Test Anxiety in Jordanian Students: Measurement, Correlates and Treatment

Psychometric properties of the Differential Test Anxiety Inventory (DAI), and a comparison of cognitive therapy and study skills counseling in the treatment of test anxiety

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Zusammenfassung

Diese Untersuchung bestand aus einer korrelationalen Studie und einer experimentellen Studie.

Die korrelationale Studie hat die Beziehungen zwischen Leistungsängstlichkeit, Procrastination, akademischer Leistung und Zufriedenheit mit dem Studium bei einer Stichprobe von 573 männlichen High-School Studenten, die aus vier Schulen ausgewählt wurden, untersucht. Pearson-Produkt-Moment Korrelationsskoefficienten wurden gerechnet, um die Beziehungen zwischen diesen Variablen festzustellen. Die Ergebnisse haben gezeigt, dass es eine signifikante positive Korrelation zwischen Leistungsängstlichkeit und Procrastination gibt (r= .29). Signifikante negative Korrelationen wurden zwischen Leistungsängstlichkeit und akademischer Leistung (r= -.22), Leistungsängstlichkeit und Zufriedenheit mit dem Studium (r= -.27), Procrastination und akademischer Leistung (r= -.24), sowie Procrastination und Zufriedenheit mit dem Studium (r= -.33) gefunden. Keine Korrelation wurde zwischen wissensbezogener Angstauslösung und akademischer Leistung gefunden (r= .05), während sich eine signifikante Korrelation zwischen Repertoire-Unsicherheit und akademischer Leistung ergeben hat (r= -.22).

Die experimentelle Studie der Untersuchung andererseits hat die Wirksamkeit des kognitiven Therapieprogramms und Beratungsprogramms in Studierfertigkeiten in der Reduzierung der Leistungsängstlichkeit und Procrastination, und Verbesserung der akademischen Leistung und Zufriedenheit mit dem Studium untersucht. 81 männlichen Studenten wurden aus einer Gruppe von 156 Zehnter Klasse Studenten aufgrund ihrer Noten auf den globalen Angstskalen des Differentialen Leistungsängstlichkeitsinventars (DAI; Rost and Schermer, 1997) ausgewählt. Diese Studenten wurden auf der Basis ihrer Noten in der kurzen Form des Aitken Procrastinationsinventars (API; Aitken, 1982) geordnet, danach wurden sie auf drei Gruppen verteilt.

Die Gruppen wurden zufällig auf kognitive Therapie, Studierfertigkeitensberatung und Kontroll verteilt. Die kognitive Therapie hat versucht, den Versuchspersonen zu helfen, angstproduzierenden Selbststatements bewusst zu werden, und mit ihnen neue, positive selbst-statements zu trainieren. Die Studierfertigkeitenberatung hat darauf abgezielt den Versuchspersonen die nötigen Fertigkeiten für wirksames Lernen (z.B. SQ3R Methode, Methoden des Zeitmanagements, Vorbereitung für Tests) beizubringen. Alle Versuchspersonen, die behandelt wurden, haben sich für six 50-Minute wöchentliche Behandlungssitzungen getroffen. Der Untersucher diente auch als Therapeut für die Behandlungsgruppen.

Pretest/Posttest Verfahren wurden auf DAI, API, G.P.A und auf eine einzig-Item Frage über Zufriedenheit mit dem Studium durchgeführt. Die Data wurden mit Hilfe der einfaktoriellen Varianzanalyse analysiert. Auf Pretest wurden keine signifikanten Unterschiede zwischen den Gruppen gefunden. Jedoch haben die Ergebnisse gezeigt, dass beide Behandlungsgruppen signifikante Verbesserungen von Pretest zu Posttest in Leistungsängstlichkeit und Zufriedenheit mit dem Studium erzielten. Die Gruppe der Studierfertigkeitensberatung hat eine signifikante grössere Reduzierung in Procrastination als die Kontrollgruppe gezeigt, während die kognitive Therapiegruppe eine grössere Verbesserung in der akademischen Leistung als die Kontrollgruppe zeigte. Ein wichtiges Ergebnis ist, dass das kognitiven Therapieprogramm signifikant Leistungsängstlichkeit reduziert hat, die Procrastination jedoch nicht. Folglich ist die Reduzierung der Angst nötig aber nicht genug um Procrastination zu reduzieren.

Im allgemeinen, können die Ergebnisse der beiden Studien so interpretiert wurden, dass sie das Interferenz Modell des Effektes der Angst auf Leistung unterstützen.

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I. Theoretical Framework

1. Introduction

It is important for many students to get the highest grades possible in their exams. They study hard and make great efforts to achieve this purpose. Some benefit greatly from the efforts they make, but others do not. Therefore, counselors try to help students improve their academic performance and cope with the problems, which may hinder their academic progress. Accordingly, counselors should be well acquainted with the methods necessary for dealing with such matters, so that they could do their work more effectively.

Some academic problems that many students experience are related. This may indicate that these problems stem from the same causes. Students may experience a problem as a result of certain factors; these factors may also make them experience problems other than that which they are aware of. Thus, when counselors deal with the causes of a certain problem through a training program, they may help students overcome other problems at the same time.

Test anxiety is a problem that many students frequently experience; some students, however, find that anxiety interferes with their learning and test taking to such an extent that their grades are seriously affected. These students may efficiently study, but because they may engage in anxiety-provoking thoughts, such as fear of failure or desire for perfectionism, they perform poorly. Furthermore, these same negative thoughts may result in other consequences such as dissatisfaction with study or procrastination, which may in turn lead to detrimental academic performance. On the other hand, test-anxious students may have poor study skills and habits, such as reading without understanding or poor time management, which may also lead to test anxiety, procrastination and poor performance as reactions of the lack of knowledge.

Research shows that a variety of treatment programs have been designed for reducing test anxiety, some of them were effective in reducing test anxiety and/or improving school performance, and others were not. However, so far there is no program to be recommended to counselors, as highly effective for achieving both aims. Therefore, there is still a need for developing new programs with specified components to be easily implemented or modifying old programs. As suggested in the literature of test anxiety, programs designed to teach test-anxious students how to challenge anxiety-producing self-statements and/or help them acquire

good study skills may be effective in reducing their anxiety and increasing their grades.

The present investigation consists of two studies: a descriptive correlational study and an experimental study. The purpose of the descriptive correlational study is to examine the relationships between test anxiety, academic procrastination, academic achievement and satisfaction with study, whereas the purpose of the experimental study is to compare the effectiveness of a cognitive therapy program and a study skills counseling program in reducing test anxiety and academic procrastination, and increasing academic performance and satisfaction with study in high school male students.

2. Test Anxiety

2.1 Definition

I begin by explaining the construct of anxiety, then move on to define the term "test anxiety" and differentiate between its two types (trait and state).

2.1.1 Anxiety

Anxiety belongs in theory and practice to the concepts of general, differential, clinical, counseling and educational psychology (Spielberger, 1966, 1972; Tuma & Maser, 1985; Krohne & Laux, 1982; Schwarzer, 1984; I.G. Sarason & Spielberger, 1975). Although researchers have made considerable progress in the theoretical analysis of anxiety, the identification of the conditions of its development, the construction of methods to diagnose anxiety and the invention of therapeutic techniques (Krohne, 1977), they haven't yet presented a clear definition of the term anxiety, perhaps because there is no consensus upon the various facets included in it (Rost & Schermer, 1989). However, anxiety has been conceptualized as a probability of a harmful future outcome, and as a response to a stressful condition (Shechter & Zeidner, 1990, cited in Zeidner, 1998, pp. 17). The phenomenon of anxiety can be characterized by feelings of anticipation, threat, danger, uneasiness and distress (Rost & Schermer, 1989). In the following are some of the major attributes of anxiety listed by I. G. Sarason and Sarason (1990):

1- The anxious individual appraises a situation as difficult, threatening, or challenging.
2- The anxious individual perceives himself or herself as being inefficient or inadequate to the task at hand.

3- The anxious individual focuses on undesirable consequences of personal inadequacy or on undesirable outcomes.
4- The anxious individual is preoccupied with self-related thoughts that compete with cognitive task-related activity.
5- The anxious individual expects failure and loss of self-esteem.

2.1.2 Test Anxiety

The term test in test anxiety indicates the anxiety-evoking situation and/or the causes of anxiety relating to the training, learning and performance in their wide sense (Rost & Schermer, 1989). The term test anxiety refers to the set of phenomenological, physiological, and behavioral responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative situation (Sieber, O'Neil & Tobias, 1977).

The nature of test anxiety has been characterized as multifaceted and inclusive of task-irrelevant cognitions, heightened physiological arousal, and inefficient study behavior (Spielberger, Anton, & Bedell, 1976, cited in Kirkland & Hollandsworth, 1979). High-test anxious students tend to view evaluative situations, in general, and test situations, in particular, as personally threatening (I. G. Sarason, 1986, I. G. Sarason & Sarason, 1990). They most likely have negative self-images, hold low positions in their peer group and they are often socially isolated. They are frequently regarded by parents and teachers as nonconformists and are often underestimated in their cognitive performance. They frequently have a bad attitude towards work and take less care of their tasks. They show a high degree of helplessness, lack of self-confidence, low self-esteem and are less satisfied with themselves. They perform lower in almost all school subjects, and lower on tests of school achievements, intelligence and creativity, as compared to their low test-anxious counterparts. They attribute their academic success to external factors (e.g. to the chance) and their failure to internal factors (e.g. to the lack of talents). They are frequently absent, frequently ill and suffer more from failure (Rost & Schermer, 2001).

2.1.3 Trait Test Anxiety

Trait test anxiety refers to a relatively stable individual difference in anxiety proneness, that is, in the general tendency to perceive stressful test situations as dangerous or threatening, and to respond to such situations with varying levels in the intensity of anxiety reactions (Spielberger, 1966). High trait-anxious students tend to see test situations as more threatening than students who are low in evaluative trait anxiety. They are more susceptible to stress in test situations and tend to experience anxiety state reactions of greater intensity and with greater frequency over time than low trait-anxious students (Zeidner, 1998).

2.1.4 State Test Anxiety

State test anxiety refers to anxiety as a transitory condition occurs in a student prior to and/or during the test situations, because he/she perceives these situations

as threatening (Spielbeger et al., 1976). This condition is characterized by conscious feelings of tension and perceived arousal, accompanied by physiological reactions (e.g. palpitation, sweat, muscle tension), and accompanied by negative self-statements and thoughts related to failure or poor achievement (Spielbeger & Vagg, 1995).

2.2 Manifestations of Test Anxiety

Test anxiety has cognitive, physiological, emotional and behavioral manifestations. It may be reasonable to differentiate between high test-anxious and low test-anxious individuals through these manifestations.

2.2.1 Cognitive Manifestation

Worry is traditionally viewed as a primary component of the anxiety state (I. G. Sarason, 1988). Liebert and Morris (1967) defined worry as the cognitive elements of the anxiety experience, such as negative expectations and cognitive concerns about oneself, the situation at hand, and potential consequences. Worry component is triggered by cues related to negative appraisals of exam performance, perceived as threatening the individual's sense of adequacy and worth (Morris et al., 1981). Worrisome thoughts reach a high level early in the exam process and do not dissipate so rapidly (Liebert & Moris, 1967). It has been found that worry is significantly negatively related to both performance expectancy (Liebert & Moris, 1967) and exam performance (Deffenbacher, 1977). Worrisome thoughts may interfere with performance by distracting attention while preparing for the exam and taking the exam (Morris et al., 1981). In this context, it should be pointed out that task-irrelevant thoughts can be related to the test performance and can be unrelated. Spielberger and Vagg (1995) argue that it would be more meaningful to regard the latter as a correlate and not as a component of test anxiety.

Research indicates that the cognitive elements of test anxiety may be manifested as worry, misunderstanding the task, not noting the mistakes, thought blocking, forgetting, poor listening, poor concentration, clinging to the same thoughts, task irrelevant thoughts, unclear thoughts, not understanding the questions, reduced attention (Rost & Schermer, 1997), self-focused attention or negative performance expectations (Deffenbacher, 1980).

2.2.2 Physiological Manifestation

Autonomic arousal is the most dominant response for the expression of anxiety in stressful situations. Autonomic arousal may manifest during testing in a variety

of physiological responses, such as rapid heart beat, feelings of nausea, sweating, cold and clammy hands, need to pass urine, and shaking and trembling (Suinn, 1984). Galassi, Frierson and Sharer (1981) found that the most frequently reported bodily sensations experienced by university students, in descending order, were hands or body perspiring, heart beating fast, stomach tense, dryness in mouth, and hands or body trembling. Studies by Holroyd, Wetbrook, Wolf, and Badhorn (1978), and Hollandsworth, Glazeski, Kirkland, Jones and Van Norman (1979) found that high-compared to low-test-anxious students did not differ in physiological arousal levels both prior to and during a test, but instead differed in the appraisal and interpretations made about their arousal (e.g., test-anxious students defined their arousal as debilitative, whereas low-test anxious students viewed their arousal as a cue to exert greater effort toward the test).

2.2.3 Emotional Manifestation

Emotionality is defined as one's perception of the physiological-affective elements of the anxiety experience. This implies awareness of indications of autonomic arousal and unpleasant feeling states such as nervousness and tension (Morris et al., 1981). Emotionality rises sharply immediately before the test and typically wanes as the examinee progresses on the exam (Doctor & Altman, 1969). It has been found that emotionality is elicited primarily by external cues (e.g., walking into the exam hall, appearance of examiner, distribution of test booklets), which indicate the initiation of evaluation (Morrris et al., 1981). The emotional elements of anxiety can be expressed as feelings of restriction, loneliness, sadness, disappointment or helplessness (Rost & Schermer, 1989).

2.2.4 Behavioral Manifestation

High test-anxious students show significantly lower levels of study skill competence when compared to low test-anxious students (Wittmaier, 1972). They are characterized by poor study skills, including utilizing class time, taking and organizing class notes, preparing for exams, and maximizing their use of time on objective exams (Culler & Holahan, 1980; Kirkland & Hollandsworth, 1979). They attempt to compensate for their lack of study skills by increasing the amount of total study time (Culler & Holahan, 1980; Benjamin, Mckeachie, Lin & Holinger, 1981). They report significantly more problems in encoding, organizing and retrieval of the information (Benjamin et al., 1981). Also, anxiety may be expressed in a variety of avoidance behaviors at various stages of the exam process. Academic procrastination is an outstanding form of avoidance behavior characterizing test-anxious students (Solomon & Rothblum, 1984).

2.3 Determinants of Test Anxiety

If a student appreciates the situational demands of the testing process as dangerous and exceeding his/her competence, the transaction between the student and the test situation will be judged as anxiety-producing (Zeidner, 1998). It is expected that any aspect of the testing process (e.g., test difficulty) increases the probability of failure will also increase the student's appraisal of perceived threat in the test environment, thus increasing his/her anxiety (Lazarus & Folkman, 1984, cited in Zeidner, 1998, pp. 171). This transaction shows that there are situational and subjective determinants of test anxiety.

2.3.1 Situational Determinants

Students high in test anxiety usually perform as well as those low in test anxiety if the situation is not evaluative or stressful (Wine, 1971). This means only in evaluative situations, there is a difference in performance between high test-anxious and low test-anxious individuals.

The difficulty of the task (i.e., test) is regarded to be a major source of stress and anxiety. O'Neil, Spielberger, and Hansen (1969) found that blood pressure increased while students worked on difficult learning materials and decreased when they responded to easy materials. The difficulty may not only be due to the task, but also to other factors such as the ability of the student, amount of preparation, and prior experience with the task in which a student will be engaged (Zeidner, 1998).

Item order may also affect test anxiety. It has been found that when a test is initially perceived as highly difficult, the presence of anxiety will be most disruptive, and then the performance will be poorest. Covington and Omelich (1987) reported that students who combine high anxiety and a lack of self-confidence performed on hard test items poorly, especially when hard items were placed first, compared to their counterparts who combine low anxiety and high confidence.

Regarding test instructions, Williams (1976, cited in Wigfield & Eccles, 1989) reported that task instructions deemphasizing the evaluative nature of the task improved the performance of anxious students, while instructions stressed that the task is a test of ability hindered their performance. Furthermore, test formats may affect high-test anxious students. A study by Green (1981) examined whether preferences for different test formats (e.g., multiple-choice, problem-solving, essay, interpretive exercise, completion, and true-false), differed for students high and low in anxiety. It was found that groups high and low in

anxiety agreed on all preference ranks except essay and interpretive exercise; the highly anxious group preferred interpretive exercises to essays. Another study by Zeidner (1987) showed that school children viewed multiple-choice tests as being less anxiety-producing than essay tests.

On the other hand, time pressure is an anxiety-evoking factor. Students may note that the exam time is insufficient for them to answer all the exam questions. This situation may lead them to think about the consequences of poor achievement or failure, which may make them feel anxious. Plass and Hill (1986) found that high-anxious boys performed poorly under time pressure compared to their less anxious peers, whereas when time pressure was removed, their performance improved significantly.

2.3.2 Subjective Determinants

Irrational beliefs and negative perceptions relating to the test situation are considered to be sources of anxiety. When a student interprets the test situation as threatening or challenging, he/she may feel uncomfortable and tense. Accordingly, even if a student has adequately prepared for an exam, his/her anxiety may result from negative thinking or worries such as focusing on how friends and other classmates are doing, or on the negative consequences of failure. A number of studies showed that anxious students emit more negative self-statements and thoughts than non-anxious students. Hunsley (1987) found that high levels of test anxiety were associated with frequent negative cognitions during exams. Similarly, Galassi et al., (1981) reported that low test-anxious students experienced more positive and fewer negative thoughts than high-test anxious students. Zatz and Chassin (1983) found that high test-anxious subjects reported more task-debilitating thoughts than either moderate- or low-anxious subjects. Additionally, high-test anxious subjects reported fewer positive evaluations that low test-anxious subjects.

Another determinant of test anxiety is study skills and test taking deficits. Students with poor study skills and inefficient methods of preparation frequently lack self-confidence and are anxious and tense before and during tests. Desiderato and Koskinen (1969), Mitchell and Ng (1972), Wittmaier (1972) and Onwueguzie and Daley (1996) reported that high-test anxious students had less effective study skills than low-test anxious students. This implies that test anxiety may stem from the lack of knowledge of the examination material (Onwuegbuzie & Daley, 1996). A student perceives his/her ability to cope with a test as unsatisfactory and is uncertain about the consequences of inadequate coping (I. G. Sarason & Sarason, 1990). Thus, he/she experiences test anxiety, because he/she does not feel sufficiently prepared as a result of having too few or even no

study skills and habits (Culler and Holahan 1980). In addition, low level of intelligence may contribute to the initiation of test anxiety. A meta-analytic study of 61 different studies based on 8438 subjects in grades 3-postsecondary showed consistent correlation of -.23 between IQ and test anxiety (Hembree, 1988). This indicates that high-test anxiety associates with low intelligence.

Generally, anxiety-producing self-statements may result from irrational beliefs (e.g., if I don't get a full score, I will be worthless), the perception of test situation as threatening (e.g., the exam will be difficult for me, I don't know whether I'll do well or not), and/or poor study habits and skills (e.g., I feel I'm not well prepared for the exam, I may fail).

2.4 Gender Differences

Almost all investigations of gender differences in test anxiety indicate that girls consistently show higher levels of anxiety than boys, especially in grades 5 to 10 (Hembree, 1988).

A study by Ahlawat (1989) investigated the sex differences in test anxiety in a sample of 3,572 Jordanian high school and community college students. The high school students were 1,014 males and 839 females studying in the 12th grade. Community college students were 768 males and 951 females from both the first and second years of the two-year community colleges. It was found that the girls showed a tendency to score higher than the boys on the test anxiety scale (The Jordanian Arabic version (Y-TAI) of the Test Anxiety Inventory (TAI; Spielberger, 1980)).

A frequent interpretation of gender differences explains them in terms of socialization differences. Girls are more emotional, have less self-control, and disclose more personal information. Thus, they seem to admit anxiety more quickly, considering that they, in comparison to boys, lose less regard when they report their levels of anxiety. Also, girls are probably actually more affected by the test situation and view this situation as anxiety-evoking, because they seem to be more socially motivated (Rost & Schermer, 2001).

2.5 Correlates

Test situation usually results in varying degrees of anxiety. Also, it may produce other emotional reactions such as low self-esteem, depression and anger (Van der Ploeg, 1983). These reactions or responses may be related to test anxiety. Numerous studies have investigated the relationships between test anxiety and personality variables. These studies indicate that test anxiety is significantly correlated with a variety of personal variables.

Hembree's (1988) meta-analysis of 36 studies showed a strong inverse correlation (r=-.42) between self-esteem and test anxiety. This indicates that high-test anxious students have low self-esteem compared to their low-test anxious peers. Additionally, it has been found that test anxiety is negatively correlated with optimism. Students who are high in test anxiety are often pessimistic regarding examination results. They expect that they will not get good results (Carver & Scheier, 1989). Kleijn, Van der Ploeg and Topman (1994) found inverse correlations between optimism and both worry (r=-.51) and emotionality (r=-.44) subscales of test anxiety in a sample of first year medical

and biomedical students. This suggests that successful students feel competent about fulfilling the demands of study and can handle test situations.

Anxious individuals are usually worried about future events, which may or may not occur. Depressed individuals, on the other hand, are usually sad as a result of perceived losses in the past (Beck & Emory, 1985). However, both anxious and depressed persons are engaged in negative self-talk. This may suggest that test anxiety and depression are related. Comunian (1989) found a correlation of .36 between scores on the Test Anxiety Inventory and Children's Depression Scale in a sample of 200 Italian high school students.

Some circumstances may facilitate the development of angry feelings during exams. These circumstances include poor organization of the examination, lack of facilities and getting a bad grade (Van der Ploeg, 1983). A study by Van der Ploeg (1983) examined the relationship between test anxiety and anger in a sample of 184 second year medical students in Holland. Results showed that test anxiety was more strongly correlated with trait anger (r= .24) than with state anger (r= .12). When the relationships between these variables were examined in a second administration of the scales in a sample of 82 medical students, the correlations between test anxiety and both trait (r= .43) and state anger (r= .35) were higher.

Regarding self-handicapping, Smith, Snyder and Handelsman (1982) found that high-test anxious individuals used reports of lowered effort in a self-handicapping pattern. Harris, Snyder, Higgins and Schrag (1986) investigated the differential contributions of test anxiety and other personality variables to self-handicapping in a sample of 104 undergraduate women in high-evaluative stress condition and in low-evaluative stress condition. Subjects' level of test anxiety was a reliable predictor of anticipated effort; high test-anxious subjects anticipated expending less effort.

2.6 Consequences

Seipp (1991) conducted a series of meta-analyses (126 studies published from 1975 to 1988) to reveal the strength of the relationship between anxiety and performance. He found a negative correlation (r= -.21) between the two variables. This means that high-test anxiety accompanies poor performance. Another important result (see Tryon, 1980 & Küpfer, 1997) is that the cognitive component of test anxiety, the worry, is negatively correlated with performance, whereas the emotional component, the emotionality, is not. High test-anxious students show autonomic activity similar to low test-anxious students in testing situations. Thus, negative thinking about exams may impair test performance

much more than perception of the physiological arousal. Research shows that there are two models for explaining the relationship between test anxiety and performance: the interference model and the skills-deficit model. In the following, the basic assumptions of the interference model will be outlined. Then, the skills-deficit model will be presented.

2.6.1 Interference Model

Sometimes students find it difficult to remember the answers of some questions during an exam, but when they leave the exam room, they can easily retrieve the information related to these questions. From the interference model point of view, the effect of test anxiety on performance occurs in the testing situation. That is, anxiety during tests interferes with the student's ability to retrieve and use information that is known well (Culler & Holahan, 1980). Accordingly, anxiety hinders the individual from utilizing or developing task-relevant knowledge or skills (Hodapp & Henneberger, 1983). The roots of the interference model go back to the beginnings of the empirical test anxiety research. Mandler and S. B. Sarason (1952) put forward the central hypotheses of the interference theory, which was later presented by Wine (1971, 1980) in the framework of attentional theory. These both interference beginnings will be presented in the following in more detail.

2.6.1.1 Interference Theory by Mandler and S. B. Sarason

Mandler and Sarason (1952) presented an interpretation of the difference in performance based on the learned psychological drives. They assumed that in test situations, two kinds of learned drives are typically effective: task drives and anxiety drives. The task drives stimulate behaviors to complete the task. These behaviors are activated in a given situation through setting of tasks and the expectations of individuals. The anxiety drives include all anxiety reactions, which have so far been learned in similar test situations. These drives primarily produce such reactions, so that they lead to anxiety reduction. In this regard, Mandler and Sarason proposed that these drives stimulate two opposite and incompatible behaviors: (a) Task-relevant reactions that directly contribute to task completion, thus reducing the anxiety. (b) Task-irrelevant reactions, which are not specifically linked with the requirements of the task. They can manifest as feelings of incompetence, helplessness, somatic reactions, anticipation of punishment or loss of self-worth as well as implicit attempts to avoid the test situations. It is here a matter of self-centered reactions, which impair task performance.

