the T-Anxiety and S-Anxiety scales for the Form Y, however, are quite high with overall median alpha coefficients of .92 and .90 respectively in the normative data. Spielberger also examined evidence supporting the construct, convergent, divergent, and concurrent validity of the STAI scales. The T-Anxiety scale appears to be a valid measure of trait anxiety showing good correlations with other self-report measures of anxiety (i.e., IPAT Anxiety Scale .75 & TM Anxiety Scale .80) and the S-Anxiety scale seems sensitive to changes in perceived stress under positive and negative conditions.

The STAI has been used to evaluate process and outcome in counselling, psychotherapy, relaxation training, biofeedback, and behavioural and cognitive treatments in over three hundred studies since 1970 (Mitchell, 1985). Researchers have found the inventory can be readily administered to individuals aged thirteen and older because the key words in most of the STAI items are at the sixth-grade reading level or below. To ensure that the STAI was suitable for SLD junior high school students five such students who were not subjects in this study were asked to rate IPAT Anxiety, TM Anxiety and STAI

scales as to user friendliness. All ranked the STAI as the best for readability and format. The IPAT Anxiety scale format was considered too confusing and the TM Anxiety too difficult to understand and too long (55 items).

The Coopersmith Self-Esteem Inventory-School Form (SEI) (Coopersmith, 1981) is one of the best known self-concept scales for use with individuals aged 10 and older (Beitchman & Corradini, 1988). The SEI consists of 58-items: 50 self-esteem items and 8-items that constitute the Lie Scale, the latter measuring a student's defensiveness or test wiseness. The self-esteem items yield a total score and separate scores for four subscales to measure attitudes toward self in general, social, academic and personal contexts. Coopersmith (1981) reported an overall reliability coefficient of .80 and evidence supporting the construct, convergent, divergent, and concurrent validity of the SEI. The SEI appears to be a valid measure of self-esteem showing significant correlations with other self-report measures of self-concept such as the Piers-Harris Children's Self-Concept Scale.

In studies of self-concept, the SEI consistently differentiated between learning disabled and normally functioning adolescents (i.e. Omizo, Amerikaner & Micheal, 1985; Rosenberg & Gaier, 1977) with learning disabled students scoring below the average scores obtained by normally functioning students. Since the SEI appears to be suitable for LD adolescents and was deemed user friendly by five SLD students who were not subjects in this study, the inventory was selected as the measure of global self-esteem.

The Rosenzweig Picture-Frustration (P-F) Study-T (Rosenzweig, 1981) is referred to as a semi-projective instrument because it is assumed as a basis for P-F Study scoring that the examinee projects his or her own bias in the replies given. The P-F Study is used for assessing patterns of response to everyday stress that are of widely recognized importance in both normal and abnormal adjustment by adolescents. The P-F Study consists of a series of 24 cartoon-like pictures, each depicting two figures involved in a

commonly occurring, socially frustrating situation. The figure on the left of each item is shown making a statement that either frustrates the figure on the right or points out an already existing frustration. The person to the right is always shown with a blank caption box above. The subjects are instructed to examine the situations one at a time and to provide the first reply of the figure to the right that enters their mind. Three types and three directions of aggression are assessed serving as the basis for the empirical scoring of responses. The P-F Study yields a measure of individuals' frustration tolerance and their ability to socially conform when they may impulsively be inclined to behave otherwise.

Rosenzweig, (1978) reported that the interscorer reliability of the P-F Study has been shown repeatedly to be high (around 85%) because it is scored more objectively than other projective techniques. The retest reliability of the P-F Study varies, but in general, correlations are statistically significant. While none of the reported investigations involving construct, criterion-related or pragmatic validity examined in Rosenzweig and Rosenzweig (1976) yielded overwhelming evidence, the cumulative results supported the overall validity of the P-F Study as a method of assessing responses to everyday situations of frustration.

To ensure that the P-F Study was suitable for administration to SLD junior high school students, five such students who were not subjects in this study were asked to assess the instrument as to user friendliness. All found the P-F Study understandable. The blank caption boxes, however, were deemed unsuitable in size for responses. A response sheet more appropriate for SLD students was designed to avoid the censoring that may occur when space is limited or responses are given orally (see Appendix B).

For information on the availability of the above standardized measures see Appendix B.

The Group Participation Evaluation Form (GPEF) was designed to investigate how group members evaluate their level of participation during the training sessions (Appendix B). The group participation evaluation form consists of fourteen questions that requires the students to assess their behaviour in the group on a seven point scale (1 not true of me to 7

very true of me), adapted from one developed by Johnson (1993, pp 79-80). Although the language was simplified, the essence of the questions were retained. The questionnaire yields two scores on the individuals' expression of trust within the group. Each score is based on seven questions: (1) Trusting, assesses members' openness to ideas and information, and their willingness to share ideas and resources; (2) Trustworthy, evaluates participants' willingness to express acceptance, support, and cooperative intentions to other group members. On either scale, trusting or trustworthy, an individual can score a maximum of 49 and a minimum of 7. If individuals score 35 or over on the trusting or the trustworthy scale, they are classified as being trusting or trustworthy and if they score under 35 as being distrustful or untrustworthy (Johnson, 1993).

Johnson (1993) suggested that an essential aspect of group therapy effectiveness is the development of a high level of trust among group members because the more members trust each other, the more effectively they will work together. In order to assess the trust relationships among group members, data from the group participation evaluation form was collected. The students were asked to rate how they perceived their own and the other group members behaviour during the training sessions. The data gathered from the group participation evaluation form was divided into two categories: (1) self-perception of trust behaviours; and (2) the perceptions of other group members of an individuals' trust behaviours. The rating scores used for the second category were derived by computing the averages for the ratings of the other group members assigned to a particular participant. The GPEF was included in this study for the purpose of exploring a possible relationship between self-perceived behaviour and that observed by others, and the level of participation and training outcomes.

Finally, two types of responses were collected for the program evaluation. First The Group Evaluation Questionnaire (GEO) was devised to investigate how each member experienced and evaluated the training sessions (Appendix B). The nine questions included in the questionnaire were designed to explore what techniques were helpful and what

aspects of the group were least helpful adapted from sample questions suggested by Corey and Corey (1992). The evaluation of the interventions was included for the purpose of improving the design of future groups. Second, the completed questionnaire then formed the basis for the guided debriefing interview script based on information in Merriam (1988) outlined in Appendix B. Corey and Corey (1992) suggested it was difficult to assess the process and outcomes of group therapy by empirical procedures alone. Statistical measures of change may not be adequate to detect subtle changes in attitudes, beliefs, feelings, and behaviour. Since statistical measures are not designed to elicit information on the effectiveness of the various techniques that may be used in the group therapy program Corey and Corey (1992) recommended a short individual follow-up interview be conducted.

Procedure

Fifteen severely learning disabled students were recruited from the Career Education for the Learning Disabled (C.E.L.D.) program at a junior high school in the District of Surrey, British Columbia. Consent was sought from both the school principal and the C.E.L.D. teachers. During the recruitment presentations, the purpose and goals of the study were explained to all potential participants. While participation in the study was voluntary, commitment until completion was emphasized. Interested students were given a copy of the student information sheet and consent form along with a verbal explanation of content. A letter of information and consent form was then sent to the parents/guardians of the prospective participants. Written consent from both students and parents/guardians was required (see Appendix C).

Participants were divided into three groups of five subjects according to their high school timetables, since some of the students' C.E.L.D. blocks were rotated with elective

courses at semester break immediately before the study began. Each group was then randomly assigned one of the three treatment conditions: Stress Inoculation Training (SIT); Skills Only (SO); or No Treatment (NT). All participants were administered the State-Trait Anxiety Inventory-Form Y, the Coopersmith Self-Esteem Inventory-School Form, and the Rosenzweig Picture-Frustration Study-T one week before, one week after, and eight weeks following the last session. The time lapse for follow-up testing fell within the parameters (6 to 10 weeks) recommended by Morganett (1990) when working with adolescents in a group therapy format.

The researcher was responsible for all steps in the data collection and lead all the group sessions. Ideally this research would have been carried out by group leaders who were not aware of the study's hypotheses. However, such resources were not available. Although training was not knowingly varied to influence results, possible confound related to having the same leader for both groups has been noted. All testing and training sessions took place in a separate room from the C.E.L.D. resource centre to ensure a setting free from distraction.

Pretest Procedure

Group-administered assessments were conducted for all participants one week before the training sessions commenced to establish baseline data for anxiety, self-esteem, and frustration expression. All the assessment measures were administered in three groups of five during their respective tutorial blocks. Examinees were given three options: (1) to write their own responses; (2) to have their responses scribed; or (3) to tape record their responses. All the students chose to respond in written form to the test items and completed the pre-test measures within forty-five minutes.

The State-Trait Anxiety Inventory-Form Y (STAI) (Spielberger,1983) was used to measure anxiety. The STAI designed to be self-administering and may be given either

individually or to groups without time limits. In responding to the STAI S-Anxiety scale, examinees blacken the number on the standard test form to the right of each item statement that best describes the intensity of their feelings at that moment: (1) not at all; (2) somewhat; (3) moderately so; (4) very much so. In responding to the T-Anxiety scale, examinees are instructed to indicate how they generally feel by rating the frequency of their feelings of anxiety on the following four-point scale: (1) almost never; (2) sometimes; (3) often; (4) almost never. The students were asked to read the directions silently while the examiner read them aloud to give them an opportunity to raise questions as suggested by Spielberger (1983). Upon the request of the students and their apparent varied reading levels, each item was read aloud with response time in between. Students were encouraged to respond to all the items and the inventories were checked for compliance as they were collected.

The Coopersmith Self-Esteem Inventory-School Form (SEI) (Coopersmith, 1981) was used to measure self-esteem. The SEI may be administered to groups or individually. In responding to the 58 items the examinee indicates either "like me" if the item describes how they usually feel, or "unlike me." Instructions were read aloud as the students followed along on their inventory booklets allowing them an opportunity to raise questions. They then completed the practice item provided on the front of the booklets. Once it was certain that all the students understood the task each item was read aloud with response time in between, as suggested by Coopersmith (1981) for groups who may have difficulty reading the items. Students were encouraged to respond to all the items and the inventories were checked for compliance upon collection.

The Rosenzweig Picture-Frustration (P-F) Study-T (Rosenzweig, 1981) was used to measure frustration expression. The P-F Study may be administered to groups or individually. In responding to the series of 24 cartoon-like pictures the examinees were asked to enter their replies on the provided answer sheet rather than the leaflet. The instructions on the front page of the leaflets were read aloud as the students followed along, allowing them the opportunity to raise questions. They then completed the first item in the

leaflet. Once it was certain that all the students understood the task, each item was read aloud with response time in between, as suggested in Rosenzweig (1978). Students were encouraged to respond to all the items and the response sheets were checked for compliance upon collection.

Intervention Procedures

Program Development. Stress coping training programs developed by Meichenbaum (1977, 1985) and Morganett (1990) were combined to generate a program manual for eight one-hour group training sessions. The general structure of the sessions and skills training sequence is outlined in Appendix D. Each of the stress and self management skills included in the training program (see Appendix D) were assessed as effective stress reduction techniques by Wexler (1991) based on information from research and practitioners.

Physical and mental relaxation were addressed through progressive muscle relaxation and thematic imagery exercises. The script for the progressive muscle relaxation exercise was adapted from Cautela and Groden (1978, pp. 22-30). The script for the thematic imagery exercise was adapted from Morganett (1990, pp. 119-121). Cognitive restructuring was approached through a "self-instruction" exercise using positive self-coping statement handouts and worksheets and a "reframing of mistakes" exercise based on information provided by Meichenbaum (1977, 1985). Stressor rating scales adapted from Morganett (1990, pp. 110-111) and handouts depicting a cycle of social interaction modified from Johnson (1993, p. 5) were used to create awareness of the type of stimuli as well as the contextual situations that may elicit the stress response from individuals. To provide the SIT group with graded exposure to stressful situations, two sets of role play vignettes were adapted from Vernon (1989, pp. 133).

Setting: Training sessions for the acquisition and controlled practice of the stress and self-management skills were held in a room with a door that could be closed and locked so group members were not overheard, in keeping with the confidentiality issue of group therapy. Group members sat in a circle including the leader's chair so that group members were able to see one another clearly to promote group cohesion and encourage them to direct their comments to one another.

Interventions: While the NT group received only the pre/post/follow-up measures, the SO and SIT groups received identical procedures and protocol outlined in Appendix D. Training on the acquisition and controlled practice of stress and self-management skills took place over eight sessions of 55 minutes meeting once a week. During the initial session the ground rules for group interaction were established as outlined in Appendix D. In the following sessions both groups were provided with a rationale, a description, and an opportunity to practice each skill. The introduction of each new skill was followed by a discussion on when and where it could best be used in the reduction of the stress response.

In addition, the SIT group received instruction on the transactional theory of stress and coping. They were made aware of the transactional nature of stress and coping and how their reactions contribute to and maintain stress relationships. They were explicitly educated about the cognitive, physiological, and behavioural components of anxiety, the antecedents of their anxiety, and the concept that anxiety consists of several stages rather than a single overwhelming response. They were taught to recognize the antecedents for their anxiety, how to insert coping skills in the chain between the antecedent stimuli and previously automatic emotional responses. For refining, applying, and generalizing they practiced their new coping skills in increasingly stressful situations through role plays.

Posttest Procedures

One week after the last session, posttest measures were administered to all the participants in the same manner as in the pretest procedures. The students took an average of forty minutes to complete the same questionnaires administered at pretest. In addition, the SO and SIT treatment groups were asked to complete group participation evaluation forms rating their and the other members' behaviour during the group sessions. The instructions were read aloud to the students and once it was certain that all of them understood the task each item for the self-evaluation was read aloud with response time in between. The students then completed the same evaluation form for each of the other group members at their own pace. Students were encouraged to respond to all the items and the response sheets were checked for compliance upon collection.

Follow-up Procedures

During the eighth week following the last session all participants were administered the State-Trait Anxiety Inventory-Form Y, the Coopersmith Self-Esteem Inventory-School Form, and the Rosenzweig Picture-Frustration Study-T in the same manner as in the pre- and post-test procedures. The students completed all questionnaires within forty minutes. In addition, the SO and SIT treatment groups were asked to complete group evaluation questionnaires and a fifteen to twenty minute debriefing interview to investigate their attitudes towards the group process and the stress and self-management skills taught in the experimental conditions. The instructions for the questionnaire were given orally to students and once it was certain that all of them understood the task, each question was read aloud with time for written responses in between. The students completed the evaluation questionnaires in ten to twelve minutes.

During the debriefing interview the students were asked to elaborate on their feelings and experiences arising from the group, review their progress towards the personal

goals they had set in the first session, and remark on the appropriateness of the skills for stress reduction. Their comments were recorded as accurately as possible by the interviewer on the evaluation forms. All were encouraged to continue using the skills most effective for them.

Upon completion of the study, each student was thanked for his or her participation and refreshments were served.

Scoring Procedures

After all the data was collected and scored, a random sample of approximately twenty percent of each dependent measure and the group participation evaluation forms was scored by another graduate student. Interrater agreement percentages were: .994 for the State-Trait Anxiety Inventory-Form Y; .987 for the Coopersmith Self-Esteem Inventory-School Form; .965 for the Rosenzweig Picture-Frustration Study-T; and 1.0 for the group participation evaluation forms.

CHAPTER IV

RESULTS

The results of this study are reported in three sections. In the first section, findings related to the hypotheses will be presented. In sections two and three, additional findings related to the evaluation of the efficiency of stress inoculation training in bringing about positive changes in learning disabled adolescents are reported. The second section, includes supplementary correlational and regression data related to the dependent measures and experimental conditions. Finally, in the third section, results from the participation and group evaluation questionnaires will be described.

Section 1- Findings as related to hypotheses

This study examined the differences of treatment effects on three groups: no treatment, skills only, and stress inoculation training. In Table 2, the means and standard deviations for the state and trait anxiety, global self-esteem, group conformity rating, and general stress coping index scores, for each group at pre-treatment are reported. The general stress coping index scores were derived by adding the state and trait anxiety, global self-esteem, group conformity rating, scores for each subject. Preliminary one-way analyses of variance were performed on the scores for the stress coping index and each of the dependent measures obtained at pre-testing. No statistically reliable differences were found among the three groups for the general stress coping index ($F(2, 12) = 2.89, p > .05$), state anxiety ($F(2, 12) = .09, p > .05$), trait anxiety ($F(2, 12) = 1.5, p > .05$), global self-esteem ($F(2, 12) = 3.12, p > .05$), and group conformity ratings ($F(2, 12) = .20, p > .05$). These findings indicate that the groups were equivalent in their self-reported levels of state and trait anxiety, global self-esteem, group conformity ratings, and general

TABLE 2

Means and Standard Deviations for the Dependent Measures
and the General Stress Coping Index Scores at Pre-Test

Dependent Measures	Experimental Conditions					
	SIT (N=5)		SO (N=5)		NT (N=5)	
	M	SD	M	SD	M	SD
State Anxiety ^a	51.40	(11.06)	51.40	(6.35)	53.60	(10.11)
Trait Anxiety ^a	53.20	(5.07)	59.40	(7.09)	53.60	(6.69)
Global Self-Esteem ^b	47.20	(9.65)	43.20	(7.95)	61.20	(16.53)
Group Conformity Ratings ^c	8.00	(4.30)	7.20	(1.89)	6.90	(1.34)
General Stress Coping Index ^d	159.80	(12.91)	161.20	(6.41)	175.30	(13.20)

^aMinimum possible score = 20 and maximum possible score = 80

Expected mean for highschool students = 40 with a standard deviation of 10

^bA maximum possible total score = 100

Expected mean for highschool students = 68 with a standard deviation of 11 Maximum

^cA maximum possible total score = 18

Expected mean for highschool students = 9.8 with a standard deviation of 2.0

^dGeneral Stress Coping Index scores are derived by adding the scores for each subjects on State and Trait Anxiety, Global Self-Esteem, and Group Conformity Ratings.

Note: SIT is the Stress Inoculation Training Group.

SO is the Skills Only Group.

NT is the No Treatment Control Group.

TABLE 3

Correlation Matrix of Dependent Measures, Treatment Conditions, and Test Occasions for All the Participants*

Variables	Dependent Measures		
	State Anxiety	Trait Anxiety	Global Self-esteem
Trait Anxiety	0.781		
Global Self-Esteem	-0.477	-0.666	
Group Conformity Rating (GCR)	-0.372	-0.298	-0.008

*r's ≥ 0.297 , $p < .05$

copied with stress at the beginning of training. Since no group differences were found on the pretest scores for any of the measures utilized and the same psychometric measures were administered on all three occasions, a 3 (treatments) by 3 (occasions) repeated measures analysis of variance was used to analyze the data collected for the general stress coping index scores and each of the dependent variables. When results were significant only those contrasts based on the a priori predictions made for the study were investigated to limit the error rate to an acceptable level (Howell, 1982). The level of significance was set at .05 (two tailed) in all cases. In addition, it should be noted that using data derived from such small subject populations may have implications on the validity of the statistical analyses of that data. Myers (1987) suggested that the validity of statistical analysis with data collected from less than thirty subjects may be affected, since the power of the statistical tests used is reduced. This reduction in power increases the probability of type II errors, which occur when the intervention really did have an effect, but the statistical tests fail to detect it.

