AMERICAN UNIVERSITY OF BEIRUT

TEACHERS' PERCEPTIONS OF TEST ANXIETY IDENTIFICATION AND PREVENTION IN LEBANESE SCHOOLS IN THE GREATER BEIRUT AREA

by
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AN ABSTRACT OF THE THESIS OF

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Teachers play a significant role in the education and character development of students. When it comes to test anxiety, teachers have the power to prevent or minimize it, by virtue of their role responsibilities, which include shaping classroom environments, and teaching cognitive, behavioral, emotive, and study skills. According to the American School Counselor Association (ASCA; 2012), teachers are also a key feature in the identification process of students with test anxiety. It is imperative, therefore, that teachers actively play a part in properly identifying students with test anxiety, as well as helping them overcome it through setting up healthy classroom environments and teaching skills to battle test anxiety.

The review of the literature has revealed fragmented and scarce documentation of the student behaviors that teachers perceive as telltale identifiers of test anxiety. Furthermore, while the literature indicated a consensus with regards to the belief that classroom environments affect students' test anxiety, no studies looked into the practices that teachers undertake to ensure an anxiety-free testing environment.

A sample of three teachers from Elementary, Middle School, and High School each, from seven schools in the Greater Beirut area, participated in a descriptive study whereby they responded to a questionnaire aimed at investigating their perceptions and actions with regards to test anxiety identification and prevention. Descriptive statistics were used to analyze the data.

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To my mother and my father.

For every tear, every heartache, every lesson, every smile, every laugh, every hug, every cent, every sleepless night, and every hardship, this is for you.

Everything I have, and everything I hope to become is because of you.

May all the children of the world be blessed with parents as loving as you.

CHAPTER I

INTRODUCTION

Anxiety is a physiological and behavioral reaction to a clearly identified stimulus. The association between the stimulus and its reaction is established through classical conditioning, which happens as a result of the interaction of variables in the child's environment. According to Social Learning Theory, "a great deal of human behavior is activated by events which become threatening through association with painful experiences. A prime function of most anticipatory behavior is to provide protection against potential hazards" (Bandura, 1990, p. 60). There are many different types of anxiety that appear in the school setting, including test anxiety, social phobia, panic disorder, and separation anxiety. For test anxiety, the stimulus resulting in the maladaptive response is any form of assessment, and the response itself has different manifestations: behavioral, physiological, cognitive (Bodas, Ollendick, & Sovani, 2008; Ergene, 2003), and affective (Bandura, 1990; Lowe et al., 2008).

The behavioral manifestations of test anxiety include avoidance and withdrawal from situations. The physiological ones include acceleration of heart rate, hyperventilation, sweating, insomnia, muscle tension, stuttering, and shaking. The emotional manifestation is primarily fear, and the cognitive manifestations include negative attributions, low self-esteem and poor efficacy expectations. Test anxious children tend to be shy and inhibited. They are sometimes labeled as perfectionists or eager to please. Relative to other students, test anxious students are more likely to perform poorly, receive lower scores, repeat a grade

(Lowe et al., 2008; Peleg-Popko & Klingman, 2002) and drop out of school (Lowe et al., 2008). The activation of the personal, behavioral, and environmental factors simultaneously produces a complex web of interactions (Bandura, 1990).

Research Problem

In the context of the school setting, teachers are the party with the most direct exposure to, and time spent with students. As such, they are reasonably most in-tuned to student behavioral norms, and conversely, student maladaptive behavior. By virtue of their exposure to students across varying classroom situations, teachers can pick up on even minute changes in student behavior (Landry, 2006). Most modern day teaching models place a professional obligation on teachers to identify student individual differences, so as to cater to each student's particular needs, and provide necessary support when required. For instance, if a student begins to exhibit altered behavior every time he is subjected to some form of performance appraisal, it is the teacher's responsibility to make note of such changes, in order to make the necessary arrangements to support that student (American School Counselor Association [ASCA], 2012).

The school and classroom environment within which students function constitute a vital component in their educational and character development. This setting that students are incubated in is a product of the interaction of various pedagogical, sociocultural, socioeconomic, curricular, and motivational factors (Ogundokun, 2011). For better or for worse, teachers are the party most directly responsible for molding the classroom environment and setting it up for learning and child development. Consequently, teachers

play a fundamental role in the development and maintenance of many neuroses, including test anxiety (Putwain, Woods, & Symes, 2010). According to the American School Counselor Association (2012), they are also a key feature in its treatment. It is therefore fundamental that teachers be knowledgeable with regards to the different facets of test anxiety, including its predictor, indicators, and treatment protocols.