2.6.1.2 Attentional Interpretation by Wine

Wine (1971) suggested that the debilitating effects of test anxiety on performance might have an attentional explanation. To put it more clearly, high-test anxious student attends to both self-relevant and task-relevant variables in contrast to the low test-anxious student who attends mostly to task-relevant variables. Thus, according to the cognitive attentional model of test anxiety proposed by Wine, task performance is impaired by worry, negative self-statements, and task-irrelevant thoughts. This model may propose cognitive-attentional training to help anxious individuals focus their attention on the work at hand.

2.6.2 Skills-Deficit Model

Researchers who support this model (e.g. Desiderato & Kokinen, 1969; Wittmaier, 1972; Culler & Holahan, 1980) assume that poor performance in exams is mainly attributed to inefficient preparation caused by poor study-related behavior. Students characterized by poor study skills and habits are well aware of their poor preparation for the exam, and thus adapt low self-expectations for success. This increases anxiety relating to the exam, which, in turn, impairs performance. Consequently, when students feel or perceive that their study skills are insufficient, they may become anxious and then perform poorly. High-test anxious students have less study skills than low-test anxious students. As a result, they are less prepared for exams. According to this model, study skills counseling and training would be proposed to help test anxious students with poor study skills be self-confident in test situations.

2.7 Diagnosis

Qualitative and quantitative diagnoses are possible through physiological measurements, self-references (free stories, questionnaires, etc.) as well as by means of observation or estimates done by teachers, parents and classmates. In the diagnosis of test anxiety, the classical questionnaires, which are very economic and preferred in the research, dominate as a diagnostic tool. The traditional questionnaires concentrate nearly exclusively on the anxiety reactions of individuals and don't pay enough attention to the other aspects of anxiety (i.e., initiation of anxiety, coping with anxiety and anxiety stability)(Rost & Schermer, 1987).

The present questionnaires are regarded as being of little relevance to the field of counseling and clinical psychology, because they allow knowing the presence of test anxiety, but don't offer relevant information for counseling. Therefore, it has frequently been gone back to the clinical interview, which can be seen as a search

pattern for relevant information for intervention. Whether and to which extent the functional relationships can be uncovered through the clinical interviews strongly depends, as in all interviews, on the experience and the psychological and social competence of counselors, school psychologists or therapists (Rost & Schermer, 2001).

(a) Procedures with uni-dimensional evaluation. Most test anxiety questionnaires show only the level of anxiety, although since the 1950's there have been indications to multi-dimensional structures. Rost and Schermer (2001) viewed such questionnaires as not consistent with the current stand of knowledge and they shouldn't be used any more for counseling purposes.

(b) Procedures with bi-dimensional evaluation. It is clear that a one-dimensional description to the complexity of the phenomenon of test anxiety is not adequate. State-trait Anxiety Inventory (STAI) makes a distinction between state test anxiety [I feel now, i.e., in the moment, tense] and trait test anxiety [I generally feel tense]. It, however, doesn't further divide the construct itself. The division of test anxiety by Liebert and Morris (1967) into a worry component and an emotionality component is more fruitful.

Procedures with multi-dimensional evaluation. All modern questionnaires of test anxiety include (at least) the both components- worry and emotionality. Hodapp's (1991) test anxiety inventory, which is restricted to the reaction aspect, contains in addition to emotionality (I'm excited) and worry (I think about the consequences of a possible failure) both lack of confidence [I'm confident of my performance] and interference [sudden thoughts interfere with my concentration]. Also, the inventory developed by I. G. Sarason (1984) consists of four factors, namely worry, irrelevant thoughts, strain, and physical symptoms. Rost and Schermer (1992) considered this procedure as neither theoretically nor psychometrically convincing.

So far a precise analysis of test anxiety can be examined only with the Differential Test Anxiety Inventory by Rost and Schermer (1997). It is a multi-faceted inventory that includes in addition to the manifestations of test anxiety (physiological [If I experience test anxiety, I start to sweat]; emotional [If I experience test anxiety, I feel useless]; cognitive [If I experience test anxiety, I forget thing I've already learned]) three typical factors of the initiation of test anxiety (repertory uncertainty [I experience anxiety, because I have difficulties in finding the right way of preparing for a test]; lack of knowledge [I experience anxiety, when I realize that my knowledge is insufficient], recitation situations [I experience anxiety, to recite something in front of class]. It also includes two

stability conditions of test anxiety (external stability [Others take great consideration in my anxiety] and internal stability [The idea that I could fail takes grasp of me and then never lets me go]) as well as four coping strategies with test anxiety (danger control [To cope with my anxiety, I review the subjects]; situation control [To cope with my anxiety, I rely on cheating]; anxiety control [To cope with my anxiety, I try to do something against my tension]; anxiety repression [To cope with my anxiety, I say to myself that school isn't that important]).

2.8 Coping

The literature shows that several techniques and programs have been used in attempts to treat test anxiety, including cognitive techniques, which focus on the worry component, behavioral techniques, which focus on the emotionality component, cognitive-behavioral techniques, which focus on both components, study skills counseling, which aims to teach students how to study and prepare for exams, in addition to combined programs. However, until now there is no single theory, technique or program that can be regarded as the most appropriate option for school counselors in reducing test anxiety and enhancing performance of students.

Rost and Schermer (2001) suggested that prevention and treatment of test anxiety should be divided into three components: "teachers and school", "student's personality" and "parent's house".

(a) In the field of school and classes, there are procedures to be considered, which reduce danger and build success-oriented expectations. The initiation of test anxiety can be prevented through the extensive use of freedom in classrooms. In addition to creating an emotional and warm atmosphere, it is important to think about defusing crisis situations (such as starting school, or transition to a secondary school), about defusing threatening situations relating to performance and tests, and about optimizing the learning process in classes.

(b) The classical technique of behavioral therapy for reducing test anxiety is systematic desensitization, which can be used in combination with positive reinforcement for successful coping with anxiety-producing situations. Its use alone is no longer supported as a method for treating test anxiety, because the optimization of coping strategies remains unconsidered. Also, since test anxiety is negatively correlated with performance, counseling and therapy should always be done through procedures for the acquisition of study skills, if necessary, in connection with private tuition, to compensate the lack of knowledge, and hence make it possible to get high scores, increase self-confidence and self-esteem. Other treatment approaches have emphasized the cognitive aspects, which include one's motivation, processes of thinking and problem solving. In this respect, the strategies of attention, self-assertion and attribution can increase self-confidence and realistically evaluate the own abilities as well as performance possibilities (cognitive therapy).

(c) The reaction to performance situations in the parent's house has a crucial part in the stability of test anxiety. Above all, this problem can be dealt with through intensifying the communication and cooperation between parent's house and

school. The parents should regularly discuss the school situation openly and free from personal devaluation and to act in solidarity with their child. Parental reactions to performance and school behavior of their child should be appropriately constant. They should regard their child as an independent personality and not to view him as a model of their own self-image (child should realize, what his parents wish), because he comes under severe performance pressure, by asking or expecting too much of his intellectual abilities.

3. Academic Procrastination

3.1 Definition

I begin by explaining the concepts of general, decisional and behavioral procrastination, then move on to academic procrastination.

3.1.1 Procrastination

There is no doubt that occasional postponements of tasks or assignments are acceptable. All students may sometimes find themselves obliged to put off their tasks until later, especially when unexpected circumstances occur, because of which they have to make some changes in their work plans. However, some people frequently postpone completing their tasks, which may make them feel guilty as a result of wasting time and losing opportunities. This frequent postponement has been viewed as problematic and termed procrastination, as an area of investigation.

Procrastination has been defined as a tendency to delay tasks that should be completed (Lay, 1986). Ellis and Knaus (1977, cited in Ferrari, Johnson & McCown, 1995, pp. 72) viewed procrastination as a habit or trait, stemming mainly from self-defeating thoughts. They labeled it as the phenomenon of delaying task completion to the point of experiencing subjective discomfort. Compulsive or dysfunctional procrastination is defined as decisional and behavioral procrastination in the same person (Ferrari, 1991). Decisional procrastination is defined as the purposive delay in making decisions within some specific time frame (Ferrari, 1994). Janis and Mann (1977) regarded this type of procrastination as a cognitive response pattern causing an individual discomfort because of the delay. The decisional procrastinator might claim a tendency toward forgetfulness and absentmindedness. Behavioral procrastination, on the other hand, refers to the tendency to postpone most everyday tasks (Lay, 1988). This delay is meant to protect a vulnerable self-esteem (Burka & Yuen, 1983, cited in Ferrari, 1991). Behavioral procrastinators view their self-worth as based solely on their ability to perform. By avoiding task completion, procrastinators'

actual inability at the task is never tested; they may maintain an illusion concerning their task ability (Ferrari, 1994). That is, for them, it is better to do nothing than risk failure and look foolish (Ferrari, 1992).

Procrastinatory behavior may be due to fear of failure or fear of success. Some procrastinatory behavior may represent a form of rebellion to those in authority (Burka and Yuen 1983, cited in Lay, 1986). Ellis and Knaus (1977, cited in Rorer, 1983) offered some interpretations of procrastinatory behavior: First, it can be viewed as a reaction to fear of failure or rejection. Second, it may be a result of one's unwillingness to act on unpleasant or difficult tasks. Third, it may be a response to unfair treatment by others toward oneself. Thus, the causes of procrastination may be different from one person to another, or from one group to another.

3.1.2 Academic Procrastination

Academic procrastination has received a great interest from researchers, because of the obvious negative consequences of procrastination for millions of students, and the availability of these students for research and treatment (Milgram, Gehrman & Keinan, 1992). Delaying academic tasks is a common practice among college students. It was found that nearly one fourth of all university students reported problems with procrastination on such academic tasks as writing term papers, studying for exams, and keeping up with weekly readings (Solomon & Rothblum 1984). Rothblum, Solomon and Murakami (1986) defined academic procrastination as the (a) self-reported tendency to put off academic tasks nearly always or always and (b) to experience nearly always or always problematic levels of anxiety associated with this procrastination. They considered that self-reported procrastination must include both frequent delay and considerable anxiety.

There is evidence that tendency for students to procrastinate increases the longer they are in college. That is, freshmen procrastinate the least; seniors, the most (Semb, Glick & Spencer 1979, cited in Solomon & Rothblum, 1984). It has also been found that there are differences between academic procrastinators in their attribution of academic performance. High procrastinators attribute their good test performance to luck or situational factors (external attributions), whereas low procrastinators attribute success on a test to effort or ability (internal attributions) (Rothblum et al., 1986).

3.2 Manifestations

What can be observed in procrastinating students is that they delay in beginning or completing academic assignments until a later date (Ferrari et al., 1995). For example, rather than studying regularly during the semester, they begin studying just a few days before exams. This means that they begin studying later than it would be optimal. Milgram, Stroloff and Resenbaum (1988) suggested that this delay might be because their study behavior doesn't accord with their stated intentions, or because their intention to begin studying is delayed. Accordingly, both an intention-behavior discrepancy and a lack of promptness in intending to perform and performing study assignments may be observed. Additionally, procrastinating students are easily distracted toward activities other than studying (e.g., recreational or sport activities) (Ferrari et al., 1995). Some procrastinating students, especially those who procrastinate as a response to fear of failure, are careful to let the others see them or know about them, when they spend a lot of their time doing activities other than studying. In doing so, these students want to send a message to the people whom they know that if they haven't passed the exams, this doesn't mean that they are unable or unintelligent, but means that they haven't passed, because they haven't studied. Therefore, when they get their exam results, it would be less embarrassing for them to talk about their academic performance, if poor, compared to their peers, who study hard and perform poorly.

3.3 Determinants

Of course, procrastinatory behavior can be explained in terms of several psychological theories, especially the psychoanalytic, psychodynamic, behavioral and cognitive theories.

3.3.1 Psychoanalytic Theories

According to the psychoanalytic theories, procrastination results essentially from anxiety. Freud (1953, cited in Ferrari et al., 1995, pp. 22) illuminated the role of anxiety in avoidance behavior. He believed that anxiety was a warning signal to the ego of repressed unconscious material that could be disruptive. As soon as the ego identifies anxiety, it institutes a large array of defenses. The Freudian concepts of dynamic defenses and task avoidance argue that tasks that are not completed are avoided primarily because they are threatening to the ego.

3.3.2 Psychodynamic Theories

These theories asserted the role of authoritarian parenting in the development of procrastination. Spock (1971, cited in Ferrari et al., 1995, pp. 24) argued that unconscious feelings of parental anger express themselves when children fail at

parentally imposed tasks. Children unconsciously respond to this anger by demonstrating a delay of future goal-oriented behavior. When adults raised under these conditions encounter a task requiring a significant degree of achievement, they unconsciously recall the parental conflict. They respond to this unconscious memory and subsequent resentment by attempting to thwart the wishes of the parental figure that is imposing the achievement-oriented task. The result is that they find themselves chronically unable to finish any task that is indicative of the early childhood conflicts between themselves and their parents.

3.3.3 Behavioral Theories

The behavioral theories explain procrastinatory behavior in terms of environment and previous experiences. Procrastinating students already learned to postpone completing their academic tasks, especially if these tasks are unpleasant, and to direct their attention towards other activities that are interesting for them. This behavior has been reinforced by students themselves, their peers or their social environment. At the same time, it hasn't been punished. Therefore, it has become habitual over time.

3.3.4 Cognitive Theories

According to the cognitive theories, procrastinatory behavior stems from irrational beliefs or negative self-statements, such as "I still have much time ahead, I will begin preparing for the exams later," or "I can read the whole material the night before the exam, so I don't need to begin preparing now". Also, some students behave irrationally, when they view their self-worth as based only on task ability, and avoid completing tasks, so that they don't give a chance to others to test or know their actual inability at the tasks. Solomon and Rothblum (1984) investigated academic procrastination in 342 college students. They performed a factor analysis of subjects' reasons for procrastination. They found that students engaged in frequent procrastination for two major reasons: fear of failure and task-aversiveness. They also found that the difference between students who procrastinated because of aversiveness of the task and those who procrastinated because of fear of failure was that the latter also reported high anxiety and low self-esteem. This reflects the role of negative self-statements in inducing procrastination, and other related personality disorders (e.g., high anxiety, low self-esteem and fear of failure).

3.4 Consequences

It is quite clear that when students frequently postpone their academic tasks until a later date, these tasks will accumulate in the future, because during the semester

new assignments will be required. Thus, while preparing for a particular exam, they may not be able to study all of the material a few days before the exam; this could lead them to focus on some parts and ignore others. Insufficient preparation will most likely result in poor achievement. When students perform poorly in their exams, it has a negative effect on them. They may lose the opportunity to continue their studies in the fields that they like or to get the jobs that they want and other possible losses. Furthermore, procrastinating students may feel guilty for taking so much of their time away from studying and doing other activities. Feeling guilty and worried about losing opportunities and wasting time may lead to other emotional disorders such as depression or anxiety. This may negatively impact their families and their relationships with others. Thus, procrastination can affect all aspects of the students' lives (academic, personal, social).

3.5 Correlates

Research has shown that there are significant correlations between procrastination and a variety of personality variables such as trait anxiety, low self-confidence and self-esteem, lack of energy, disorganization, noncompetitiveness, depression, neurosis, and forgetfulness (Solomon & Rothblum, 1984; Beswick, Rothblum & Mann, 1988; Effert & Ferrari, 1989). In the following, I present the results of some studies investigating the relationship of procrastination to other personality variables.

A study by Aitken (1982) showed that academic procrastination was correlated with self-concept (r= -.42) and impulsivity (r= .21). McCown, Petzel, and Rupert (1987) reported a correlation of .60 between academic procrastination and extraversion. Lay (1986) found that procrastination was strongly correlated with organization (r= -.49) and neurotic disorganization (r= .69) in a sample of 76 university students. Ferrari (1991) explored whether low self-esteem and high social anxiety promoted the choice of an environmental performance obstacle more by procrastinators than nonprocrastinators as an attempt to protect social and self-esteems in a sample of 120 female college students. Female procrastinators (n= 57) self-reported significantly lower self-esteems than female nonprocrastinators (n=63). Also, procrastinators (49.1%) were more likely than nonprocrastinators (30.2%) to self-handicap. Procrastinators compared to nonprocrtastinators self-reported significantly more self-awareness, self-presentation, and self-handicapping tendencies. Another study by Ferrari (1992) examined the relationships between procrastination, perfectionism and self-consciousness in a sample of male (n= 103) and female (n= 204) college undergraduates. Results showed that procrastination was correlated with perfectionism (r= .34), private self-consciousness (.21), public self-consciousness (.31), and self-handicapping (.30). Weigand (2001) found a correlation of -.32

between procrastination and satisfaction with study in a sample of 505 university students.

3.6 Diagnosis

A number of inventories have been developed in the field of academic procrastination either to differentiate between high procrastinators and low procrastinators, or to explore the reasons for procrastination and frequency of procrastination. The most widely used inventories are: Aitken Procrastination Inventory (API), Procrastination Assessment Scale-Students (PASS) and Tuckman Procrastination Scale (TPS).

Aitken (1982, cited in Ferrari et al, 1995, pp. 52) Procrastination Inventory (API) was developed to differentiate chronic procrastinators from nonprocrastinators among college undergraduates. This inventory consists of 19 items interspersed through a larger body of 52 items. Each statement is rated along a 5-point scale from False (1) to True (5).

Another scale of procrastination is Procrastination Assessment Scale-Students (PASS), developed by Solomon and Rothblum (1984) to explore procrastination on academic tasks. The PASS consists of two parts. The first part assesses the prevalence of procrastination in six areas of academic functioning: (1) writing a term paper, (2) studying for an exam, (3) keeping up with weekly reading assignments, (4) performing administrative tasks, (5) attending meeting, and (6) performing academic tasks in general. Subjects are asked to indicate on a 5-point Likert scale the degree to which they procrastinate on the task (1= never procrastinate; 5= always procrastinate) and the degree to which procrastination on the task is a problem for them (1=not at all a problem; 5=always a problem). Additionally, subjects are asked to indicate on a 5-piont Likert scale the extent to which they want to decrease their procrastination behavior on each academic task (1= do not want to decrease; 5=definitely want to decrease).

The second part of the PASS presents the respondent with a procrastination scenario (e.g., delay in writing a term paper) and then lists a variety of possible reasons for procrastination on the task: (1) evaluation anxiety, (2) perfectionism, (3) difficulty making decisions, (4) dependency and help seeking, (5) aversiveness of the task and low frustration tolerance, (6) lack of self-confidence, (7) laziness, (8) lack of assertion, (9) fear of success, (10) tendency to feel overwhelmed and poorly manage time, (11) rebellion against control, (12) risk-taking, and (13) peer influence. Two statements are listed for each of these reasons, and students are asked to rate each statement on a 5-point Likert scale

according to how much it reflects why they procrastinated the last time they were in this situation.

The Tuckman (1991, cited in Ferrari et al, 1995, pp. 54) Procrastination Scale (TPS) was developed to detect whether undergraduates tend to procrastinate at completing college requirements. The TPS provides a general index of academic procrastination resulting from a student's ability to self-regulate or control task schedules. This scale is actually 16 items embedded among 35 items regarding academic behaviors. Tuckman (1991) suggested that procrastination is caused by a combination of one's disbelief that he or she is capable of performing tasks well, inability to postpone gratification, and frequent assignment of blame to external sources for life predicaments.

3.7 Coping

Most studies that examined the effectiveness of treatment methods for reducing procrastination remain unpublished. Therefore, it is difficult to know through too few studies available, which techniques are more efficient in coping with procrastination.

A study by Ziesat, Rosenthal and White (1978) investigated the effects of stimulus control, self-reinforcement, and a combination of the two on a sample of 56 college students who procrastinated in studying. Students were given either behavioral self-control training or a nondirective, attention-placebo control procedure. Experimental clients were exposed to training in either stimulus control, self-reinforcement, or a combination of the two. Half of these clients used self-punishment; half did not. Half were trained individually and half in groups of four. Regarding reported amount and attitudes toward studying, experimental clients improved, whereas control clients did not. However, there were no significant differences among experimental subconditions. Neither control nor experimental conditions resulted in any significant change in over-all grade point average.

Richards (1975) investigated the efficacy of two behavioral self-control procedures as additions to study skills advice in modifying behavior of studying in a sample of 108 college students. Results indicated that self-monitoring was an effective treatment addition to study skills advice and stimulus control was not. All of the combined treatment groups were superior to the controls that were equivalent. Treatment effects were equivalent for good and poor students, and most students felt that the treatment had helped them significantly with the improvement of their study habits.

Green (1982) examined the effects of self-monitoring alone and self-monitoring plus self-reward on three academic and three related procrastinative behaviors of six academically disadvantaged minority college students. Results showed that subjects could self-monitor consistently and accurately and self-reward frequently the occurrences of their academic behaviors. Self-monitoring alone did not reduce academic or procrastinative behaviors. A combination of self-monitoring and self-reward was effective in producing substantial increases in academic behaviors and grades and in producing decreases in related procrastinative behaviors.

Wright and Strong (1982) examined whether directives that tell clients exactly what to do stimulate defiance, and those that give clients a choice of what to do stimulate compliance; also they investigated whether the therapeutic change can

be facilitated by directing clients to maintain their undesired behaviors. 20 college student procrastinators were given 2 interviews in which interviewers directed them either to continue to procrastinate exactly as they had been doing or to choose some of their procrastination behaviors to continue. 10 other procrastinating students did not receive interviews. Subjects who were interviewed, including those who were directed to maintain their procrastination, decreased procrastination dramatically, whereas those not interviewed did not.

4. Test Anxiety and Procrastination

Previous research indicates that there is a relationship between test anxiety and academic procrastination. A study by Rothblum, Solomon and Murakami (1986), in a sample of 379 university students, showed that high procrastinators, particularly women, were significantly more likely than were low procrastinators to report more test anxiety, weekly state anxiety, and weekly anxiety-related physical symptoms. Another study by Weigand (2001) examined the relationship between test anxiety and academic procrastination in a sample of 505 university students. Results showed that procrastination was correlated with the repertory uncertainty (r=41), danger control (r=-.35), situation control (r=28) and cognitive manifestation (r=23) subscales of the Differential Test Anxiety Inventory.

5. Cognitive Therapy and Study Skills Counseling

In this section, I begin by explaining the concept of cognitive therapy, and present a number of studies that examined its effectiveness in reducing test anxiety, then move on to study skills counseling.

5.1 Cognitive Therapy

Cognitive therapy is based on the idea that the way we think about things affects how we feel (Goldfried & Davison, 1976), our feelings are not just automatic responses to events, they are shaped by the beliefs and thoughts that we have (Wells, 2001). The therapist works with clients to help them recognize the cognitions and other factors that cause problems for the clients, to test the validity of the beliefs and thoughts that prove important, and to make the needed changes in both cognition and behavior (Freeman, Pretzer, Fleming, & Simon, 1990). In this way, clients can explore the connections between how they think, how they feel and how they behave. They become aware of their negative self-statements, and learn how to dispute and replace these statements with rational ones.

Thus, cognitive therapy aims to help clients to think appropriately and enable them to cope effectively with their emotional disorders. Each element of the

structure of cognitive therapy sessions is designed to increase the collaboration between therapist and clients while working effectively toward the clients' goals (Freeman et al., 1990). Beck (1970) defined the term cognitive therapy in two ways: In a broad sense, any technique is directed toward modification of faulty or irrational patterns of thinking; in a narrow sense, a set of operations focused on client's cognitions and on the assumptions and attitudes underlying these cognitions.

Regarding the reduction of test anxiety, cognitive therapy is aimed at replacing anxiety-evoking thoughts with thoughts that facilitate task attending. Several experimental studies investigated the effectiveness of cognitive methods in reducing test anxiety and improving academic performance. Although cognitive procedures do seem to reduce test anxiety rather consistently, they are less consistent in improving academic performance. This may be due to the difference in the procedures used in the experiments, the selected samples, the qualifications and experience of the experimenters or other factors.

A study by Meichenbaum (1972) examined the relative efficacy of group cognitive modification treatment and group desensitization in reducing test anxiety in a sample of 21 volunteer subjects ranging in age from 17 to 25 years. The cognitive modification group combined an insight-oriented therapy with a modified desensitization procedure. Results indicated that the cognitive modification therapy was most effective in significantly reducing test anxiety. Additionally, the cognitive modification group showed the most significant performance improvement on grade point average.

Hahnloser (1974) examined the relative effectiveness of cognitive restructuring and progressive relaxation in reducing test anxiety in a sample of 45 college students. The treatment groups met for four one-hour sessions. The results suggested that all three treatment approaches led to significant decreases in anxiety levels when compared with the waiting list control group. Comparisons among the treatment groups indicated that a treatment approach, which combines a cognitive-attentional restructuring process with training in progressive relaxation, seems to be most effective in reducing test anxiety.

McMillan (1974) examined the effects of desensitization, rational emotive therapy, and a combination of these approaches for the reduction of test-anxiety among 84 female university students with high versus moderate levels of general anxiety. The results showed that rational emotive therapy and desensitization were equally effective in reducing the self-reports of test-anxiety for high and moderate general anxiety students. There was no difference between treatment and control subjects with regard to academic performance.