The a priori predictions regarding the effectiveness of stress inoculation training (SIT) as a method for teaching stress self-management techniques were:

1. That LD students trained in stress management techniques will show greater reductions in anxiety and improvements in self-esteem and frustration expression than LD students not taught stress management techniques.
2. That LD students taught stress management techniques using the SIT approach will show greater reductions in anxiety and improvements in self-esteem and frustration expression than LD students taught the same techniques excluding the SIT conceptual framework.
3. That the improvement in scores for anxiety, self-esteem and frustration expression will be maintained better at follow-up testing for LD students taught stress management

skills using the SIT approach than those taught the same skills excluding the SIT conceptual framework.

General Stress Coping Index

Murphy and Davidshofer (1991) stated that composite scores are typically more reliable than the scores of the individual tests that make up the composite particularly if the scores obtained on the tests are highly correlated. They contended that highly correlated tests represent independent observations of similar or of the same attributes, therefore, the more highly correlated the scores on the tests, the higher the reliability of the sum of those tests. Spielberger (1983) reported that researchers found significant positive relationships between the state and trait portions of the State-Trait Anxiety Inventory and that there appeared to a significant inverse relationship between state and particularly trait anxiety and general self-esteem measures. The correlation matrix presented in Table 3 demonstrates a fairly large amount of intercorrelation among the scores on the tests used to measure the students ability to cope with stress. Thus, the sum or composite of those scores represent a more reliable indicator of the students' general coping with stress than the scores on the tests which make up the composite. The composite or general stress coping index scores was used here as an indicator of between group similarities or differences in general coping with stress.

In Table 4 the means and standard deviations for the general stress coping index scores for each group, across occasions, are reported. The analysis of variance for repeated measures for these scores showed significant main effects for treatment ($F(2, 24) = 10.04$, $p < .05$) and occasion ($F(2, 24) = 7.78$, $p < .05$). The interaction between treatment and occasion was not significant. The general stress coping index scores for the students in this study differed as a result of the type of treatment they received and when the tests were administered. Since as previously stated, no significant differences in general stress coping

TABLE 4

Means and Standard Deviations for
the General Stress Coping Index Scores Across Assessments^a

Occasions	Experimental Conditions							
	COMB (N=10)		SIT (N=5)		SO (N=5)		NT (N=5)	
	M	SD	M	SD	M	SD	M	SD
Pretest	160.50	(9.64)	159.80	(12.91)	161.20	(6.41)	175.30	(13.20)
Posttest	159.60	(7.76)	159.80	(1.72)	159.50	(11.51)	177.00	(12.13)
Follow-up	149.55	(6.50)	150.50	(7.80)	148.60	(5.64)	171.50	(3.42)

^a General Stress Coping Index Scores are derived by adding the scores obtained on the Dependent Measures.

Note: COMB is the combined data for the SIT and SO groups.

SIT is the Stress Inoculation Training Group.

SO is the Skills Only Group.

NT is the No Treatment Control Group.

index scores were found at pre-test for the three treatment groups, the post and follow-up general stress coping index scores were further analyzed.

The analyses of variance indicated that there were significant differences between groups for general stress coping index scores at post ($F(2, 12) = 5.36, p < .05$) and at follow-up ($F(2, 12) = 23.01, p < .05$) testing. Comparison t-tests showed that the combined general stress coping index data of the subjects trained in stress management was significantly different from the students who received no training at post ($t(13) = -2.92, p < .05$) and follow-up ($t(13) = -8.53, p < .05$). When the two training groups were analyzed separately, the stress inoculation training group did not significantly differ from the skills only group on either post ($t(8) = 0.04, p > .05$) or follow-up testing ($t(8) = 0.44, p > .05$). These findings indicate that stress management training affected the scores obtained on the dependent measures at post and follow-up testing, however, there was no significant difference in the effect of the two training approaches. To investigate the effects of training condition in more detail, each dependent measure was analyzed separately.

Anxiety Measures

Scores on the trait anxiety (T-Anxiety) scale of the State-Trait Anxiety Inventory are a measure of anxiety at the given moment of examination. In Table 5 the means and standard deviations for the state anxiety scores for the no-treatment (NT), skills only (SO), and the stress inoculation training (SIT) groups are reported. The state anxiety curves for the three groups are presented in Figure 1. These data indicate that all three groups suffered from higher means of state anxiety than the expected mean of 40 (SD 10) for their age level. Both stress management training groups exhibited greater overall reductions in self-reported state anxiety than the no-treatment group. In addition, the stress inoculation training approach had a greater influence in decreasing state anxiety than the same techniques taught without the SIT framework at follow-up testing.

TABLE 5

Means and Standard Deviations for State Anxiety
Across Assessments^a

Experimental Conditions						
Occasions	SIT (n=5)		SO (n=5)		NT (n=5)	
	M	SD	M	SD	M	SD
Pretest	51.40	(11.06)	51.40	(6.35)	53.60	(10.11)
Posttest	42.00	(2.92)	43.20	(6.42)	53.00	(8.22)
Follow-up	32.80	(4.97)	38.00	(6.44)	46.40	(4.16)

^aMinimum possible score = 20 and maximum possible score = 80

Expected mean for highschool students = 40 with a standard deviation of 10

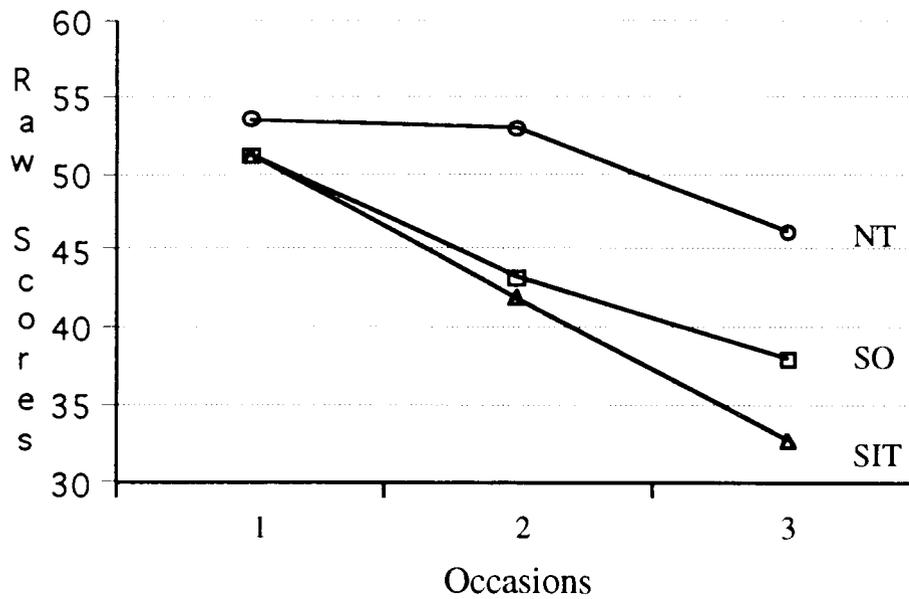
Note: SIT is the Stress Inoculation Training Group.

SO is the Skills Only Group.

NT is the No Treatment Control Group.

Figure 1

State-Anxiety Curves Across Assessments^a



^a Minimum possible score = 20 and maximum possible score = 80
 Expected mean for highschool students = 40 with a standard deviation of 10

Note: SIT is the Stress Inoculation Training Group.
 SO is the Skills Only Group.
 NT is the No Treatment Control Group.

TABLE 6

Means and Standard Deviations for Differences Between
the State Anxiety Scores Across Pre to Post and
Follow-up Testing, and Between Post to Follow-up Testing

Mean Differences	Experimental Conditions							
	COMB		SIT		SO		NT	
	MD	SD	MD	SD	MD	SD	MD	SD
Pre-post	8.80**	(6.80)	9.40	(10.01)	8.20*	(1.64)	0.60	(3.85)
Pre- Follow-up	16.00**	(9.96)	18.60*	(12.72)	13.40*	(6.66)	7.20	(7.53)
Post- Follow-up	7.20**	(5.61)	9.20*	(4.27)	5.20	(6.53)	6.60	(7.09)

t-Values for Differences Between
the State Anxiety Scores Across Pre to Post and
Follow-up Testing, and Between Post to Follow-up Testing

Comparisons	Experimental Conditions			
	COMB	SIT	SO	NT
Pre-Post	t = 4.10**	-	t = 11.16*	-
Pre Follow-up	t = 5.08**	t = 3.27*	t = 4.50*	-
Post Follow-up	t = 4.06**	t = 4.82*	-	-

* Obtained correlated t-test values exceeded t (4) value = 2.776, $p < .05$

** Obtained correlated t-test values exceeded t (9) value = 2.262, $p < .05$

Note: COMB is the combined data for the SIT and SO groups.
SIT is the Stress Inoculation Training Group.
SO is the Skills Only Group.
NT is the No Treatment Control Group.

The analysis of variance for repeated measures for state anxiety scores revealed only a main effect for occasion ($F(2, 24) = 23.47, p < .01$) with declines for all three groups. Comparison t-tests using the combined state anxiety data of the subjects trained in stress management showed that the trained subjects reported significantly lower scores than the students who received no training at post ($t(13) = 2.62, p < .05$) and at follow-up ($t(13) = 4.11, p < .05$) assessments. When the state anxiety scores for the two training groups was analyzed separately, the stress inoculation training group did not significantly differ from the skills only group on either post ($t(8) = 0.72, p > .05$) or follow-up testing ($t(8) = 1.43, p > .05$).

To gain more specific information as to the actual reductions from one assessment to the next, the state anxiety differences scores from pre to post to follow-up testing were investigated. The state anxiety differences scores were derived by subtracting each subject's pre-test score from the post-and follow-up scores, and the post score from the follow-up score. These differences scores represent the changes in state anxiety reported by the subjects from one test occasion to another. It should be noted that some texts, such as Murphy and Davidshofer (1991), have contended that differences scores tend to have low reliability. On the other hand, others have suggested that differences scores may provide valuable information as to treatment effects when subjects are measured before and after an intervention (Huck, Cormier, & Bounds, 1974).

In Table 6 the means, standard deviations, and t-values for the state anxiety differences scores for each group are reported. As indicated by the t-values in Table 6, correlated t-tests for repeated measures using the combined data of the subjects trained in stress management showed significant reductions in S-Anxiety from pre to post and follow-up as well as from post to follow-up testing. When the data for the stress inoculation training and the skills only groups were analyzed separately, significant reductions in S-Anxiety were found from pre and post to follow-up assessment for the SIT group and from pre to post and follow-up testing for the SO group. The SO group

experienced a significant reduction immediately after training whereas the SIT group experienced significant reductions from the end of training to follow-up testing. For the no-treatment group the differences scores for S-Anxiety were not significant at any level.

Scores on the trait anxiety (T-Anxiety) scale of the State-Trait Anxiety Inventory are a measure of the frequency and intensity of stress reactions which reflect the individual's general feelings of anxiety. The means and standard deviations for the trait anxiety scores are given in Table 7 and the trait anxiety curves for the three groups are illustrated in Figure 2. These data show that the three treatment groups exhibited higher trait anxiety means than expected for their age level (mean = 40, SD 10). There are declines in trait anxiety for both the stress inoculation training and skills only subjects at post and follow-up testing. No changes in the no-treatment control subjects' self-reported trait anxiety seem evident.

The analysis of variance for repeated measures for T-Anxiety scores resulted in a main effect for occasion ($F(2, 24) = 35.24, p < .05$), and a significant interaction between groups and occasion ($F(4, 24) = 9.16, p < .05$), indicating that the groups were differentially affected by the various treatments. Comparison t-tests showed that the trained subjects did not report significantly lower T-Anxiety scores than the students who received no training at post-test ($t(13) = .52, p > .05$). The trained students, however, reported significantly lower T-Anxiety than the untrained subjects at follow-up testing ($t(13) = 3.48, p < .05$). When the data for the two training groups was analyzed separately, the T-Anxiety scores for the stress inoculation training group were significantly lower than the skills only group ($t(8) = 3.02, p < .05$) immediately after training. At follow-up testing there was no significant difference between the two training ($t(8) = 1.50, p > .05$). These results indicate that both training groups reported less T-Anxiety than the no-treatment group at follow-up assessment but the T-Anxiety reductions appear to have been achieved at different rates. In an attempt to gain more specific information as to these different rates of reduction, the differences between the trait anxiety scores from pre to post to follow-up testing were also analyzed for each experimental condition.

TABLE 7

Means and Standard Deviations for Trait Anxiety
Across Assessments^a

Experimental Conditions						
Occasions	SIT (n=5)		SO (n=5)		NT (n=5)	
	M	SD	M	SD	M	SD
Pretest	53.20	(5.07)	59.40	(7.09)	53.60	(6.69)
Posttest	47.80	(3.03)	57.60	(6.58)	54.60	(6.54)
Follow-up	40.00	(3.81)	44.60	(5.27)	53.60	(6.35)

^aMinimum possible score = 20 and maximum possible score = 80

Expected mean for highschool students = 40 with a standard deviation of 10

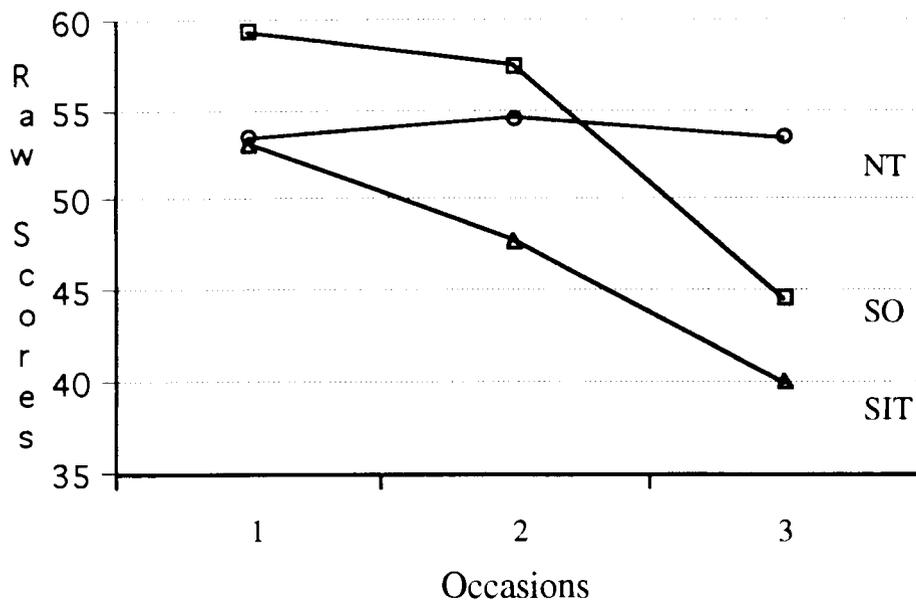
Note: SIT is the Stress Inoculation Training Group.

SO is the Skills Only Group.

NT is the No Treatment Control Group.

Figure 2

Trait-Anxiety Curves Across Assessments^a



^a Minimum possible score = 20 and maximum possible score = 80
 Expected mean for highschool students = 40 with a standard deviation of 10

Note: SIT is the Stress Inoculation Training Group.
 SO is the Skills Only Group.
 NT is the No Treatment Control Group.

TABLE 8

Means and Standard Deviations for Differences Between
the Trait Anxiety Scores Across Pre to Post and
Follow-up Testing, and Between Post to Follow-up Testing

Mean Differences	Experimental Conditions							
	COMB		SIT		SO		NT	
	MD	SD	MD	SD	MD	SD	MD	SD
Pre-post	3.60**	(2.55)	5.40*	(2.30)	1.80*	(1.10)	1.00	(1.87)
Pre- Follow-up	14.00**	(6.53)	13.20*	(4.21)	14.80*	(8.00)	0.00	(1.41)
Post- Follow-up	10.40**	(6.24)	7.80*	(2.29)	13.00*	(6.53)	1.00	(2.65)

t-Values for Differences Between
the Trait Anxiety Scores Across Pre to Post and
Follow-up Testing, and Between Post to Follow-up Testing

Differences	Experimental Conditions			
	COMB	SIT	SO	NT
Pre-Post	t = 4.47**	t = 5.24*	t = 3.67*	-
Pre Follow-up	t = 6.78**	t = 7.02*	t = 3.78*	-
Post Follow-up	t = 5.27**	t = 6.78*	t = 3.63*	-

** Obtained correlated t-test values exceeded t (9) value = 2.262, $p < .05$

* Obtained correlated t-test values exceeded t (4) value = 2.776, $p < .05$

Note: COMB is the combined data for the SIT and SO groups.
SIT is the Stress Inoculation Training Group.
SO is the Skills Only Group.
NT is the No Treatment Control Group.

In Table 8 the means, standard deviations, and t-values for the trait anxiety differences scores for each group are provided. As indicated by the t-values in Table 8, there were significant reductions in T-Anxiety from pre to post and follow-up and post to follow-up testing for the combined training data. These results were also found for both training conditions when the reductions in T-Anxiety for the stress inoculation training and the skills only group were analyzed separately. There were no significant changes found in T-Anxiety for the no-treatment group at any level. Further analyses showed that SIT group experienced a significantly greater reduction in T-Anxiety than the SO group from pre to post-testing ($t(8) = 3.16, p < .05$). The two training groups, however, did not differ significantly in T-Anxiety reductions from before training to follow-up testing ($t(8) = 0.37, p > .05$) nor from post to follow-up assessments ($t(8) = 1.38, p > .05$).

Self-Esteem Measure

Because of the low number of items that contributed to the individual scales, only the total or global self-esteem and lie scale scores were used from the Coopersmith Self-esteem Inventory-School Form (SEI). A maximum score of 8 is possible on the lie scale. A high score (5 or above) on the lie scale may indicate that the subjects responded defensively or thought they understood the "intention" of the inventory and were attempting to respond positively to all items. In such instances, the inventory results may be invalid (Coopersmith, 1981). Since none of the subjects tested scored above 4 on the lie scale the data collected from the inventory can be considered a valid measures of global self-esteem.