Moreover, children and grown-ups alike need to properly develop cognitive, behavioral, and emotional competence in order to function healthily in different situations they will come across in their lives, which will present varying degrees of pressure and provoke mounting levels of anxiety (Marlow, Bloss, & Bloss, 2000). Schools have a duty, therefore, to facilitate the appropriate development of healthy global citizens through the teaching of certain skills; which include, amongst other things, means to minimize the negative effects of anxiety on performance. For this purpose, teachers must construct a learning environment which promotes the use and practice of cognitive, behavioral, and emotional competencies, in the context of existing school curricula. A previous study has shown some evidence of teaching certain social and emotional skills in elementary, and to a lesser extent in middle school (Marlow et al. 2000).

The research problem addressed in this study deals with perceptions of teachers regarding identification and prevention of test anxiety. The identification aspect accounts for teachers' perceptions regarding indicators of test anxiety exhibited by students during testing situations. The prevention aspect, on the other hand, attends to teachers' perceptions regarding the proactive role that they play in preventing students from experiencing test anxiety. This includes individual efforts that the teachers may undertake, like setting up a

testing environment that is not conducive to anxiety, as well as promoting student learning of cognitive, behavioral, and emotional competencies aimed at reducing test anxiety.

With regards to teacher perceptions of the identification of test anxiety, one previous study has looked into what individual teachers acknowledged as observable measures of test anxiety in Elementary students (Landry, 2006). The results produced a wide array of identifiers, as opposed to a unified set. As for teacher prevention, studies have reported feelings of helplessness experienced by teachers of students displaying test anxious behavior (Landry, 2006). While researchers have established that environmental variables affect levels of test anxiety and student performance anxiety, and that teachers are directly responsible for shaping this environment (Putwain et al., 2010), none look into the degree of teacher awareness of this empirically-proven fact (Ogundukun, 2011), or the practices that teachers actually carry out in the classroom to avoid the arousal of test anxious feelings in the first place.

A clear understanding of teachers' knowledge regarding the potentially negative effects of an improper testing environment on the development of test anxiety in students, as well as their role in curbing these negative effects, is a necessary prerequisite to providing practical assistance for teachers. Healthy student functionality in testing situations is contingent upon teacher awareness of age-specific identification of test anxiety, as well as teacher efforts to integrate certain age-appropriate preventive and corrective measures into students' lives, particularly their classroom environments, so that they may overcome any learning or performance difficulties, like those brought on by test anxiety (Marlow et al., 2000).

Purpose

The purpose of this study is multifaceted. First, the study aims to identify what observable measures teachers recognize as indicators of test anxiety exhibited by students in each of elementary, middle school, and high school. Second, it aims to investigate teacher practices aimed at preventing the arousal of students' test anxiety in each of elementary, middle school, and high school classrooms; including how teachers manipulate environmental factors in the classroom to reduce the incidence of test anxiety, and what cognitive, behavioral, and emotional skills they teach students to help them deal with test anxiety.

Consequently, the study aims to answer the following questions as pertaining to all three school cycles:

- What observable behaviors and utterances do teachers recognize as identifiers of test anxiety in each of elementary, middle school, and high school?
- What preventive measures do teachers undertake to avoid the arousal of students' test anxiety in elementary, middle school, and high school classrooms, including:
  - Manipulating the environmental factors in the classroom during testing situations?
  - Teaching students cognitive, behavioral, and emotional competencies pertaining to test anxiety?

Significance

This study holds implications to both research and practice. At the research level, the study may contribute to the knowledge base of test anxiety in Lebanese schools, particularly with regards to teachers' perceptions and the role teachers play in either exacerbating or preventing this form of anxiety. For instance, due to the idiosyncrasies of different student populations, Lebanese students may express their test anxiety differently than Western students, upon whom most of the research is based. Consequently, the behaviors that teachers recognize as telltale identifiers of test anxiety may vary from one population to the next.