Osarchuk (1976) investigated the effectiveness of self-control desensitization, rational restructuring, a combination of self-control desensitization and rational restructuring in reducing test anxiety. 49 test anxious students were assigned to one of four treatment groups: self-control desensitization, rational restructuring, combined self-control desensitization/rational restructuring, or an attention placebo. Results showed that all groups demonstrated equally large reductions in test anxiety on the assessment given immediately after the termination of treatment, while only the three active therapy groups maintained this reduction after two months. However, no differences in the effectiveness of the active procedures were found at either post therapy assessment.

Holroyd (1976) assessed the comparative effectiveness of cognitive therapy, systematic desensitization, a combination of cognitive therapy and systematic desensitization in reducing test anxiety in a sample of 48 test-anxious volunteers. Subjects were assigned randomly to one of two therapists, who provided (1) cognitive therapy, (2) systematic desensitization, (3) a combination of cognitive therapy and systematic desensitization, and (4) a pseudotherapy control procedure. 12 subjects were also assigned to a waiting-list control group. The results indicated that cognitive therapy was more effective in reducing anxiety and improving grade point average than the other treatment and control procedures.

In a study by Finger and Galassi (1977), 40 test-anxious students were assigned randomly to one of four groups: an attentional treatment, in which attention to task-relevant activities was reinforced; a relaxation treatment, in which relaxation responses were reinforced; a combined attentional-relaxation treatment; and a waiting-list control group. It was found that all treatments affected significant changes on measures of worry, emotionality, and debilitating anxiety. However, they failed to affect significant changes in both facilitating anxiety and performance.

A study by Fabick (1977) examined the relative effectiveness of systematic desensitization, cognitive modification, and mantra meditation in the reduction of test anxiety in a sample of 21 college students. 7 students were assigned to each of the three treatment groups. All three treatments were on audiotape and administered by a treatment administrator not the investigator himself. For the three groups, treatment consisted of two sessions of about an hour and a half duration each. These were spaced one week apart. Posttesting was accomplished one week after the second treatment session. Results indicated that all three treatments significantly reduced test anxiety and general anxiety. The meditation

group, however, showed a significantly greater score reduction from pretest to posttest than the other two groups.

Katz (1978) investigated the effectiveness of rational emotive therapy (RET) and relaxation placebo in the treatment of test anxiety in a sample of 30 undergraduate students. The subjects were randomly assigned to one of three treatment conditions: (a) rational-emotive therapy (RET), which emphasized making subjects aware of both their own anxiety-evoking self-verbalizations and ways they might counter such verbalizations, (b) relaxation placebo (RP), which emphasized the mastery of skills in progressive deep muscle relaxation, and (c) a no-treatment (NT) condition. The data from this investigation showed that RET was significantly more effective in reducing test anxiety than either NT or RP.

A study by Hymen and Warren (1978) evaluated the efficacy of rational-emotive imagery as a component of rational-emotive therapy in the treatment of test anxiety in college students. 11 volunteers met for six 1-hour group treatment sessions over a 3-week period. After two initial treatment sessions subjects were randomly assigned to groups given either rational-emotive therapy with rational-emotive imagery or rational-emotive therapy without imagery. There were no statistical differences between groups on test anxiety and performance measures. Failure to find differences was attributed to similarities in content of treatment sessions and short treatment time. Combined groups showed significant within-group improvement on these measures.

Vagg (1978) examined the efficacy of biofeedback and cognitive coping strategies in reducing test anxiety when time-limited, individual therapy was used. The study was intended to determine if there was any differential effect on outcome because of the sex of the experimenter. 32 test-anxious undergraduates were randomly assigned to one of four conditions: biofeedback in combination with cognitive coping (BCC), biofeedback only (BIO), cognitive coping only (CCO), or no treatment control. Each member of the three treatment groups met with the same experimenter in the same room for 60-90 minutes for seven consecutive weeks. The results indicated that the two groups that received cognitive coping training (BCC and CCO) showed significant reductions in test anxiety. There were no statistically significant differences for the sex of the experimenter.

A study by Goldfried, Linehan and Smith (1978) compared two procedures for reducing test anxiety with a waiting list control condition in a sample of 36 university students. In the first, systematic rational restructuring, participants were trained to realistically reevaluate imaginally presented test-taking situations. In the second, a prolonged exposure condition, the same hierarchy items were

presented, but with no instructions for coping cognitively. Rational restructuring was more effective in reducing test anxiety, followed by the prolonged exposure. There were no changes for the waiting-list control. Another study by Kaplan, McCordick and Twitchell (1979) examined the efficacy of (1) desensitization only (2) cognitive component only, (3) the combination of cognitive component and desensitization in reducing test anxiety in 24 college students. Results indicated that the cognitive component of Meichenbaum's (1972) cognitive-behavior modification was more effective than the desensitization component or the combination of cognitive and desensitization.

Also, Leal, Baxter, Martin and Marx (1981) examined the effects of cognitive modification and systematic desensitization on the treatment of test anxiety. 30 10th grade test anxious students were randomly assigned in equal numbers to either a cognitive modification, systematic desensitization, or waiting-list control group. Systematic desensitization treatment appeared to be significantly more effective than either the cognitive modification or waiting-list control on the performance measure, while the cognitive modification procedure was more effective on one of the self-report measures of anxiety (The State-Trait Anxiety Inventory-State form). Another study by Nauheim (1981) evaluated the relative effectiveness of group anxiety management training, group negative practice and group cognitive therapy in the reduction of test anxiety in a sample of 80 high school students. Participants met for six 45 minute weekly sessions. Results showed that all three treatment groups exhibited significantly lower self-reported test anxiety than the no treatment control group. Significant differences among groups were not found for test performance.

D'Alelio and Murray (1981) investigated the effect of the number of cognitive therapy sessions on test anxiety in a sample of 55 college students. Subjects were randomly assigned to groups meeting for eight weekly sessions, groups meeting for four weekly sessions, or a waiting list control group. The results suggested that the eight-session condition was superior to the four-session condition, which was superior to the control condition in reducing self-reported test anxiety. On the other hand, neither a task performance measure nor grade point average showed any effect of treatment.

Smithy-Willis (1981) tested the effect of a cognitive modification program on test anxiety and test performance in college students. The cognitive modification program consisted of six treatment sessions, each of one-hour duration. Each hour of treatment was divided into approximately 30 minutes of progressive relaxation and 30 minutes of cognitive restructuring. The pseudotherapy group received a meditation program that involved mind control and body awareness. The subjects were randomly assigned to one of four groups: (a) afternoon or (b)

evening treatment; or (c) afternoon or (d) evening pseudotherapy. Results showed that both the cognitive modification program and the pseudotherapy technique significantly reduced anxiety and increased test performance.

A study by Erdell (1983) explored the efficacy of relaxation training in a cognitive approach to manage test anxiety. Female freshman and sophomores formed three treatment conditions of equal size (n=17); cognitive restructuring, a combination of cognitive restructuring and relaxation training, and waiting list control group. Both treatments received cognitive restructuring during four hour-long sessions over two weeks. The results showed that relaxation combined with cognitive restructuring was associated with lesser degrees of reported state and trait anxiety than that which resulted from exposure to cognitive restructuring alone.

Wise and Haynes (1983) investigated the relative efficacy of rational restructuring and attentional training for the cognitive treatment of test anxiety in a sample of 38 college students. The results indicated that both cognitive treatments were superior to a waiting-list control group in reducing test anxiety and improving performance on analogue tasks.

5.2 Study Skills Counseling

Many students spend several hours a day studying, but they perform poorly in their exams. These students may attribute their poor performance to the lack of talent or to external factors such as bad luck. On the other hand, there are students who spend just a few hours a day studying to achieve higher grades than those who spend long hours. Certainly, high intellectual abilities are important for high performance, but good study skills could be of equal importance, especially in facilitating the tasks, which students should perform, before and during exams. That is, when students master the skills needed for reading, writing, time-management, note-taking, preparing for and taking exams, they may not need to spend more time studying the required material or performing the task at hand and will most likely perform better, compared to their counterparts who don't have such skills. The more skills students learn, the better they perform. Some students have none or a few skills, while others have sufficient skills.

Maybe it will be better when students learn the skills necessary for effective study during their first years of study at school, so that they can make good use of their time. When they learn these skills, and notice that they are becoming more knowledgeable, and their grades are improving, they will probably be highly motivated to study and view the learning process as something enjoyable. If students don't learn these skills, they may practice poor study skills and habits for

many years. This may affect their grades, waste their time and effort, and make them prone to academic or emotional problems, such as test anxiety, procrastination, lack of motivation or lack of confidence.

When students don't have the opportunity to learn the necessary skills when they are at the elementary stage of education, they can learn these skills as they get older, while studying at school, university or anywhere else, but the early they learn these skills, the more they benefit from their time and effort. However, even if students perceive that they get poor grades in their exams and they suffer from some problems as a result of the poor study skills, which they have acquired over the years, it is not easy for them to find out which skills they should learn, or how they can learn these skills, considering that there are several skills that should be learned. To be efficient, these skills should be presented in a meaningful order within a training program. This program should be supervised by a qualified person (e.g. a counselor or teacher) in order to be able to cope with the problems experienced by program participants in learning these new skills. The participants, on their part, should work hard to benefit from the program. It is necessary that each of them monitors his/her study behavior, and be prepared to tell the other participants during the program sessions, to which extent his/her study behavior has been improved, and whether he/she has experienced any learning difficulties. This implies that each participant should keep a diary, focusing on his/her study activities.

Clearly, the program can be applied individually or in groups, but students will benefit from the experiences of each other, and receive more feedback, when they participate in a group. Consequently, study skills counseling can be defined as an approach for teaching students the effective study skills, and helping them deal with the problems they face while learning.

The rationale behind study skills counseling is that test anxiety is a normal reaction, which occurs when students lack the skills necessary for good performance on exams. A number of studies have found that study skills counseling is effective in reducing test anxiety and/or improving academic performance, whereas other studies yielded contradictory findings. Allen (1971) assessed the comparative effectiveness of systematic desensitization and study counseling techniques in terms of reducing self-reported and physiological indicants of test anxiety and increasing the academic performance of 75 test-anxious undergraduates. The results indicated that a combination of desensitization and study counseling was more effective in reducing physiologically measured anxiety and improving academic and examination performance than either technique alone.

Osterhouse (1972) compared the effectiveness of systematic desensitization and study skills training for reducing test anxiety in subjects selected on the basis of two types of self-reported anxiety. It was hypothesized that subjects reporting high levels of emotional arousal during examinations would benefit more from treatment by desensitization, while subjects reporting high levels of cognitive worry about their test performance would benefit more from training in study skills training. This hypothesis was not supported. Desensitization subjects reported significantly less anxiety during a final examination than did no-contact control subjects. Control subjects received significantly higher examination scores than did study skills subjects.

A study by Cornish and Dilley (1973) compared systematic desensitization, implosive therapy, and study counseling in reducing test anxiety in a sample of 39 college students. In terms of debilitating anxiety, the systematic desensitization group scored significantly lower than did the implosive therapy, study skills, or control groups. The study skills group was not significantly different from the control group. Grade point data showed no significant difference between groups. Another study by Allen (1973) investigated the treatment of test anxiety by group-administered and self-administered relaxation and study counseling in a sample of 84 college students. Subjects received therapy consisting of relaxation or relaxation and study counseling in small groups or via self-instructional manuals. They were also assigned to a group-administered placebo condition or two control groups. The results indicated that both therapeutic methods were equally effective in reducing anxiety and improving grades, and significantly better than no treatment.

Horne and Matson (1977) compared the effectiveness of modeling, desensitization, flooding and study skills for reducing test anxiety in a sample of 100 college students. The results indicated that modeling was most effective in decreasing test anxiety followed by desensitization and then flooding. A study skills program was significantly more effective than flooding or a waiting-list control in increasing final grades. Most subjects expressed satisfaction with modeling and approximately half of the subjects said they would recommend desensitization. Although flooding eliminated test anxiety, a majority said that they would not recommend it, because of the psychological discomfort it produced.

A study by Lent and Russell (1978) compared the relative effectiveness of two multicomponent strategies in the treatment of test anxiety in a sample of 57 college students. The subjects were assigned to one of four conditions: (1) no-treatment, (2) participation in a study-skills course alone, (3) systematic desensitization in combination with a study-skills course, or (4) a combined cue-

controlled-desensitization-study-skills program. It was found that both desensitization treatment programs demonstrated significant improvement over no-treatment on self-report debilitative and facilitative test anxiety, state and trait anxiety, and study habits. The superiority of the multicomponent groups relative to study-skills training alone was restricted to debilitative test anxiety and state anxiety. Both multicomponent groups earned significantly higher posttreatment grade point averages than the control subjects.

Altmaier and Woodward (1981) assessed the effectiveness of vicarious desensitization and study skills training in reducing test anxiety in a sample of 43 college students. Self-report measures indicated that vicarious desensitization resulted in lower test and trait anxiety than study skills training alone or no treatment. In addition, subjects who received study skills alone did not significantly differ from the control subjects on test or trait anxiety. Academic performance measures indicated no differential effectiveness.

Another study by Bander, Russell and Zamostny (1982) examined the relative effectiveness of cue-controlled relaxation, study skills counseling and a combined study skills and cue-controlled relaxation for the treatment of mathematics anxiety in a sample of 36 college students. The results demonstrated that the study skills condition produced significant improvements on self-reported mathematics anxiety and mathematics performance, and the cue-controlled relaxation and combined conditions led to significant declines in generalized test anxiety. However, by follow-up, cue-controlled relaxation was found to be superior to the other treatments on level of mathematics anxiety and mathematics performance.

Sapp (1989) investigated the effects of autosuggestion therapy combined with study skills counseling, relaxation therapy combined with study skills counseling, and nondirective therapy on test anxiety in undergraduates. The results indicated that nondirective therapy was the most effective treatment. However, the three treatment groups were more effective in reducing test anxiety and improving academic performance than a control group. A study by Naveh-Benjamin (1991) compared training programs intended for different types of test-anxious students. The first type consisted of students with good study habits who had difficulties mostly in retrieval for a test. The second type consisted of students with poor study habits that had problems in all stages of processing. Each of the 84 high test-anxious university students was subjected to either desensitization or study skills training. Results showed desensitization was more beneficial for those high test-anxious students with problems in retrieval, probably by reducing interfering thoughts assumed to block retrieval. Study skills training benefited more those

high test-anxious students with problems in all stages of information processing, probably by allowing them to better learn the information.

Some studies compared the effectiveness of cognitive therapy and study skills counseling in the reduction of test anxiety. In a study by McCordick, Kaplan, Finn and Smith (1979), 48 undergraduate students were randomly assigned to one of three experimental or two control conditions: (1) a core treatment, which consisted of Meichenbaum's cognitive behavior modification and study skills training, (2) the core treatment plus videotaped modeling, (3) the core treatment plus rehearsal modeling, (4) study skills control, and (5) waiting list control. It was found that treated groups showed greater improvement in test anxiety compared with the controls, with the rehearsal modeling condition ranking first among the treatments. No treatment led to significant improvement in academic performance.

Also, in a study conducted by Decker and Russell (1981), 30 test-anxious students with deficient study habits were assigned to one of three experimental conditions: (1) a combined cue-controlled relaxation and cognitive restructuring program, (2) a study-skills program, or (3) a waiting-list control group. The results showed that both the cue-controlled relaxation and cognitive-restructuring group and the study-skills group demonstrated significant improvement over the waiting-list control group on self-report debilitative test anxiety and irrational thinking. The study skills program led to the most dramatic improvements in grade point averages.

A study by Minor (1982) compared the effectiveness of cognitive therapy and study skills training in the group treatment of test anxiety. 40 test-anxious students were randomly assigned to one of four groups: (a) cognitive therapy, (b) study skills training, (c) a combination of cognitive therapy and study skills training, and (d) a pseudotherapy control procedure. 11 subjects were also assigned to a waiting-list control group. Treatment consisted of five one-hour weekly sessions. The results indicated that no consistent pattern favoring one treatment group over another emerged on self-report measures of test anxiety. No treatment led to significant improvement in academic performance.

Dendato and Diener (1986) assessed the effectiveness of cognitive/relaxation therapy and study-skills training in reducing self-reported anxiety and improving the academic performance of 45 test-anxious students. The subjects were randomly assigned to one of four treatment conditions: (1) relaxation/cognitive therapy, (2) study-skills training, (3) a combination of relaxation/cognitive therapy and study-skills training, or (4) no treatment. The relaxation/cognitive therapy was found to be effective in reducing anxiety, but failed to improve

classroom test scores. The combined therapy both reduced anxiety and improved performance relative to the no-treatment control condition and was significantly more effective than was either treatment alone.

A study by Bosse (1987) assessed the comparative effectiveness of relaxation and cognitive counseling (RCC), study skills counseling (SSC), and a combined program (RCC & SSC) in reducing test anxiety in a sample of 38 students ranging from 9th to 12th grade. The groups met for one and one-half hours for six weeks with a pretest, posttest and ten week follow-up. The results didn't provide support for any one treatment in reducing test anxiety, improving study skills and habits or improving grade point average.

Another study by Lukens (1988) compared three approaches to the treatment of test anxiety. 55 test anxious college students were randomly assigned to one of three groups: Commitment counseling, cognitive therapy, or study counseling. Commitment counseling was defined as a group therapy in which individuals examine their goals in the academic field and their commitment to being students. Participants receiving cognitive therapy reported higher facilitating anxiety than study counseling subjects. Study counseling subjects achieved significantly higher grade point averages than the commitment and cognitive groups. Jones (1988) compared the effectiveness of cognitive modification and study skills training in the treatment of test anxiety in a sample of 52 community college students with deficient study skills. The results did not indicate that study skills training or cognitive modification was a preferred method of treatment with this sample. Both treatments were equally effective in reducing self-reported test anxiety. Pretest and posttest tests were not found to be significant for grade point average.

A study by Dogarlu (1991) investigated the comparative effectiveness of either cognitive therapy or systematic desensitization, in combination with study skill training upon self-reported test anxiety and academic performance in a sample of 82 medical college students. All subjects receiving treatment met for a total of seven 90-minute treatment sessions spanning over seven weeks. Results showed that both treatment groups made significant improvements from pretesting to posttesting in anxiety reduction and in study skills. Only the group that received cognitive therapy plus skill training showed a significant improvement from pre- to posttreatment in academic performance.

The results of the above studies, which compared the effectiveness of cognitive therapy and study skills counseling in reducing test anxiety and improving academic performance, didn't show a clear superiority of one treatment method over the other. This demonstrates the importance of conducting more studies to

confirm whether both methods are equally effective or one method is more effective than the other. In addition, the literature of test anxiety shows that the number of studies examining the effect of treatment of test anxiety on procrastination and satisfaction with study is very few.

6. Significance of the Investigation

Test anxious students often need counseling to help them reduce their anxiety and improve their grades. Therefore, many studies tried to shed light on different areas of test anxiety and to examine the efficacy of various types of therapy in the treatment of test anxiety. As a contribution in this direction, the descriptive correlational study of this investigation examines the relationships between test anxiety, procrastination, satisfaction with study and academic performance. Knowing the strength of the relationships between the variables is important for better understanding of these variables, and for developing treatment programs related to them.

On the other hand, the experimental study investigates the effectiveness of a cognitive therapy program, and a study skills counseling program in reducing test anxiety and procrastination, and improving academic performance and satisfaction with study. It examines the effects of two treatment programs not only on test anxiety, but also on other related variables. These programs consist of organized sessions, each session includes activities to be performed. Thus, they can easily be used by other researchers and therapists.

The results of the two studies are expected to be of great value to counselors, particularly in helping anxious and procrastinating students, and to researchers who are interested in conducting studies in the fields of test anxiety and procrastination.

II. Correlational Study

1. Questions

The purpose of this study is to investigate the relationships between test anxiety, procrastination, academic performance and satisfaction with study in Jordanian high school male students. Thus, the following research questions are formulated:

6- What is the correlation between test anxiety and procrastination?
7- What is the correlation between test anxiety and academic performance?
8- What is the correlation between test anxiety and satisfaction with study?
9- What is the correlation between procrastination and academic performance?
10- What is the correlation between procrastination and satisfaction with study?

2. Method

2.1 Subjects

Subjects were 573 high school male students. They were selected from four typical high schools in the northern region of Jordan during October 2002. The mean age of subjects was 17.01 years (SD= 0.81). They were in grades 10-12. The 12^{th} grade is the last year of the secondary school in which the final examination is held by the ministry of education. Table 1 shows the distribution of subjects by grade.

Table 1: Distribution of subjects by grade.

Grade	Frequency	Percent
Tenth	184	32,1
Eleventh	212	37,0
Twelfth	177	30,9
Total	573	100,0

2.2 Variables

This study aims to investigate the relationships between the following variables:

1. Test Anxiety:
a. Anxiety-producing conditions:

-Repertory uncertainty
-Lack of knowledge
-Recitation situations

b. Manifestations of test anxiety:
-Physiological manifestation
-Emotional manifestation
-Cognitive manifestation

c. Coping strategies:
-Danger control
-Situation control
-Anxiety control
-Anxiety repression

d. Stability:
-Internal stability
-External stability

2. General test anxiety (manifestations + internal stability)
3. Academic procrastination
4. Academic performance
5. Satisfaction with study

2.3 Instruments

Test anxiety was measured by the short form of the Differential Test Anxiety Inventory (DAI), developed by Rost and Schermer (1997). Procrastination was measured by a short form of the Aitken Procrastination Inventory (API) (Aitken, 1982). Academic performance was assessed by the mean grade point average (G.P.A) of the student for the two semesters immediately preceding the semester during which the inventories were administered. Satisfaction with study was measured by a single-item question. The item was rated along a five point scale ranging from (1) not at all satisfied to (5) very satisfied.

2.3.1 Differential Test Anxiety Inventory (DAI)

There are two forms of the DAI. A long form (146 items), which is usually used for the purposes of individual diagnosis, and a short form (96 items), which is suitable for research purposes. The researcher translated the short form of the DAI from German into Arabic and used it as a measure of test anxiety in the present study. In the short form, each 8 items form a subscale. Thus, the number of subscales is 12, which cover 4 areas, for each of which there are special instructions (see Appendix 3).

Regarding the area of manifestations of test anxiety, each item in this area is rated along a five-point scale measuring the intensity of anxiety:
1= strongly not true
2= not true
3= neutral
4= true
5= strongly true

For the areas of (a) anxiety-producing conditions, (b) coping strategies, and (c) stability, each item in these areas is rated along a five-point scale measuring the frequency:
1= almost never (i.e., less than 10% of the cases).
2= sometimes (i.e., nearly 25% of the cases).
3= to the half (i.e., nearly 50% of the cases).
4= often (i.e., nearly 75% of the cases).
5= almost always (i.e., more than 90% of the cases).

2.3.1.1 Description of the DAI Subscales

1. Anxiety-producing conditions

a. Repertory uncertainty
Some situations are either prone to test anxiety or induce test anxiety, such as those situations in which the person is uncertain about potential demands, and whether he/she has at his/her disposal the necessary skills to deal with them successfully. Since this test anxiety producing condition is primarily located within the person, indicating a generalized deficit in perceived repertoire, it is named repertory uncertainty (Rost & Schermer, 1989).
b. Lack of knowledge
It has been found that lack of knowledge is an anxiety evoking condition. This kind of test anxiety provocation is triggered by the realization that achievement demands can't be met, above all those which are represented by test (Rost & Schermer, 1989).
c. Recitation situations
The situations in which the student is required to speak or to do some activities in front of the teacher and classmates may induce test anxiety reactions relatively independent of knowledge and examination content. Thus, test anxiety is the consequence when the achievement has to be presented to others and when reactions that pose a threat to self-esteem are anticipated (Rost & Schermer, 1989).

2. Manifestations of test anxiety
This area of the DAI focuses on the reactions to test anxiety-evoking cues.

a. Cognitive manifestation
This manifestation includes the disturbances of concentration and cognitive interferences (thoughts and memory blockage).
b. Physiological manifestation
This subscale measures the physiological signs of test anxiety (e.g., sweating, trembling, rapid heart beat).
c. Emotional manifestation
This subscale focuses on the emotional reactions of test anxiety (e.g., feeling of helplessness, repression, loneliness).

3. Test anxiety coping strategies
This area concentrates on 4 strategies for coping with test anxiety:

a. Danger control
Danger control is based on the idea that when students use their time effectively and prepare well for the forthcoming test or achievement situation, it would be more probable that they get better grades and become less anxious. Thus, the danger control subscale covers different learning and study strategies that increase the subjectively estimated standard of knowledge and decrease the acute danger and the resulting test anxiety (Rost & Schermer, 1989).
b. Anxiety repression
This subscale focuses on the denial of the test anxiety-producing situation. This denial serves a palliative function, which can lead to an effective relief without modifying the underlying anxiety potential directly. In most cases, this relief will only last a short time. This strategy can change the cognitive representation of a problem situation in a non-instrumental manner (Rost & Schermer, 1989).
c. Anxiety control
Anxiety control subscale focuses on the relaxation and anticipation as methods for coping with test anxiety. Relaxation is intended only after interpreting the physiological arousal as test anxiety. By anticipation is meant the person tries to explore the danger cognitively (Rost & Schermer, 1989).
d. Situation control
Situation control focuses on the strategies that students use when the intended test anxiety control or test anxiety repression proves to be insufficient, such as cheating, avoiding or procrastinating the test situation (Rost & Schermer, 1989).