For the SEI, high scores correspond to high self-esteem and the normative distributions are skewed in the direction of high self-esteem. The means and standard deviations for the global self-esteem scores are provided in Table 9 and the self-esteem curves for the three groups are presented in Figure 3. These data indicate that at the beginning of the study the global self-esteem means for both training groups were lower

than the no-treatment group mean and one standard deviation or more below the expected mean of 68 (SD 11) for high school students. All three treatment groups show improvements in self-concept at post and follow-up testing. Both stress management training groups showed greater gains in self-esteem than the no-treatment group. In addition, the subjects taught through the stress inoculation training approach improved more than those taught the same techniques without the SIT framework.

The analysis of variance for repeated measures for global self-esteem scores revealed a main effect for occasion ($F(2, 24) = 19.17, p < .05$) with improvements for all three groups. There also was a significant interaction between treatment and occasion ($F(4, 24) = 3.04, p < .05$), indicating that the groups were differentially affected by the various treatments. Comparison t-tests for the combined self-esteem data of the subjects trained in stress management found no significant differences between the trained and untrained subjects at post or follow-up testing. When the self-esteem scores for the two training groups were analyzed separately, the stress inoculation training group did not significantly differ from the skills only group on either post or follow-up assessment. Since the group comparisons do not appear to explain how they were differently affected by the treatments they received, the self-esteem data for each group was analyzed separately using analysis of variance for repeated measures. Results indicated that only the SIT group reported significant changes in self-esteem across occasions ($F(2, 12) = 7.39, p < .05$). To ascertain more specific information into these gains of self-esteem the differences between self-esteem scores from pre to post to follow-up testing were also analyzed for each experimental condition.

Table 10 gives the means, standard deviations, and t-values for the global self-esteem differences for each group. Comparison t-tests showed that the trained subjects experienced significantly greater gains in self-esteem than the untrained students from pre to post and follow-up testing ($t(13) = 3.44, p < .05$) and ($t(13) = 2.25, p < .05$) respectively. In addition, the t-values in Table 8 indicate that there were significant

TABLE 9

Means and Standard Deviations for Global Self-Esteem
Across Assessments^a

Experimental Conditions						
Occasions	SIT (n=5)		SO (n=5)		NT (n=5)	
	M	SD	M	SD	M	SD
Pretest	47.20	(9.65)	43.20	(7.95)	61.20	(16.53)
Posttest	61.20	(6.42)	49.60	(12.03)	63.20	(14.32)
Follow-up	68.80	(10.45)	57.20	(11.54)	65.20	(7.50)

^aA maximum possible total score = 100

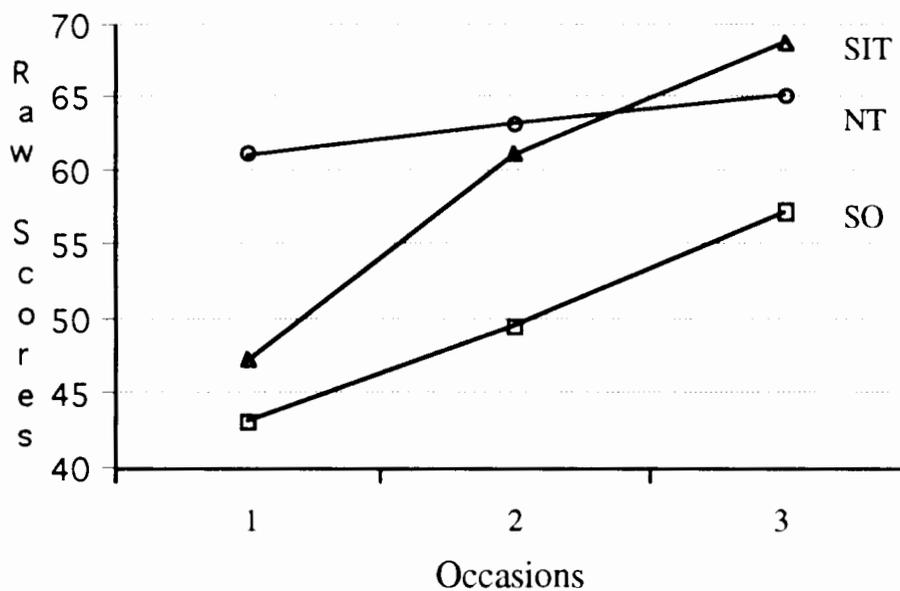
Expected mean for highschool students = 68 with a standard deviation of 11

Note: SIT is the Stress Inoculation Training Group.

SO is the Skills Only Group.

NT is the No Treatment Control Group.

Figure 3

Self-Esteem Curves Across Assessments^a

^aA maximum possible total score = 100

Expected mean for highschool students = 68 with a standard deviation of 11.

Note: SIT is the Stress Inoculation Training Group.
 SO is the Skills Only Group.
 NT is the No Treatment Control Group.

TABLE 10

Means and Standard Deviations for Differences Between
the Global Self-Esteem Scores Across Pre to Post and
Follow-up Testing, and Between Post to Follow-up Testing

Mean Differences	Experimental Conditions							
	COMB		SIT		SO		NT	
	MD	SD	MD	SD	MD	SD	MD	SD
Pre-post	10.20**	(6.70)	14.00*	(4.69)	6.40	(6.54)	2.00	(2.45)
Pre Follow-up	17.80**	(10.00)	21.60*	(6.99)	14.00	(11.83)	4.00	(11.75)
Post- Follow-up	7.60**	(7.65)	7.60*	(5.90)	7.60	(9.84)	2.00	(9.38)

t-Values for Differences Between
the Global Self-Esteem Scores Across Pre to Post and
Follow-up Testing, and Between Post to Follow-up Testing

Differences	Experimental Conditions			
	COMB	SIT	SO	NT
Pre-Post	t = 4.82**	t = 6.67*	-	-
Pre Follow-up	t = 5.63**	t = 2.88*	-	-
Post Follow-up	t = 3.14**	t = 6.91*	-	-

** Obtained correlated t-test values exceeded t (9) value = 2.262, $p < .05$

* Obtained correlated t-test values exceeded t (4) value = 2.776, $p < .05$

Note: COMB is the combined data for the SIT and SO groups.
SIT is the Stress Inoculation Training Group.
SO is the Skills Only Group.
NT is the No Treatment Control Group.

improvements in global self-esteem from pre to post and follow-up, and post to follow-up testing for the combined data and the stress inoculation training group but not the skills only or no-treatment subjects.

Frustration Expression

Rosenzweig (1978) refers to the Group Conformity Rating as an index of examinees ability to tolerate frustration and conform with their normative group when they might impulsively be inclined to behave otherwise. GCR scores indicate the degree to which the responses of the examinees on the P-F Study correspond with to those typically given by their normative group in similar situations. Rosenzweig suggests that GCR scores within one standard deviation above or below the expected mean for the examinees age group are considered as falling within the normative range. A GCR score above the normative range, may indicate that the individual turns frustration inward, lacks assertiveness and self-criticizes more than others in the same age group. A GCR score below the normative range, on the other hand, may reflect the subject's tendency to express frustration outwardly and a general asocial adjustment as compared with the normative sample for that age group (Rosenzweig, 1978).

In Table 11 the means and standard deviations for the Group Conformity Rating scores are reported and the GCR curves for the three groups are presented in Figure 4. An examination of the Group Conformity Rating data indicates that at the beginning of the study, the three treatment groups exhibit mean Group Conformity Ratings just within or below the normative range (9.8+/-2.0 or 7.8 to 11.8) for high school students. The SIT group means appear to move closer to the expected mean with a decrease in the standard deviations from pre to post and follow-up testing, whereas, the SO group regresses towards the mean at post-test to come within the normative range and then falls slightly at

follow-up testing. The no-treatment group GCR mean scores seem relatively unchanged remaining below the normative range across assessments.

The analysis of variance for repeated measures of the GCR data produced no significant main effects for time ($F(2, 24) = 0.60, p > .05$) or treatment ($F(2, 24) = 1.88, p > .05$), and no significant interactions ($F(4, 24) = 0.83, p > .05$) between factors. Since no significant effects are evident, no further statistical analyses were conducted on the GCR scores for the three treatment groups. Presented in Figures 5, 6, and 7 are the individual GCR scores for each participant in each group across assessments. Figure 5 shows that before training none of SIT group members scored within the normative range with four falling below and one scoring well above. Immediately after training two SIT members moved within the normative range and by follow-up testing four of the five SIT trainees scored within the normative range. The GCR scores of four of the members in the SIT group moved closer to or within the normative range with each time of testing, whereas, in Figure 6 that pattern is evident for only one SO group member (S8). Of the other four SO group members: one (S7) had GCR scores that were almost the same at each time of testing; one (S6) regressed within the normative range from pre to post-assessment and then moved above the normative range at follow-up testing; and two (S9 & S10) had GCR scores that fluctuated up and down across assessments. The NT individual GCR scores, presented in Figure 7, also fluctuate across assessments with four or all five of the scores falling below the normative range on each occasion. The descriptive look at the responses to frustrating situations reported by the subjects across occasions shows it is possible that the additional component of the SIT framework may facilitate learning disabled adolescents to cope with frustration in a more age appropriate manner.

TABLE 11

Means and Standard Deviations for Group Conformity Ratings
Across Assessments^a

Experimental Conditions						
Occasions	SIT (n=5)		SO (n=5)		NT (n=5)	
	M	SD	M	SD	M	SD
Pretest	8.00	(4.30)	7.20	(1.89)	6.90	(1.34)
Posttest	8.70	(2.49)	9.10	(3.17)	6.20	(1.26)
Follow-up	8.90	(1.56)	8.80	(2.64)	6.20	(0.76)

^aA maximum possible total score = 18

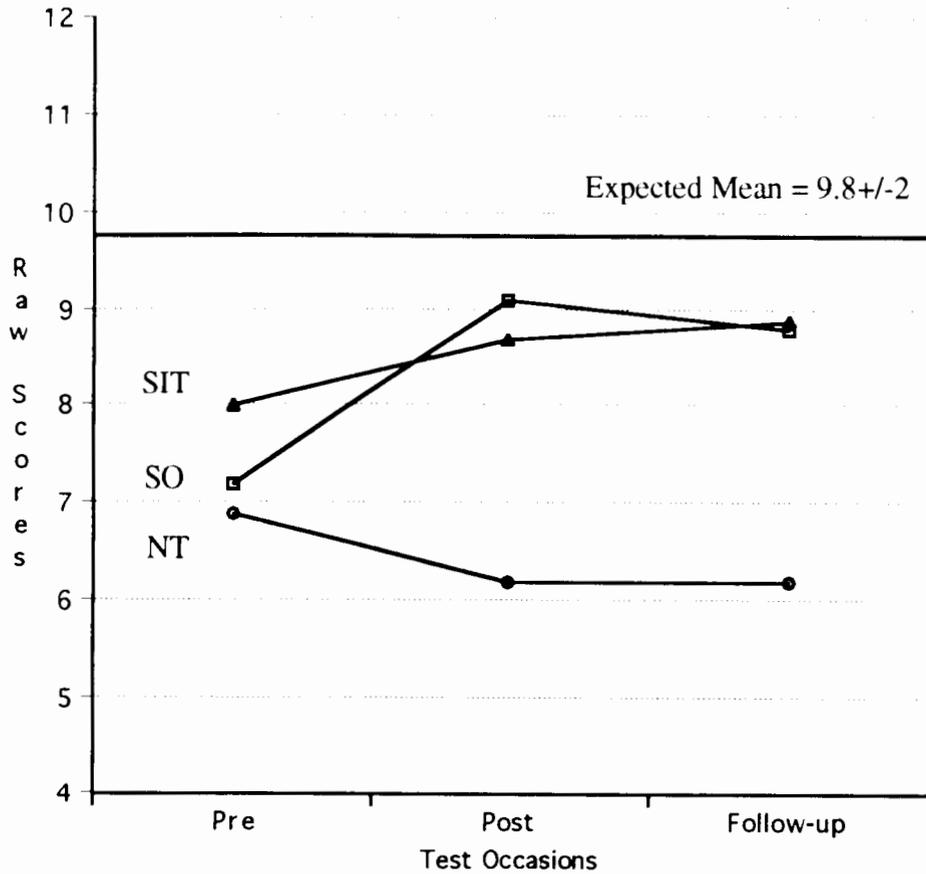
Expected mean for highschool students = 9.8 with a standard deviation of 2.0

Note: SIT is the Stress Inoculation Training Group.

SO is the Skills Only Group.

NT is the No Treatment Control Group.

Figure 4

Group Conformity Rating Curves Across Assessments^a

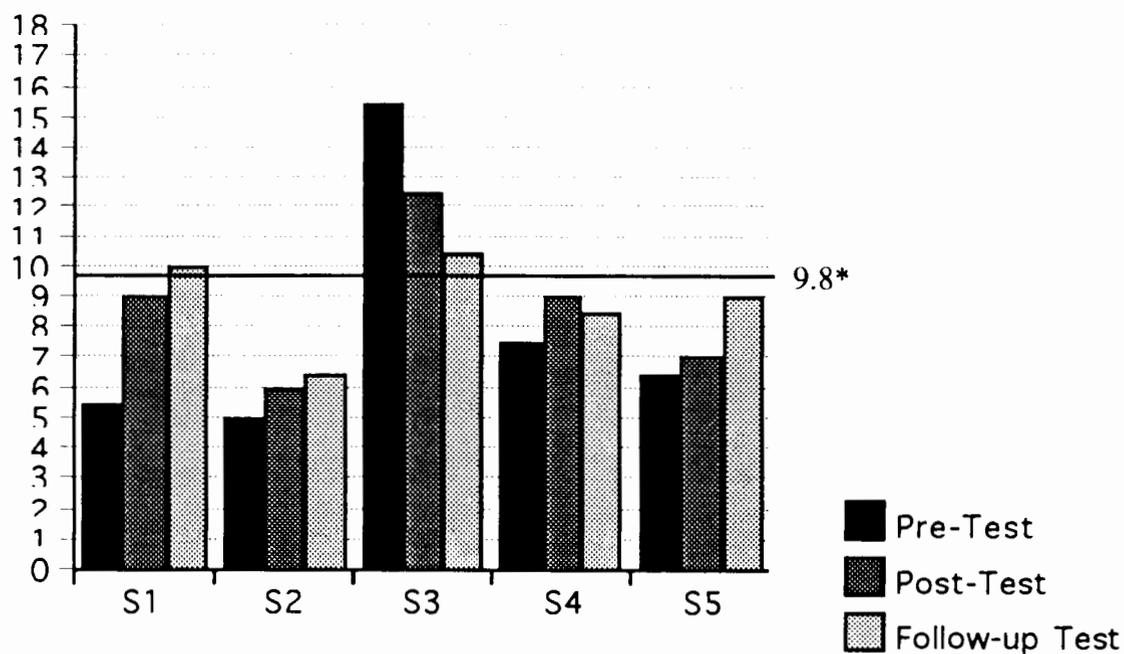
^aMaximum possible total score = 18

Expected mean for highschool students = 9.8 with a standard deviation of 2.0

Note: SIT is the stress Inoculation Training Group.
 SO is the Skills Only Group.
 NT is the No Treatment Control Group

Figure 5

Pretest, Posttest, and Follow-up Group Conformity
Rating Scores for Each of the Stress Inoculation Training Subjects^a

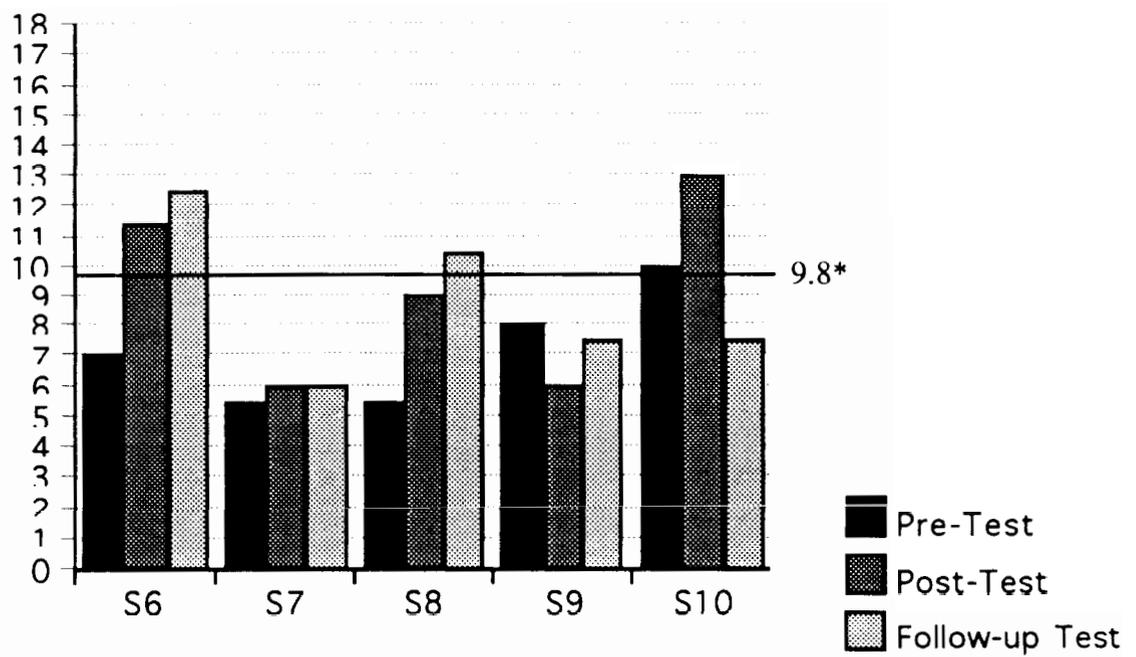


^aMaximum possible total score = 18

*Expected score for highschool students = 9.8 with a standard deviation of 2.0

Figure 6

Pretest, Posttest, and Follow-up Group Conformity Rating Scores for Each of the Skills Only Subjects^a

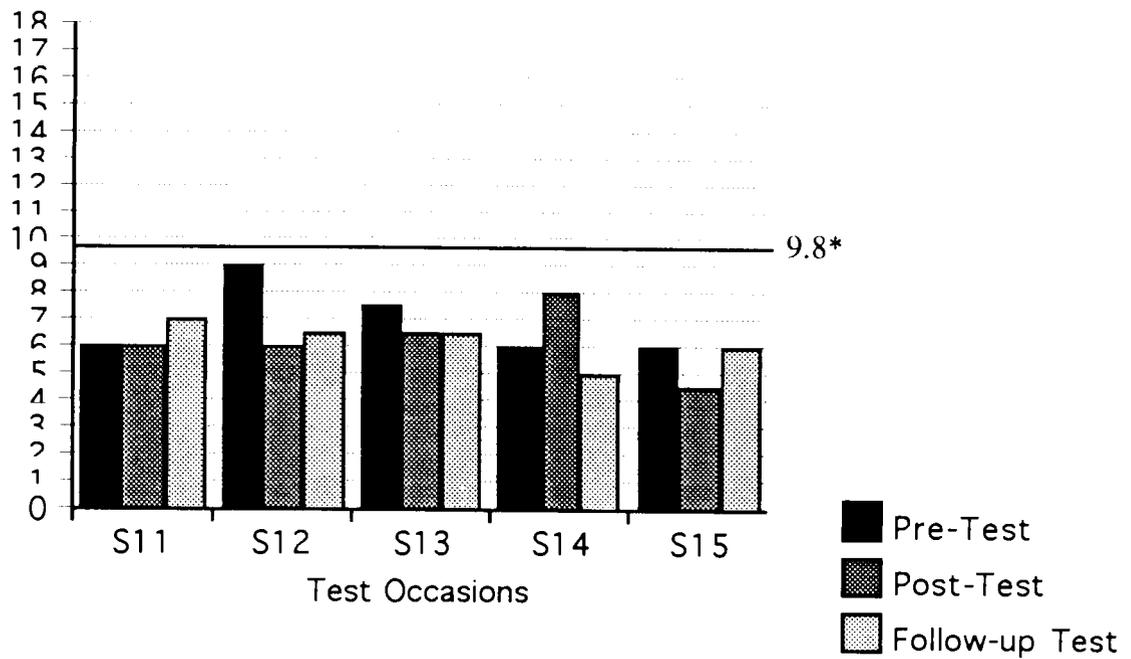


^aMaximum possible total score = 18

*Expected score for highschool students = 9.8 with a standard deviation of 2.0

Figure 7

Pretest, Posttest, and Follow-up Group Conformity
Rating Scores for Each of the No Treatment Subjects^a



^aMaximum possible total score = 18

*Expected score for highschool students = 9.8 with a standard deviation of 2.0.