At the practical level, since the modern notion of school guidance highlights counseling as a proactive -inside the classroom- collaboration between counselors and teachers (ASCA, 2012), the information determined from this study may help inform best teaching and counseling practices for the identification and prevention of test anxiety. Moreover, identifying teacher perceptions and practices of test anxiety may help counselors develop the necessary corrective measures, like workshops for teachers or guidance lessons for students (ASCA, 2012).

In other words, establishing a clear understanding of teachers' knowledge and perceptions regarding test anxiety may help in refining teacher and counselor preparation programs, as well as treatment protocols for test anxiety. If teacher perceptions with regards to test anxiety are found fragmented and inconsistent, for instance, Lebanese counselors may want to redirect some of their working hours towards helping teachers gain insight into

test anxiety identification and prevention. This course of action would be in line with the proactive, preemptive approach to counseling which promotes identifying student issues in their early stages and preventing their evolution, as opposed to resorting to corrective measures after the fact (ASCA, 2012). Provided with a better understanding of current practices, all school personnel involved in student learning, including teachers, counselors, teacher/counselor educators, and supervisors can gain perspective, and become more focused in their efforts to provide practical and timely assistance for students, by way of their teachers.

CHAPTER II

LITERATURE REVIEW

Test Anxiety Construct

Test anxiety refers to a set of cognitive, physiological, and behavioral responses associated with concerns regarding the potential of performing poorly in a testing situation (Bodas et al., 2008; Ergene, 2003). An optimal level of arousal is generally accepted as necessary for the proper completion of any performance task. Anxiety of this kind, or intensity, may provide motivation or enthusiasm towards performing, and is therefore constructive. When the level of anxiety exceeds the optimum, however, it may cause various negative reactions that hinder performance (Ogundokun, 2011). Test anxiety is a serious problem experienced by students of different ages and demographics (Ergene, 2003), its estimated prevalence ranging from 25 to 40% in school children (Bodas et al., 2008; Cassady, 2010; Huberty, 2009 as cited in Salend, 2011), and 15-20% in college students (Ergene, 2003).

Spielberger's definition of test anxiety as "an unpleasant state characterized by feelings of tension and apprehension, worrisome thoughts and the activation of the autonomic nervous system when an individual faces evaluative achievement-demanding situations" (Spielberger, 1972 as quoted in Ergene, 2003) has been widely accepted as grounds for developing different models for the test anxiety construct. Throughout history, different definitions of test anxiety have evolved as a function of changes in the body of

literature relating to test anxiety, as well as variances in the theoretical perspectives of the researchers involved. Early on, the construct was characterized on a purely behavioral level, after which it shifted to a cognitive orientation. Most recently, conceptualizations of test anxiety were derived from transactional process models, which factor in both behavioral and cognitive approaches. Plenty of recent literature has characterized test anxiety as "performance failure", i.e. maladaptive interaction with the situation, wherein the appraisal of an assessment, and judgment as to its degree of threat, is influenced by both characteristics of the evaluative situation and personal factors (Lowe et al., 2008).

Cognitive Aspect

In terms of personal factors, the transactional model gives credence to cognitive appraisal, where students' stress reactions and coping abilities are impacted by their assessment of their available personal resources to cope and adapt to any given situation. (Lazarous & Folkman, 1987, as cited in Sawyer & Hollis-Sawyer, 2005). As such, the more self-regulation and stress management resources available to students, the better equipped they are to deal with testing situations (Lowe et al., 2008; Marlow, Bloss, & Bloss, 2000). The model also accounts for attentional factors, wherein test-anxious students divide their attention between task-relevant thoughts like thoughts about how to solve a problem on a test, and task-irrelevant thoughts like worries about oneself and one's performance. The task-irrelevant thoughts interfere with the students' ability to focus on the test, thereby negatively impacting their test performance (Lowe et al., 2008).

Environmental Aspect

Zeidner's (1998) transactional process model of test anxiety, emphasized the following characteristics of the evaluative situation: nature of the task, difficulty, atmosphere, time constraints, examiner characteristics, mode of administration, and physical setting (as cited in Lowe et al., 2008). Lazarous and Folkman (1987) also postulated that reactions to testing are impacted by context-dependant, social environmental factors. They highlighted the impact of contextual factors and subjective perceptions pertaining to the testing environment (as cited in Sawyer & Hollis-Sawyer, 2005).