4. Stability
The stability area of the DAI consists of two subscales:

a. Internal stability
This subscale represents the worries, which revolve in an almost compulsive manner around future and past examination situations. They reflect a generalized inclination to anxious rumination (Rost & Schermer, 1989).
b. External stability
Anxious individuals often show specific reactions to gain sympathy from others. This subscale focuses on the social support, understanding, consideration, affiliation and sympathy, which those individuals receive from significant others (e.g., parents, teachers, peers) (Rost & Schermer, 1989).

2.3.2 Aitken Procrastination Inventory (API)

A short form of the API was used as a measure of academic procrastination in this study. 10 items of the short form were the same items chosen by Weigand (2001) from the German version of the API (see Helmke & Schrader, 2000), one more item, which is "when I have a test scheduled soon, I often find myself working on other jobs when a deadline is near" was chosen from the English version (see Ferrari et al., 1995). Accordingly, the present form of the API consisted of 11 items. 5 positively phrased items were reverse coded before analyses were conducted. These items are: pr1, pr3, pr6, pr7, pr9 (see Appendix 3). The answer pattern is rated along a five-point scale (from " almost never true" to "almost always true"). The higher the participants' scores the higher the participants' academic procrastination levels.

2.3.3 Reliability

The reliability for the DAI subscales and the API was measured using Cronbach's alpha. The alpha reliability coefficients are presented in Table 2.

Table 2: Alpha reliability coefficients for the DAI subscales and for the API.

Variable	Alpha
Repertory Uncertainty (ru)	.86
Lack of Knowledge (lk)	.82
Recitation Situations (rs)	.83
Physiological Manifestation (Phy)	.73
Emotional Manifestation (emo)	.77
Cognitive Manifestation (cog)	.83
Danger Control (dc)	.73
Situation Control (sc)	.78
Anxiety Control (ac)	.70
Anxiety Repression (ar)	.71

External Stability (es)	.80
Internal Stability (is)	.81
General Test Anxiety (gta)	.91
Procrastination (pr)	.77

Although for the purposes of group comparison, Alpha >.50 is sufficient (Lienert & Raatz, 1995), using factor scores leads to more reliable scores. Thus, correlations were conducted on factor scores for the DAI subscales and for the API, because of the moderate reliability of some subscales of the DAI (phy, dc, ac, ar).

2.3.4 Validity

Construct validity for the subscales of the DAI and for the API was assessed through factor analysis. The three subscales of the area of anxiety-producing conditions were replicated. The first 15 eigenvalues are: 6.06, 2.08, 1,57, 1.06, 1.00, 0.94, 0.88, 0.82, 0.80, 0.78, 0.73, 0.71, 0.70, 0.64, 0.63. The varimax rotated principal component analysis is shown in Table 3.

Table 3: Varimax rotated principal component analysis of the area of anxiety-producing conditions. RU = repertory uncertainty; Lk = lack of knowledge; RS = recitation situations. (% Var = percent variance explained).

Item	C1	C2	C3	h^2
RU1	.17	.0 9	**.50**	.29
RU2	.04	.24	**.68**	.52
RU3	.20	.14	**.53**	.34
RU4	.08	.06	**.70**	.50
RU5	.13	.07	**.51**	.28
RU6	.32	.15	**.54**	.42
RU7	.16	.27	**.50**	.35
RU8	.16	.11	**.67**	.49
LK1	**.60**	.13	-.10	.28
LK2	**.64**	.13	.17	.46
LK3	**.63**	.01	.26	.47
LK4	**.70**	.04	.12	.51
LK5	**.42**	.03	.17	.21
LK6	**.52**	.21	.15	.34
LK7	**.57**	.13	.20	.38
LK8	**.55**	.04	.24	.36
RS1	.06	**.68**	.12	.48
RS2	.37	**.40**	.25	.36

RS3	.01	**.68**	.07	.47
RS4	.08	**.59**	.20	.40
RS5	.24	**.58**	.18	.43
RS6	.05	**.55**	.05	.31
RS7	.03	**.72**	.09	.53
RS8	.22	**.53**	.18	.36
% Var	**13.7**	**13.4**	**13.4**	

The three subscales of the area of manifestations of test anxiety were also replicated. The first 15 eigenvalues are: 6.11, 1.89, 1.27, 1.13, 1.11, 1.04, 1.00, 0.98, 0.84, 0.78, 0.74, 0.72, 0.70, 0.67, 0.64. The varimax rotated principal component analysis is presented in Table 4.

Table 4: Varimax rotated principal component analysis of the manifestations of test anxiety. COG = cognitive manifestation; EMO = emotional manifestation; PHY = physiological manifestation. (% Var = percent variance explained).

Item	C1	C2	C3	h^2
COG1	**.47**	.19	.08	.26
COG2	**.49**	.28	.15	.34
COG3	**.65**	.18	.25	.52
COG4	**.59**	.19	.01	.38
COG5	**.61**	.19	.14	.43
COG6	**.62**	-.04	.11	.40
COG7	**.71**	.18	.15	.56
COG8	**.66**	.08	.05	.45
EMO1	.24	**.50**	.05	.31
EMO2	.24	**.62**	.09	.45
EMO3	.22	**.46**	.19	.30
EMO4	.08	**.68**	.16	.49
EMO5	.17	**.61**	.13	.42
EMO6	.18	**.63**	.07	.43
EMO7	.09	**.54**	.24	.36
EMO8	.19	**.46**	.39	.40
PHY1	.33	.19	**.54**	.44
PHY2	.15	.16	**.50**	.30

PHY3	.01	.14	**.57**	.35
PHY4	.04	-.06	**.40**	.17
PHY5	.09	.22	**.59**	.41
PHY6	.09	.05	**.64**	.42
PHY7	.15	.13	**.43**	.22
PHY8	.13	.14	**.66**	.47
% Var	**14.9**	**11.8**	**11.8**	

In the area of coping strategies, item AC4 (I try to be quiet, so that I can develop a strategy) loaded more highly on the DC subscale (danger control), and item AR1 (I convince myself that not everything is so bad) loaded more highly on the AC subscale (anxiety control). The first 15 eigenvalues are: 4.84, 3.59, 1.51, 1.37, 1.28, 1.17, 1.08, 1.02, 1.01, 0.93, 0.91, 0.84, 0.83, 0.82, 0.78. The varimax rotated principal component analysis is presented in Table 5.

Table 5: Varimax rotated principal component analysis of the coping strategies. AC = anxiety control; AR = anxiety repression; DC = danger control; SC = situation control. (% Var = percent variance explained).

Item	C1	C2	C3	C4	h^2
AC1	.30	.04	.01	**.51**	.35
AC2	.25	.12	.04	**.60**	.44
AC3	-.10	-.06	.31	**.53**	.39
AC4	**.55**	-.01	.10	.29	.40
AC5	.09	.02	.29	**.41**	.26
AC6	.20	.12	.13	**.56**	.39
AC7	.45	-.04	.13	**.39**	.37
AC8	.06	.17	.08	**.28**	.12
AR1	.08	-.03	.12	**.58**	.36
AR2	.06	-.02	**.50**	.25	.32
AR3	.06	.12	**.56**	.16	.36
AR4	.18	.18	**.48**	.09	.30
AR5	.34	-.06	**.50**	.15	.39
AR6	-.08	.30	**.44**	.06	.29
AR7	-.01	.15	**.65**	.12	.46
AR8	-.25	.13	**.23**	.46	.34
DC1	**.54**	-.07	.05	.20	.34
DC2	**.62**	-.07	-.07	.11	.41
DC3	**.41**	.14	-.14	.24	.27
DC4	**.50**	.05	-.16	.13	.30

DC5	**.38**	.36	.04	-.08	.28
DC6	**.66**	-.20	.08	.05	.49
DC7	**.60**	-.07	.03	-.03	.37
DC8	**.58**	-.04	.02	.06	.34
SC1	.07	**.62**	.07	-.06	.40
SC2	-.21	**.47**	.31	-.06	.37
SC3	.24	**.48**	.02	-.05	.29
SC4	-.21	**.53**	.17	.19	.39
SC5	-.07	**.38**	.19	.09	.19
SC6	-.14	**.64**	.12	.28	.43
SC7	-.05	**.67**	.05	.18	.49
SC8	-.16	**.49**	.36	.01	.40
%Var	**12.3**	**7.9**	**7.8**	**7.4**	

Both stability subscales were also replicated. The eigenvalues are: 3.30, 2.64, 1.14, 1.01, 0.98, 0.81, 0.80, 0.72, 0.69, 0.68, 0.62, 0.58, 0.57, 0.51, 0.50, 0.46. The varimax rotated principal component analysis is given in Table 6.

Table 6: Varimax rotated principal component analysis of the stability subscales. IS = internal stability; ES = external stability. (% Var = percent variance explained).

Item	C1	C2	h^2
IS1	**.66**	.03	.44
IS2	**.61**	-.09	.38
IS3	**.55**	.05	.31
IS4	**.68**	.09	.47
IS5	**.62**	.08	.39
IS6	**.54**	.11	.30
IS7	**.66**	-.03	.44
IS8	**.68**	.01	.46
ES1	.06	**.54**	.30
ES2	-.03	**.62**	.39
ES3	.03	**.60**	.36
ES4	-.04	**.50**	.25
ES5	.17	**.43**	.21
ES6	-.06	**.73**	.54
ES7	-.06	**.67**	.45

ES8	.24	**.47**	.28
%Var	**20.3**	**16.9**	

Although the API was designed as a uni-dimensional scale, the results show that it seems to be two-dimensional (see Table 7). However, in the present analysis, only the one-component solution is considered, because this solution represents the optimal summary of the variables. In addition, the uni-dimensionality of the scale has been documented in several studies. The rotated eigenvalues are: 2.40, 1.72, 1.05, 0.94, 0.86, 0.84, 0.79, 0.73, 0.59, 0.57, 0.52. Table 7 shows the principal component matrix of the procrastination items.

Table 7: procrastination items in a principal component matrix. (% Var = percent variance explained).

Item	C1	h^2
PR1	.30	.09
PR2	.66	.44
PR3	.66	.44
PR4	.35	.12
PR5	.09	.01
PR6	.50	.25
PR7	.52	.27
PR8	-.05	.00
PR9	.66	.44
PR10	.48	.23
PR11	.33	.11
%Var	**21.8**	

2.4 Procedures

The researcher applied to the ministry of education of Jordan for permission to conduct his study on a sample of school students. After the approval of the application, the inventories were administered to a sample selected from four schools. Six classes of the 10th grade were selected from among ten classes in two high schools; six classes of the 11th grade and six classes of the 12th grade were selected from two schools containing only students in these two grades. The inventories were distributed to students in classrooms. At the beginning, the researcher explained the instructions relating to the scale of manifestations of test anxiety, emphasizing that the items in this part focus on the intensity of anxiety. When the subjects had completed this part, he turned to the instructions relating to the other parts of the inventories, stressing that the items in these parts focus on the frequency. The students needed about 30 minutes to complete the inventories.

2.5 Statistical Treatment

The following statistical measures were used in this study:

1. Factor analyses were conducted for the four areas of the DAI to help understand the dimensions of each area. Also, the API items were factor analyzed. Factor scores were computed for each student.
2. Pearson product moment correlation coefficients were calculated to describe the strength of the relationships between the dimensions of test anxiety,

general test anxiety, procrastination, grade point average and satisfaction with study.

3. Results

This study aimed to examine the relationships between test anxiety, procrastination, academic performance and satisfaction with study in Jordanian high school male students. Pearson product moment correlation coefficients were calculated to assess the relationships between these variables. Table 8 displays the correlations between the variables.

3.1 Test Anxiety and Procrastination

The results showed that there was a higher correlation between the cognitive manifestation and procrastination (r= .25) than between the emotional manifestation and procrastination (r= .15). No correlation was demonstrated between the physiological manifestation and procrastination (r= .01). Regarding the anxiety-producing conditions, the results showed that there was a stronger correlation between repertory uncertainty and procrastination (r= .37) than between recitation situations and procrastination (r= .15). No correlation was found between lack of knowledge and procrastination (r= -.01).

Concerning the coping strategies with test anxiety, danger control was found to be negatively correlated with procrastination (r= -.40), while situation control was found to be positively correlated with procrastination (r= .32). A low positive correlation was demonstrated between anxiety repression and procrastination (r= .15). No correlation was found between anxiety control and procrastination (r= .03).

Regarding the stability of test anxiety, internal stability was found to be positively related to procrastination (r= .29), whereas external stability was negatively correlated with it (r= -.24). General test anxiety was found to be positively correlated with procrastination (r= .29) (see Table 8).

3.2 Test Anxiety and Academic Performance

An inverse correlation was found between the cognitive manifestation and G.P.A (r= -.22), and between the emotional manifestation and G.P.A (r= -.14), but no correlation was found between the physiological manifestation and G.P.A (r= -.08). Concerning the anxiety-producing conditions, an inverse correlation was demonstrated between repertory uncertainty and G.P.A (r= -.22), and between

recitation situations and G.P.A (r= -.19), while no correlation was found between lack of knowledge and G.P.A (r= .05).

Table 8: Correlations between test anxiety, procrastination, satisfaction with study and grade point average. (N = 573)

	COG	EMO	PHY	LK	RS	RU	DC	SC	AR	AC	IS	ES	GTA	PR	SS	G.P.A
COG	-	.00	.00	**.20**	**.14**	**.36**	-.07	**.26**	**.10**	.08	**.33**	.06	**.56**	**.25**	**-.16**	**-.22**
EMO		-	.00	**.22**	**.18**	**.25**	.04	**.22**	**.13**	**.18**	**.31**	.02	**.55**	**.15**	**-.16**	**-.14**
PHY			-	**.20**	**.21**	.01	**.17**	**.17**	.07	**.11**	**.23**	**.09**	**.51**	.01	-.06	-.08
LK				-	.00	.00	**.17**	**.14**	.07	**.22**	**.36**	.06	**.41**	-.01	**-.10**	.05
RS					-	.00	-.01	**.28**	-.02	.04	**.24**	**.10**	**.32**	**.15**	**-.12**	**-.19**
RU						-	**-.14**	**.22**	**.23**	**.18**	**.31**	-.06	**.39**	**.37**	**-.28**	**-.22**
DC							-	.00	.00	.00	-.03	**.38**	.04	**-.40**	**.17**	**.09**
SC								-	.00	.00	**.38**	.02	**.43**	**.32**	**-.17**	**-.26**
AR									-	.00	**.21**	.02	**.21**	**.15**	**-.16**	-.06
AC										-	**.22**	**.15**	**.24**	.03	.02	.02
IS											-	.00	**.78**	**.29**	**-.27**	**-.10**
ES												-	.07	**-.24**	**.16**	-.03
GTA													-	**.29**	**-.27**	**-.22**
PR														-	**-.33**	**-.24**
SS															-	**.19**
G.P.A																-

Note. COG = cognitive manifestation; EMO = emotional manifestation; PHY = physiological manifestation; LK = lack of knowledge; RS = recitation situations; RU = repertory uncertainty; DC = danger control; SC = situation control; AR = anxiety repression; AC = anxiety control; IS = internal stability; ES = external stability; GTA = general test anxiety; PR = procrastination; SS = satisfaction with study; G.P.A = grade point average of the student for the two semesters immediately preceding the semester during which the inventories were administered. Statistically significant correlations ($p < 0.05$) are in boldface.

Regarding the coping strategies, a low positive correlation was found between danger control and G.P.A (r= .09), while an inverse correlation was found between situation control and G.P.A (r= -.26). No correlation was found between anxiety repression and G.P.A (r= -.06), and between anxiety control and G.P.A (r= .02). With respect to the stability of test anxiety, the findings indicated that there was a low negative correlation between internal stability and G.P.A (r= -.10). No correlation appeared between external stability and G.P.A (r= -.03). General test anxiety was found to be negatively associated with G.P.A (r= -.22) (see Table 8).

3.3 Test Anxiety and Satisfaction with Study (SS)

An inverse correlation appeared between the cognitive manifestation and SS (r= -.16) and between the emotional manifestation and SS (r= -.16). However, no correlation was demonstrated between the physiological manifestation and SS (r= -.06). Regarding the anxiety-producing conditions, the results showed that there was a higher correlation between repertory uncertainty and SS (r= -.28) than between reaction situations and SS (r= -.12) and between lack of knowledge and SS (r= -.10).

Concerning the coping strategies, a positive correlation was found between danger control and SS (r= .17), while an inverse correlation was demonstrated between situation control and SS (r= -.17), and between anxiety repression and SS (r= -.16). No correlation was found between anxiety control and SS (r= .02). Regarding the stability of test anxiety, a higher correlation was found between internal stability and SS (r= -.27) than between external stability and SS (r= .16). General test anxiety was found to be negatively associated with SS (r= -.27) (see Table 8).

3.4 Procrastination and Academic Performance

The results showed that there was an inverse correlation between procrastination and G.P.A (r= -.24).

3.5 Procrastination and Satisfaction with Study

This study also demonstrated that there was an inverse correlation between procrastination and satisfaction with study (r= -.33).

4. Discussion

The data showed positive correlations between a number of the test anxiety subscales and procrastination. The cognitive manifestation of test anxiety was positively correlated with procrastination. Repertory uncertainty, which focuses on the lack of concentration or distraction of attention as an anxiety-producing condition, was also positively correlated with procrastination. This indicates that students, who report that they cannot concentrate well while preparing for exams or during exams, procrastinate more than those who report that they can focus their attention on their tasks. Similarly, procrastinators compared to nonprocrastinators may find it more difficult to concentrate or to remember things when they perform their academic tasks.

Situation control was positively correlated with procrastination, suggesting that students, who frequently delay the completion of their academic tasks are usually unprepared for exams. Accordingly, they try to control the exam situation by means of cheating, reporting sick, and the like. They want to pass exams without making any serious efforts to improve their study habits. Such students are usually less motivated to study and spend most of their time doing their favorite hobbies.

On the other hand, there was a positive correlation between internal stability and procrastination, indicating that students who are worried about their exams tend to postpone completing their assignments, perhaps because of fear of failure. Another explanation is that procrastinating students may have negative expectations regarding their exams, since they are not sufficiently prepared for them. By contrast, students who perform their tasks day by day, are better prepared, more confident and less worried. They think positively about their assignments, including exams and homework.

A negative correlation was shown between external stability and procrastination. This suggests that students, who delay performing their tasks until later, receive less social support from significant others such as parents, friends, peers, etc., compared to their counterparts, who do their assignments regularly. This may be because procrastinating students give an impression that they are not serious students. Another explanation of this correlation is that students, who receive less social support from significant others may tend to procrastinate more; they feel that they are neglected.

A negative correlation was found between danger control and procrastination, suggesting that students, who make study schedules and stick to them, and pay more attention during classes, procrastinate less than those who do not keep to

their schedules. These findings are consistent with those of Weigand (2001), who reported that there were significant correlations between the test anxiety subscales and procrastination.

The present results showed that there was a positive correlation between general test anxiety and procrastination. This is relatively consistent with a study by Solomon and Rothblum (1984), which found that fear of failure, as a reason for procrastination correlated significantly with trait anxiety. The finding is also consistent with a study by Rothblum et al. (1986), who reported that high procrastinators experienced high and stable levels of general anxiety, and also had more test anxiety. Thus, the relationship between test anxiety and procrastination is clearly positive, which means that high-test anxiety goes together with high procrastination and vice versa.

It is interesting to note that there was no correlation between the physiological manifestation of anxiety and G.P.A, indicating that there is no difference between low-and high-performing students with regard to the physiological reactions in evaluative situations. However, the same cannot be said when it comes to the other manifestations of anxiety. The results showed that there were significant negative correlations between the cognitive manifestation and G.P.A and between the emotional manifestation and G.P.A, suggesting that when low-performing students are in stressful situations, they suffer more from lack of concentration and feel more repressed, compared to their high-performing counterparts. A negative relationship was found between general test anxiety and academic performance. This relationship is consistent with previous studies (see Hembree, 1988; Seipp, 1991).

These results showed that feeling of lack of knowledge was not correlated with grade point average, while repertory uncertainty was negatively correlated with it. That is, even if students feel that they are not prepared for exams or lack the knowledge required to perform well, it may not have negative effects on their grades, but if they do not concentrate well when they prepare for exams, they may get poor grades. This finding emphasizes the importance of developing treatment programs for helping anxious students concentrate better when they perform their tasks.

A negative correlation was demonstrated between situation control and grade point average, indicating that students who depend on means other than studying to obtain grades and overcome anxiety, they usually get poor grades. Such students are less academically prepared and may not always get a chance to obtain grades by devious means. Therefore, they perform poorly and are less satisfied with their academic achievements.

Since repertory uncertainty was negatively correlated with grade point average, it is not surprising that it was also negatively correlated with satisfaction with study. Clearly, satisfaction with study is always a result of other factors. Lack of concentration can result in poor performance, which in turn leads to low satisfaction with study.

Additionally, the results showed that there was a negative correlation between internal stability and satisfaction with study, indicating that worries about study, including exams and assignments, are related to low satisfaction with study. Students who are often engaged in negative self-talk regarding their schools, teachers, etc., tend to be less satisfied with their studies. They have a negative view of their academic achievements and goals. Counselors should help these students have a positive attitude towards learning.

General test anxiety was found to be positively correlated with procrastination and poor academic achievement, thus the negative correlation between general test anxiety and satisfaction with study may be a natural result of the correlations between test anxiety and the other variables. This finding is consistent with the study by Weigand (2001), which demonstrated a negative correlation between test anxiety and satisfaction with study.

A negative correlation was found between procrastination and grade point average, indicating that procrastination accompanies poor academic performance. In this regard, the results of the present study do not support those of Solomon and Rothblum (1984), who found that course grade was not significantly correlated with self-reported procrastination. They attributed the lack of correlation between self-reported procrastination and course grade to the measure of academic performance, which was based only on students' grades in a course. However, the results of the present study support those of Rothblum et al. (1986), who reported a significant negative correlation between procrastination and grade point average.

Furthermore, the present study showed a negative correlation between procrastination and satisfaction with study. Students who delay completing their assignments are less satisfied with their studies than those who complete their assignments in time. This result is consistent with that of Weigend (2001), who found a negative correlation between these two variables in a sample of university students.

In summary, the present study showed that there were significant correlations between test anxiety, procrastination, satisfaction with study and academic

performance. These findings are consistent with those of studies conducted in similar settings.

III. Experimental Study

The goal of this study is to examine the effects of cognitive therapy and study skills counseling in reducing test anxiety and procrastination, and increasing academic performance and satisfaction with study in Jordanian high school male students. The design of this study consists of two experimental groups and one control group. Figure 1 illustrates the experimental design of the study.

R:	EG1:	O1	X	O2
R:	EG2:	O1	X	O2
R:	CG:	O1		O2

Figure 1: Experimental design of the study.
Note. R = randomization; EG = experimental group; CG = control group; O = measurement; X = treatment.

1. Hypotheses

The following hypotheses are tested:

(1) H0: There are no significant differences in test anxiety between the cognitive therapy group, the study skills counseling group, and the waiting-list control group.

H1: Cognitive therapy is more effective in reducing test anxiety than either study skills counseling or a waiting-list control group.

Cognitive therapy focuses on anxiety-producing self-statements (direct effect), whereas study skills counseling focuses on study and test taking skills, which may be helpful in reducing anxiety (indirect effect). The control group receives no treatment, thus there may be no significant change in anxiety levels in the group.

(2) H0: There are no significant differences in procrastination between the groups.

H1: Study skills counseling is more effective in reducing procrastination than either cognitive therapy or a waiting-list control group.

The study skills program includes techniques for time management in addition to other study skills, which may enable the subjects to organize their time better, whereas the cognitive therapy program does not include such techniques or skills. Also, no significant change is expected in the control subjects, because they get no treatment.

(3) H0: There are no significant differences in academic performance between the groups.

H1: Study skills counseling is more effective in improving academic performance than either cognitive therapy or a waiting-list control group.

Subjects in the study skills counseling group learn new study techniques, thus they may get higher grades compared with subjects in the other two groups.

(4) H0: There are no significant differences in satisfaction with study between the groups.

H1: Study skills counseling is more effective in improving satisfaction with study than either cognitive therapy or a waiting-list control group.

Subjects in the study skills counseling group may get higher grades, thus they may be more satisfied with their academic achievements, relative to subjects in the other two groups.

2. Method

2.1 Subjects

The population of the study consisted of 156 male students enrolled in the 10th grade in a Jordanian public school during the 2002/2003 school year. Pre-test measures were administered under normal classroom conditions within the sixth week of the first semester. These measures were the same used in the correlational study.