Section 2- Correlations and Regressions

Although, neither correlational nor the multiple regression analysis can establish causality, they can provide additional information regarding the relationships between anxiety, self-esteem, frustration expression, time of testing, and treatment conditions. Correlational data gives direct clues as to the degree to which two variables are interrelated or the degree of association present between two variables; and regression equations specify a linear relationship that can be used to predict individual scores on one variable from the knowledge of the other (Edwards, 1984).

Correlations

The correlation matrix presented in Table 12 demonstrates a fairly large amount of intercorrelation among the dependent measures. The scores of the participants on the state and trait portions of the State-Trait Anxiety Inventory are significantly correlated (.781, $p < .05$). Significant negative relationships are evident between global self-esteem and both state and trait anxiety (-.477 and -.666, respectively; $p < .05$). Findings also show significant relationships between group conformity ratings (GCR) and state and trait anxiety (-.372 and -.298, respectively; $p < .05$) but no significant relationship between GCRs and global self-esteem.

The correlation coefficients presented in Table 12 also reveal significant relationships between treatment conditions and both anxiety measures and group conformity ratings. The results of further analyses, seen in Table 13, show that these relationships increased in strength from being not significant at pretesting to significant at follow-up testing. This progression indicates that the relationships between the type of treatment the subjects received and the anxiety levels and group conformity ratings reported

TABLE 12

Correlation Matrix of Dependent Measures, Treatment Conditions, and Test occasions for All the Participants*

Variables	Dependent Measures			
	State Anxiety	Trait Anxiety	Global Self-esteem	GCR
Trait Anxiety	0.781			
Global Self-Esteem	-0.477	-0.666		
Group Conformity Rating (GCR)	-0.372	-0.298	-0.008	
Treatment Conditions	0.387	0.361	0.130	0.355
Test Occasions	-0.566	-0.486	0.415	0.102

*r's ≥ 0.297 , $p < .05$

TABLE 13

Correlations Between Treatment Condition and Anxiety and Group Conformity Measures
Across Assessments

Time of Testing	Dependent Measures		
	State Anxiety	Trait Anxiety	Group Conformity Rating
Pretest	0.106	0.026	0.175
Post-test	0.603	0.427	0.403
Follow-up	0.758	0.756	0.537

Note: $r's \geq .3044$, $p < .05$

TABLE 14

Correlations Between Dependent Measures and Test Occasions for Each of the Three Treatment Groups

Conditions	Dependent Measures		
	State Anxiety	Trait Anxiety	Global Self-esteem
SIT	-0.763	-0.826	0.732
SO	-0.688	-0.694	0.514
NT	-0.378	0.000	0.135

$r's \geq .5139, p < .05$

Note: SIT is the Stress Inoculation Training Group.

SO is the Skills Only Group.

NT is the No Treatment Control Group.

by the participants become stronger across assessments. In addition, results of the correlational analyses shown in Table 12 indicate significant relationships between the time of testing and three of the dependent measures. The negative correlation coefficients for both state and trait anxiety scores and time of testing (-.566 and -.486, respectively; $p < .05$), signify the presence of a negative relationship between the measures for anxiety and time of testing. Since the relationship is negative, the levels of state and trait anxiety reported by the participants appear to have decreased across assessments. Self-esteem, on the other hand, is positively related to time of testing (.415, $p < .05$), indicating that scores on the global self-esteem measure increased across assessments.

To determine if the significant relationships between the dependent measures for anxiety and self-esteem with test occasions, shown in Table 12, held true for each of the three experimental conditions, the data were analyzed separately for each group. The results of the analysis are presented in Table 14. The correlation coefficients for the three dependent measures and time of testing are significant ($p < .05$) for both groups trained in stress management but not for the subjects who received no training. The intervening experiences of the members of the training groups during the times between test occasions are significantly related to reductions in state and trait anxiety and gains in self-esteem scores on the respective self-report measures. The intervening experiences of the untrained subjects between times of testing, however, are not significantly related to similar reductions or gains on the dependent measures for anxiety or self-esteem. The correlation coefficients reported in Table 14, also suggest that the relationships between anxiety reductions and self-esteem gains across assessments are stronger for the stress inoculation training than the skills only group.

Regressions

The correlation matrix presented in Table 12 demonstrates a fairly large amount of intercorrelation among the dependent measures, as well as correlations between dependent measures, test occasions, and the type of treatment the subjects received. Because of the presence of correlated measures, the data were examined further using regression analysis. Regression analysis allows for a more systematic investigation of the effect treatment conditions may have had on the scores obtained by the subjects on the dependent measures. Simply looking at the effect of treatment conditions on the attained scores on each of the dependent measures, however, would ignore the possible impact of other variables, such as time of testing. Multiple regression on the other hand, provides the opportunity to examine the simultaneous effects of several variables (Edwards, 1984). Although, multiple regression does not in itself establish a causal ordering of variables it does provide the following information: (a) the possible effects of several variables at once and which ones significantly influence the dependent variable being regressed, and (b) it summarizes how much of the variation in that dependent measure is explained by this set of variables.

A regression analysis was performed on the results for each of the four dependent measures state anxiety, trait anxiety, global self-esteem, and group conformity ratings. The data sets included scores attained on each of the other three dependent measures and times of testing. The variables that had no significant ($p < .05$) effect on the dependent measure being regressed were then omitted, which left the variables and the patterns of relationships presented in the left-hand columns of Tables 15,16, and 17 under Regression 1.

Next, treatment condition was added to these lists of variable to see if it has any separate effect on the dependent measure being examined. The results are reported in the right-hand columns under Regression 2 in each Table respectively. The path coefficients (betas) indicate the relative effect of each variable on the dependent measure in question (Edwards, 1984).

TABLE 15

Regression Analysis of Factors Affecting
State Anxiety ($p \leq .05$)

Variables	Path Coefficients (betas)	
	Regressions	
	1	2
Trait Anxiety	.80	.70
Test Occasion	-2.82	-3.29
Treatment Condition	-	2.06
R ² (Squared multiple correlation)	.66	.68

TABLE 16

Regression Analysis of Factors Affecting
Trait Anxiety ($p \leq .05$)

Variables	Path Coefficients (betas)	
	Regressions	
	1	2
State Anxiety	.50	.38
Global Self-Esteem	-.23	-.29
Treatment Condition	-	2.37
R ² (Squared multiple correlation)	.72	.77

TABLE 17

Regression Analysis of Factors Affecting
Global Self-Esteem ($p \leq .05$)

Variables	Path Coefficients (betas)	
	Regressions	
	1	2
Trait Anxiety	1.10	-1.36
Treatment Condition	-	6.77
R ² (Squared multiple correlation)	.44	.60

As shown in Table 15 under Regression 1, the variables that affect state anxiety are trait anxiety and time of testing. The path coefficients (betas) reveal that time of testing has the biggest effect (beta = -2.82), followed by trait anxiety (beta = .80). The minus sign with the coefficient for test occasion indicates that state anxiety decreased consecutively over times tested. This is consistent with the finding that state anxiety and time of testing were negatively correlated. The squared multiple correlation (R²) at the bottom of Table 15 denotes that these two variables account for 66 percent of the variance for self-reported state anxiety. In the next step when treatment condition is added to the two variables it does appear to have a separate effect on self-reported state anxiety. The Regression 2 in Table 15 shows that the effect of treatment condition (beta = 2.06, $p < .05$) on state anxiety is less than test occasion but greater than trait anxiety. Treatment condition also adds two percent to the amount of the variance accounted for in state anxiety, indicating that treatment

condition has a separate effect on state anxiety from the other two variables. Thus, the type of treatment received appears to have a significant effect on the participants' state anxiety scores.

The variables that affect trait anxiety are state anxiety and global self-esteem, reported in Table 16 under Regression 1. The path coefficients (betas) show that state anxiety has the greatest effect ($\beta = .50$), followed by global self-esteem ($\beta = -.23$). The minus sign with the coefficient for global self-esteem indicates that those who exhibit higher trait anxiety tend to have lower self-worth. This is consistent with the previous finding that trait anxiety and global self-esteem were negatively correlated. The squared multiple correlation (R^2) at the bottom of Table 16 indicates that these two variables account for 72 percent of the variance for self-reported trait anxiety. When treatment condition is added to the two variables the Regression 2 in Table 16 shows that the effect of treatment condition ($\beta = 2.37, p < .05$) on trait anxiety is greater than either state anxiety or global self-esteem. Treatment condition also increases the amount of the variance accounted for in self-reported trait anxiety from 72 percent to 77 percent indicating that treatment condition has a separate effect on trait anxiety from the other two variables. Results indicate that the type of treatment received has a significant effect on the participants' trait anxiety scores.

The regression 1 in the left-hand column in Table 17, shows that the only variable that significantly affects global self-esteem is trait anxiety ($\beta = -1.10$). Consistent with the previous finding that global self-esteem and trait anxiety were negatively correlated there is a minus sign with the path coefficient for trait anxiety. From the subjects tested, those with lower levels of trait anxiety tended to score higher on the global self-esteem measure. The R^2 at the bottom of Table 17 indicates that trait anxiety accounts for 44 percent of the variance for self-reported global self-esteem. When treatment condition is added to the regression analysis the effect of treatment condition ($\beta = 6.77, p < .05$) on global self-esteem is greater than trait anxiety shown in the Regression 2 in Table 17.

Treatment condition also increases the amount of the variance accounted for in self-reported global self-esteem from 44 percent to 60 percent indicating that treatment condition has a separate effect on global self-esteem from trait anxiety. The type of treatment received, therefore, seems to have a significant effect on the participants' scores on the global self-esteem measure.

The results of the multiple regression analysis for the group conformity rating data show that none of the variables including state anxiety, trait anxiety, global self-esteem, or test occasion significantly contributed to the regression equation. In addition, this set of variables only accounts for 21 percent of the variance for the group conformity ratings. After those variables are omitted and treatment condition is regressed as a single variable the path coefficient ($\beta = 1.05$) indicates that treatment condition accounts for 12.6 percent of the variance for the group conformity ratings.

In summary, the correlational data shows that for the stress management training group the relationships are stronger between the measures of global self-esteem, state and trait anxiety, and time of testing than for skills only and the no-treatment subjects. In addition, the regression data shows that knowing the type of treatment a subject received increased the amount of variance accounted for in the scores obtained on the self-report measures for global self-esteem, state anxiety, and trait anxiety scores. Therefore, the results from both the correlational and regression analysis indicate that the intervening experiences between times of testing had a greater influence on the self-reported anxiety and self-esteem scores for the stress management groups than the no special treatment control group.

Section 3- Participation and Program Evaluation

Two written questionnaires and a debriefing interview were administered only to the students in the stress inoculation training (SIT) and skills only (SO) conditions. The data collected provides quantitative as well as qualitative indications of the participants' opinions on group participation and stress management training.

Participation Questionnaire

The means and standard deviations for the self and other group members' assessed ratings of trusting and trustworthy behaviours are reported in Table 18. An inspection of the data shows that although both training groups rated their own and each other's behaviours during the sessions as distrustful and untrustworthy, the stress inoculation training group rated themselves more trusting and trustworthy with a smaller standard deviation than the skills only group. Further analysis using t-tests, however, found that there were no significant differences ($t > .05$) between the two groups' self rated trusting and trustworthy behaviours. There were also no significant differences between how the two groups rated each others trusting and trustworthy behaviours. The analysis for the combined data showed no significant differences between the participants' self-perceptions and the perceptions of others for both trusting and trustworthy behaviours. When the data for each group was analyzed separately, there were no significant differences between how the skills only group rated their own and each others trusting and trustworthy behaviours but there were significant differences between how the stress inoculation training group

TABLE 18

Means and Standard Deviations for Self and
Other Trusting and Trustworthy Ratings

Ratings	Experimental Conditions					
	COMB (N=10)		SIT (N=5)		SO (N=5)	
	X	SD	X	SD	X	SD
Self Perceptions						
Trusting	26.60	(7.81)	30.40	(4.04)	22.80	(9.20)
Trust Worthy	28.30	(6.62)	31.40	(5.37)	25.20	(6.76)
Perceptions of Others						
Trusting	22.70	(6.55)	23.80	(2.95)	21.60	(9.21)
Trust Worthy	23.20	(5.16)	23.80	(2.59)	22.60	(7.23)

*Note: COMB is the combined results of both training groups.
SIT is the Stress Inoculation group.
SO is the Skills Only group.

perceived their own and each others' trusting ($t(8) = 2.95, p < .05$) and trustworthy ($t(8) = 2.85, p < .05$) behaviours. These results indicate that the skills only group did not perceive their own trust behaviours differently from how others perceived their trust behaviours while the subjects in stress inoculation training condition either overestimated their own or underestimated each others' trust behaviours. Correlational analysis was used to investigate the possible relationships between trusting and trustworthy behaviours (self-perceived and as perceived by others) and the outcome measures utilized in this study.

The correlation coefficients for self and other rated trust behaviours for the combined data of the two training groups are presented in Table 19. An examination of the correlation coefficients shows that there is a significant positive relationship between self rated trusting and trustworthy behaviours (.684). There seem to be no significant relationships between how subjects rated themselves and how they were rated by others on both trust behaviour scales although the relationship between trusting and trustworthy behaviours as rated by others is even stronger (.946) than the self-ratings. Further correlational analysis using the combined data for self and other rated trust behaviours, the composite scores and the scores obtained on the dependent measures for anxiety, self-esteem, and group conformity ratings at pre, post and follow-up testing revealed an interesting pattern. Over half of the relationships between trust behaviours and the scores on the dependent measures and the general stress coping index increase in strength with successive testing although only the scores for state anxiety on the follow-up assessment were significantly inversely related (-.874) to self-perceived trustworthy ratings. To see if these findings held true across training conditions the data for each group was analyzed separately.

When the data for each group were analyzed separately, there were no significant relationships between how each training group rated their own trusting and trustworthy

TABLE 19

Correlations Between Self and Other Rated Trusting and Trustworthy Behaviour for the Combined Data of the Stress Inoculation Training and Skills Only Groups

	Trust Behaviours		
	Trusting Self	Trustworthy Self	Trusting Other
Trustworthy Self	0.684		
Trusting Other	0.549	0.282	
Trustworthy Other	0.457	0.210	0.946

Note: r 's $\geq .6319$, $p > .05$

behaviours (-.055 for SIT & .825 for SO). Significant relationships, however, were found between trusting and trustworthy behaviours as rated by others for both the SIT (.878) and the SO (.954) groups. Also there were no significant relationships between how subjects from either training group rated themselves and how they were rated by others on trusting and trustworthy behaviours.

The correlational analysis of the data for each group for self and other rated trust behaviours, the general stress coping index scores and the scores obtained on the four dependent measures at pre, post and follow-up testing resulted in only four of the over one hundred correlation coefficients generated falling into the significant range. There were

significant relationships between self rated trusting behaviours and the composite score at pre-test for the SIT condition (.89) and self rated trusting behaviours and the composite scores at post-test for the SO group (.88). The other two significant relationships were found between group conformity ratings at follow-up testing and other rated trusting (-.90) and trustworthy (-.92) behaviours for the SO subjects. In addition, the pattern observed for over half of the combined data correlational analysis where the relationships between trust behaviours and test scores increased in strength with successive testing was not present for either group. There was also no pattern in the correlation matrix indicating that either self or other rated trust behaviours were more strongly related to therapeutic outcomes as assessed by the dependent measures used in this study.

In summary, the results of the correlational analysis for the combined and individual group data appear to support Johnson's (1993) suggestion that trusting and trustworthy behaviours as perceived by others are related. The correlational analysis, however, provided no evidence that either self or other rated trust behaviours were related to therapeutic outcomes as assessed by the dependent measures used in this study.

Program Evaluation

The verbal responses in the program evaluation portion of the debriefing interview supplemented the written responses on the Group Evaluation Questionnaire. The information collected was therefore combined. In Table 20 a brief summary of the combined data for the program evaluation is presented.

TABLE 20

PROGRAM EVALUATIONS

Questions	Responses			
	SO (N-5)		SIT (N-5)	
	No	Yes	No	Yes
1. Did you find the group experience helpful?	1	4		5
2. Were the relaxation techniques of use to you?	1	4		5
3. Which of the relaxation techniques were most helpful?				
Techniques cited:				
Breathing exercise.		1		
Taped physical relaxation.		3		2
Taped thematic relaxation.				3
4. Which of the group activities did you find most helpful?				
Activities cited:				
Discussion.	1	4	1	4
Role plays (SIT only).			1	4
5. What recommendations do you have for improving the program you participated in?				
Recommendations generated:				
Less questionnaires and worksheets.		5		5
Have group at beginning of school year.		4		5
Increase number of sessions.		4		4
Have follow-up sessions.		4		4
Increase group size.				4
Modify physical relaxation script.		3		
Allow more time for discussion.		4		3
Add more and different role plays (SIT only).				4
6. Would you recommend the program to others?		4		5

Group Evaluation Form Responses

When the participants were asked in what ways, if any, the group experience had been helpful to them, both written and verbal comments centered on how stress management helped them keep calm, improve their relationship with others, and have a more positive attitude because they felt they were more in control of their own actions and reactions during stressful situations. Nine of the students felt that participating in the group had a positive influence in their life since they were less likely to be upset by little things than before, they were having more fun and getting into trouble less often. The taped relaxation exercises were rated by eight of the participants as the most useful stress reduction techniques presented during the sessions. More specifically, five of the eight students found the progressive muscle relaxation exercise most helpful and three found the thematic imagery relaxation most helpful. They went on to explain that by practicing the physical and /or the imaginal relaxation exercises they learned how to calm themselves down when they started to feel tense, angry or frustrated, to stay focused in stressful situations, and to think about their course action. One student in the SO group felt that the breathing exercise had been the most useful, since taking three deep breaths reminded him to relax and think before acting, while another member of the SO did not feel that any of the exercises had been useful to him. For most of the students it was important that they were able to exert some control over what happened to them under stressful situations.