School Environment and Student Learning

School climate refers to the environment that affects the behavior of teachers and students, on both a global and classroom level. The environment or climate of any organization is commonly accepted as a critical component in the life of that organization. The quality of a working environment reflects the way people interact and react within that environment, and is a means by which teachers, administrators, parents and policy makers measure school characteristics. The interaction of the different environmental factors relating to school and the classroom enables optimum functionality of the school community, on both an educational as well as psychological level; and in turn, optimal levels of teaching and learning on part of the teachers and students, respectively. Researchers have verified that a positive school climate can yield positive educational and psychological outcomes for students and school personnel, whereas a negative climate can prevent optimal learning and development (Freiberg, 1998; Johnson & Johnson, 1993,

1997; Kuperminc et al., 1997; Kuperminc, Leadbeater & Blatt, 2001; Manning & Saddlemire, 1996, as cited in Ogundukun, 2011).

Of the school climate variables that have been found to impact students and their learning, classroom environmental factors have proven especially influential to students' results (Ozay, Kaya, & Fatih, 2004, as cited in Ogundokun, 2011; Putwain et al., 2010). Accordingly, the variables of the classroom environment that affect learning outcomes include the temperature and air quality, noise levels, lighting, color schemes and other such features (Ogundokun, 2011).

In 2011, Ogundokun conducted a study to explore the effects of school environments, amongst other things, on students' results. The researcher utilized an ex-post facto research design, where he surveyed 300 boys and girls aged 12 to 19, from ten different co-ed schools in Nigeria. For the purposes of the school environment variable, he administered the School Environment Scale [SES] developed by Webster and Fraser (2003). To measure the levels of test anxiety, Ogundokun administered the Test Anxiety Scale [TAS], which is a 56-item Likert scale developed by Nist and Diehl in 1990. The researcher also measured academic learning outcomes by way of English and mathematics achievement tests.

Using regression and correlational studies, the results of the study revealed that classroom environment is indeed a significant predictor of learning outcomes, and that test anxiety, when not managed properly, can have drastically negative effects on student performance. Furthermore, though it was not one of the primary aims of the study, the correlational matrix developed for the results verifies a correlation between classroom

testing environment and test anxiety ($r = 0.153$, $p<0.05$). Putwain, Woods, and Symes (2010) also conducted a study in which they hypothesized and verified that situational influences are related, albeit indirectly, to test anxiety.

Test Anxiety in Students of Different Ages

School and classroom environments vary from one age range to the next (Landry, 2006). Similarly, school curricula become increasingly challenging and performance oriented as students progress from Elementary to Middle School and then High School. Correspondingly, studies on test anxiety have found the most elevated levels of test anxiety in High School students, particularly in the years of, as well as the years prior to, major examinations like Governmental Exams and School Board Exams (Bodas et al., 2008). Student personalities and behaviors also change as they grow, particularly during their transition from childhood into adolescence. Most test anxiety inventories like the Test Anxiety Inventory [TAI] and the Test Anxiety Inventory for Children and Adolescents [TAICA] are directed at children and adolescents alike without distinction, and do not factor in the particular idiosyncrasies associated with different age brackets.

Oktedalen and Hagtvet (2011) conducted a study to investigate the psychometric properties of a revised adaptation of the Norwegian version of the Test Anxiety Inventory. In doing so, they highlight the notion that in real-world research settings dealing with student populations, student samples are often commonly analyzed as representing a single homogeneous sample, without taking into account population heterogeneity. Oktedalen and Hagtvet claim that this assumption is unrealistic and misleading when dealing with children of different ages and instructional levels. Their 2011 study surveyed students ranging in age

from 19 to 60 and belonging to 19 different study programs. They claim that it is widely unlikely to assume that all the different age groups within their sample will have reported the same parameters and indicators. Finally, Oktedalen and Hagtvet (2011) deduce that it is of utmost importance to assess the particular differences of each age group with regards to test anxiety. They go on to point out the dearth of research on test anxiety factors in heterogeneous populations.

Identifying Test Anxiety –Inside the Classroom

While most of the literature on test anxiety collectively calls for proper identification through the administration of research-developed assessment measures, most notable of which being the Test Anxiety Inventory (TAI; Taylor & Deane, 2002) and the Test Anxiety Inventory for Children and Adolescents (TAICA; Sena, Lowe, & Lee, 2007) students usually undergo a nomination process first, where a student who is suspected of having test anxiety is referred for evaluation. Since teachers are the party most directly involved in students' academic testing, they are often behind most student referrals (Iowa Comprehensive Counseling and Guidance Program Development Guide [ICCGPDG], 2001). In many school districts all over the world, student referral for testing upon suspicion of a learning issue or disability is considered a professional duty and obligation for teachers (Salend, 2011).