The mean of student scores on the general test anxiety scale of the DAI was 77.8. Students with scores of 79 and above on this scale were invited to participate in treatment. They were 81 students. The subjects were rank ordered on the basis of their scores on the procrastination scale, and then were assigned to three groups. Specifically, the subject with the highest ranking was assigned to group A the subject with the second highest ranking was assigned to group B the subject with

the third highest ranking was assigned to group C, followed by A, B, C, A, etc. Thus, the number of subjects in each group was 27.

The three groups were assigned randomly to:

1) Cognitive therapy
2) Study skills counseling
3) Waiting-list control

2.2 Variables

The independent variable was: the groups (a) cognitive therapy, (b) study skills counseling and (c) waiting-list control.

The dependent variables were:
1. Dimensions of test anxiety
2. General test anxiety
3. Academic procrastination
4. Academic performance
5. Satisfaction with study

2.3 Treatment

The researcher served as a therapist for the treatment groups. Each group was divided into two sections and each section received six 50-minute weekly sessions. No subject missed more than one session.

Cognitive Therapy (CT)

The CT program was designed:

11- To help anxious subjects become aware of the anxiety-producing self-statements they emitted both before and during exams, and
12- To train them to develop new, positive self-statements that would facilitate task attending in stressful situations.

The group members were informed that they could master their anxiety by learning to control task-irrelevant self-statements that generate anxiety and distract attention from the task at hand. They learned to replace negative self-statements with positive alternatives.

During the first session, some preliminary questions about test anxiety were asked, such as why do some students get anxious during exams?, what are the manifestations of anxiety?. Then the goals of the program were explained, followed by asking the group members about their expectations about the program. Additionally, examples were offered to illustrate how our feelings can be affected by our self-statements. As a homework assignment, the group

members were asked to keep a diary of their self-statements, feelings, and behaviors in stressful situations.

In the second session, anxiety was explained to the group as resulting from their negative self-statements. Then, the ABC model of Rational Emotive Therapy was presented, and the group members used it in disputing three anxiety-producing self-statements. Each statement was discussed first in small groups and then there was a general discussion. Three other self-statements were discussed in the third session, and another three in the fourth session. Most of the statements discussed during the sessions were assigned by the therapist, one of the statements given by one of the group members is that "my parents will kill me, if I don't get a good grade".

During the fifth session, other techniques for inhibiting task irrelevant thoughts were offered, these techniques are: Using positive self-talk, convincing oneself that test score is not a measure of self-worth, distinguishing between demands and preferences and practicing thought stopping. In the sixth session, the group was taught how to develop procedures to attend fully to the task. Handout entitled "attention-focusing procedures" was given to the group. At the end of the session, there was a general discussion about the program (see Appendix 1).

Study Skills Counseling (SSC)

The group was informed that test anxiety is often related to poor study skills. In addition, poor academic performance is not caused completely by an insufficient amount of time spent in study. It also depends on the quality of the time spent. There is evidence that low performing students use inadequate, incorrect, and ineffective methods of study. Therefore, they understand little of what they study and remember little of what they understand. The active participation in the SSC program would lead to more effective study skills and habits, which may be helpful in reducing test anxiety, considering that test anxiety is probably a natural reaction resulting from ineffective study methods.

The group members were asked to monitor their study behaviors and record which problems they experience while studying. Topics covered in the sessions were SQ3R method (Survey, Question, Read, Recite and Review), techniques of time management, note-taking methods, test preparation techniques and test-taking techniques.

Specifically, during the first session, the goals of the program were explained and a general idea about the training sessions was given. The group was taught the SQ3R method of studying. They were informed that they should first survey the

chapter by glancing quickly through the headings, tables and illustrations. Then, they should question by turning headings into questions to be answered while reading. They should read actively, focusing on completion of the main ideas of the passage. They should recite the material in the section they have just finished. Finally, they should review main points, concentrating on passages not yet completely understood. At the end of the session, the group was asked to review at home the five steps of the SQ3R method.

It is noteworthy that the importance of using underlining was emphasized. The group was told that the purpose of underlining is to reduce the amount of material to be studied for exams. If one underlines everything, one might as well underline nothing. On the other hand, if one underlines almost nothing, it will not be of much help either. It will be sufficient if one indicates the key words or key phrases within a sentence. Of great importance is that underlining should follow and not precede understanding.

In the second session, the group applied the SQ3R method to a history textbook chapter. They were asked to apply the steps of "survey and question" to the whole chapter, and the steps of read, recite and review only to one or two passages. During the third session, the group members were taught how to develop a time schedule and were informed that each one of them should follow his time schedule until he habitually turns from one activity to another. Also, he should follow the rules of study time. For instance, he should not wait until he is in a suitable mood before studying.

The fourth session was devoted to explain the basic techniques of note-taking, the group was informed that there are steps to be followed, when taking notes. A student should record during class as many meaningful ideas as possible, then he should reduce these ideas into key words listed in the recall column, recite the main ideas, reflect on the material, and periodically review the notes.

During the fifth session, principles relating to the timing of reviews were discussed. The sixth session was devoted to test preparation and test-taking strategies. First, the group discussed techniques relating to essay exams, then they turned to objective exams. Handouts were distributed to the group during the sessions (see appendix 2).

Regarding the waiting-list control group, subjects received no treatment. They were seen only at the pre- and post-tests.

Posttests were administered to all groups, two weeks after a six-week treatment period, while final exams began three weeks after treatment had ended. Subjects'

grades were obtained from the registrar's records for the semester during which treatment was conducted.

2.4 Statistical Treatment

Data were analyzed by one-way ANOVA, followed by Tukey's post hoc test. These tests were based on factor scores for the DAI subscales and for the API. Regarding the DAI, the factor scores of the after-treatment data (posttest data) of study II were estimated on the basis of the loadings derived from the factor analyses conducted in study I. According to theory, API is viewed to be a unidimensional scale. The API after-treatment (post test) factor scores were estimated on the basis of the one factor loadings in study I.

3. Results

This study aimed to assess the effectiveness of a cognitive therapy program and a study skills counseling program in reducing test anxiety and procrastination and improving academic performance and satisfaction with study.

Table 9 shows the means, standard deviations and differences between pretest and posttest measurements. A one-way analysis of variance (ANOVA) was conducted on pretest and posttest scores. There were no significant differences ($p < .05$) between groups on the pretest scores. Table 10 presents the one-way ANOVA summary for prettest scores. However, significant differences ($p < .05$) were found between the groups on the posttest scores. Table 11 displays the one-way ANOVA summary for posttest scores. The results in this Table indicate that there were significant differences between the groups on measures of the cognitive manifestation, emotional manifestation, lack of knowledge, recitation situations, repertory uncertainty, situation control, internal stability, external stability, general test anxiety, procrastination, satisfaction with study and grade point average. On the other hand, there were no significant differences between the groups on measures of the physiological manifestation, danger control, anxiety repression and anxiety control. Tukey's post-hoc test was used to determine between which groups there are differences.

Table 9: Means, standard deviations and differences between pretest and posttest measurements

		Cognitive Therapy (n=27)			Study Skills Counseling (n=27)			Waiting-list Control (n=27)		
Variable		Pre.	Post.	Diff.	Pre.	Post.	Diff.	Pre.	Post.	Diff.
COG	M	.46	-.47	-.93	.54	-.24	-.78	.54	.72	.18
	SD	1.1	.87	-.23	.75	.75	.00	.70	.96	.26
EMO	M	.21	.02	-.19	.07	-.39	-.46	.42	.37	-.05
	SD	.99	.81	-.18	.86	.92	.06	.76	1.1	.34
PHY	M	.29	-.16	-.45	-.05	-.12	-.07	.28	.28	.00
	SD	.99	.77	-.22	.89	1.1	.21	.90	1.1	.20
LK	M	.13	-.32	-.45	.06	-.20	-.26	-.04	.52	.56
	SD	1.0	1.1	.10	.94	.85	-.09	.95	.88	-.07
RS	M	.56	-.15	-.71	.39	-.24	-.63	.43	.39	-.04
	SD	.95	1.0	.05	.77	1.0	.23	.94	.86	-.08
RU	M	.07	-.30	-.37	.06	-.15	-.09	.11	.45	.34
	SD	1.1	.87	-.23	.66	.94	.28	.92	1.1	.18
DC	M	.11	-.09	-.20	-.07	.14	.21	.03	-.03	-.06
	SD	.89	1.0	.11	.76	.88	.12	1.1	1.1	.00
SC	M	.33	-.07	-.40	-.22	-.39	-.17	.27	.46	.19
	SD	1.0	.84	-.16	.80	1.1	.30	1.1	.83	-.27
AR	M	-.11	.17	.28	-.31	-.35	-.04	-.08	.18	.26
	SD	.99	.90	-.09	.76	.73	-.03	.87	1.2	.33
AC	M	.09	-.02	-.11	.09	-.17	-.26	.21	.19	-.02
	SD	.90	1.2	.30	1.1	.94	-.16	1.0	.83	-.17
IS	M	.71	-.21	-.92	.27	-.38	-.65	.39	.60	.21
	SD	.91	.85	-.06	.83	1.0	.17	1.0	.88	-.12
ES	M	.55	-.20	-.75	.01	-.21	-.22	.15	.41	.26
	SD	1.1	.88	-.22	.89	1.1	.21	1.1	.89	-.21
GTA	M	.42	-.21	-.63	.21	-.29	-.50	.41	.49	.08
	SD	.37	.42	.05	.31	.50	.19	.40	.51	.11
PR	M	-.02	-.13	-.11	-.04	-.25	-.21	-.07	.38	.45
	SD	.94	1.0	.06	.87	.83	-.04	.81	1.0	.19
SS	M	3.2	3.6	0.4	2.9	3.6	.70	3.0	3.0	.00
	SD	.94	.74	-.20	1.0	.80	-.30	1.0	.98	-.02
G.P.A	M	81.7	79.2	-2.5	79.8	75.8	-4.0	78.5	69.7	-8.8
	SD	11.9	10.9	-1.0	12.9	10.3	-2.6	11.7	12.8	1.1

Note. COG = cognitive manifestation; EMO = emotional manifestation; PHY = physiological manifestation; LK = lack of knowledge; RS = recitation situations; RU = repertory uncertainty; DC = danger control; SC = situation control; AR = anxiety repression; AC = anxiety control; IS = internal stability; ES = external stability; GTA = general test anxiety; PR = procrastination; SS = satisfaction with study; G.P.A = grade point average. Diff = posttest-pretest.

Table 10: One-way ANOVA summary for pretest scores

Variable	Source	Sum of Squares	DF	Mean Squares	F	P	Eta^2
COG	Between groups	.118	2	5.905E-02	.075	.927	.002
	Within groups	61.093	78	.783			
	Total	61.211	80				
EMO	Between groups	1.587	2	.794	1.031	.361	.026
	Within groups	60.034	78	.770			
	Total	61.621	80				
PHY	Between groups	2.043	2	1.021	1.188	.310	.030
	Within groups	67.039	78	.859			
	Total	69.081	80				
LK	Between groups	.393	2	.196	.208	.812	.005
	Within groups	73.521	78	.943			
	Total	73.914	80				
RS	Between groups	.422	2	.211	.266	.767	.007
	Within groups	61.899	78	.794			
	Total	62.321	80				
RU	Between groups	.455	2	.228	.254	.776	.006
	Within groups	69.790	78	.895			
	Total	70.245	80				
DC	Between groups	.452	2	.226	.251	.778	.006
	Within groups	70.194	78	.900			
	Total	70.647	80				
SC	Between groups	4.878	2	2.439	2.611	.080	.063
	Within groups	72.857	78	.934			
	Total	77.735	80				
AR	Between groups	.818	2	.409	.529	.591	.013
	Within groups	60.349	78	.774			
	Total	61.167	80				
AC	Between groups	.235	2	.117	.115	.891	.003
	Within groups	79.359	78	1.017			
	Total	79.594	80				
IS	Between groups	2.753	2	1.376	1.643	.200	.040
	Within groups	65.330	78	.838			
	Total	68.083	80				
ES	Between groups	4.105	2	2.053	1.930	.152	.047
	Within groups	82.979	78	1.064			
	Total	87.084	80				
GTA	Between groups	.739	2	.370	2.787	.068	.067
	Within groups	10.346	78	.133			
	Total	11.085	80				
PR	Between groups	3.818E-02	2	1.909E-02	.025	.975	.001
	Within groups	59.820	78	.767			
	Total	59.858	80				
SS	Between groups	1.654	2	.827	.816	.446	.021
	Within groups	79.037	78	1.013			
	Total	80.691	80				
G.P.A	Between groups	3.432	2	1.716	1.476	.235	.012

	Within groups	90.667	78	1.162			
	Total	94.099	80				

Table 11: One-way ANOVA summary for posttest scores

Variable	Source	Sum of Squares	DF	Mean Squares	F	P	Eta^2
COG	Between groups	21.624	2	10.812	14.446	< .001	.270
	Within groups	58.376	78	.748			
	Total	80.000	80				
EMO	Between groups	7.902	2	3.951	4.274	.017	.099
	Within groups	72.098	78	.924			
	Total	80.000	80				
PHY	Between groups	3.240	2	1.620	1.646	.199	.040
	Within groups	76.760	78	.984			
	Total	80.000	80				
LK	Between groups	10.985	2	5.493	6.208	.003	.137
	Within groups	69.015	78	.885			
	Total	80.000	80				
RS	Between groups	6.389	2	3.194	3.385	.039	.080
	Within groups	73.611	78	.944			
	Total	80.000	80				
RU	Between groups	8.554	2	4.277	4.669	.012	.107
	Within groups	71.446	78	.916			
	Total	80.000	80				
SC	Between groups	9.873	2	4.937	5.491	.006	.123
	Within groups	70.127	78	.899			
	Total	80.000	80				
DC	Between groups	.788	2	.394	.388	.680	.010
	Within groups	79.212	78	1.016			
	Total	80.000	80				
AR	Between groups	5.045	2	2.522	2.625	.079	.063
	Within groups	74.955	78	.961			
	Total	80.000	80				
AC	Between groups	1.761	2	.881	.878	.420	.022
	Within groups	78.239	78	1.003			
	Total	80.000	80				
IS	Between groups	14.779	2	7.390	8.838	< .001	.185
	Within groups	65.221	78	.836			
	Total	80.000	80				
ES	Between groups	6.741	2	3.370	3.589	.032	.084
	Within groups	73.259	78	.939			
	Total	80.000	80				
GTA	Between groups	9.876	2	4.938	21.285	< .001	.353
	Within groups	18.096	78	.232			
	Total	27.972	80				
PR	Between groups	6.167	2	3.084	3.258	.044	.077
	Within groups	73.833	78	.947			
	Total	80.000	80				
SS	Between groups	7.580	2	3.790	5.300	.007	.120
	Within groups	55.778	78	.715			
	Total	63.358	80				
G.P.A	Between groups	1261.713	2	630.856	4.829	.011	.110
	Within groups	10190.293	78	130.645			
	Total	11452.005	80				

The results of the Tukey test are presented in the following tables.

3.1 Results Related to the First Hypothesis

Table 12: The results of the Tukey test for the cognitive manifestation variable.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	S
Study skills		-	S
Control			-

S = significant at p < .05. NS = not significant at p < .05.

Table 12 indicates that the cognitive therapy and the study skills counseling groups showed significantly greater reductions in cognitive manifestation as compared with the control group. However, no significant difference was found between the two treatment groups. Figure 2 illustrates the differences in the cognitive manifestation levels between the treatment and control groups.

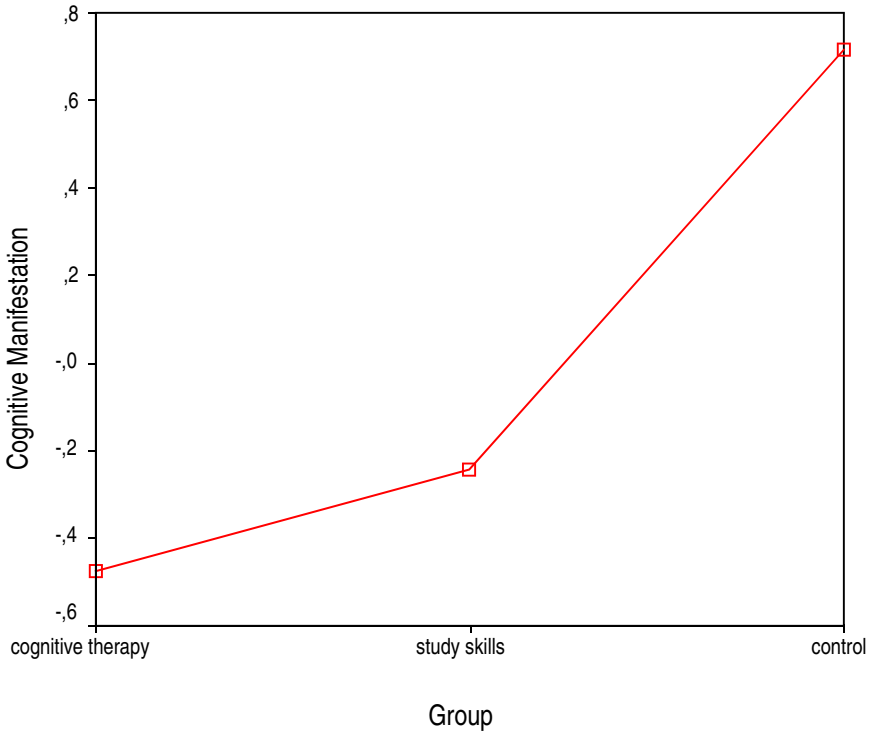


Figure 2. Differences in the cognitive manifestation levels between the treatment and control groups.

(cognitive manifestation: factor scores)

Table 13: The results of the Tukey test for the emotional manifestation variable.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	NS
Study skills		-	**S**
Control			-

S = significant at p < .05. NS = not significant at p < .05.

Table 13 indicates that the study skills counseling group showed a significantly greater reduction in emotional manifestation than did the control group, however, no significant difference was found between the cognitive therapy group and the control group or between the two treatment groups. Figure 3 illustrates the differences in the emotional manifestation levels between the treatment and control groups.

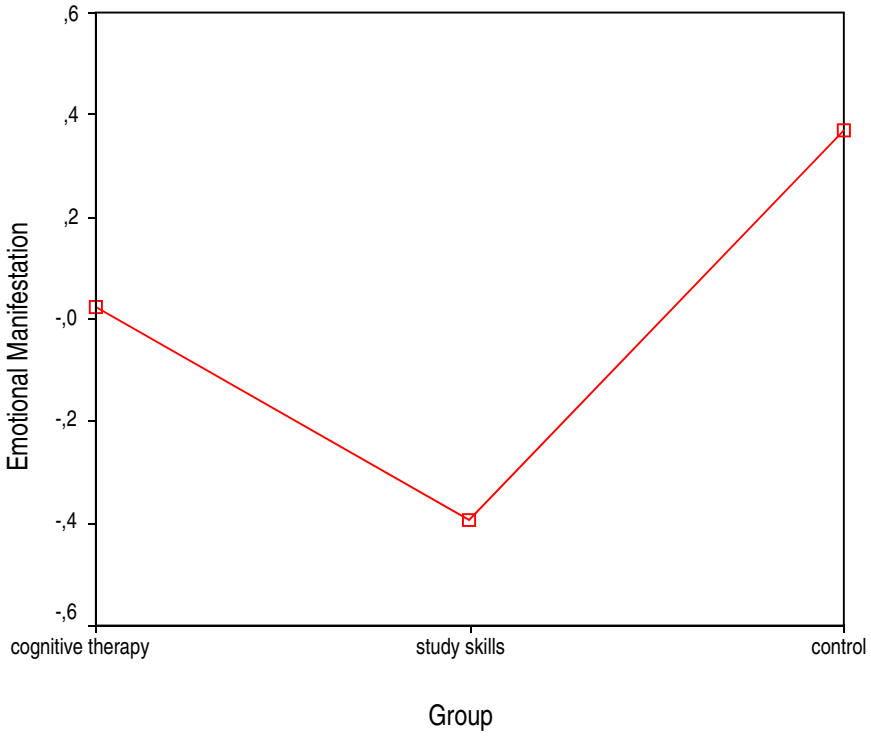


Figure 3. Differences in the emotional manifestation levels between the treatment and control groups.
(emotional manifestation: factor scores)

Table 14: The results of the Tukey test for the repertory uncertainty variable.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	**S**
Study skills		-	**S**
Control			-

S = significant at p < .05. NS = not significant at p < .05.

Table 14 indicates that the cognitive therapy and the study skills counseling groups showed significantly greater reductions in repertory uncertainty as compared with the control group. No significant difference was found between the two treatment groups. Figure 4 illustrates the differences in the repertory uncertainty levels between the treatment and control groups.

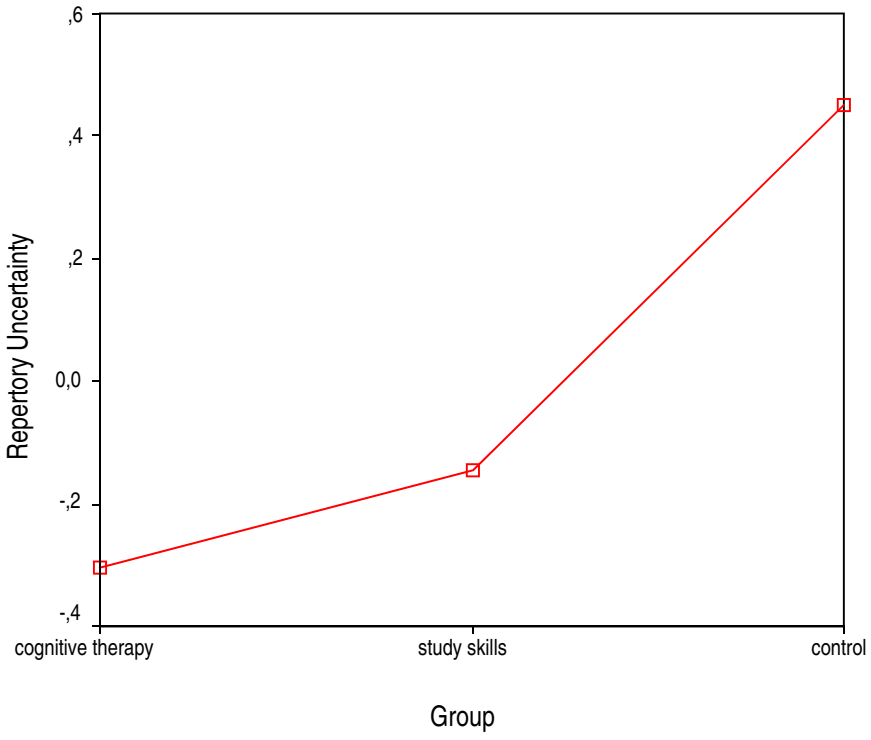


Figure 4. Differences in the repertory uncertainty levels between the treatment and control groups.
(repertory uncertainty: factor scores)

Table 15: The results of the Tukey test for the lack of knowledge variable.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	**S**
Study skills		-	**S**
Control			-

S = significant at p < .05. NS = not significant at p < .05.

Table 15 indicates that the cognitive therapy and the study skills counseling groups showed significantly greater reductions in lack of knowledge compared to the control group. No significant difference was found between the two treatment groups. Figure 5 illustrates the differences in the lack of knowledge levels between the treatment and control groups.

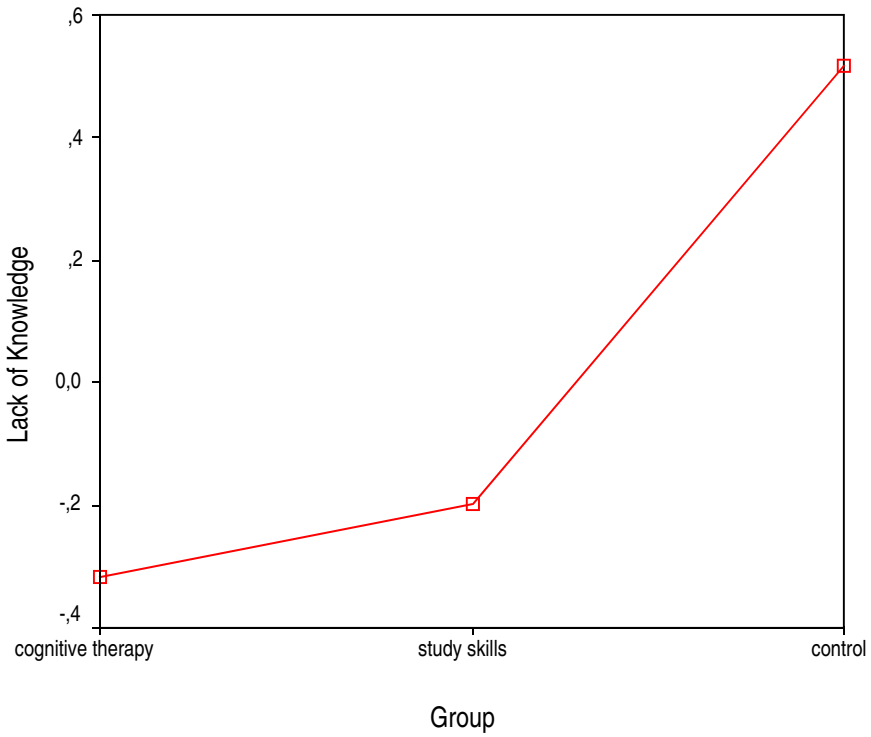


Figure 5. Differences in the lack of knowledge levels between the treatment and control groups.
(lack of knowledge: factor scores)

Table 16: The results of the Tukey test for the variable of recitation situations.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	**S**
Study skills		-	**S**
Control			-

S = significant at $p < .05$. NS = not significant at $p < .05$.