To the question that asked the participants which skill covered in the group they had found least useful, five students responded, none, explaining that they could not say which if any had not been useful. Even though it had been explained to the students at the beginning of the study that the questionnaires were not part of the stress management training program but one method of assessing the programs utility, five participants rated

learning how to fill out the questionnaires as been the least useful skill because they already knew how to write tests. The majority of the students in both groups also cited filling out the questionnaires as the least valuable learning experience although two student enjoyed filling out the Rosenzweig Picture-Frustration (P-F) Study. The differences between the stress inoculation training and skills only methods of teaching the stress management skills were reflected in the responses to the questions that asked which of the group activities were most enjoyable and best learning experiences and how the sessions could be improved. The SO members generally rated the group discussions as the most enjoyable and most valuable learning experiences since they provided participants an opportunity to share ideas, compare problems, and brainstorm solutions. The SIT group, on the other hand considered the role plays as the most enjoyable and best learning experiences. Their comments centered around how the role plays were a fun way to try out new ways of acting, a safe way to try out different ways of handling a situation, and allowed them to practice new skills making it easier to do them in real life. One SIT member stated that he wasn't sure how he could actually be learning anything because he was having so much fun.

The final two items on the evaluation questionnaire elicited opinions on the group leaders performance and asked if the participants would recommend the stress management training group format to other learning disabled students. Eight of the students comments centered around the group leader being well informed and organized, and offered the opinion that the sessions had been generally well run. One student also added that the group leader needed help because marking all those questionnaires was too big a job for just one person. Two students stated that they could not rate the leaders' performance since they had never participated in group training sessions before and therefore had nothing to compare it to. To the last question, nine of the students indicated that they would recommend group stress management training to other learning disabled students because it had helped them with their problems group experience may help others as well. One

participant stated that although the training sessions had not been worthwhile for him it was possible that someone who had problems coping with stress may find the training useful.

Student Recommendations

In addition, during the debriefing interview students were asked how the stress management training program they received could be improved. All the subjects who were interviewed suggested that the number of questionnaires should be reduced or eliminated. Nine of the participants felt that the program should be offered at the beginning of the school year and eight proposed that without the questionnaires the actual number of working sessions could be increased from eight to ten to allow for more practice of new skills. They also recommended that monthly follow-up sessions should be held throughout the school year for progress reviews and discussing current problems. Other comments from students in the SO group focused on improving the progressive muscle relaxation script, providing extra sessions on communication and organizational skills, and having more time for discussion. The SIT subjects suggested that the group size could be increased to eight members and more time should be devoted to role plays specific to the problems members may be experiencing. Several of the SIT group members also provided topics such as dating, dealing with police officers, shyness, and being "picked on" by other students for future scenarios that could be added to the program.

Review of Personal Goals

In the initial session, participants set specific and realistic personal goals they wanted to achieve by the end of the group which are presented in Appendix E. As part of the debriefing interview the students were asked to review their goals and if they had made any strides towards reaching those goals.

SIT Group

S1 stated that although he had been able to resist going along with some of his friends' activities, by doing role plays in his head of the possible outcomes that may result from those actions, he still found it very hard to say no. He felt he had made some strides towards becoming his own person, but had to work on feeling more comfortable asserting his opinions with his friends before he actually reached his goal. S2 concluded he had met his original goal. By using his metal cue cards, he was able to stay calm and give a good oral presentation in his French class (he received an A). He had decided that since he was able to get through his French oral presentation, he now had a good chance of passing the French conversational test at the end of the course. He explained that he was practicing to stay calm by reminding himself to breathe and relax while conversing in French with one of the CELD teachers. He also found that three deep breaths helped him relax and stay calm so he could answer questions when called upon in class which made him feel more confident speaking in front of others. Therefore, he felt he was making progress towards his new goal, to express himself more freely in front of others. S3 found that by going to his special place using thematic imagery, he was able to work through the decision making process by sifting through his available options and weighing the possible consequences. He felt he had made some progress towards his goal but making decisions still did not come easy for him. He thought that, since he was gaining greater confidence in his own decision making process, the more he used it the better he would get at making decisions. S4 stated that by staying calm she was able to get involved in the conversation when she was with a group of people. She was very surprised that other people were interested in what she had to say and that it felt really good when someone listened to what you said. She found that it was a lot of fun talking with classmates and she was starting to make some new friends. She also felt she was becoming more assertive in expressing her feelings when she did not like something rather than bottling it up and getting frustrated. During the first session she did not think she could possibly reach her goal but now she was working

on asserting herself more at home and at school. The last SIT subject interviewed, S5 felt he had reached his goal, since by making himself relax and stay calm, he did not blurt out something silly or stammer when he met new people. He provided the example, that when a dignitary recently visited the organization he belongs to, he had made a good impression by being able to act as a tour guide. He also remarked that although it wasn't part of his goal, he was getting along better at school since when he thought more about what he was saying or how he was acting, other students did not seem to "pick on" him as much for being stupid or silly.

SO Group

The first member of the skills only group interviewed, S6, made it very clear that his improved attendance at school had nothing to do with the program but was a condition set by his father before he was allowed to get his learner's driving license when he turned sixteen. S6 did not feel that the group experience had been beneficial for him in any way because he did not have problems like the other group members. S7 reported that he felt he had met his goal since using the relaxation tape at bed time enabled him to control the racing thoughts that were going through his head and fall asleep. He was getting more uninterrupted sleep by telling himself to relax, which made it easier to get up in the morning and go to school. In addition, using his positive coping statement "At least I made it through the day, I did as much as I wanted to and that's OK" gave him a feeling of accomplishment at the end of the school day. By taking school one day at a time he felt he could complete his grade 10 requirements and go into the work experience program rather than quitting school when he turned sixteen. S8 stated that he had met his original goal by the fifth week of the program. Like S7, he used the relaxation tape at bed time for about two weeks and he was no longer wrestling to get to sleep. At the time of the interview he was averaging eight hours sleep per night. He also found that since he was getting more sleep, he was losing his temper less often, and he was now working on consciously

controlling his anger responses. He felt he had been making some progress since he had managed to stay calm by telling himself to relax and think about what he was going to say during his most recent visit to the vice principal's office. He felt there was still lots of room for improvement. S9 said that he had partially met his goal. By reminding himself to stay calm and relax he could answer factual based questions in class. However, questions that required him to give an explanation or an opinion were still very difficult for him.

Although he found it hard to tell himself to relax and to organize his thoughts at the same time, he felt he was improving, and with more practice, he would be able to do it. The final participant interviewed, S10, stated that he was conquering his fear of exams. By going to his safe place and physically relaxing, he was able to stay calm and remind himself to only look at one question at a time. If he did not know the answer, to put it aside and move on to the next one. He did not feel as overwhelmed and could focus more on the task at hand. He was very hopeful that he would pass math and science since he scored above seventy percent on several recent tests in both courses. He felt that he was developing a successful strategy for taking tests which would enable him to show his teachers how much he really knew and get better grades.

Although, none of the students cited self-instruction as the most helpful skill they had learned, when reviewing their progress towards their goals, most of them mentioned using self-statements to remind themselves to use whichever stress reduction technique was most effective for them. Self-instruction appears to be an important element in the successful application of effective coping strategies.

The overall results of the written questionnaire and debriefing interview indicate that students in both experimental groups had a positive opinion of stress management training, found the stress reduction techniques useful in accomplishing desired changes, and would continue using the skills they had learned in the future.

CHAPTER V

GENERAL DISCUSSION

This chapter summarizes the findings of the present study, and discusses their relationship to previous research and possible explanations. Limitations of this investigation are reviewed and recommendations for future stress inoculation training research with learning disabled adolescents are provided. It concludes with practical suggestions offered to counsellors and remedial instructors on how stress inoculation training, or elements thereof, may be helpful in addressing the maladaptive beliefs and coping behaviour underlying the learning disabled students' feelings of helplessness.

Summary and Integration of Results

This study sought to examine the effects of stress inoculation training on the anxieties, self-perceptions, and expressions of frustration of learning disabled adolescents. Analyses of these preliminary data confirm both the need for a stress management training intervention and the potential positive effects of such an intervention.

Learning Disabilities, Anxiety, and Self-esteem

Consistent with previous findings by researchers such as Jones (1985), Margalit and Zak (1984), and Patten (1983) the learning disabled adolescents in this sample, both experimental and control, were found to manifest higher levels of general anxiety and lower self-esteem than their peers. When compared to the high school norms provided by Spielberger (1983) for the State-Trait Anxiety Inventory the pre-treatment scores on the

state anxiety and trait anxiety scales on average ranked in the ninety-second and ninety-fourth percentiles respectively. These high rankings indicate that this group of students reported higher levels of state and trait anxiety than at least ninety percent of Spielberger's normative sample of high school students. For the norms established by Coopersmith (1981) for the Coopersmith Self-Esteem Inventory, the pre-treatment global self-esteem scores on average fell in the nineteenth percentile ranking for high school students. These low rankings indicate that the participants in this study reported lower levels of global self-esteem than eighty percent of the students used by Coopersmith (1981) as his normative sample. In addition, at pre-test the overall mean group conformity rating fell into the thirtieth percentile in the normative conformity rankings provided by Rosenzweig (1978). This conformity ranking indicates that these students responded similarly to Rosenzweig's normative sample of high school students only thirty percent time to the frustrating situations presented in the Rosenzweig Picture-Frustration Study. Rosenzweig (1978) contends that group conformity ratings below the fortieth percentile indicate a tendency towards impulsivity, outward expression of frustration, and a general asocial adjustment. The low overall mean group conformity rating implies that this group of LD students tended to react to frustrating situations inappropriately for their age. Therefore, these students would be less likely to foster positive relationships with others and be perceived as less socially competent than normal adolescents.

Consistent with profile of the LD adolescent proposed by Sabatino (1982), the present sample of LD students felt anxious, had limited feelings of self-worth, and responded impulsively in an age inappropriate manner to frustrating situations. These results also suggest that these students may lack the ability to self-generate effective coping and self-monitoring skills, deficits consistently linked with individuals with learning disabilities by Wong (1987,1989).

SIT, Anxiety, and Self-esteem

The stress inoculation training group showed significant improvements in trait anxiety and self-esteem from pre to post assessment while no significant improvements were made by their learning disabled controls. Also, a clear but not statistically significant trend of the group conformity ratings towards the normative range suggested that these students started to express their frustrations in a more age appropriate manner. This trend towards the normative range was not evident in the no-special-treatment group, indicating that SIT may have produced the changes rather than a natural regression to the mean. The students who participated in SIT began to function more like their normal peers in terms of trait anxiety, self-esteem, and expression of frustration. The post to follow-up data indicated significant improvements in state and trait anxiety, and self-esteem along with a continuation of the trend towards the normative range for expression of frustration. These findings suggest that the acquisition of cognitive restructuring and stress management skills may have enabled these students to cope in a more effective manner with negative events when they occurred, and that the impact of these events may have been subsequently lessened. While caution must be used in interpreting effects with such small numbers, the results give confirmation that stress inoculation training can enhance coping skills and contribute to healthy adjustment in learning disabled adolescents. These findings are consistent with previous SIT research in treating stress reactions that has been reported by Meichenbaum (1985a) and Meichenbaum and Deffenbacher (1988).

SIT vs. Conventional Skill Training

Research has shown that when learning disabled students are taught new skills and strategies using explanatory theoretical conceptualizations and models they are more likely to learn and generalize those skills and strategies (Dush et al., 1989; Margolis, 1990; Schumaker & Hazel, 1984a, 1984b; Shapiro, 1989). LD students taught stress

management skills using SIT should then not only learn but also generalize those skills. It was expected that they would show significantly greater improvements and maintenance of training gains at post- and follow-up testing than the students who were taught the same skills using conventional methods.

Immediately after treatment in terms of mean differences from pre- to post-treatment SIT also produced greater improvements in state and trait anxiety, self-esteem, and a stronger trend towards the normative group conformity range than conventional teaching methods. The SIT group showed significantly greater reductions in trait anxiety than conventional teaching methods and experienced significant gains in self-esteem not matched by the conventional teaching group. These results were in the expected direction and indicate that SIT may have a more immediate impact on enhancing the coping skills and feelings of self-worth than the conventional approach.

SIT emphasizes generalization by using role plays to practice the newly acquired skills in session and then in real life during increasingly stressful situations, while the conventional approach does not. This promotion of generalization should result in greater retention and application of coping skills reflected in a continuation of improvement trends once treatment has ended. The follow-up data indicated that students taught by either approach improved upon and /or maintained the treatment gains garnered over the treatment period. SIT produced significant improvements in state anxiety and self-esteem from post to follow-up assessments not found for the conventional teaching data. However, there were no significant differences between groups on any of the dependent measures. Contrary to expectation, SIT did not produce greater overall retention or generalization of coping skills than conventional teaching methods during the time between the last treatment session and follow-up assessment. These results indicate that in terms of lasting improvements neither of the stress management training approaches appears to be clearly superior over the other mode of intervention.

Explanation of Results

Subjects: The identification of severely learning disabled encompasses a wide range of specific learning problems and the diagnostic records are confidential. Thus, the groups could not be matched in accordance to their specific processing deficits, and the treatment effects may have been obscured by the heterogeneity of the sample. Furthermore, it may take some time for these students to generalize their new coping skills since learning disabled individuals tend to resist change and the eight week follow-up delay may have been insufficient to detect differential long term treatment effects.

The small sample size also may have played a role in the lack of significant differences between types of teaching approaches. The sample size was about half of that of most reported SIT outcome studies (e.g. Cecil & Forman, 1990; Jay & Elliott, 1990). Since the trends in the treatment effects were in the expected direction, an increase in sample size may have sufficiently increased the power of the statistical tests used to analyze the data to detect differential effects between treatment modalities.

Assessment procedures: The lack of significant differences between groups on the state anxiety scale may be explained in terms of the nature of the construct. State anxiety indicates the presence of anxiety that an individual is feeling at the time of assessment. Considering that the conditions under which the assessments were administered were identical for both groups, the students may have been experiencing similar levels of anxiety at the time of assessment, thereby obscuring differential treatment effects.

Assessment measures: Murphy and Davidshofer (1991) suggested that the process of completing an anxiety inventory could serve to increase a person's level of anxiety, thus, obscuring differential treatment effects. Murphy and Davidshofer (1991) also suggested that self-reports should not necessarily be taken at face value. For example, people who describe themselves as anxious and unable to cope may nevertheless exhibit appropriate coping behaviours in a variety of settings. Given that the assessment procedure focused on self-report data, this study design cannot rule out the possibility that the subjects

experienced treatment effects of which they were unaware or were not measured by the instruments used. Anecdotally, the CELD staff reported observing marked changes in behaviour in a number of the students such as remaining on task over longer periods, improved test taking skills, greater assignment completion, improved attendance, increased socialization, more assertiveness rather than aggressiveness, and a greater willingness to try different strategies.

Similarity in intervention: The existential theory on how to stay healthy under stress (Kobasa, Hilker, & Maddi, 1979) may help explain why no clear-cut differences between groups emerged. The existential theory of stress proposes that three personality dispositions allow individuals who willingly or unwillingly encounter great stress to remain healthy nonetheless: 1) they have a sense of commitment, of purpose and of active involvement which minimizes the threat of otherwise stressful events, and provides a basis for continual grappling with problems and setbacks; 2) they believe one can control and transform the events of one's experience; and 3) they perceive stressful events as a challenge rather than a threat.

In attempting to understand why the groups exhibited similar results, it should be noted that the treatment groups had three things in common: the relaxation procedures, the cognitive restructuring, and the group format that facilitated the exchange of ideas and experiences. Cormier and Cormier (1991) stated it is widely accepted today by people of various theoretical orientations that a therapeutic climate based on trust is the groundwork for more direct intervention strategies to yield their intended effects. In the first session the group rules and the meaning of confidentiality were explicitly established for both groups. Although, the overall results on the trust behaviour measure were low, the students in both groups felt free to discuss personal problems and experiences. This willingness to self-disclose indicated that some measure of trust was established within both groups. Also, the relaxation procedures and cognitive restructuring may have brought about the treatment changes, due to the pro-active nature of these ingredients. During the group sessions,

students identified negative coping statements such as "I will never be able to do it" that were responsible for their feelings of inadequacy and increased their skills in generating more adaptive self-statements. The students also reported progress in their ability to relax, and made positive self-statements in coping with stressful events at school and at home. The successful application of relaxation skills and adaptive self-statements may have fostered the beliefs that they have an active involvement in how they react to stress and that they can control their life experiences. Some of the students may also have started to view applying their new coping skills when facing stressful events as a challenge to see if they would work in order to share their experiences during group discussions. Perhaps the combination of relaxation procedures, cognitive restructuring, and a group format in which previous maladaptive coping skills are challenged and corrected provided all that was necessary for therapeutic change.

Regardless of the explanation, both treatment approaches were demonstrated to be effective in improving state and trait anxiety, self-esteem, and to a lesser extent expression of frustration. These changes were produced by the interventions and not merely the passage of time as evidenced by the lack of change in the no-special-treatment controls. The key finding in the present investigation is that stress management training, as a school-based intervention, can enhance coping skills in stress-vulnerable learning disabled adolescents. In addition, the overall data from the written questionnaires and debriefing interviews indicated that the students in both treatments groups had a positive opinion of stress management training, found the stress reduction techniques useful in accomplishing desired changes, and would continue using the skills they had learned in the future. They felt they had benefited from participating in the group and recommended the experience for other learning disabled students. Since at least seven individuals from the general student body made inquiries into how they could sign-up for the next set of sessions, the participants must have expressed similar sentiments to others not just the researcher and the CELD staff. These results are promising because of the deleterious effects high trait

anxiety may have on adolescents with or without learning disabilities, both in terms of psychological functioning and physical health (Silver, 1992).

Limitations and Implications for Future Research

Findings in the present investigation provide direction for future stress inoculation training with learning disabled individuals. Wolpe stated that whatever the problem being addressed, the clinical status of a method, should be assessed on several criteria: 1) how quickly, how completely, and how enduringly does it affect desired change; 2) does it accomplish those changes without disadvantageous consequences; and 3) is it cost effective in terms of the time and effort for both client and therapist (Wolpe, Salter, & Reyna, 1964).