Personal judgment on part of the teachers is integral to the referral process. Their preliminary identification of potentially test-anxious students is based heavily on observable physiological and behavioral displays (Landry, 2006; Salend, 2011). These

somatic symptoms of test anxiety are referred to as the emotionality component of test anxiety, and they are more noticeable and more easily recognized than the worry component, which entails the negative self-talk and negative cognitions that an individual experiences in relation to testing and examinations. Furthermore, the emotionality, or physiological hyperarousal, is believed by some researchers to precede the worry, as the somatic symptoms experienced by an individual during a testing situation activate the negative thinking, which in turn causes low performance (Zeidner, 1998, as cited in Sena et al., 2007).

Student Behavioral Changes during Testing As Perceived by Teachers

A study conducted by Deborah Landry in 2006 aimed to document behavioral changes that students undergo during testing situations, as perceived by teachers. The study surveyed 63 teachers of students ranging from kindergarten to fifth grade, in different schools belonging to both urban and suburban areas. This was a qualitative study where the researcher utilized an online survey, open-ended comments, teacher interviews, field notes, and her own lived experience as a teacher to identify themes relating to changes in children's behavior during testing. The participants were nominated for the study using the "Gatekeeper method", where public school administrators nominated the teachers reported to have had concerns regarding observed negative effects of testing on children.

In her study, Landry (2006) makes note of environmental changes affecting classroom settings during testing situations, claiming that "desks had been ungrouped and separated, bulletin boards emptied of all content and color, windows blackened with

bulletin board paper to eliminate distractions, all in accordance with policy coming from the front office" (Landry, 2006, p. 34). The collected data represented the observed behavior of 1,058 students during normalized or standardized tests; and established a correlation between anxiety experienced during standardized testing and that experienced during normal classroom testing. The results included twenty-five commonly observed behaviors, with the percentage of students displaying these behaviors ranging from 2% to 52% of students. Some of the behaviors documented were "students complain of stomachache, students cry, students complain of a headache, students worry about how hard the test is, students chew on their nails, students hands tremble or shake, students audibly sigh or moan, [and] students grind their teeth" (Landry, 2006, p. 35). The themes that emerged from the study were stress, behavior changes, helplessness, fear, abandonment, and self- doubt during testing situations.

Addressing Test Anxiety through the Manipulation of Environmental Variables

Most of the previous research relating to the prevention of test anxiety has unanimously emphasized the significance of the role that classroom teachers can play in preventing test anxiety. Primarily, they may establish a testing environment that supports student performance, and limits students' negative arousal. Teachers can analyze environmental variables pertaining to the testing situation, which may affect student performance, including the setting, room temperature, testing material, lighting, technologies, and noise level (Biggie & Stump, 1999, as cited in Conderman & Pederson, 2010). By nature of their role and tasks, teachers control many of these variables and may

manipulate them during testing situations, so that students are comfortable, relaxed, and not distracted.

Suggestions for Preparing the Environment

Conderman & Pederson (2010) provide the following suggestions for preparing the physical environment so that it is not conducive to distractibility or test anxiety: 1. Reduce glare by correcting the effect of sunlight or fluorescent lights. 2. Adjust the room temperature to maximize student concentration. 3. Place a "do not disturb" note on the classroom door. 4. Turn off intercom, phone, and bell systems during testing. 5. Communicate with city officials to determine if nearby noisy city construction projects can be rescheduled during test days. 6. Read test directions accurately and calmly. 7. Calmly notify students when their time is almost up. 8. Wear non-distracting clothing on test days. 9. Assure that students have ample desk space for manipulating testing materials. 10. Encourage students to wear comfortable clothing on test days. 11. Have test materials prepared and in orderly fashion. 12. Have extra erasers and sharpened pencils on hand. 13. Remind students of what they can do if they finish early. 14. Encourage students to do their best and prompt them to use the strategies they have learned. 15. Emphasize that some subtests contain items that may be difficult because they cover a range of skill levels and therefore students are not expected to get them all correct.