Table 16 indicates that the cognitive therapy and the study skills counseling groups showed significantly greater reductions in recitation situations compared to the control group. No significant difference was found between the two treatment groups. Figure 6 illustrates the differences in the levels of recitation situations between the treatment and control groups.

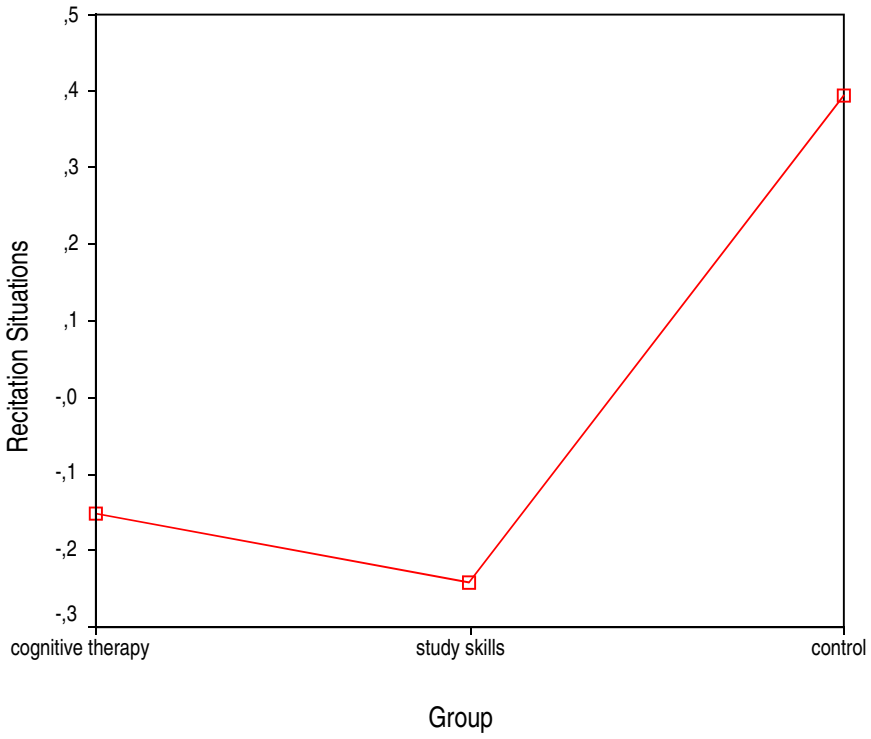


Figure 6. Differences in the levels of recitation situations between the treatment and control groups
(recitation situations: factor scores)

Table 17: The results of the Tukey test for the situation control variable.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	**S**
Study skills		-	**S**
Control			-

S = significant at p < .05. NS = not significant at p < .05.

Table 17 indicates that the cognitive therapy and the study skills counseling groups showed significantly greater reductions in situation control when compared to the control group. No significant difference was found between the two treatment groups. Figure 7 illustrates the differences in the situation control levels between the treatment and control groups.

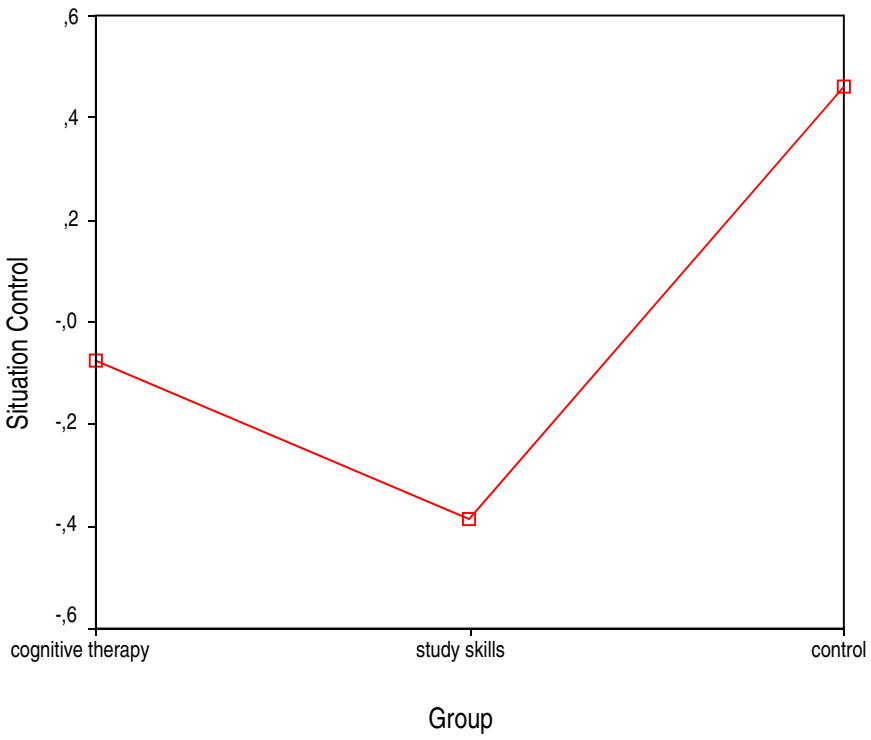


Figure 7. Differences in the situation control levels between the treatment and control groups.
(situation control: factor scores)

Table 18: The results of the Tukey test for the internal stability variable.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	**S**
Study skills		-	**S**
Control			-

S = significant at $p < .05$. NS = not significant at $p < .05$.

Table 18 indicates that the cognitive therapy and the study skills counseling groups showed significantly greater reductions in internal stability compared with the control group. No significant difference was found between the two treatment

groups. Figure 8 illustrates the differences in the internal stability levels between the treatment and control groups.

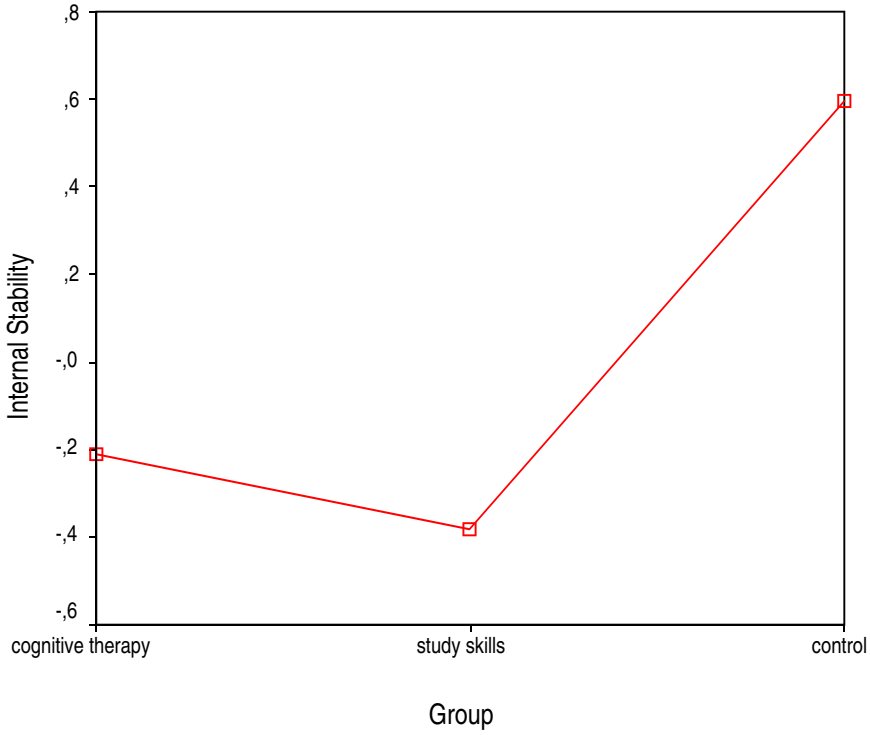


Figure 8. Differences in the internal stability levels between the treatment and control groups.
(internal stability: factor scores)

Table 19: The results of the Tukey test for the external stability variable.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	**S**
Study skills		-	**S**
Control			-

S = significant at $p < .05$. NS = not significant at $p < .05$.

Table 19 indicates that the cognitive therapy and the study skills counseling groups showed significantly greater reductions in external stability compared to the control group. No significant difference was found between the two treatment groups. Figure 9 illustrates the differences in the external stability levels between the treatment and control groups.

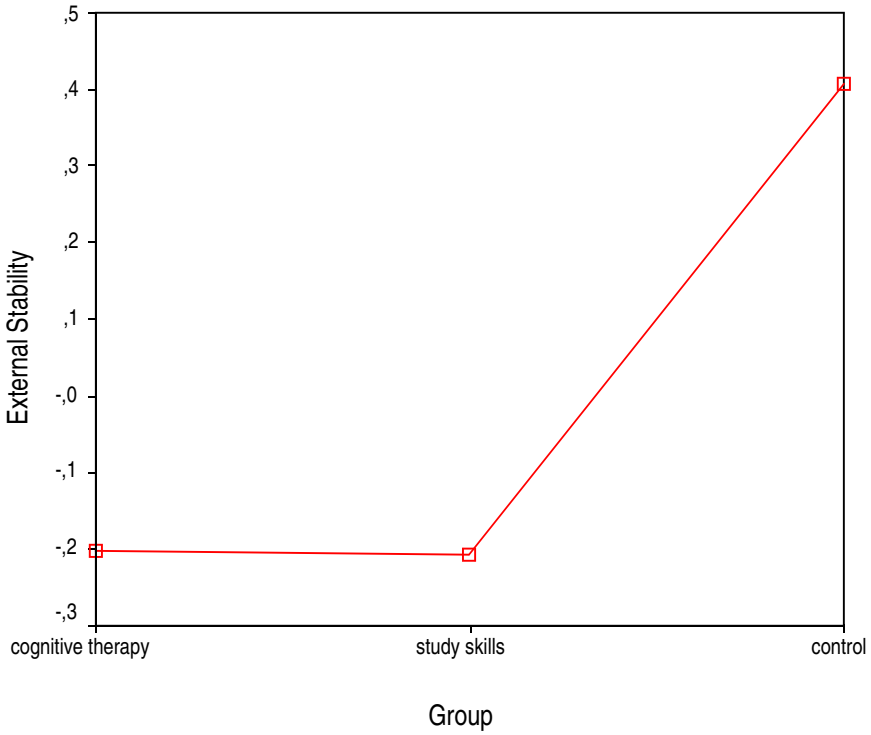


Figure 9. Differences in the external stability levels between the treatment and control groups.
(external stability: factor scores)

Table 20: The results of the Tukey test for the general test anxiety variable.

Group	Cognitive therapy	Study skills	Control

Cognitive therapy	-	NS	**S**
Study skills		-	**S**
Control			-

S = significant at $p < .05$. NS = not significant at $p < .05$.

Table 20 indicates that the cognitive therapy and the study skills counseling groups showed significantly greater reductions in general test anxiety compared to the control group. No significant difference was found between the two treatment groups. Figure 10 illustrates the differences in the general test anxiety levels between the treatment and control groups.

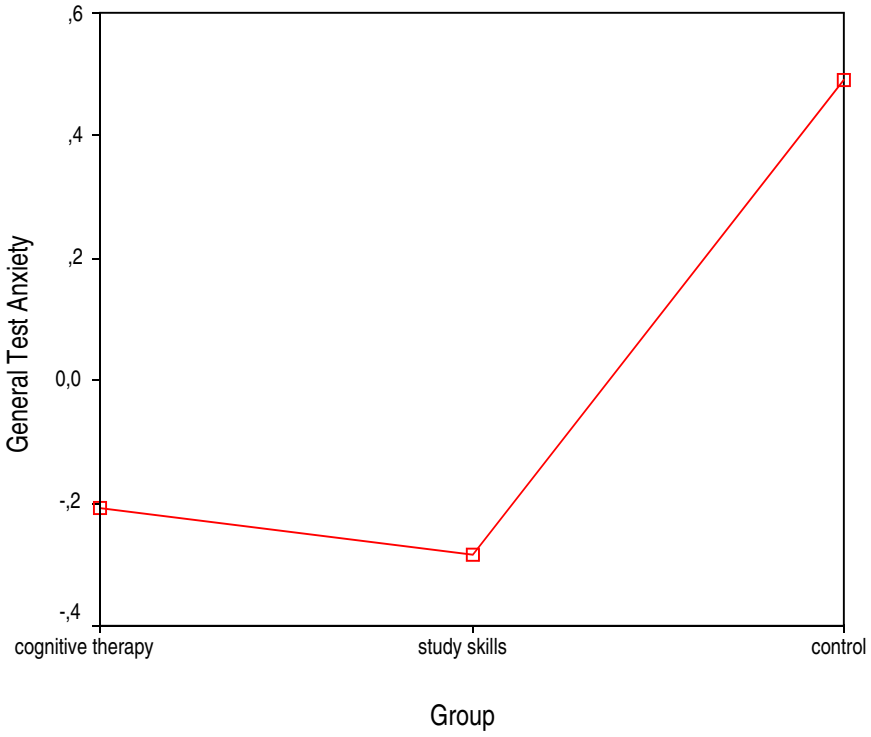


Figure 10. Differences in the general test anxiety levels between the treatment and control groups.
(general test anxiety: factor scores)

Thus, it seems that the first hypothesis was partially supported on most of the test anxiety subscales and on the general test anxiety scale.

3.2 Results Related to the Second Hypothesis

Table 21: The results of the Tukey test for the procrastination variable.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	NS
Study skills		-	**S**
Control			-

S = significant at $p < .05$. NS = not significant at $p < .05$.

Table 21 indicates that the study skills counseling group showed a significantly greater reduction in procrastination than did the control group. No significant difference was found between the cognitive therapy group and the control group or between the two treatment groups. Thus, the hypothesis was only partially supported. Figure 11 illustrates the differences in the procrastination levels between the treatment and control groups.

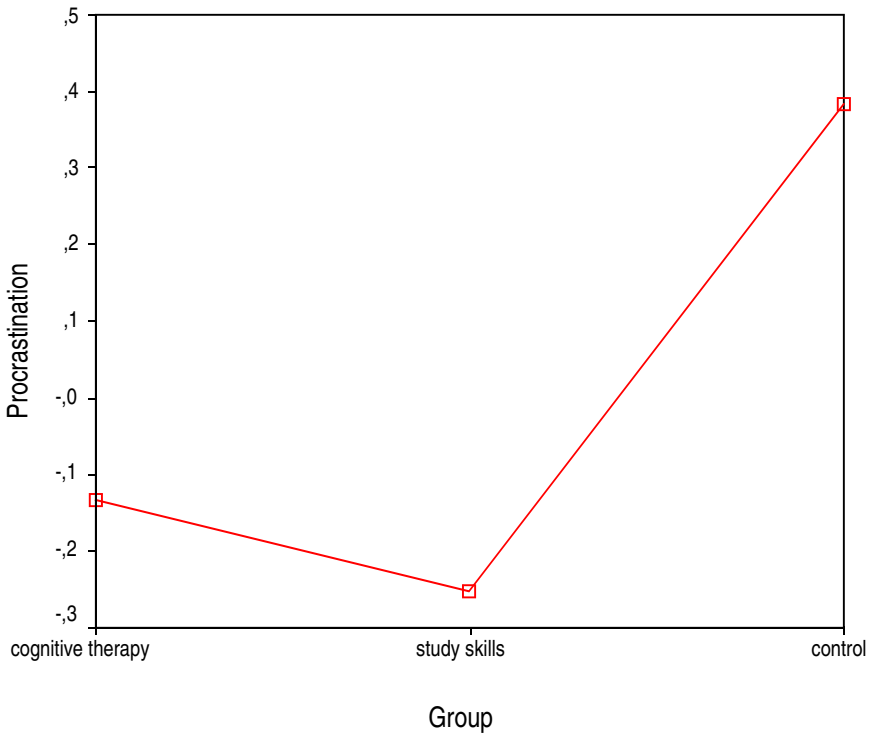


Figure 11. Differences in the procrastination levels between the treatment and control groups.
(Procrastination: factor scores)

3.3 Results Related to the Third Hypothesis

Table 22: The results of the Tukey test for the grade point average variable.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	**S**
Study skills		-	NS
Control			-

S = significant at $p < .05$. NS = not significant at $p < .05$.

Table 22 shows that the cognitive therapy group demonstrated significantly greater improvement in grade point average than did the control group. No significant difference was found between the study skills counseling group and the control group or between the two treatment groups. In this case, the hypothesis was not supported. Figure 12 illustrates the differences in grade point average between the treatment and control groups.

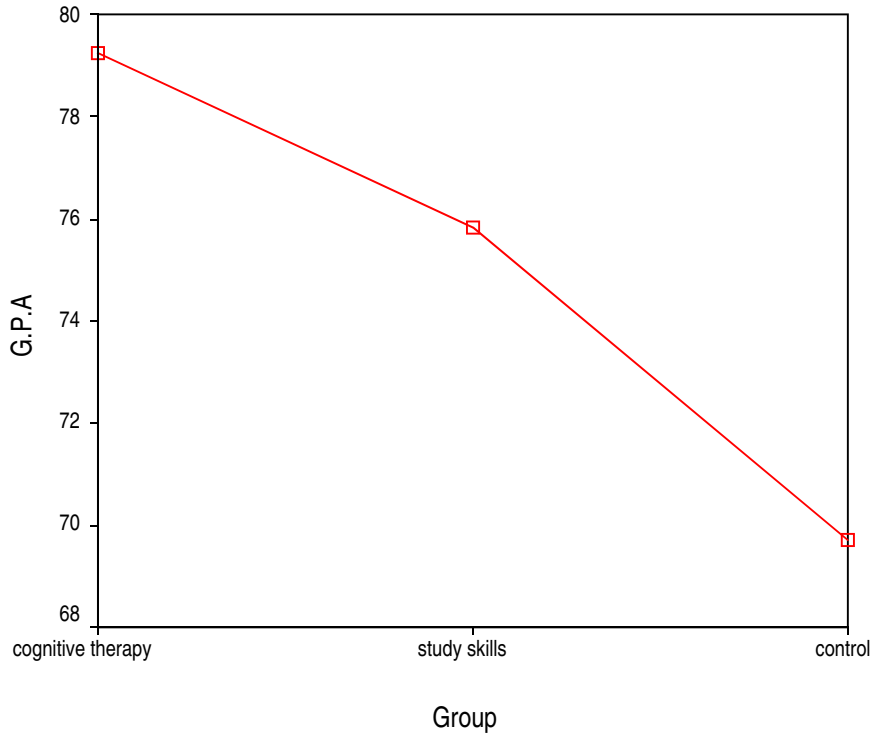


Figure 12. Differences in grade point average between the treatment and control groups.

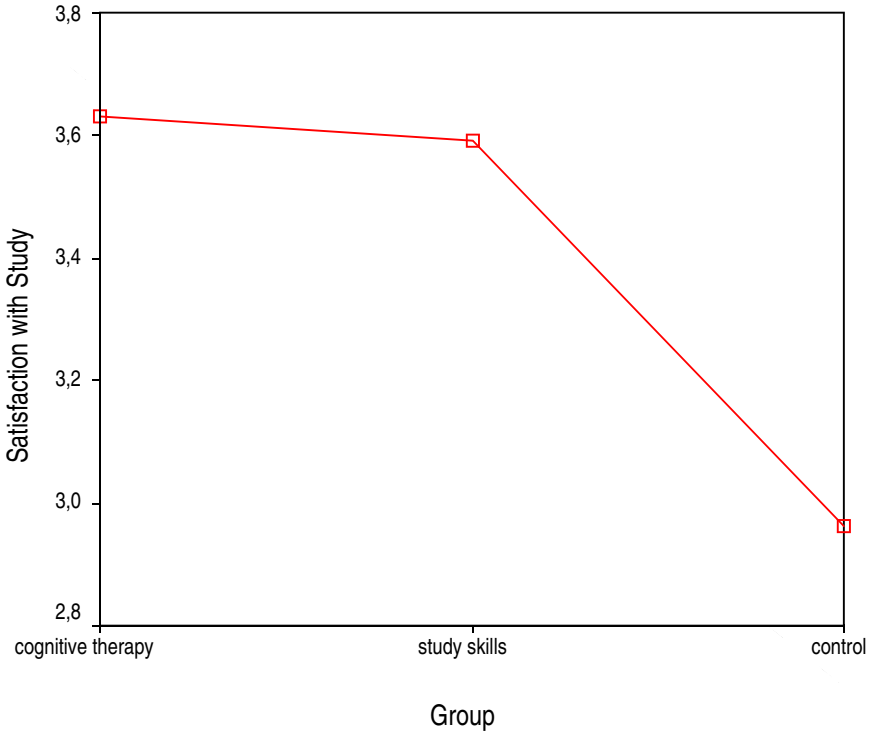
3.4 Results Related to the Fourth Hypothesis

Table 23 The results of the Tukey test for the variable of satisfaction with study.

Group	Cognitive therapy	Study skills	Control
Cognitive therapy	-	NS	**S**
Study skills		-	**S**
Control			-

S = significant at $p < .05$. NS = not significant at $p < .05$.

Table 23 indicates that the cognitive therapy and the study skills counseling groups showed significantly greater improvement in satisfaction with study compared to the control group. No significant difference was found between the two treatments. Thus, the hypothesis was partially confirmed. Figure 13 illustrates the differences in the levels of satisfaction with study between the treatment and control groups.

Figure 

trol groups.

4. Disc

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improving performance, while cognitive therapy can help these students not only be aware of anxiety-evoking thoughts and self-statements, but also teach them how to focus their attention fully on the task at hand rather than to attend to self-oriented thoughts. In other words, when the negative self-statements of test-anxious students are replaced with positive ones, this will help them to be relaxed prior to and during exams. Studying while they are relaxed may help them learn the material better, and remember it more easily. Therefore, cognitive therapy can reduce anxiety, increase grades and as a result improve satisfaction with study.

The results of this study are consistent with previous research
suggesting that cognitive therapy and/or study skills counseling may be more effective than a waiting-list control condition in reducing test anxiety. They are in accordance with the study by Meichenbaum (1972), who found that cognitive modification treatment was effective in reducing test anxiety and improving performance. The cognitive modification therapy used by Meichenbaum was a combined program, an insight-oriented therapy with a modified desensitization procedure, while the program used in the present study included only cognitive procedures. This implies that the cognitive techniques may be as effective as combined programs in the treatment of test anxiety and increasing grades. Also, these results agree with Hahnloser's (1974) study, which reported that cognitive restructuring led to a significant decrease in anxiety, however it was not more effective than a treatment approach that combines a cognitive-attentional

restructuring process with training in progressive relaxation. The study by Finger and Galassi (1977), which found that attentional treatment was effective in reducing test anxiety.

These findings are consistent with the study by McMillan (1974), who found that rational emotive therapy was effective in reducing the self-reports of test-anxiety for high and moderate general anxiety students, but there was no difference between rational emotive therapy and a control condition with respect to the academic performance. It is noteworthy that rational emotive therapy was one of the techniques used in the cognitive therapy program in the present study. Moreover, the present results agree with Osarchuk's (1976) study, which reported that a cognitive restructuring group demonstrated a large reduction in test anxiety on the assessment given immediately after the termination of treatment and it maintained this reduction after two weeks. Holroyd's (1976) study, which found that cognitive therapy was more effective in reducing anxiety and improving grade point average than systematic desensitization, a combination of cognitive therapy and systematic desensitization and a control condition. The study by Fabick (1977), which examined the effectiveness of cognitive modification, desensitization, and mantra meditation in the treatment of test anxiety. It was found that all three treatments significantly reduced test anxiety and general anxiety. Katz's (1978) study, which showed that rational emotive therapy was significantly more effective in reducing test anxiety than either no-treatment condition or relaxation placebo.

These results are consistent with Vagg's (1978) study, which investigated the effectiveness of biofeedback in combination with cognitive coping, biofeedback only, and cognitive coping only, in reducing test anxiety. It was found that the two groups that received cognitive coping training showed significant reductions in test anxiety. The study by Kaplan et al. (1979), which showed that the cognitive component of Meichenbaum's (1972) cognitive-behavior modification is more effective than the desensitization component or the combination of the cognitive and desensitization. The study by Goldfried et al. (1978), who found that systematic rational restructuring was more effective than a prolonged exposure condition and a waiting-list control condition in reducing test anxiety.