The results of the present study indicate that if judged by Wolpe's criteria, SIT may be a viable intervention for helping learning disabled students cope with stress more effectively. First, after only eight - one hour sessions the students showed an increase in their ability to cope with stress indicated by significant improvements in trait anxiety and self-esteem. Also, these improvements were maintained for at least two month after the last session. Second, by the end of the study none of the students appeared to show any negative consequences from having participated in stress inoculation training. Finally, since SIT can be successfully used in a group format, it is more economical in terms of the available resources in the public school system than individual counselling. However, more research is needed to assess the feasibility of adding stress inoculation training as part of the special programs serving learning disabled adolescents.

Limitations of the study are addressed as they provide direction for future research. The first limitation is its sample size. As a result, generalization of the results to the learning disabled adolescent population is limited. The type of responses offered by these students needs to be more fully explored with a generous sampling of learning disabled students. There is a distinct need in the learning disabilities field to examine the

effectiveness of stress inoculation training with larger samples of learning disabled high school students.

The second limitation of this study is the use of the same leader for both groups. Perhaps, without realizing it, the group leader may have blended elements of SIT with the conventional teaching methods obscuring the differential treatment effects of the two approaches. Further research using the double blind design may determine which approach to stress management training is most effective for learning disabled adolescents.

The third limitation of this study is the use of a single researcher. Myers (1987) questioned the use of a single researcher for outcome studies using a between group design since there may be experimenter bias. She suggested that the researcher may behave differently in different treatment conditions. The researcher may be warm and friendly in the experimental condition but indifferent in the treatment control condition. That is all right if the researcher's demeanor is the independent variable. If it is not, it may confound results. Subjects might feel more at ease in the experimental condition and so perform better. Researchers may also treat subjects differently depending on what they expect from them. They may give more time and attention to subjects in the experimental condition. This differential treatment may create the self-fulfilling prophecy or Pygmalion effect documented by Rosenthal (1976). In addition, experimenters are more likely to make errors that favour the hypothesis when scoring and recording data from the study. Rosenthal (1978) reported that from the errors found in 21 published studies, two thirds favoured the researchers' hypotheses. That may not be the case here since the results did not clearly favour the hypotheses.

The fourth limitation lies with the measuring tools to detect changes in the ability to cope with stress. In Weiner's (1979) model, it is suggested that the use of adaptive coping skills mediates changes in locus of causality and self-esteem. The measures used here indicated changes in self-esteem. What cannot be detected is changes in locus of causality along with the changes in self-esteem. Even though, the SIT intervention included as part

of the third phase, practice of alternative responses during graded stressful situations both in session and in real life, no observational measures of possible changes in behaviour were included in this study. Although, the measures used indicated changes in self-perceived dispositions to react maladaptively to stress, actual changes in behaviour could not be detected nor if these changes in reacting to stress influenced academic achievement. It is recommended that future stress inoculation training research with learning disabled students, assess pre and post academic achievement, examine changes in students' locus of control, and explore the relationship between self-perceived and observed behavioural changes.

Finally, the significant inverse correlation between self-esteem and trait anxiety consistent with the results obtained by previous researchers (e.g. Jones, 1985; Patten, 1983) indicated an interactive effect between the students' self-concept and feelings of anxiety. However, it may take time for this interactive effect to become a positive reinforcing cycle and a long-term study would be beneficial in order to examine the overall effects of this positive feedback loop.

Implications for Practitioners

The findings of this study have a number of implications for counsellors who wish to explore the use of group intervention in working with LD adolescents. The first centers on the brevity of the intervention program. The groups met just once a week for eight weeks, yet notable improvements in state and trait anxiety and self-esteem were evident. Both the quantitative and qualitative data suggest that brief interventions can have positive effects on LD adolescents without unduly disrupting the students ongoing school activities for an extended period of time. Results also indicated there is a strong but not a perfect inverse relationship between the students' self-concept and their feelings of anxiety.

Reductions in general anxiety may be reflected, if not in the same magnitude, in gains of the self esteem. This inverse relationship supports the contention by Margalit and Zak (1984) that relieving the LD students' anxiety related to feeling like a pawn (having no control over your life) would improve self-satisfaction. Since low self-esteem is often cited by teachers' when explaining lack of academic success, stress inoculation training in a group format may offer a viable form of addressing these teachers concerns. Listed below are some practical suggestions for high school counsellors who may wish to run a stress inoculation training group for learning disabled adolescents. These suggestions were generated from the general feedback and recommendations of the participants in this study and from the personal observations of the researcher.

1. Group counselling should be voluntary.
2. Before considering a student for group counselling, check teacher reports, observe the student, and then conduct a personal interview.
3. In the personal interview, advise students of the nature and purpose of group counselling, expected behaviour, possible risks, and kinds of activities in which they are asked to participate.
4. Groups should be composed of six to eight students, of either or both sexes, drawn from approximately the same grade level. The group should meet for a predetermined number of sessions at the same time each week.
5. Specific rules including confidentiality should be established and discussed with group members in the first sessions. The consequences of rule violations should be determined.
6. Clear personal and group goals should be set in the first session and periodically reviewed throughout the duration of the group.
7. Activities that require completing worksheets or filling out questionnaires should be kept to a minimum.

8. Time should be set aside for role plays addressing such topics as dating, shyness, and being "picked on" by other students.

Stress inoculation training also generates practical applications in the special education field. Maladaptive coping with stress undermines the acquisition, maintenance, and transfer of new skills and strategies for learning disabled students. The positive relationship between state and trait anxiety indicates that the learning disabled students may not exhibit the "deafness" to their own difficulties that was demonstrated by Margalit and Shulman (1986). Because they may be aware of their own difficulties, instruction and specific skills training in stress reduction may not only be important for but also be perceived as credible by these students. Silver (1992) emphasizes that if the goal is to ensure long term maintenance and generalization of new coping skills and adaptive behaviours, then intervention must take place in a variety of situations, across settings, and on a long term basis. Learning disabled students may be taught to view that their stress reactions are under their control if the stress management skills are paying off with successful outcomes and coping with difficulty or failure. For learning disabled students, positive feedback may serve as initial social reinforcement, whereas, active participation in effective coping--self management--may initiate personal responsibility in behaviour.

Offered below, are some considerations for secondary remedial instructors of learning disabled students that have come out of the present study:

- (1) There is a critical need to consider how learning disabled students may be assisted in coping with the stress from the academic demands of the high school curriculum. Using stress inoculation training the remedial instructor can provide the students with "tools" with which they can learn adaptive coping skills in a structured, systematic fashion.

- (2) Coping skills/instructional variables in learning strategies should be considered in their selection. First, prior research points to direct instruction as a highly effective teaching method for learning disabled students. Direct instruction provides structured and systematic steps for the acquisition of stress reduction techniques. Describing and modeling these steps allows the students knowledge of the specific techniques. However, the primary goal for secondary students is independent adaptive behaviour. A second critical variable is a self-instructional component. Students need to go beyond knowledge of the skills to self-regulation of the adaptive coping. Stress inoculation training provides opportunity for practice and monitoring of the coping with stress in a controlled remedial environment. Finally, generalization is an issue to be considered at all levels of instruction. Students need to understand the benefits and appropriate use of the coping skills outside the Learning Disabilities Resource Room.
- (3) Learning disabled students need to be reassured that their negative feelings and thoughts are understood. The remedial centre may provide a secure environment for students to become aware of the cognitions that hamper school success and to express or acknowledge these cognitions. However, as the goal for secondary learning disabled students is responsible academic behaviour, students learn through cognitive restructuring how to set aside these negative thoughts and feelings and replace them with adaptive cognitions. They need to feel that they have some control over their stress reactions. Learning disabled students need to deliberately attempt self-reinforcing statements that allow them to persist with adaptive coping behaviours that improve academic performance.

- (4) Remedial instructors need to become aware of the type of feedback given to learning disabled students. Indiscriminately telling students to try harder may be undermining effort given to complete academic tasks. It is the acknowledgment of their effort in applying adaptive coping behaviours that allows these students fuller understanding of their role in effective stress management.

- (5) The way in which feedback is delivered is also an important consideration for remedial instructors. Initially, remedial programs can offer a consistent and secure environment through socially reinforcing statements such as the acknowledgment of effective coping. Students need to be aware of the role of specific coping skills in producing successful academic and social outcomes. As these students move toward independence, social reinforcement feedback must be interspersed with self-reinforcing statements.

- (6) Learning disabled students need to accept responsibility for their own stress reactions. They need to acquire effective skills not only to cope with stress within the school environment, but also develop appropriate life skills for independent and responsible behaviour following formal schooling. Remedial instructors may initiate self responsibility by providing opportunity for the development of adaptive coping skills. Learning disabled students must feel that they are able to control and transform the events they experience in order to effectively cope with the problems and setbacks in their lives.

In conclusion, adolescents with learning disabilities are vulnerable to stress due to their past histories of academic and social failures. As learning disabled students enter the high school environment, they encounter many demands that often serve to under-score the

reality of their disabilities. A large gap between academic expectations and student performance often exists. In addition, there are nonacademic expectations in such area as social and personal development. They are at risk for developing high levels of general anxiety and limited feelings of self-worth. The results of this study provided preliminary evidence that stress inoculation training can have a positive impact on the self-concept and manifested anxiety of learning disabled adolescents without unduly disrupting their on going school activities for an extended period of time. Stress inoculation training, as a cost-effective school-based intervention can enhance coping skills and contribute to healthy adjustment in learning disabled adolescents.

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APPENDIX A

Provincial and School District Guidelines for the Identification and Placement of Learning Disabled Students

Included in this appendix are the guidelines for identification and placement of the severely learning disabled set forth in the Manual of Policies, Procedures and Guidelines published by the Ministry of Education in the Province of British Columbia. School district criteria for services is established in accord with provincial guidelines. Included is a statement of the provision of services set forth by the school and the school district in which the present research was carried out.



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3.26 - SEVERE LEARNING DISABILITIES

3.26.1 DEFINITION

The Ministry of Education recognizes that 1-2% of students in the schools will be severely learning disabled. These students experience difficulties with learning that are so severe as to almost totally impede educational instruction by conventional methods. It is anticipated that the mild to moderately learning disabled will be supported at the school level by the Learning Assistance teacher.

The following definition is advanced by the Ministry of Education:

Learning disabilities is a processing disorder involved in understanding or using symbols or spoken language. These disorders result in a significant discrepancy between estimated learning potential and actual performance. Generally, a discrepancy of two or more years on grade equivalent scores or a similar discrepancy on standardized score comparisons is recognized as significant. This discrepancy is related to basic problems in attention, perception, symbolization and the understanding or use of spoken or written language. These may be manifested in extreme difficulties in thinking, listening, talking, reading, writing, spelling or computing.

The defined population is limited to children whose learning difficulty can be clearly identified as a communication disorder. This category does not include children with learning problems primarily resultant from factors such as:

1. Sensory or physical impairments;
2. Mental retardation;
3. Emotional disturbance;
4. Environmental or cultural disadvantage;
5. English as a Second Language;
6. Lack of opportunity to learn: due to irregular attendance or transiency

3.26.2 IDENTIFICATION/PLACEMENT

Students suspected of being severely learning disabled should be referred for an in-depth psychoeducational assessment. Health



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and developmental information, including social adjustment data, should also be included in the assessment. Prior to this referral, however, it is essential that sufficient school based data collection be compiled and instructional intervention strategies attempted.

The district screening and placement procedure should be the vehicle to process referrals for the program to ensure consistency with regard to the student population being served.

Parental permission should be obtained prior to any data gathering and the parents should be involved in any program/placement decisions.

3.26.3 PROGRAM

An Individualized Educational Plan (IEP) should be carefully planned for the student with a severe learning disability. The program should include a statement of the student's present levels of educational performance, the long range goals and short term instructional objectives, the services to be provided, the evaluation procedure, the anticipated duration of services and a date for reviewing the program. The program should be developed by the learning disabilities teacher in conjunction with the classroom teacher, learning assistance teacher, other involved school personnel and parent/guardian.

Individualized planning should be provided on an intensive basis, with a view to maintaining the student in/or returning the student to the regular classroom as quickly as possible. Each student's program and placement should be reviewed regularly.

Duration of service will vary according to degree of disability and rate of learning. It is recognized that even when students with severe learning disabilities respond well to intensive short term instruction, they may still need ongoing support which is usually provided by the learning assistance teacher. Some students may require ongoing intensive long term service in a resource room or a self-contained class.

Student progress should be recorded regularly and stated in objective, as well as subjective, terms.

School Districts should establish program/placement criteria, develop specific program entrance and exit criteria and specify procedures for monitoring or reviewing individual placements.



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3.26.4 SERVICE DELIVERY

School districts should examine the least restrictive alternative in planning services for the severely learning disabled student. It is recognized however, that a range of options is necessary in planning appropriate services for such a diverse group. Possible service delivery options include assessment and programming centres, resource rooms, self contained classes and itinerant services.

3.26.5 EVALUATION

School districts should provide for regular evaluation of programs for students with severe learning disabilities. Please consult the Ministry's Evaluation of Special Programs: Resource Materials for information on evaluation.

3.26.6 PROGRAM PERSONNEL

Teachers appointed to programs for the severely learning disabled should have the qualifications and competencies expected for learning assistance teachers, as well as, advanced course work in the following areas:

- (a) assessment and programming for learning disabilities;
- (b) language and communications;
- (c) diagnosis and remediation of mathematics and language arts;
- (d) social skills development and behaviour management;
- (e) curriculum modification;
- (f) cooperative planning and consultation.

3.26.7 RESOURCES

Severely learning disabled students who have difficulty in using print materials may obtain copies of audio books from the master tapes held by the Provincial Resource Centre for the Visually Impaired at minimal cost. Titles held by the Centre are listed in a catalogue which is available in all school districts.

To comply with copyright requirements users of this service must be certified by the school district as "print- handicapped". Forms are available from the Resource Centre and must be signed by the Superintendent of Schools or the Special Education Supervisor.



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Inquiries and purchase orders should be addressed to:

Provincial Resource Centre for the Visually Impaired
4196 West 4th Avenue,
Vancouver, B.C.
V6R 4J5

3.26.8 FACILITIES

Please refer to the B.C. School Facilities Building Manual - Part 3 Design Guidelines.

3.26.9 CONSULTATION

The services of the Coordinator, Learning Assistance and Learning Disabilities are available to school districts to assist with learning disability programs. Further information may be obtained from:

Provincial Coordinator
Learning Assistance and Learning Disabilities
Division of Special Education
Ministry of Education
Parliament Buildings
Victoria, B.C.
V8V 2M4

Telephone: 387-4611 (Local 205)

A statement of the provision of services for the Severely Learning Disabled by the Surrey School District is provided as follows:

Program Description for
Career Education for the Learning Disabled
(C.E.L.D.)

History:

In cooperation with parent requests and presentations to the Surrey School Board, a program was designed to meet the needs of secondary students with learning disabilities. Parents and School District personnel met to explore possibilities. Edith Quest, Supervisor of Reading Instruction, Bill Johnson, Supervisor of Industrial Education, and Linda Weston, Remedial Reading Teacher, were given the task to develop such a program. In September, 1980, ten students were enrolled in the C.E.L.D. program at L.A. Matheson Jr. Secondary. As of September, 1992, approximately 260 students enrolled in the C.E.L.D. programs in twelve secondary schools. The program was originally designed with a strong emphasis on vocational skills and modified academics. Grade 12 graduation was not an expected outcome. Over the years there have been many changes in our understanding of learning disabilities due to experience and research information. Because of this, the program is organized to meet the academic needs of the students with grade 12 graduation as one of several options.

Program:

The C.E.L.D. program is designed to provide support services for secondary students who have been identified with severe learning disabilities. The C.E.L.D. staff may provide assistance to classroom teachers through consultation, inservice, resources, and direct in-class support. Inservice may include teaching and learning strategies, curriculum strategies, and compensatory strategies. Emphasis is placed on the flexibility needed to allow students access to computers, taped materials, scribes and/or a quiet place to work with minimal distractions.

As it is presently organized the C.E.L.D. staff may provide direct small group instruction for academics, computer skills and some vocational training. Grade 8 students may integrate for most or all of their courses. Students in grades 9-12 are integrated as much as possible with an optional tutorial block (as needed), and/or the option to access the resource room for support services. Grade 12 students will have access to adjudicated

exams. This may include time extensions, scribing, reading support and access to an environment with fewer distractions.

The program model is flexible so as to accommodate the individual needs of the students within their particular setting.

Goals:

- To address the individual needs of each student;
- To provide academic support;
- To provide students with organizational and study skills;
- To provide necessary technological training to facilitate learning, i.e. computer skills;
- To provide students with compensatory strategies for learning and communicating;
- To provide career planning: i.e. long term and short term career goals;
- To assist students with post secondary planning, i.e. options, transition;
- To assist with vocational program planning, i.e. options re: other programs
- To assist students in developing appropriate social and behavioural patterns.

Selection of Students:

Candidates from the elementary programs are reviewed annually and recommendations for next years placement are made at that time. Parents and the School Based Team discuss the needs of the student and the appropriate placement for the following year. Students who have been identified as having severe learning disabilities or who were receiving services in another district, will be considered for placement in the C.E.L.D. program.

The process for selection is outlined in a memo to administrators. Included is the service and referral sequence as well as the Ministry and District criteria. (Please consult with your school psychologist for further information on the identification and service of students with learning disabilities.)

Linda Weston
 Special Education Helping Teacher
 Learning Disabilities

A statement of the provision of services for the Severely Learning Disabled by the Junior Secondary School is provided as follows:

CAREER EDUCATION, LEARNING DISABILITIES PROGRAMME **POLICY AND PROCEDURES**

PHILOSOPHY

The Career Education Learning Disabilities programme is designed to give support and assistance to those students who have a severe learning disability. We believe that given the right educational setting and the tools for learning these students can succeed. It is our aim to ensure that a severely learning disabled child has the opportunity to complete his/her education to the highest possible level. We are also cognizant of the social and emotional needs of learning disabled young people and are therefore committed to the philosophy and practice of integration.

AIMS

1. To provide a setting where students can receive direct and/or indirect support from a Learning Disabilities teacher when and if needed.
2. To provide an educational setting whereby the student can develop effective learning strategies so that he/she can be a successful student.
3. To prepare an individual educational plan for each student according to his/her needs. To plan this collaboratively and in consultation with all relevant parties.
4. To assess and monitor the progress of student performance and progress in courses taken and arrange for any modification of curricular and/or teaching service and evaluation procedures as required.
5. To provide instructional support and resource material to the regular classroom teacher as required.
6. To provide assistance or assist in arranging for any other services deemed necessary for the success of the student. e.g. Oral exams or extra time for assignments.
7. To establish and maintain contact with parents so that they may assist in providing appropriate reinforcement outside of the school environment.
8. To foster a team approach in assisting each student to realize his/her potential.
9. To make appropriate use of communication technology in enabling the learner to learn.