Accommodations for Students with Special Needs

Furthermore, students with special needs or disabilities may be even more susceptible to distractions or experiencing test anxiety, and may therefore require more

particular accommodations (Conderman & Pederson, 2010). In the United States of America, civil rights legislation protects, by law, the rights of students with special needs to specific accommodations. Section 504 of the Rehabilitation Act of 1973 requires that accommodations be made for students with disabilities that do not hinder them from full inclusion into a regular classroom, such as students diagnosed with attention-deficit/ hyperactivity disorder or specific mental or physical health issues (Clark & Crandall Breman, 2009).

Students with attention issues, for instance, may benefit from extended time on assignments and examinations, specific classroom seating arrangements (Clark & Crandall Breman, 2009), or the use of cardboard dividers to serve as visors for the purpose of limiting visual distractions. As for students with established cases of test anxiety or other learning disabilities which may lead them to experience anxiety during testing, it may help to use stress balls, or to become familiar with the specifics of the examination process ahead of time, as they are probably more comfortable with routine than they are with foreign situations. These specifics may include the time and venue of the exam, the subjects being assessed, the test format including the types of questions being asked, and the exam proctors and regulators (Conderman & Pederson, 2010).

Landry's (2006) research corroborates that familiarity with the testing scenario lessens the incidence of test anxiety, as the unfamiliarity and "sterility" of the examination venue, as well as the formality of the proctors is believed by teachers to exacerbate the already existing feelings of anxiety, if not instigate them altogether. To this end, Conderman and Pederson (2010) suggest that teachers simulate testing conditions by

familiarizing students with the test format, providing students with sample questions to complete daily, and presenting opportunities for students to practice. They also suggest that teachers may model to their students relaxation or stress reduction strategies, to minimize the negative somatic reactions that might arise during testing situations. These include psychological relaxation techniques like positive self-talk during the test, deep breathing, visual imagining (Minskoff & Allsopp, 2003, as cited in Conderman & Pederson, 2010), skimming the entire test first before proceeding to answer any question, keeping track of time limits and pacing themselves accordingly, and using rest breaks, as well as bodily relaxation techniques like muscle stretching, head and neck rolling, and back and shoulder arching (Cizek & Burg, 2006, as cited in Conderman, & Pederson, 2010).

Helping Students Deal with Test Anxiety

Many researchers argue that worrisome thoughts about one's performance and stress reactions cause distractibility during testing situations, and increase involuntary and physical reactions. Spiegelberg (1998) characterized test anxiety as a situation-specific trait which includes two important criteria: worry, which refers to cognitive manifestations, and excitability, which refers to the physiological and excitement arousal in the exams. Anxious students tend to consider the exam situation as a threat, and in such situations they react through anxiety (as cited in Shokrpour, Zareii, Zahedi, & Rafatbakhsh, 2011).

Cognitive Strategies

The worry component refers to negative self-talk and negative cognitions an individual experiences in relation to examinations (Sena et al., 2007). As such, many forms

of cognitive restructuring (Von Der Embse, Barterian, & Segool, 2012) and self-regulation techniques like self-talk, self-awareness, identifying feelings, managing impulses (Marlow et al., 2000), self-monitoring, attention control, and improving perceptions of self-competence (Von Der Embse et al., 2012) can be used for the prevention and treatment of test anxiety.

To this end, one study documented the success of an intervention technique wherein teachers ask students to think about a person who they perceive to possess skills in accurately solving problems and exercises. Students are instructed to write down five to nine abilities the individual possesses, five to nine adjectives regarding the personality and values of the individual, and three sentences about how this individual feels when they are about to solve difficult problems (Lang & Lang, 2010, as cited in Von Der Embse et al., 2012). Other studies documented the success of psychoeducation regarding testing self-efficacy, the cognitive model of stress, identifying stressors and using adaptive thoughts to reduce test anxiety (Weems et al., 2009, Yahav & Cohen, 2008, as cited in Von Der Embse et al., 2012). Yet another study found merit in cognitive therapy aimed at disseminating information on how thoughts can influence feelings, addressing negative cognitions surrounding test taking, and replacing negative thoughts with positive and useful cognitions (Gregor, 2005, as cited in Von Der Embse et al., 2012).