The present results agree with the study by Smith (1979), which reported that Meichenbaum's cognitive behavior modification in combination with study skills training was more effective in reducing test anxiety than study skills alone or a waiting-list control group. They found that no treatment led to a significant improvement in academic performance. These findings are partially consistent with those of the present study suggesting that cognitive therapy was more effective than a waiting-list control condition. The present findings are also

consistent with Nauheim's (1981) study, which investigated the effectiveness of group anxiety management training, group negative practice and group cognitive therapy in the reduction of test anxiety. The three treatment methods were significantly effective in reducing test anxiety. The study by Smithy-Willis (1981), who found that a cognitive modification program and a pseudotherapy technique significantly reduced anxiety and increased test performance. The study by Wise and Haynes (1983), which found that both rational restructuring and attentional training were superior to a waiting-list control group in reducing test anxiety and improving performance.

Allen's (1973) study, which reported that group-administered and self-administered relaxation and study counseling were equally effective in reducing anxiety and improving grades, and significantly better than the control. The study by Bander et al. (1982), which showed that study skills training produced significant improvements on self-reported mathematics anxiety and mathematics performance. The study by Sapp (1989), who reported that autosuggestion therapy combined with study skills counseling, relaxation therapy combined with study skills counseling, and nondirective therapy were all more effective than a control group in reducing test anxiety and improving academic performance.

The study by Decker and Russell (1981), who found that a cue-controlled relaxation and cognitive-restructuring group and a study-skills group showed significant improvement over a waiting-list control group on self-report debilitative test anxiety and irrational thinking. Study skills training led to the most improvement in grade point averages. The study by Dendato and Diener (1986), which reported that relaxation/cognitive therapy was effective in reducing anxiety, but failed to improve classroom test scores, while a combination of relaxation/cognitive therapy and study skills training reduced anxiety and improved performance, compared to the no-treatment control condition and was significantly more effective than was either treatment alone. In the combined program, subjects were given a chance to learn the skills necessary for effective study, at the same time they were taught how to cope with anxiety-evoking thoughts. Perhaps that is why they showed greater improvement in anxiety and performance. The present results are also consistent with the study by Jones (1988), which showed that both study skills training and cognitive modification were equally effective in reducing self-reported test anxiety. No treatment led to significant improvement in grade point average. Dogarlu's (1991) study, which found that both cognitive therapy in combination with study skills training (CT+SST), and systematic desensitization in combination with study skills training (SD+SST) made significant improvements from pretest to posttest in anxiety reduction and in study skills. Only the group that received CT+SST demonstrated a significant improvement in academic performance. It should be

considered that some of these studies showed the efficacy of cognitive therapy and study skills counseling in combined programs.

Obviously, the present results agree with those of the above studies with respect to the treatment of test anxiety, but with regard to the academic performance, the matter is different from one study to another.

However, the results of this study contrast with previous studies suggesting that cognitive therapy and/or study skills counseling may not be more effective than a waiting-list control condition in reducing test anxiety. They are in contrast with the study by Horne and Matson (1977), which showed that modeling was most effective in decreasing test anxiety followed by desensitization and then flooding. Study skills counseling was significantly more effective than flooding or a waiting-list control group in improving final grades. Some studies indicated that study skills counseling was effective neither in reducing test anxiety nor in improving grades. Osterhouse's (1972) study, which found that desensitization was more effective than study skills training and a waiting-list control group in reducing test anxiety. Control group received significantly higher examination scores than did study skills group. The study by Cornish and Dilley (1973), who found that study skills counseling was not significantly different from the control group with respect to the levels of test anxiety and grade point average. This is in contrast with the present study, in which study skills counseling was effective in reducing anxiety.

These results also contrast with the study by Lent and Russel (1978), which found that systematic desensitization in combination with a study-skills course, and cue-controlled desensitization in combination with a study-skills course were superior to study-skills training alone in reducing test anxiety and state anxiety. Both multicomponent groups showed significantly greater improvement in grade point averages than no treatment. The study by Altmaier and Woodward (1981), which showed that vicarious desensitization resulted in lower test and trait anxiety than study skills training alone or a waiting-list control. There was no significant difference between the study skills group and the control group on test or trait anxiety. No differences were found between the groups on academic performance measures. Minor's (1982) study, which showed that no significant differences were found between cognitive therapy, study skills training, a combination of cognitive therapy and study skills training, pseudotherapy control procedure and a waiting-list control group on self-report measures of test anxiety. Also, no treatment led to significant improvement in academic performance. This is perhaps because of the small number of subjects in this study. 51 subjects were assigned to 5 groups.

Moreover, the present results contrast with the study by Bosse (1987), who found that no differences were found between relaxation and cognitive counseling (RCC), study skills counseling (SSC), and a combined program (RCC & SSC) in reducing test anxiety, improving study skills and habits or improving grade point average. Although the circumstances of this study (i.e., the number of training sessions, age of subjects, treatment methods) are similar to those in the present study, these results are inconsistent with the present results. Bosse claimed that there were some factors that might have contributed to the nonsignificant results: the strict entrance criteria, a relatively small sample size, and the difficulty in motivating high school students to change attitudes and behaviors in a brief therapy program. Luckens's (1988) study, which showed that subjects receiving cognitive therapy reported higher facilitating anxiety than study counseling subjects. Study counseling subjects earned significantly higher grade point averages than the commitment and cognitive groups. It should be noted that this result not only contrasts with those of the present study, but also with those of several other studies showing that cognitive therapy was effective in increasing grades, whereas study skills counseling was not.

Generally, the results of the present study give further support to the conclusion that almost any type of treatment seems to be effective in reducing self-reported test anxiety, but changing academic performance is another matter.

One of the interesting findings in this study is that the study skills counseling group was superior to the control group in decreasing procrastination. This refers to the effectiveness of the strategies included in the study skills counseling program. Subjects who participated in the program were taught the SQ3R method of studying to help them read with understanding. They were taught time-management techniques, each one of them developed a time schedule in which he wrote the activities of eating, sleeping, class hours, outside work, the hours during which each of them expects to study each subject, and hours of free-time. They were informed that a student should follow the time schedule until he habitually turns from each activity to the next one. He should not wait until he is in a suitable mood before studying, he should begin studying at his regularly set time. In addition to this, he should monitor his study behavior.

Although the study skills counseling group showed greater improvement than the control group in procrastination, there was no difference between the two groups in academic performance. This finding agrees with that of Ziesat, Rosenthal and White (1978), who examined the effects of stimulus control, self-reinforcement, and a combination of the two in treating procrastination of studying and improving achievement. They reported that all treatments were more effective than the control condition in reducing procrastination, but neither control nor

experimental conditions led to any significant change in grade point average. It also agrees with the findings of Richards (1975), who reported that a combination of self-monitoring and study skills advice was effective in modifying behavior of studying.

However, the present study contrasts with that of Beneke and Harris (1972), which found that subjects who participated in a self-control procedure, which utilized the stimulus control procedures, self-reinforcement and punishment, and the SQ3R method of studying, showed significant improvements in grade point average for the three semesters following the study, when compared with those who did not participate. It also contrasts with the findings of Green (1982), who reported that self-monitoring plus self-reward was effective in producing increases in academic behaviors and grades and in producing decreases in related procrastinative behaviors. Future research should focus on new treatment methods that may be more effective for reducing procrastination and improving grades.

The present study found that treating test anxiety did not reduce procrastination. Clearly, cognitive therapy was superior to the control group in reducing anxiety, but it was not effective with regard to procrastination. Thus, students may procrastinate not because of the same negative thoughts that lead to test anxiety, but because of other thoughts result in procrastination. These thoughts should be identified and discussed with procrastinating students to reduce their procrastination. Greco (1985; cited in Ferrari et al., 1995, pp. 36) found that procrastinators are more likely to engage in negative self-talk, especially regarding excuse making. Ferrari et al., (1995) found, based on clinical experience, that academic procrastinators typically make five cognitive distortions, which promote and maintain their task avoidance, these five cognitive distortions are: 1. Overestimation of time left to perform tasks, 2. Underestimation of time required to complete tasks, 3. Overestimation of future motivational states, 4. Misreliance on the necessity of emotional congruence to succeed at task, and 5. Belief that working when not in the mood to work is unproductive or suboptimal.

The above cognitive distortions, which are frequent in most procrastinators, were not included in the present cognitive therapy program. This may explain why it failed to reduce procrastination. Since the negative self-statements of procrastinators may be different from those of test anxious students, the cognitive therapy programs designed for procrastinators should be different from those designed for test-anxious individuals.

Regarding the study skills program, it was developed to help anxious students learn strategies necessary for effective learning, which may be useful for reducing test anxiety and/or procrastination. Therefore, one cannot conclude that procrastination was reduced in the study skills counseling group as a result of the treatment of test anxiety or vice versa.

The experimental design of this study did not include an attention-placebo condition to control for the effects of attention and suggestion. Future research on test-anxious students would be enhanced by including an appropriate placebo condition to insure that the findings were completely attributable to the treatments. Replication of the study using multiple therapists would also be highly desirable. Perhaps the treatment programs used in this study have significant effects on other variables such as general anxiety, irrational thinking, locus of control, self-esteem, self-acceptance or depression. This is left for future research.

IV. General Discussion

This investigation included two studies. The first study attempted to investigate the relationships between test anxiety, procrastination, academic performance and satisfaction with study, while the second study tried to compare the effectiveness of two treatment methods in reducing test anxiety. Both studies were conducted on samples of high school male students in Jordan.

The correlational study replicated the results of previous studies that investigated the relationship of test anxiety to academic performance, procrastination and/or satisfaction with study. This is one of the few studies that examined the relationship between test anxiety and satisfaction with study in school students. The results of this study indicated that test anxiety was associated with negative academic consequences. Test anxious students perform poorly, procrastinate more, and are less satisfied with their academic achievements, compared to their low-test anxious counterparts. The present results are consistent with those of other studies, indicating the strength of the relationships between the variables in question.

Cognitive therapy and study skills counseling have been widely used for test anxiety and other academic problems. In the present experimental study, these methods were used in two treatment programs, but with new designs. The components of each program were organized in a way that was easy for students to understand. All procedures, techniques and activities related to each program were divided into six weekly sessions to give subjects enough time to practice what they learn during the sessions. The number of sessions was equal for both experimental groups, so that the differences in the effects between the treatment and control groups attribute only to the different treatments. The study examined the effects of the treatments not only on test anxiety, but also on procrastination, academic performance and satisfaction with study. Regarding the effectiveness of these treatments, it was measured through a test anxiety scale, with a new design too, along with other scales. The results of this study showed that cognitive therapy was very beneficial for those students who suffer from test anxiety and perform poorly on exams, while study skills counseling was more helpful for students who suffer from test anxiety and procrastination. Both treatments were effective in improving satisfaction with study.

The present results demonstrated that procrastination was inversely correlated with academic performance. However, this result should be viewed with caution. It would be hasty to conclude that reduction of procrastination leads to the improvement of performance. The study skills counseling group showed a great reduction in procrastination, but they did not show improvement in academic

performance. This suggests that there are factors other than procrastination that affect performance. The present results also demonstrated that academic performance was highly affected by lack of concentration or distraction of attention. Accordingly, students should learn how to manage their time effectively as well as how to focus their attention on the work at hand, so that they can improve their academic performance. Counseling programs designed to reduce procrastination should include, in addition to time management strategies, attention-focusing techniques to be more effective.

On the other hand, it was found that improving performance did not lead to reductions in procrastination. The cognitive therapy group showed great improvement in academic performance, but they did not demonstrate a significant reduction in procrastination. This may indicate that there are causes of procrastination other than fear of failure or task aversiveness. School students may procrastinate, because they may find something more interesting for them than performing academic assignments. That is, they may like to do their academic tasks, but they also prefer other more enjoyable activities.

Results of both studies support the interference model of the effect of anxiety on performance, but do not support the skills-deficit model of the effect of anxiety. The correlational study showed that there was a significant negative correlation between repertory uncertainty and G.P.A, while there was no correlation between lack of knowledge and G.P.A, indicating that lack of concentration while preparing for exams is related to poor academic performance, whereas feeling of lack of knowledge before or during exams is not related to it. On the other hand, the experimental study found that cognitive therapy, which focuses on the anxiety-producing self-statements, was effective in reducing anxiety and improving grades, that is, teaching test-anxious students how to concentrate better, when they prepare for exams and take exams, can help them reduce their anxiety and increase their grades, while study skills counseling, which focuses on the study techniques, was found to be effective in reducing test anxiety, but it did not improve performance. This contrasts the skills-deficit model that assumes that students, who feel or perceive that their study skills are insufficient, may become anxious and then perform poorly. In other words, teaching test-anxious students the skills needed for effective study may help them reduce their anxiety and improve their grades.

Again, it should be emphasized that it is not enough for students to learn the skills needed for effective study, so that they can increase their grades. They should also learn how to concentrate when they perform their academic tasks. Students with good study skills may have the knowledge required to accomplish their tasks, but this knowledge should be accompanied with good concentration

in order to be fruitful. This demonstrates the importance of counseling in helping students achieve this goal. Counselors should be qualified to teach students how to study effectively and how to focus their attention on the tasks at hand.

The findings showed that general test anxiety was significantly correlated with recitation situations, suggesting that students high in test anxiety are also high in social anxiety. They feel anxious when they take exams and when they have to say or present something in front of their colleagues or in front of strangers. In this context, the results also demonstrated that treating test anxiety through a study skills counseling program or through a cognitive therapy program led to reductions in social anxiety (recitation situations). This indicates that these treatment methods are effective in helping students think positively during evaluative situations.

When comparing the results of the present experimental study with those of other studies, enough attention should be given to the elements of the treatment programs designed to achieve the goals of each of these studies. The literature of test anxiety shows that almost all studies that used study skills counseling programs are similar regarding the components of these programs. In each of these studies, one finds almost the same techniques necessary for effective learning (i.e., SQ3R, note-taking, time management, etc.). Thus, it is fair to compare the results of these studies with each other. However, not all studies that used cognitive therapy programs for treating test anxiety are similar with respect to the components of these programs. Some cognitive programs included relaxation techniques or desensitization (e.g., Meichenbaum, 1972); other programs included only cognitive procedures (e.g., Holroyd, 1976). To make the comparison fair, the components of the cognitive programs should be taken in consideration.

The test anxiety inventory (DAI) used in this investigation was successful in demonstrating the strength of the relationships between test anxiety and other variables in Jordanian high school students. This means that the DAI can be used for achieving the purposes of correlational studies aiming to examine the relationship of test anxiety to other personality variables. In addition, this scale showed significant differences in test anxiety between the treatment and control groups, indicating that it is also suitable for experimental studies. It is worth noting that the DAI includes the traditional dimensions of test anxiety (i.e., worry and emotionality) and other new dimensions, which may be equally important. It should be stressed that in the DAI, worry is functionally interpreted as a stability factor, while emotionality is functionally interpreted as a manifestation of test anxiety. Although the DAI consists of 12 subscales, it is easy to apply.

Accordingly, this scale is recommended for future studies as a measure of test anxiety.

Participants, in both studies, were pleased to fill out the inventories. They noticed that these inventories focused on the problems that they experience. Also, students who participated in treatment were pleased to be invited to participate as group members. They were very enthusiastic and interested in the topics discussed during the training sessions. They proposed that the treatment programs should be applied to large numbers of students, indicating that they were convinced of the usefulness of these programs. In fact, both treatment methods are important for test anxious students. Cognitive therapy was found to be effective in treating test anxiety and improving performance, while study skills counseling was found to be effective in reducing test anxiety and procrastination. When students feel less anxious, learn to perform their academic tasks without delay and get higher grades, they will certainly be more satisfied with their studies and more successful in their lives.

The present experimental study showed that cognitive therapy and study skills counseling were effective in reducing test anxiety. Does the literature of test anxiety indicate that there are more effective techniques?

Several studies compared the effectiveness of cognitive therapy and/or study skills counseling with systematic desensitization and/or relaxation (behavioral techniques) in the treatment of test anxiety. The available studies showed that cognitive therapy was either as effective as (see McMillan, 1974; Osarchuk, 1976; Fabick, 1977) or more effective than systematic desensitization (see Meichenbaum, 1972; Holroyd, 1976; Kaplan et al., 1979; Leal et al., 1981). Also, it was either as effective as (see Hanloser, 1974) or more effective than relaxation (see Katz, 1978). On the other hand, the studies demonstrated that study skills counseling was less effective than systematic desensitization (see Osterhouse, 1972; Cornish & Dilley, 1973; Altmaier & Woodward, 1981), whereas it was either as effective as (see Allen, 1971) or less effective than relaxation (see Bander et al., 1982). From the literature review, it can be concluded that the behavioral techniques may be more effective than study skills counseling, but they are as effective as or less effective than cognitive therapy. The design of the present experimental study did not include a combined program. Therefore, only the efficacy of individual techniques is considered in this brief review.

As recommendations for counseling, the present cognitive therapy program is designed to be used with a group of students. It includes anxiety-producing thoughts that should be discussed in a group setting. The group members are expected to be motivated to participate in discussing these thoughts or self-

statements, because they will feel that many students have such thoughts. It will not be embarrassing for them to talk freely about their own experiences and feelings related to the assigned thoughts. Counselors can use such a program with a group of test anxious students (group counseling). This will save the time of counselors, and it will be more beneficial for the group members. However, if a student asks a counselor to help him/her reduce his/her anxiety (individual counseling), the counselor may not need to use all program components, because he can ask the student directly about his/her anxiety-evoking thoughts and the circumstances under which he/she suffers from anxiety, and then he can determine a suitable treatment plan. The same cannot be said regarding the study skills counseling program. It can be used with both an individual student and with a group of students. Apparently, it includes skills needed for effective study, which are important for all students. These skills can be offered in different forms.

Finally, future research is needed to replicate the results of these two studies in other settings, they may be important for counselors to help anxious students be more confident and satisfied with their studies, and to provide parents with suggestions for reducing anxiety in their children.

V. Abstract

This research consisted of a descriptive correlational study and an experimental study.

The correlational study investigated the relationships between test anxiety, procrastination, academic performance and satisfaction with study in a sample of 573 high school male students selected from four schools in Jordan. Pearson product moment correlation coefficients were calculated to determine the relationships between these variables. The results showed a significant positive correlation between test anxiety and procrastination (r= .29). Significant negative correlations were found between test anxiety and grade point average (G.P.A) (r= -.22), test anxiety and satisfaction with study (r= -.27), procrastination and G.P.A (r= -.24), and procrastination and satisfaction with study (r= -.33). No correlation was found between feeling of lack of knowledge, as an anxiety-producing condition, and G.P.A (r= .05), whereas a significant correlation was found between repertory uncertainty and G.P.A (r= -.22).

On the other hand, the experimental study of this research examined the effectiveness of a cognitive therapy program and a study skills counseling program in reducing test anxiety and procrastination and improving academic performance and satisfaction with study. 81 students were selected from a group of 156 tenth grade male students on the basis of their scores on the general test anxiety scale of the Differential Test Anxiety Inventory (DAI; Rost and Schermer, 1997). These students were rank ordered based on their scores on a short form of the Aitken Procrastination Inventory (API; Aitken, 1982), and then assigned to three groups. These groups were randomly assigned to: cognitive therapy, study skills counseling and waiting-list control. Cognitive therapy aimed to help subjects become aware of the anxiety-evoking self-statements they emitted both before and during exams, and to train them to develop new, positive self-statements that would facilitate task attending, whereas study skills counseling aimed to teach subjects the skills necessary for effective learning, namely SQ3R method of studying, techniques of time management, note-taking methods, test preparation techniques and test-taking techniques. All subjects receiving treatment met for a total of six 50-minute treatment sessions spanning over six weeks. The author served as a therapist for the treatment groups.

Pretest/ posttest measures were taken on the DAI, API, G.P.A and a single-item question on student satisfaction with study. The data were analyzed using one-way analysis of variance. No significant differences existed between groups at pretest. However, the results indicated that both treatment groups made significant improvements from pretest to posttest in test anxiety and satisfaction

with study when compared to the waiting-list control group. The study skills counseling group showed a significantly greater reduction in procrastination than did the control group, while the cognitive therapy group was superior to the control group in improving academic performance. Of great importance is the finding that the cognitive therapy program significantly reduced test anxiety, but it did not reduce procrastination. Thus, treatment of anxiety is necessary but not sufficient for reducing procrastination.

Overall, the results of both studies were interpreted as giving support to the interference model of the debilitating effect of anxiety on performance.

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Cognitive Therapy Program For Test Anxiety

Developed by:
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Appendix (1)

Introduction:

Cognitive therapy is typically defined as any technique directed toward modification of irrational or faulty patterns of thinking. When clients learn to think appropriately, they will be able to cope with their emotional disorders and achieve more success in their lives.

Treatment of test anxiety through cognitive methods has attracted the interest of many researchers in the fields of counseling, clinical and educational psychology. Yet, it is unclear how these methods can be included in a treatment program to make it effective in reducing anxiety and improving academic performance in students. This stresses the need to make more efforts in identifying the activities and techniques relevant to each training session, because this will facilitate the work of school counselors and have positive consequences for students.

The present cognitive therapy program is an attempt to meet this need. It consists of six sessions, each of these sessions aims to cover certain points. However, there are general goals of the program that include helping test-anxious high school students become aware of their anxiety-engendering self-statements, so that they can replace these statements with rational ones. Also, the program aims at training them how to focus on the task at hand, and encouraging them to use any personally generated self-statements that facilitate their attending to the task and inhibit task-irrelevant thoughts, considering that students' performance may be improved by directing their attention fully to the task.

The publications of Ellis (1962), Ellis & Grieger (1977), Beck (1970), Oliver (1975), Rost & Schermer (1992), Goldfried & Davison (1976), Goldfried, Linehan & Smith (1978), D'Alelio & Murray (1981), Dendato & Diener (1986), Wine (1971), Zeidner (1998) and Kaplan, McCordick & Twitchell (1979) were greatly beneficial in preparing the training sessions of this program.

The first session:

The points covered in this session include:

Asking some preliminary questions about test anxiety, such as:

- Why do some students get anxious during exams? Presumably, the group members are all test-anxious, thus it is expected that each of them will talk about himself/herself regarding this matter.

- What are the manifestations of test anxiety? During the discussion, it should be stressed that test anxiety has different manifestations (e.g., fast heart beat, fast breathing, sweating, frequent urination, trembling, upset stomach, poor concentration, inability to notice mistakes).
- Why do test-anxious students perform poorly, compared to their non-anxious counterparts? It should be explained that high test-anxious students divide their attention between task-relevant and task-irrelevant thoughts, whereas low-test-anxious students focus more on the task. These task-irrelevant thoughts lead to a lack of concentration on the task and, as a consequence, impair performance. This makes it clear why some students perform poorly on an exam even though they know the material, and why they suddenly remember the answers as soon as they leave the exam room.

- Explaining the goals of the program. In order to collaborate effectively, therapist and group members must agree on goals for therapy.
- Asking the group about their expectations towards the program and how much they are motivated to participate.
- Offering examples to illustrate how our feelings can be affected by what we tell ourselves, such as:

Example (1):

Two hypothetical students have seen a snake hidden in the grass. The first student is feeling afraid, and he is running away. His thoughts are, “this animal is dangerous. If I stay here it’ll attack and bite me, and its poison will kill me. Thus, I must run away as quickly as possible”. The second student is calm to the extent that he is coming a little closer to the snake. He may say to himself, “I’m not familiar with this animal, and one can’t always see it. It is not dangerous and it’ll not attack me as long as I don’t provoke it. I want to come closer to it in order to enjoy seeing it”.

Before telling the group members about the hypothetical self-statements of the two students, the therapist should ask them to interpret the different emotional reactions of those two students. Why is the first feeling afraid? And why is the second feeling calm? The therapist should make it clear that those different emotional reactions are due to the different self-statements.

Example (2):

Two hypothetical persons are getting ready to attend the same discussion group. The first person is feeling calm about the prospect, and is looking forward to the

evening ahead. He may say to himself, “it should be an interesting discussion tonight. There’ll probably be several people there that I don’t know, which can give me the opportunity to make some new friends. There'll also be some people there I know and whom I like very much, so I’ll be able to renew some friendships and will have a good time. By contrast, the second person is nervous and fearful. His thoughts are, “I don’t know how well I’ll do tonight. There are going to be many people there I don’t know, and I’m not sure if I’ll be able to say the right thing. I don’t want to look foolish, especially since there will be many people there that I like.

The therapist may ask:
Why do the two individuals have completely different feelings, despite they will be both in the same situation?

The group members should reach an understanding through these examples, that when a person is in a particular situation, his/her anxiety is often not the result of the situation itself, but rather the way in which he/she interprets the situation. In other words, what he/she tells himself/herself about the situation. This understanding is very useful as a basis for discussing anxiety-evoking self-statements in the next sessions.

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Homework assignment:
The group members are asked to keep a diary of their self-statements, feelings and behaviors in the situations that they find stressful. They then discuss these in detail with the group, asking themselves whether or not their self-statements are rational or not. They can then learn to replace these statements with more helpful ones.