APPENDIX B

Dependent and Evaluation Measures

This appendix contains information on the availability of the three standardized assessment measures used in the study and samples of the Rosenzweig (P-F) Study response sheet, the Group Participation Evaluation Form (GPEF), the Group Evaluation Questionnaire (GEQ), and Guided Debriefing Interview Script.

STANDARDIZED ASSESSMENT MEASURES AVAILABILITY

1. The State-Trait Anxiety Inventories by Charles D. Spielberger
2. The Coopersmith Self-Esteem Inventories by Stanley Coopersmith
are available from:

Psychometrics Canada Ltd.
Room 103, Students' Union Building
University of Alberta
Edmonton, Alberta
T6G 2J7

3. The Rosenzweig Picture-Frustration (P-F) Study by Saul Rosenzweig is available
from:

Psychological Assessment Resources, Inc.
P.O. Box 998
Odessa, Fl., U.S.A.
33556 - 9901

Name _____ Present Date _____

ROSENZWEIG P-F STUDY RESPONSE SHEET

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____
- 11. _____
- 12. _____
- 13. _____
- 14. _____
- 15. _____
- 16. _____
- 17. _____
- 18. _____
- 19. _____
- 20. _____
- 21. _____
- 22. _____
- 23. _____
- 24. _____

GROUP PARTICIPATION EVALUATION FORM

The following is a series of questions about your behaviour in your group. Answer each question as honestly as you can. There are no right or wrong answers. It is important for you to describe your behaviour as accurately as possible. Answers should range between 1 (not true of me) and 7 (very true of me).

1. I help in group discussion by offering information and ideas that are on topic.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
2. I show my willingness to work with other group members and want them to work with me.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
3. I am open and candid with my dealings with the entire group.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
4. I give support to group members who are on the spot and struggling to say what they think or feel.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
5. I keep my thoughts, ideas, feelings, and reactions to myself during group discussions.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
6. I look at what other group members have to say to see if it is useful to me and if they are right or wrong.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
7. I take risks by sharing new ideas and current feelings during a group discussion.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always

GROUP PARTICIPATION EVALUATION FORM (con't)

8. I let the other group members know that I am aware of, and appreciate, their abilities, talents, and skills.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
9. I try to help anyone in the group when ever I can so all of us will do better.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
10. I encourage the openness in other group members and it's okay for everyone in the group to be different.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
11. I share what I have like books or other material that might be helpful with the other group members.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
12. I often will say in my own words what other members have said before I respond or comment.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
13. I level with other group members.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always
14. I warmly encourage all members to participate, showed openness to their ideas, and was generally friendly to all the group members.
Never 1 - 2 - 3 - 4 - 5 - 6 - 7 Always

NAME _____

Group Evaluation Questionnaire

1. In what ways, if any, was the group helpful to you?

2. What effect has the group experience had on your life?

3. Which of the skills covered in the group has been the most useful to you?

4. Which of the skills covered in the group has been least useful to you?

Group Evaluation Questionnaire (con't)

5. Which type of group activity was most enjoyable?

6. Which type of group activity provided you with the best learning experience?

7. Which type of group activity provided you with the least valuable learning experience?

8. Please comment on how well the group leader did leading the group.

9. Would you recommend the group to other LD students? Why or why not?

Guided Interview Script

The questions presented below were intended to elicit some the feelings, thoughts and attitudes of the participants towards the group experience if they did not offer the specific information in the course of the interview.

1. What are some changes, if any, you've made in your life that you can attribute at least partially to your group experience ?
2. What were some specific things that you became aware of about your attitudes and relationships with others ?
3. How might your life be different now had you not experienced the group ?
4. Do you feel the changes that occurred as a result of your group experiences lasted ? If so, do you think the changes are permanent ?
5. Did the group experience have any negative effects on you ?
6. In the questionnaire you stated that _____ was most helpful to you, could you explain how you think it has been useful to you ?
7. In the questionnaire you stated that _____ was not very helpful to you, could you explain why you feel that it was not useful to you ?
8. If you could make any changes in the group program what would they be ?
9. What perceptions do you have of the group leader and her style ?
10. Do you have anything else to say about yourself and your group experience either during or since the group ?

APPENDIX C

Letters of Information and Consent

Listed in order, this appendix includes the information letters for the students and the parent/guardian of prospective participants, and the consent forms for the student and the parent/guardian.

Effects of Stress Inoculation Training on Learning Disabled Student's Ability to Cope With Stress

Project Information for Students

You are being asked to participate in a study to evaluate the effectiveness of an eight week stress management training program for learning disabled students at Newton Jr. With the support of Mr. Downes and Miss B. Lightfoot, the program will be conducted during one CELD period a week for eight weeks by Mrs. Alexy-ng a counselling intern at SFU, over the spring term. Participants of the program will be provided with the opportunity to learn new skills such as physical and mental relaxation techniques which may help them cope better with stress situations learning disabled individuals face every day.

In order to establish the programs effectiveness the participants will be assigned to one of the following three groups:

1. **Stress Inoculation.** Participants in this group will meet once a week for 55 minutes over a period of 8 weeks. The program consists of stress management skills including Meichenbaum's (1977, 1985, 1988) stress inoculation model.
2. **Skills Only Program.** Participants in this group will meet once a week for 55 minutes over a period of 8 weeks. The format for this group will be the same as the one above but will exclude Meichenbaum's stress inoculation model.
3. **No-treatment Group.** Students in this group will take part in all the assessment procedures, but will not be exposed to any type of intervention.

All participants will be assessed on three self-report measures one week before and after the program as well as eighth week after the last session as a follow-up. All test results will be held completely confidential but will be made available to you upon request at the conclusion of the study.

At the end of the study, participants and their parents will be sent a brief summary of the findings and will have the opportunity to discuss the study further with Mr. Downes, Miss B. Lightfoot and/or Mrs. Alexy-ng. If proven successful, participants in the Skills Only and No Treatment groups will have the option to enroll in subsequent Stress Inoculation Training sessions as part of the CELD program at Newton Junior.

Your support for this project would be greatly appreciated by returning your signed permission form as soon as possible to Mr. Downes and/or Miss B. Lightfoot.

Sincerely

Daniela Alexy-ng

Effects of Stress Inoculation Training on Learning Disabled Student's Ability to Cope With Stress

Project Information for Parent/Guardian

Dear Parent/Guardian,

Your permission is requested for your child to participate in a study to evaluate the effectiveness of an eight week stress management training program for learning disabled students at Newton Jr. With the support of Mr. Downes and Miss B. Lightfoot, the program will be conducted during one CELD period a week for eight weeks by Mrs. Alexy-ng a counselling intern at SFU, over the spring term. Participants of the program will be provided with the opportunity to learn new skills such as physical and mental relaxation techniques which may help them cope better with stress situations learning disabled individuals face every day.

In order to establish the programs effectiveness the participants will be assigned to one of the following three groups:

1. Stress Inoculation. Participants in this group will meet once a week for 55 minutes over a period of 8 weeks. The program consists of stress management skills including Meichenbaum's (1977, 1985, 1988) stress inoculation model.
2. Skills Only Program. Participants in this group will meet once a week for 55 minutes over a period of 8 weeks. The format for this group will be the same as the one above but will exclude Meichenbaum's stress inoculation model.
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All participants will be assessed on three self-report measures one week before and after the program as well as eighth week after the last session as a follow-up. All test results will be held completely confidential but will be made available to you upon request at the conclusion of the study.

At the end of the study, participants and their parents will be sent a brief summary of the findings and will have the opportunity to discuss the study further with Mr. Downes, Miss B. Lightfoot and/or Mrs. Alexy-ng. If proven successful, participants in the Skills Only and No Treatment groups will have the option to enroll in subsequent Stress Inoculation Training sessions as part of the CELD program at Newton Junior.

Your support for this project would be greatly appreciated by returning your signed permission form as soon as possible to Mr. Downes and/or Miss B. Lightfoot.

Sincerely

Daniela Alexy-ng

Simon Fraser University

INFORMED CONSENT BY STUDENTS TO PARTICIPATE IN A RESEARCH PROJECT OR EXPERIMENT

Note: The University and those conducting this project subscribe to the ethical conduct of research and to the protection at all times of the interests, comfort, and safety of participants. This form and the information attached are given to you to ensure that you fully understand the procedures involved with this study. Your signature on this form will signify that you have received the Information Form regarding this project, that you have received an adequate opportunity to consider the information in the form, and that you voluntarily agree to participate in the project.

Having been asked by D. C. Alexy-ng of the Education Faculty of Simon Fraser to participate in a research project experiment, I have read the procedures specified in the document entitled:

Effects of Stress Inoculation Training on Learning Disabled Student's Ability to Cope with Stress.

I understand the procedures to be used on this experiment and the personal risks to me in taking part.

I understand that I may withdraw my participation in this experiment at any time.

I understand that I may register any complaint I might have about the experiment with the chief researcher named above or with Dr. M. Manley-Casimir Director of Graduate Studies in Education, Simon Fraser University.

Copies of the results of this study, upon completion may be obtained by contacting: Mrs. D.C. Alexy-ng

I agree to participate by filling out three questionnaires on three occasions and participate in the 8 weekly training sessions I am assigned to as described in the document referred to above, during the period: Spring term at Newton Junior Secondary School.

NAME (Please print): _____

ADDRESS: _____

SIGNATURE: _____ WITNESS: _____

DATE: _____

Once signed, a copy of this consent form and a subject feedback form should be provided to you.

Simon Fraser University
INFORMED CONSENT FOR MINORS
BY PARENT, AND/OR GUARDIAN

Note: The University and those conducting this project subscribe to the ethical conduct of research and to the protection at all times of the interests, comfort, and safety of participants. This form and the information attached are given to you to ensure that you fully understand the procedures involved with this study. Your signature on this form will signify that you have received the Information Form regarding this project, that you have received an adequate opportunity to consider the information in the form, and that you voluntarily agree to allow the students for whom you are responsible to participate in the project.

As (parent/guardian) _____

of (name of student) _____

I consent to the above-named engaging in the procedures specified in the document titled:

Effects of Stress Inoculation Training on Learning Disabled Student's Ability to Cope With Stress.

to be carried out in the following place(s): Newton Junior Secondary School

at the following time(s): once a week for 10 weeks

in a research project supervised by: Dr. Leone Prock

of: Simon Fraser University

I certify that I understand the procedures to be used and have fully explained them to (name of child/patient/other):

In particular, the subject knows the risks involved in taking part. The subject also knows that he/she has the right to withdraw from the project at any time. Any complaint about the experiment may be brought to the chief researcher named above or to Dr. M. Manley-Casimir Director of Graduate Studies, Faculty of Education, Simon Fraser University. I may obtain a copy of the results of this study, upon its completion, by contacting:

Daniela Alexy-ng

NAME (Please print): _____

ADDRESS: _____

SIGNATURE: _____

WITNESS: _____

DATE: _____

Once signed, a copy of this consent form should be provided to you.

APPENDIX D

Intervention Program

This appendix contains the outline for general structure of the sessions, the program overview, the group rules student handout, the progressive muscle relaxation training script, the thematic imagery script, the positive coping statements handouts and worksheets for both the SIT and SO groups, the stressor rating scale, the reframing mistakes session, and the two role play handouts. Complete indepth procedures for each session are contained in the manual generated from Meichenbaum (1977, 1985) and Morganett (1990).

General Structure of Sessions

Icebreaker

/

Review

first session to introduce students to each other homework.

Review what was covered last session and debrief personal

Working Time

1. Briefly describe goals of the session.
2. Provide information and rationale for activity.
3. Activity to help members interact and learn new skill.
4. Provide opportunity for discussion.

Closing Time

1. Debrief what has happened during session.
2. Explain personal homework.
3. Remind students of the confidentiality rule and the time for the next meeting.

Program Overview

TIME	TASKS	ACTIVITIES	OUTCOME
Pretest	Evaluate Present functioning level	Administer pretest	Establish baseline for anxiety, self-esteem and expression of frustration
Session #1	Get acquainted Identify what they hope to learn Choose ground rules for group Goal setting group and individual	Record of Me List all counsellor and student generated rules in writing. Goal setting activity and discussion	Introduce students to one another, start developing trust and cohesion. Set explicit group norms Awareness of what they can expect to learn in group
Session #2	Teach concepts of stress and the stress response Teach progressive muscle relaxation as a method for coping with stress.	Instruction and discussion Guided relaxation exercise and discussion	Awareness of how people react differently to different situations. Understand and begin using physical relaxation as a method of coping with anxiety.
Session #3	Teach thematic imagery as method for coping with stress.	Guided thematic imagery exercise and discussion	Understand and begin using thematic imagery as a method coping with anxiety.
Session #4 (SIT)	Teach three parts of stressful event. Teach positive coping statements.	Stress inoculation training and discussion Positive Coping Statement exercise and discussion.	Reduction in feeling overwhelmed by stressful events. Generate and begin positive self-coping statements.

TIME	TASKS	ACTIVITIES	OUTCOME
Session#4A (SO)	Teach positive coping statements.	Positive Coping Statement exercise	Generate and begin positive self-coping statements.
Session #5	Increase internalization of positive coping statements.	Self-as-model exercise and discussion.	Continue to use positive self coping statements in stressful situations.
Session #6	Generalize stress management.	Stressors Rating Scale and discussion. Discussion.	Begin to use stress management to cope with a variety of stressors. Understand that trying to cope is success in itself and generate alternative methods of coping.
Session #7	Reframe Mistakes as Teachers	Discussion	Learn to view mistakes as teachers rather than failures.
Session #8	Encourage students to use new coping skill to deal with separation, deal with unfinished business, and review group experience.	Discussion	Acknowledge feeling re: end & recognize gains made.
Posttest	Evaluate present functioning	Administer posttest measures	Evaluation if change has taken place.

Group Rules - Student Handout

The group will offer participants an opportunity to learn and practice some ways to better cope with the anxiety from having to do your school work more on your own in the senior grades, in addition to the opportunity for mutual support and encouragement. The goal of the group will be to overcome some of the negative thoughts and feeling associated with some of the stressful situations we face everyday.

GUIDELINES FOR GROUP MEMBERS

1. Let others know what your ideas are. What every member has to say is important. Sharing your thoughts and reactions with the group will stimulate other members and will help them to share what they are thinking about.
2. Ask your questions. If you have a question or there is something you want to know more about, ask. There is no such thing as a stupid question in this group. Several other members probably want to know the same thing.
3. Don't do all the talking. Others want to participate also and they can't if you take too long to express your ideas.
4. Help other members participate. If someone looks as though he wants to say something but hasn't, encourage him to do so. You could say "Joe, you look as though you'd like to say something." Silent members may especially need your support and encouragement to participate verbally. Don't overdo it though. A member doesn't have to talk to be involved in what is going on.
5. Listen carefully to other members. Try to listen so intently that you could repeat what the other member has said to his satisfaction. You aren't listening effectively if you are thinking about what you are going to say when you get the chance. Give the other person's ideas a chance and try to understand what he is saying. Listen to him the way you would want him to listen to you.
6. Group members are here to help. Problems can be solved by working cooperatively together. In the process of helping others, you can help yourself. The information you have can be helpful to others. Suggesting alternatives or causes can help other members make better decisions.
7. Be willing to accept another point of view. Don't insist that you are right and everyone else is wrong. The other person just might be thinking the same thing. Try to help other members understand you rather than trying to make them understand.
8. Keep up with the discussion. If the discussion is confusing you, say so.
9. In this group it is okay to talk about your feelings and reactions.
10. In group, we agree to keep whatever is said confidential (no one tells what is said to anyone outside the group.)

Progressive Muscle Relaxation Training Script

Instructions: When you feel tense, upset, or nervous, certain muscle in your body tighten. By having you deliberately tense different muscles in your body, you will learn to identify the muscles that are tight and then you learn to relax them. Practice tightening and relaxing the following muscle groups by first tensing the muscles for about 5 seconds and thinking about what the muscles feel like when they are tense, then relaxing the muscles and thinking about what they feel like when they are relaxed.

Forehead

We will start by Wrinkling up your forehead. Notice where it feels tense (over the bridge of the nose and above each eyebrow). Slowly relax your forehead. Spend a few seconds noticing how it feels to have those muscles loosen, switch off, and relax. Notice the difference in how the muscles feel.

Eyes

Next close your eyes very tightly. Your eyes should feel tense above and below each eyelid and on the inner and outer edges of the eye. Pay particular attention to those areas that are especially tense. Gradually relax your eyes as you open them slowly. Notice the difference in the way muscles feel.

Tongue

Now put your tongue hard against the roof of your mouth. Point to where it particularly tense (on the inside of the mouth and your tongue, and the muscles just below the jaw). Slowly relax those muscles by letting your tongue gradually fall to the floor of your mouth. Notice how it feels to have those muscles loosen, switch off, and relax.

Jaw

This time clench your teeth. Feel where it particularly tense (the muscles on the side of your face and also the temples). Gradually relax your jaw and feel the sensation of letting go. Notice how it feels to have those muscles loosen, switch off, and relax. Notice the difference in the way the muscles feel.

Neck

Now tighten your neck. Pay special attention to those areas that are particularly tense the adam's apple and on both sides of the neck and the back of the neck. Gradually relax your neck. Notice how it feels to have those muscles loosen, switch off, and relax. Notice the difference in the way the muscles feel.

Arms

Put your right arm straight out in front of you, make a fist, and tighten your whole arm from your hand to your shoulder. Notice to where it feels tight (biceps, forearm, back of arm, elbow, above and below wrist and fingers). Gradually relax and lower your arm, bending it at the elbow; relax so that your arm is resting on your lap in the relaxing position. Notice how it feels to have those muscles loosen, switch off, and relax. Notice the difference in the way the muscles feel. Repeat with the left arm.

Progressive Muscle Relaxation Training Script (con't)

Legs

Now lift your left leg, turn your toes in towards you, and tighten your whole leg. Point to where it feels tight (top and bottom sides of thigh, knee, calf, front and back of arch, and toes). Gradually relax bending your knee and lowering your leg until your foot is squarely on the floor. Make sure your leg goes into a relaxing position. Notice the difference in the way the muscles feel. Repeat with the right leg.

Back

This time move forward in your chair. Bring your elbows up and try to get them to meet in the back. Notice where it feels particularly tense (shoulders and down the middle of your back). Gradually relax by moving back into the chair while you straighten out your arms and put them on your lap in a relaxed position. Notice how it feels to have those muscles loosen, switch off, and relax.

Chest

Next tighten your chest. Try to constrict it or pull it in. Pay special attention to those areas that are particularly tense. Gradually relax your chest by taking a deep breath and letting it out slowly. Take another deep breath and see the difference in the way the muscles feel.