The second session:

The points covered in this session are:

- Explaining anxiety to the group as resulting from their negative self-statements (negative internal dialogue) occurring before and during exams.

The therapist can discuss this point with the group members in the following way:

Suppose that a student is facing a test. He/she feels anxious. He/she doesn’t concentrate on his/her work. He/she then says that he/she is anxious because

he/she is facing a test. Is that logical? No, because if a test makes him/her anxious, then everyone of his/her colleagues must also be anxious and have the same level of anxiety. In fact, a test situation per se doesn't make him/her anxious, only he/she can make himself/herself anxious. He/she makes himself/herself anxious by what he/she says to himself/herself.

- Explaining the ABC model of Rational-Emotive Therapy.

The therapist can present this model as follows:

The ABC model is one of the most important techniques in the treatment of test anxiety. We will use it in this session and the next two sessions in identifying and disputing the anxiety-producing self-statements.
Test-anxious student says to himself/herself:

- (Activating event), "I'm taking a test".

B. (Beliefs),"I must pass. If I fail, I'm worthless and no one will respect me".
C. (Consequence), "I'm anxious".

To make it clearer, the therapist may say:
One can notice that the self-statements mentioned are negative, therefore the consequence is negative. In other words, these self-statements trigger anxiety. That is why the student is anxious.

The therapist may ask:
Suppose that his/her self-statements are positive such as, "I will do my best to answer all the questions correctly. If this is not achieved, it will not be a catastrophe, next time, I will prepare myself better and get better grades." What do you expect the consequence will be?

- Beginning to discuss the negative self-statements, which produce test anxiety.

The therapist can ask the group members to form small groups to test the validity of each of the self-statements, which he will assign. Each small group is required to discuss whether the self-statement assigned is positive or negative. If the members of this group find the self-statement negative, they have to discuss how this negative self-statement could lead to a consequence such as high-test

anxiety. They then replace it with a positive self-statement. After that, the whole group participates in a general discussion about the assigned self-statement.

The self-statements assigned for this session are easy to discuss with the group members.

Self-statement No.1: ***Since I don't know the first question, I won't know the others and I'll fail.***

The group members would challenge and replace this statement with rational statements such as, "just because I don't know the first question doesn't mean I don't know the others. I will skip this question and come back to it later. I won't waste time worrying".

Self-statement No.2: ***My grades must be higher than those of my colleagues; otherwise I'll be worthless and unlovable.***

The group members would dispute and replace this statement with coping statements such as: " I shouldn't compare myself with others, because everyone has his/her own abilities, interests and circumstances. Instead, I should compare my past grades with my present ones and work on improving my future ones".

Self-statement No.3: ***I'm going to fail this exam, and then everyone's going to think I'm stupid.***

The group members would rationally reevaluate this statement. Some of the possible rational self-statements are, "I probably won't fail, and even if I do, people probably won't think I'm stupid. And even if they do, that doesn't mean that I'm stupid".

The third session:

The group discusses three other self-statements in this session.

Self-statement No.4: ***I must pass all exams, and I consider myself a complete failure for not passing an exam.***

Some of the questions that can be raised during the discussion are:

- Why is it so terrible to have failed an exam?

- Who says I must succeed?
- If I can’t pass all exams, does that mean that I’m a worthless person?

The therapist should explain to the group members, that self-worth is something related to the general behavior of an individual. Consequently, it is illogical to be measurable in terms of a score on a test.

Self-statement No.5: ***I must at all times be perfect. I must always get a full score; I must always be at the head of the class; I must get into the best college. Anything less than that is viewed by me as failure.***

The group members would find this statement negative, because even the most intelligent students can seldom meet such perfectionistic demands. Accordingly, a student should do his/her best to achieve his/her goals, but this should be within reason.

Self-statement No.6: ***I must be loved by all my family members, friends and acquaintances, and I feel that if I fail, they won't accept me.***

The questions raised in the discussion can be:

- Should others accept me?
- What will my parents think of me?
- How can I face my friends?

It is expected that the students will reach an understanding, that it is desirable to be loved and approved by some people some of the time. However, it is not necessary or possible to win the approval of all of the people all of the time.

The fourth session:

Three other self-statements are discussed in this session. Then, questions about exam outcome are asked, so that the therapist tests to which extent the group members have profited from the previous sessions.

Self-statement N.7: ***If the exam questions are not the questions that I expected, I won't be able to answer, and I'll fail.***

The group members would dispute and replace this statement with coping statements such as, "just because the questions that I expected are not on the exam doesn't mean I don't know the exam questions. They may be easier than those, which I expected. I will try to answer them all correctly and I will begin with those that I know".

Self-statement N.8: ***The duration of the exam won't be sufficient for me to answer all these questions, and I'll get a low or failing grade.***

It is expected that this statement will be disputed and replaced with coping statements such as, “if I use the time effectively, it will be sufficient. I will answer quickly the questions that I know, and skip the questions, which I don’t know and come back to them later”.

Self-statement N.9: ***My parents will kill me, if I don’t get a good grade.***

The group members would agree that a student should explain to his/her parents that he/she really does his/her best to get the highest score he/she can. Also, he/she should try to convince them that he/she cannot do what is beyond his/her ability.

After finishing the discussion of negative self-statements, the therapist may ask: Should a student think about the outcome, or about performing the task as best as he/she can, regardless of the outcome? When is it better for a student to think about the outcome, before, during or after the exam?

The fifth session:

The group members have learned in the previous sessions how to use the ABC model in identifying and disputing the negative self-statements. In this session, other techniques for inhibiting task irrelevant thoughts are offered. It is better that the group members first discuss in small groups the question relating to each technique. Then, during the general discussion, the therapist can explain in more detail the assigned technique.

- Using positive self-talk

By saying to himself/herself “I have prepared well for the exam and I think I will perform well”, a student can be confident and relaxed during the exam. In addition, he/she will not turn his/her attention to the consequences of failure and will not be worried about how others are doing.
The therapist may ask:

If a student is well prepared for an exam, how should he/she talk to himself/herself on the exam day?

- Convincing oneself that test score is not a measure of self-worth

Each member of the group should convince himself/herself that he/she is not his/her test score. A student’s score reflects just his/her knowledge of a certain subject on a certain day. If he/she has failed, this does not mean that he/she is a

failure, but it does mean that he/she has a problem because of which he/she has failed. The causes of his/her failure may be due to the lack of knowledge, which could be resulting from deficient study skills and habits (e.g., rote memorization, repetitive reading or devoting insufficient time to studying), or may be due to negative self-statements that may interfere with his/her concentration (e.g., if I fail how I can face my parents and colleagues). Thus, he/she should seek a specialist (e.g., a counselor) to help him/her diagnose the causes of his/her poor performance.

Is a student's score a measure of his/her worth as a human being?

- Distinguishing between demands and preferences

It should be emphasized that a student will maintain his/her anxiety, if he/she insists that he/she must pass, must be perfect, must please his/her parents, or must do as well as his/her friends. If instead of "I must…"he/she says, "It would be better to…"he/she establishes the precondition for productive work (i.e., for doing his/her best to get good scores and directing his attention to the task). The therapist can tell the group members, that one technique which has been found helpful for a student to achieve this is to write out reminder cards with appropriate statements on them, such as, "I will try to do well, "I would like to succeed, "failure is neither a sin nor a crime," Then he/she places these cards in strategic places, where he/she will frequently see them in the course of the day, and then he/she repeats these statements as often as possible.

When one student says, "I must pass," and another student says, " it would be better to pass," do you think that their feelings will be the same or different?

- Practicing thought-stopping

It is important for a student, especially when he/she prepares for an exam, to be aware of intrusive thoughts, such as, "my efforts will be in vain", or "I know I can't pass". These self-defeating negative thoughts can, with practice, be stopped. He/she should say, "stop" whenever these thoughts intrude upon his/her studying, and he/she should substitute a positive thought, which counters the negative one: "It is not terrible to fail, only inconvenient", or "I'm human and fallible, a mistake is not awful".

In this regard, the therapist can explain to the group members the following two points:

- Intensive thought-stopping rehearsals prior to a test will not only minimize the build-up of anxiety, but will teach the student to stop his/her task-irrelevant thoughts during a test.

- Some pleasant thoughts (e.g., thought about a funny situation with some friends) can also take the student's attention away from the task at hand, especially during exams. In such a case, he/she can say to himself/herself, "I will think about that later, now back to the task".

What can a student do to stop the distracting thoughts that may come into his/her mind during exams?

The sixth session:

Topics covered in this session are:

- Procedures to attend fully to the task

The therapist should teach the group members how to use and develop attention-focusing procedures, so that they can control their attention both prior to and during the test situation. To achieve this:

- Handout entitled "attention-focussing procedures" is given to the group at the beginning of the session. The following procedures are suggested to be included in the handout:

- I will concentrate all energy on the problem at hand.
- I will first answer the questions that I know.
- I will not let myself get distracted from the test items.
- I have plenty of time to complete this exam.
- I will read the test questions carefully.
- I will perform well on this test because I'm well prepared.
- I will try not to leave a question without an answer.
- I can do well if I stick with it.

- The group members are asked to form small groups. Each small group works together to write a list of attention-focusing procedures, reflecting their own thoughts and words. It is assumed that, with practice, each one of the group

members will develop his/her own self-instructions just like what low-test-anxious students do.

- General discussion about the program

One of the main issues on which the therapist should focus is:
The assumption that each member of the group has been qualified to dispute his/her anxiety-producing thoughts, and emit alternate thoughts that would facilitate his/her attention to the task at hand. At the same time, the therapist should ask the group members, whether they still have some difficulties in this respect.

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Counseling Program
In Study Skills

Developed by:
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Appendix (2)

Introduction:

This counseling program is designed to teach school students the skills necessary for effective study, and to help them deal with the problems they face while learning.

The most important study skills for school students are covered in six training sessions. The first two sessions are devoted to teach participants in the program how to use the SQ3R method of studying. The third session covers techniques of time management. During the fourth session, a method of note-taking is presented. The fifth session is devoted to teach them how to prepare for exams. In the sixth session test taking techniques are covered.

Handouts entitled “effective study methods”, “time management techniques”, “how to take notes”, “how to prepare for exams”, “how to take exams” are given to the participants to help them remember and practice the different techniques that they will learn during the sessions. Mastering these techniques may lead to numerous long-range benefits. One practical benefit is higher grades.

The methods and techniques used in the training sessions are based on the works of Robinson (1970), Morgen and Deese (1969).

The first session:

This session focuses on the following points:

Explaining the goals of the program, and giving a general idea about the contents of each training session.

Monitoring study behaviors

The counselor, who conducts the sessions, should ask the participants to monitor their study behaviors so as to determine the operant consequences of their study activities. That is to say, through the sessions they will acquire new study methods and they will be required to practice these methods during their study activities. Thus, when each of them monitors his/her study behavior, he/she can determine to which extent his/her methods are improved and identify the problems he/she experiences while learning.

Introducing the SQ3R method of studying-survey, question, read, recite, and review.

The counselor explains to the participants each of the five steps of the SQ3R method, asserting that they should follow these steps in order:

A student should first ***survey*** the chapter by glancing quickly through the headings, tables and illustrations. Furthermore, he/she should read the final summary paragraph if the chapter has one. In doing this, he/she will get a general idea of what he/she is going to study before he/she studies it in detail.

Then, he/she should ***question*** by turning headings into questions to be answered while reading. In this way, he/she identifies information he/she wants from reading the passage.

After that, he/she should ***read*** actively, focusing on comprehension of the main ideas of the passage. He/she should read everything. That means tables, graphs, and other illustrations as well as the main text. They are there for a purpose, not just to make the page attractive or to fill up space.

When discussing this step, the counselor should shed light on two other important points:

A student should avoid passive reading; he/she should read to answer the question he/she has asked himself/herself or the questions the author has asked.

A student can use underlining as an effective study method if he/she waits until the end of a headed section before marking, thinks about what the important point is, underlines only the key phrase or phrases, and uses a numbering or marking system that shows relationships among the points marked.

When a student sees a new heading comes up, he/she should stop and ***recite*** the material in the section he/she has just finished. He/she recites the main points in his/her own words in order to fix the main ideas in his/her memory. Through recitation, he/she can make sure that he reads with understanding, he/she keeps his/her attention on the task at hand, and he/she can't daydream. The counselor should point out that immediate self-recitation is much more efficient than rereading soon after the initial reading.

Finally, a student should ***review*** main points, recalling the linkages among ideas or topics, concentrating on passages not yet totally understood. It is noteworthy that he/she should review periodically to refresh his/her memory and assure retention of information. The first time should be immediately after he/she has studied something (e.g., a chapter) he/she should go back and review the important points in it.

After explaining the steps of the SQ3R method, the participants are informed that, with practice, they will use this method as a study habit. This habit will make every one of them satisfied with his/her study behavior and will increase his/her motivation to study.

In addition, the counselor should make it clear for the participants that if they continue practicing this method, they will be able to read better and faster through acquiring new reading skills such as, they will read without moving the lips or vocalizing, they will not read each word one by one, they will not stop by an unfamiliar word and they will not read all material at the same rate.

Homework Assignments:

The participants are required to read at home the five steps of the SQ3R method and try to practice them while studying.
Each participant is asked to keep a diary of his/her study activities, and tell the group leader (the counselor) in the next sessions, to which extent his/her study behavior has been modified, for the sake of helping, if necessary.

The second session:

This session is devoted to the practice of SQ3R method.

The counselor asks the participants to apply what they have learned in the last session to their textbooks. Specifically, a chapter of a textbook is specified, and each participant tries to practice the five steps of the method. They are required to apply the steps of “survey and question” to the whole chapter, and the steps of “read, recite and review” just to one or two passages, because of the limited time of the session. When they finish, they discuss with the counselor how they have used the method and how effective it is. This should be followed by feedback to the whole group.

The third session:

The topic of this session is time management.

The counselor explains to the participants the steps necessary for using time effectively.

Development of a time schedule

The participants are told that in marking out a time chart they should write in:

First, the activities of eating, sleeping, class hours, and outside work.

Next, the hours during which each of them expects to study each subject. That is he/she shouldn't simply say, " I want to study from 3 to 7", but he/she should say "I want to study history from 3 to 4:30" and "I want to study English from 4:45 to 6.

They will normally find that there are still some hours left. These hours are considered free time (see the end of the appendix).

In assigning definite hours for study and recreation, the participants should be told to consider certain principles.

If a student is studying for long periods of time, he/she should stop for a few minutes between chapters or between changes of subjects. A period of relaxation allows him/her to attack the next lesson with renewed energy, and to organize information in memory.

It is better that a student studies a subject every day at the same time than to have occasional long sessions. This daily routine develops habits that facilitate planning, getting down to work, and concentrating.

A student should take in consideration not how much he/she studies but rather how well he/she studies with regard to study time.

Habitual use of time schedule

The counselor explains to the participants that a student should follow the time schedule until he/she habitually turns from each activity to the next one. Gradually, he/she will do that as a habit. It is a good idea that he/she places his/her planned time schedule where he/she will often see it (e.g., on the wall of his/her room).

Applying work rules

The participants are told that there are rules to be followed regarding study time. A student shouldn't wait until he/she is in a suitable mood before studying, he/she should begin studying at his/her regularly set time; he/she should try to finish all his/her work within the time limits set; he/she shouldn't waste time trying to decide what to study, he/she should study first the subject he/she has scheduled; when he/she is at the study table, he/she should try to go right to work, and force himself/herself to postpone other activities until later; and finally, he/she should check himself/herself whenever he/she starts to day-dream.

The fourth session:

The topic discussed in this session is note-taking.

The following points are covered:

The counselor explains to the participants the five steps of taking notes, and then they practice these steps.

A student should ***record*** during the class as many meaningful facts and ideas as possible in the main column of the notes.
He/she should ***reduce*** these ideas and facts into key words and phrases listed in the recall column.
Then, he/she should cover the main column and ***recite*** the main facts and ideas to himself/herself using the cues provided by the recall column.
He/she should ***reflect*** on the material. This means he/she should think about the content of the notes and write his/her own ideas and opinions in a separately organized summation.
Finally, he/she should periodically ***review*** the notes. Reviewing is necessary to retain what he/she has learned. Otherwise, in the course of time he/she forgets.

The counselor lectures for a few minutes on a certain topic of interest for the participants (e.g., free time), so that they practice the steps of note-taking.

The fifth session:

The topic of this session is test preparation.

The following points are discussed:

Timing of reviews

The counselor discusses with the participants the following principles relating to the timing of reviews:

Reviews should be done early to retard forgetting, which takes place so rapidly after learning.
The process of reading and rereading during the same study period is not very helpful, but doing this rereading several hours later is more effective.
The very size of the task of reviewing for a final exam tends to lead to procrastination.
The lengthy session that occurs just before the exam greatly fatigues the student so that he/she can’t be alert the next day during the test.
In order to keep the material fresh in his/her memory, a student needs to do an intermediate review between immediate review and review just before the exam. That means he/she should periodically review.

Preparing for final exams

The participants are informed that the principles of preparation for quizzes, also apply to preparation for final exams, but the latter cover the whole course. Therefore, they should take some points in consideration while preparing for the final exams. These points are:

Review for a certain course should be divided into blocks of material assigned to three or four spaced sessions.
The last session before the exam may be well spent in looking over notes for the whole course.
The few day period before and during final exams should be one in which a student lives normally.
A student should maintain habits of eating, exercise and sleeping. If he/she doesn't sleep enough he/she will not produce well in the exam.
He/she should review the material thoroughly and then relax in the night before an exam, because it is too late to learn much in preparation.
He/she should reread sections only if, after looking at their headings, he/she has trouble remembering what they are about. In this way, he/she can use his/her time efficiently.
He/she should ask questions, prepare examples for each topic, and discuss the points with a friend.

The sixth session:

The topic of this session is test-taking techniques.

These techniques are related to essay exams and objective exams.

Techniques of taking essay exams

The following are the techniques related to this type of questions:

First, a student should note the key word in the question. This will tell him/her the limited area to cover in answering the question. There are a lot of key words that can be used in the questions such as, "list", "illustrate", contrast". If a question asks for a "list", he/she shouldn't write an essay, which only will take up more of his/her time. Only when the question asks him/her to "discuss" a topic, he/she can write an essay to cover that topic.

Second, he/she should look for further limiting words, so that he/she answers the question accurately and completely. For example, a teacher would further limit what must be covered in a question about unemployment by referring to the causes of unemployment, and thus he would not expect students to cover the effects of this problem.

When a student is asked to answer an essay question, his/her answer should be comprehensive and organized. Most students start writing about the first idea that comes to mind after reading a question, and then continue with whatever ideas come to mind next. Consequently, the grader may give a low grade. For example, in the question, which asks about illustrating the causes of unemployment, a student shouldn't illustrate in great detail the first cause and not to give enough attention to the other causes, but he/she should illustrate each cause sufficiently and in an organized way.

In a question that asks for "discussion", a student shouldn't only list points, but he/she should explain why or how.

Giving illustrations to show full understanding is much appreciated by the grader, whereas the grader resents „padding" (i.e., talking about irrelevant points or repeating points already made in order to fill up space).

A student should take a few minutes at the end of the hour to proofread his/her paper. An accidentally omitted "not" or other important word may affect his/her grade.

A student should be sure that the questions and their parts are numbered correctly.

(During the discussion, the counselor should explain to the participants that in essay questions a student is required to recall topics (e.g., from a chapter)).

Techniques for taking objective exams

The following are the techniques related to this type of questions:

Every question usually has equal weight in scoring, thus a student shouldn't hesitate too long on the questions whose answers not immediately come to mind.

The difficult questions should be checked in the margin and returned to later. Doing so, a student will insure that all the easy questions on the exam will be completed.

Later questions may remind a student of the answers to the ones skipped.

A student should be sure to go back over the exam to answer questions that were omitted the first time.

(It should be explained to the participants that the objective questions require recognition).

References

Morgan, C. T. & Deese, J. (1969). How to study. New York: McGraw-Hill Book Company.

Robinson, F. P.(1970). Effective study. New York: Harper & Row, Publishers.

Plan of Study, Classes, and Recreation

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
7:30							
8.00							
9:00							
10:00							
11:00							
12:00							
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10:30							
11:00							

The Arabic Version of the Differential Test Anxiety Inventory (DAI)

1- Developed by Rost and Schermer (1997)

2- Translated from German into Arabic by Abdul-Kareem Jaradat

A

Area	Subscales	Items
Manifestations of test anxiety	1. Cognitive	cog1, cog2, cog3, cog4, cog5, cog6, cog7, cog8.
	2. Emotional	emo1, emo2, emo3, emo4, emo5, emo6, emo7, emo8.
	3. Physiological	phy1, phy2, phy3, phy4, phy5, phy6, phy7, phy8.

B

Area	Subscales	Items
Anxiety-producing conditions	1. Lack of knowledge	lk1, lk2, lk3, lk4, lk5, lk6, lk7, lk8.
	2. Repertory uncertainty	ru1, ru2, ru3, ru4, ru5, ru6, ru7, ru8.
	3. Recitation situations	rs1, rs2, rs3, rs4, rs5, rs6, rs7, rs8.

C

Area	Subscales	Items
Test anxiety coping strategies	1. Danger control	dc1, dc2, dc3, dc4, dc5, dc6, dc7, dc8.
	2. Situation control	sc1, sc2, sc3, sc4, sc5, sc6, sc7, sc8.
	3. Anxiety repression	ar1, ar2, ar3, ar4, ar5, ar6, ar7, ar8.
	4. Anxiety control	ac1, ac2, ac3, ac4, ac5, ac6, ac7, ac8.

D

Area	Subscales	Items
Stability	1. Internal stability	is1, is2, is3, is4, is5, is6, is7, is8.
	2. External stability	es1, es2, es3, es4, es5, es6, es7, es8.

A short form of the Aitken Procrastination Inventory (API) (In Arabic)

3- Developed by Aitken (1982)

4- Translated into Arabic by Abdul-Kareem Jaradat

Y

Inventory	Items
Academic procrastination	pr1, pr2, pr3, pr4, pr5, pr6, pr7, pr8, pr9, pr10, pr11.

* = items are reverse-scored.

Z

A single-item question on student satisfaction with study (In Arabic)

Appendix (3)

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… . 1emo					
… . 1cog					
… . 2emo					
… . 1phy					
… . 2phy					
… . 3emo					
… . 2cog					
… . 3phy					
… . 4emo					
… . 5emo					
… . 4phy					
… . 3cog					
… . 4cog					
… . 6emo					
… . 5phy					

…	. 5cog					
	… . 6phy					
	… . 7emo					
	… . 7phy					
	… . 6cog					
…	. 7cog					
	… . 8phy					
	… . 8emo					
	… . 8cog					

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. **B**

…	(10%)	(25%)	(50%)	(75%)	(90%)
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… . 1lk					
… . 1rs					

	… . 2ru					
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	… . 3ru					
	… . 3rs					
	… . 2lk					
	… . 4ru					
…	. 4rs					
	… . 3lk					
…	. 5ru					
	… . 4lk					
…	. 6ru					
	… . 5rs					
…	. 7ru					
	… . 5lk					
	… . 6rs					
	… . 6lk					
	… . 7rs					
	… . 7lk					

… . 8rs					
… . 8ru					
… . 8lk					

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C

…	(10%)	(25%)	(50%)	(75%)	(90%)
… . 1ac					
… . 1dc					
… . 1ar					
… . 2ar					
… . 2ac					
… . 1sc					
… . 2dc					
… . 3ac					

…						
	. 3dc					
	… . 4dc					
	… . 2sc					
	… . 4ac					
	… . 5ac					
	… . 3sc					
	… . 4sc					
	… . 3ar					
	… . 5dc					
	… . 6ac					
	… . 5sc					
	… . 4ar					

…	(10%)	(25%)	(50%)	(75%)	(90%)
… . 6sc					

	… . 7ac					
	… . 6dc					
	… . 5ar					
	… . 7sc					
	… . 6ar					
	… . 7dc					
	… . 7ar					
	… . 8ac					
…	. 8sc					
	… . 8dc					
	… . 8ar					

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D

	(10%)	(25%)	(50%)	(75%)	(90%)
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. 2is					
. 3is					
. 3es					
. 4is					
. 5is					
. 4es					

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. **7is**					
. 8es					
. **8is**					

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. **Y**

	(**10%)**	(**25%)**	(**50%)**	(**75%)**	(**90%)**
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. 11pr					

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Z

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Erklärung

Ich versichere, dass ich meine Dissertation

Test Anxiety in Jordanian Students: Measurement, Correlates and Treatment

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Psychometric properties of the Differential Test Anxiety Inventory (DAI), and a

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comparison of cognitive therapy and study skills counseling in the treatment of test

_____

anxiety

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selbst ndig, ohne unerlaubte, Hilfe angefertigt und mich dabei keiner anderen als der von mir ausdr cklich bezeichneten Quellen und Hilfen bedient habe.

Die Dissertation wurde in der jetzigen oder einer hnlichen Form noch bei keiner anderen Hochschule eingereicht und hat noch keinen sonstigen Pr fungszwecken gedient.

17. 2. 2004 Abdul-Kareem Jaradat

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