Stomach

Now tighten your stomach by pulling it in and making it as hard as a board and hold. Gradually relax your stomach by taking a deep breath and letting it out slowly. Notice how it feels to have those muscles loosen, switch off, and relax.

Below the waist

Last but not least tighten everything below the waist, including your thighs and your buttocks. You should feel yourself rise from the chair. You may notice that you have to tighten your legs a bit. Notice where it is particularly tense the top, bottom, and sides of your thighs and the muscles from the rear that make contact with the chair. Gradually relax and move back in your chair. Notice the difference in the way the muscles feel.

Thematic Imagery Script

Instructions: In this exercise we are going to relax by letting our minds dwell on a relaxing scene or setting

PAUSE

Make sure you are in a comfortable position.

PAUSE

Are your feet flat on the floor?

PAUSE

Are your hands resting comfortably in your lap?

PAUSE

Now gently close your eyes and let yourself settle into a position that is comfortable.

PAUSE

For the next minute or so, your body becomes more and more quiet.

PAUSE 1 MINUTE

Let yourself begin to settle down and relax as you remain still.

PAUSE

Let your breathing be calm and even.

PAUSE

Let every outgoing breath carry away any tension you might feel.

PAUSE

Let yourself feel more and more comfortably relaxed.

PAUSE

And quietly ask yourself, "What scene or setting is most relaxing to me at the moment?"

PAUSE 10 SECONDS

You might want to picture a quiet beach, or a grassy plain, or a cool mountain top, or a peaceful pond. Whatever scene or setting is most relaxing to you, just let it come to you.

PAUSE 10 SECONDS

And now, quietly dwell on this scene for the next few seconds.

PAUSE 15 SECONDS

Let the scene become as vivid and real as possible.

PAUSE 10 SECONDS

How does it look?

PAUSE 10 SECONDS

Can you see the sky?

PAUSE

Can you feel the wind brushing against your skin?

PAUSE

Can you smell the gentle, cool air?

PAUSE

Can you feel the warm sunlight or perhaps the cool night air?

PAUSE

Involve all your senses.

PAUSE

What do you see?

PAUSE

What do you hear?

PAUSE

What is touching your skin?

PAUSE

Can you taste or smell anything?

PAUSE

And let the scene grow in whatever way is most relaxing to you.

PAUSE 10 SECONDS

Perhaps words come to your mind that describe the scene.

PAUSE

If words or phrases come, simply let them repeat over and over like echoes.

PAUSE

Try not to force these words to change or make sense. Simply let them repeat over and over, very peacefully and quietly.

PAUSE

There is nothing for you to do except to attend quietly to your relaxing scene.

PAUSE

Let it change and evolve on its own.

PAUSE 15 SECONDS

If you find yourself engaged in thinking about something or trying to figure something out, that's OK.

PAUSE

Quietly and gently return to your relaxing scene.

PAUSE 15 SECONDS

Let yourself sink deeper into a pleasant state of relaxation.

PAUSE

From time to time, let yourself quietly repeat whatever words or pictures suggest deeper, more complete, and more satisfying relaxation.

PAUSE

You might think the words "I am sinking deeper and deeper" or "I am letting go more and more" or "There is nothing for me to do but let go."

PAUSE

Let the deepening suggestions come to you in whatever way feels most satisfying and relaxing.

PAUSE 10 SECONDS

Again and again, everytime your mind wanders or is distracted, return to your pleasant, relaxing scene.

PAUSE

Continue attending to your scene for the next few minutes. See where it leads you. See how it deepens. See how it grows and becomes more relaxing.

PAUSE 2 MINUTES

And now, very gently let go of what you are attending to.

PAUSE 5 SECONDS

When you are ready, gently open your eyes.

PAUSE 5 SECONDS

Take a deep breath letting it out very slowly.

PAUSE 5 SECONDS

And stretch your whole body.

PAUSE 5 SECONDS

This completes our imaginary get away.

Positive Coping Statements (SIT group)

Positive coping statements before the situation

- *I've read a lot about Russia in the news-I can share my knowledge with the class.
- *It's only a 5 minute report, not 30 minutes.
- *I don't have to go first, so I can model my report after the good ones that come before it.
- *I did this OK last year.
- *I'm not going to say negative things to myself.
- *I'm going to be OK.
- *I can deal with this!
- *It's OK to be nervous.

Positive coping statements during the situation

- *I'm doing my best-that's all anyone can ask.
- *I can handle this.
- *Take three deep breaths and try to relax.
- *It will be over in a minute.
- *Just relax.
- *One step at a time.
- *I can always look at my notes.
- *I really want to share this idea with my classmates.

Positive coping statements after the situation

- *I did it!
- *I did a good job.
- *I can relax now-it's over.
- *I handled the situation pretty well.
- *I'm proud of myself!
- *I can deal with tough situations.
- *I can hardly wait to tell _____ about how I did.
- *I can do this again in the future and succeed.
- *I gave it a try that is success in itself.

Positive Coping Statements (SO group)

- *It's only a 5 minute report, not 30 minutes.
- *I'm not going to say negative things to myself.
- *I'm going to be OK.
- *I can deal with this!
- *It's OK to be nervous.
- *I'm doing my best-that's all anyone can ask.
- *I can handle this.
- *Take three deep breaths and try to relax.
- *It will be over in a minute.
- *Just relax, I'm in control.
- *One step at a time.
- *I can always look at my notes.
- *I did it!
- *I did a good job.
- *I can relax now-it's over.
- *I handled the situation pretty well.
- *I'm proud of myself!
- *I can deal with tough situations.
- *I can hardly wait to tell _____ about how I did.
- *I can do this again in the future and succeed.
- *I gave it a try that is success in itself.

Positive Coping Statements Worksheet (SIT group)

Name _____ Date _____

Instructions: Write down a stressful situation you think you may face in the near future. Then think of several coping statements you could use before, during, and after the situation.

Situation _____

Statements before the situation

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____

Statements during the situation

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____

Statements after the situation

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____

Positive Coping Statements Worksheet (SO group)

Name _____ Date _____

Instructions: Write down a stressful situation you think you may face in the near future. Then think of several coping statements you could use before, during, and after the situation.

Situation _____

Statements

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Stressors Rating Scale

Name _____ Date _____

Instructions: Circle the number that shows how you respond to each of the following: people, places, or events. Write in any stressors that aren't listed in the spaces marked "other."

Scale 1 = No Stress
 2 = Slight amount of stress
 3 = Moderate amount of stress
 4 = A lot of stress
 5 = Extremely high stress

School Stressors

1. A particular teacher	1	2	3	4	5
2. Principal	1	2	3	4	5
3. Bully	1	2	3	4	5
4. A certain subject	1	2	3	4	5
5. Feeling less smart than others	1	2	3	4	5
6. Several subjects	1	2	3	4	5
7. Worrying about failing	1	2	3	4	5
8. Fear of not getting to college	1	2	3	4	5
9. Fear of being ridiculed	1	2	3	4	5
10. Fear of not living up to parents' or teachers' expectations	1	2	3	4	5
11. Fear of not getting into a good high school	1	2	3	4	5
12. Fear of not knowing what to do after graduation	1	2	3	4	5
13. Other _____	1	2	3	4	5
14. Other _____	1	2	3	4	5
15. Other _____	1	2	3	4	5

Home stressors

1. Fear of parents' divorcing	1	2	3	4	5
2. Brother's or sister's hurting me	1	2	3	4	5
3. Other family member's hurting me	1	2	3	4	5
4. Fear of parent's remarrying	1	2	3	4	5
5. Not having enough clothes or other supplies	1	2	3	4	5
6. Not getting enough supervision	1	2	3	4	5
7. Having so little supervision that it is easy to get into trouble	1	2	3	4	5
8. Not getting enough affection and love	1	2	3	4	5
9. Fighting between parents	1	2	3	4	5
10. Fighting with parents	1	2	3	4	5
11. Illness of family members	1	2	3	4	5
12. Having to deal with stepfamily members	1	2	3	4	5
13. Having to move	1	2	3	4	5
14. Other _____	1	2	3	4	5
15. Other _____	1	2	3	4	5

Stressors Rating Scale (con't)

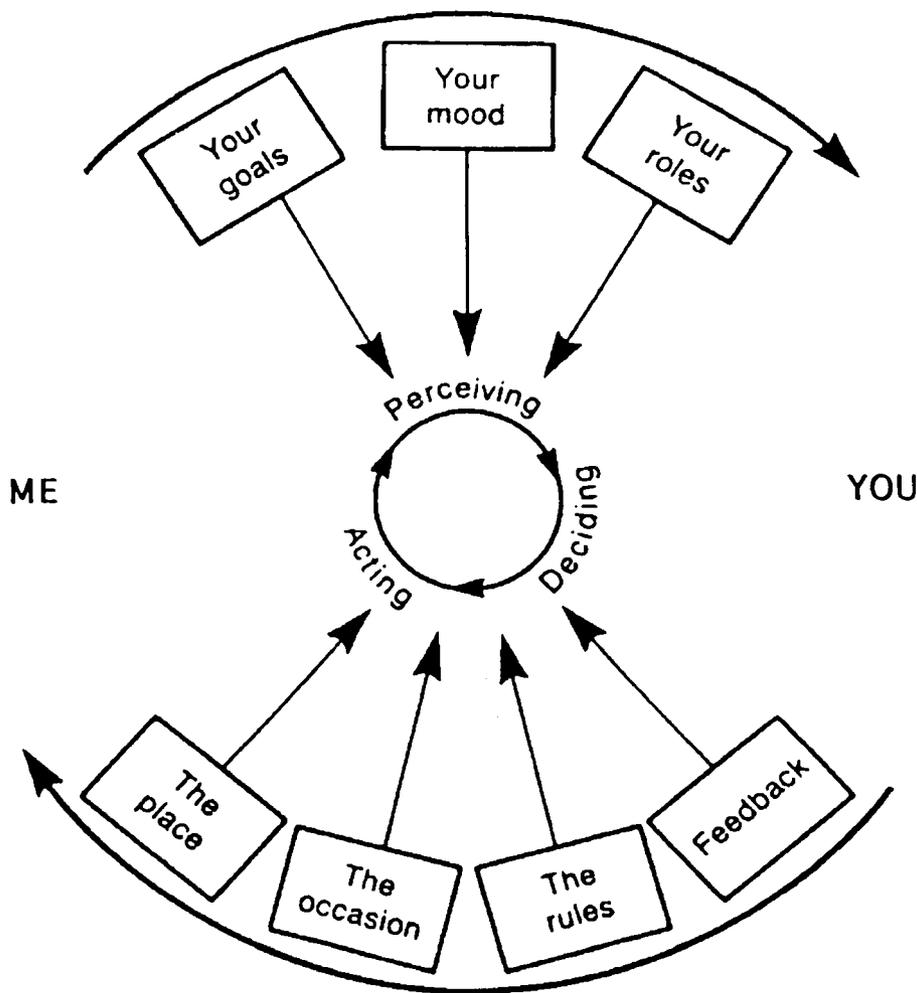
Instructions: Circle the number that shows how you respond to each of the following: people, places, or events. Write in any stressors that aren't listed in the spaces marked "other."

Scale 1 = No Stress
 2 = Slight amount of stress
 3 = Moderate amount of stress
 4 = A lot of stress
 5 = Extremely high stress

Friendship Stressors

1. Losing a friend	1	2	3	4	5
2. Not having enough friends	1	2	3	4	5
3. Having a friend reject me	1	2	3	4	5
4. Having a friend lie to me	1	2	3	4	5
5. Having a friend talk about me behind my back	1	2	3	4	5
6. Feeling unaccepted or disliked	1	2	3	4	5
7. Feeling left out	1	2	3	4	5
8. Having a friend my parents dislike or disapprove of	1	2	3	4	5
9. Worrying about not having a boyfriend or girlfriend	1	2	3	4	5
10. Not knowing how to make friends	1	2	3	4	5
11. Not knowing how to deal with situations involving friends	1	2	3	4	5
12. Not knowing how to stand up for my rights	1	2	3	4	5
13. Feeling unattractive	1	2	3	4	5
14. Other _____	1	2	3	4	5
15. Other _____	1	2	3	4	5

SOCIAL INTERACTION CYCLE



Session 7 Reframing Mistakes

Review

1. Invite students to share how they have been coping with the different stressors they faced since the last session. Was any particular stressor too much to deal with and how did you handle that?

Working Time Tasks

Affective: elicit feelings related to mistakes and failures.

Cognitive: awareness that mistakes and failures can be seen as learning experiences.

Learning: that mistakes and failures can be seen as teachers.

1. Ask students how they view mistakes and failures, and how they feel when they make a mistake or fail at something.
2. Ask students what they say to themselves after they have made a mistake or failed. Explain that it will solve nothing if you damage your self esteem by berating yourself for making a mistake and that there is no way you can learn any task or skill without making errors.
3. Discuss how looking at mistakes as necessary feedback for the learning process frees you to relax and focus on your gradual mastery of a new task and how you can use positive self statements to help you look at mistakes as learning experiences.
4. Have the students brainstorm coping statements they could use to see mistakes as information about what works and what doesn't. Ask them to practice the ones that feel best for them.
5. Have students think of a mistake they have made the past week that is still bothering them and have them relax and apply their coping statements. Do a round, ask students if this has been helpful or not? How do they feel about their mistake now? How can they prepare themselves better for making mistakes? What can they learn from their mistakes? E.g. They also function as a warning like the buzzer that tells you your seatbelt is not fastened.

Closing Time

1. Ask students to practice their coping statements if they make any mistakes during the next week and what they learned from them.
2. Encourage students to continue using their stress management techniques when they are under stress.
3. Ask whether there is anything anyone would like to say before the group ends and mention the next day which is the last session you will be discussing continued application of the skills and techniques after the group has ended. Remind students of the confidentiality rule and the time for the next meeting.

Curative Factor

Universality: by showing everyone makes mistakes.

Instillation of Hope: by reframing mistakes as teachers rather than failures.

Role Plays I

Instructions: Read over the situations below, then decide what coping statements you might use to help you deal with each.

Situation 1

Student #1: Let me copy your homework. If you don't let me copy it, I'll tell Ms. Smith you copied yours from Dan O'Brien.

Student #2: Feels very upset and tries to decide whether or not to give homework.

Situation 2

Coach: (to student) Gonzales, I want you to go out there and hit that ball over the fence, or you can get off the team right now.

Gonzales: Becomes angry and can hardly walk to the plate without crying.

Situation 3

Parent: (to child) You can't go to the show. You have to clean your room completely, including the closets.

Child: Feels furious because parent previously gave permission to go.

Situation 4

Principal: (to student) You'll have to stay after school every night for 2 weeks for smoking in the bathroom.

Student: Becomes angry because other student caught smoking gets away without any punishment.

Situation 5

Store clerk: Store policy does not allow him to give out the information that the customer wants.

Customer: Feels frustrated because he or she really wants to know the exact prices of the TVs so he or she can compare prices at other stores.

Role Plays II

Instructions: Read over the situations below, then decide what coping statements you might use to help you deal with each.

Situation 1

Parents: We don't want you to stay out past 12 o'clock on weekends.

You: Are not pleased with the decision.

Options:

1. You say nothing but are really angry and consider staying out later anyway.
2. You confront your parents, saying that everyone else gets to stay out later and that they are just mean and old fashion. You say you hate living in their prison and you don't see why they have to make life so miserable for you.
3. You tell your parents you think that, because you are ____ years old, you should be able to stay out later at least once in a while. You ask calmly if they will consider letting you do it sometimes.

Situation 2

Student #1: Is what Tom told me about you liking ____ (name) ____ really true?

You: Become angry because Tom had promised not tell anyone.

Options:

1. You tell Tom that he is the most inconsiderate, lowdown excuse for a friend, that you are no longer friends with him and that you think he is a real jerk.
2. You tell Tom that you are upset with him for betraying your confidence and that you hope he can be trusted not to make the same mistake again.
3. You don't say anything, but you are upset and act very cool and aloof the next time you see him. When he asks you what's the matter, you say nothing is wrong.

Situation 3

Student #1: Move to another table we don't want any dummies in our group.

You: Feel upset and frustrated at being called dumb and being pushed around.

Options:

1. You tell him/her calmly that you are upset at what he/she said and you don't like being treated like that. You tell him/her that, if there is a problem with you working together, you'd like to discuss it but that you don't want to be treated so disrespectfully.
2. You get up and move but feel really angry at being treated so meanly.
3. You ignore him/her and remain seated at the table although you feel mad inside, and wait for an opening to get back at him/her for that nasty comment.

Situation 4

You get a bad grade on a test, and you think that the teacher made a mistake in marking the first question.

Options:

1. You do nothing about it.
2. You ask the teacher if you could discuss the test. You indicate that you think your answer to the first question is right and request politely that he/she reconsider the response and the grade.
3. You push your paper in front of the teacher and angrily accuse him or her of being unfair. You tell the teacher that you want your answer looked at again because you know you are right.

APPENDIX E

Personal Goals

This appendix contains an outline of the personal goals each subject in the two training groups hoped to achieve by the end of the training program.

Personal Goals

Stress Inoculation Training Group

- S1 To resist peer pressure.
- S2 Make an oral presentation in front of a class without falling apart.
- S3 Feel more comfortable in making decisions.
- S4 Be more relaxed with other people.
- S5 Be more relaxed when meeting new people.

Skills Only Group

- S6 Attend school more regularly.
- S7 Feel better about going to school.
- S8 Being able to sleep more than five hours of sleep each night.
- S9 Be more relaxed when answering questions in class.
- S10 Not being totally stressed out when taking a test.

APPENDIX F

Experimental Design

This appendix contains an a diagrammatically representation of the 3(group) X 3(occasions) repeated measures factorial design utilized in this study.

Experimental Design

3 (group) X 3 (occasions) repeated measures factorial design

		Occasions											
Groups	Ss	Pretests			Postest				Follow-up				
Stress Inoculation Training	S1	1	2	3	1	2	3	4	1	2	3	5	
	.												
	.												
	S10												
Alternate Skills Program	S11	1	2	3	1	2	3	4	1	2	3	5	
	.												
	.												
	S20												
No-treatment Control	S21	1	2	3	1	2	3		1	2	3		
	.												
	.												
	S30												

Dependent Measures

1. State-trait Anxiety Inventory to measure general anxiety.
2. The Coppersmith Self Esteem Inventory (School Form) to measure attitudes toward the self in social, academic and personal contexts.
3. The Rosenzweig Picture-Frustration Test (T) to evaluate responses to frustrating situations.
4. The Group Participation Evaluation Form to evaluate the members perception of their own and each others trust behaviours.
5. Group Evaluation Questionnaire and Interview to investigate how each member experienced and evaluated the group sessions.