Behavioral Strategies

Literature indicates that behavioral strategies for test anxiety treatment have been utilized, educationally and clinically, more than other types of techniques (Shokrpour et al.,

2011), and often produced higher effect sizes than other forms of treatments, including cognitive treatments (Von Der Embse et al., 2012). These include awareness of body and breathing (Gregor, 2005, as cited in Von Der Embse et al., 2012) and relaxation methods like deep breathing, diaphragmatic breathing, guided imagery, and progressive muscle relaxation, anxiety control, stress coping strategies, study skills, biofeedback and behavioral-cognitive interventions, self-control desensitization, as well as exposure tasks and regular desensitization (test anxiety hierarchy exposure) alone or together with other behavioral techniques (Shokrpour et al., 2011; Weems et al., 2009, as cited in Von Der Embse et al., 2012).

One study empirically verified that relaxation techniques effectively and significantly reduce test anxiety in elementary school students. Another study reported a significant decrease in self-reported levels of test anxiety among high school students who were taught diaphragmatic breathing and guided progressive muscle relaxation (Larson et al., 2010, as cited in Von Der Embse et al., 2012). These positive findings were supported by teacher reported reductions in anxiety among high school students in response to relaxation training, as documented in another experimental study (Gregor, 2005, as cited in Von Der Embse, 2012); suggesting positive treatment outcomes across prevention programs teaching students relaxation techniques.

In yet another study, systematic desensitization was found to be effective in reducing test anxiety and improving task performance, wherein a systematic desensitization intervention for high school students (ES= 0.7) resulted in lower levels of test anxiety for students who had received the intervention than those who had not (Egbochuku & Obodo,

2005, as cited in Von Der Embse, 2012). By definition, systematic desensitization treatments "involve the use of relaxation techniques during exposure to feared stimuli, that is, tests, to produce a counterconditioning effect that eventually weakens the relationship between the stimuli and the fear response" (Von Der Embse et al., 2012, p.67). As such, this psychoeducation technique basically combines the use of relaxation techniques with exposure techniques.

Furthermore, two studies on test anxiety in high school students supported the effectiveness of biofeedback techniques in reducing test anxiety. Biofeedback techniques are a relatively new type of intervention that involves the use of physiological self-monitoring of bodily processes that are typically executed unconsciously, including heart rate, muscle tension, and body temperature. With practice, students can be trained to exert control over these processes to attain greater levels of physiological relaxation. A study conducted in 2010 by Bradley and colleagues found that students who received biofeedback training (through a biofeedback intervention) were reported to enter more easily into a relaxed state as measured by biological measures of heart rate and skin electrodermal activity (EDA) than control students (i.e. students who had not received the biofeedback training. In addition, students who received this intervention reported significantly lower levels of test anxiety than students who did not, and performed significantly better on a high-stakes standardized English language assessment than the control group. Another study conducted by Yahav and Cohen (2008) implemented a biofeedback intervention combined with CBT treatment. The authors found that adolescents who received the intervention displayed a significant reduction in test anxiety and behavioral symptoms in

comparison to the control group. In conclusion, these two studies strongly support the use of biofeedback strategies for reducing test anxiety among adolescents (Von Der Embse et al., 2012).

A meta-analysis evaluating the effectiveness of many of these test anxiety interventions was conducted by Ergene in 2003. It identified 39 published studies and 17 unpublished studies from 1973 to 1998. Behavioral and cognitive approaches, including the ones previously mentioned, were both repeatedly found effective in reducing test anxiety, with effect sizes of 0.80 and 0.63 respectively. Combined approaches were found to produce the highest effective sizes (as cited in Von Der Embse et al., 2012).

Teaching Social and Emotional Competency

Marlow, Bloss and Bloss (2000) postulated that there is a pertinent need for improving teacher efforts regarding their participation in the teaching of social and emotional skills, as is manifested in the shortage of qualified teachers trained in what they referred to as Social and Emotional Competency education. ASCA and other national organizations have expressed support for the integration of social and emotional competencies into school curricula, and recommended a shift of focus from content delivery to the child as a learner. Correspondingly, studies have proven the efficacy of test anxiety reduction treatments aimed at instruction on the relationship between thoughts and emotions (Yahav & Cohen, 2008, as cited in Von Der Embse et al., 2012).

The study conducted by Marlow et al. (2000) calls for teaching social and emotional competencies like emotional skills, cognitive skills, and behavioral skills, which were

defined by Goleman (1995, as cited in Marlow et al., 2000) as the skills which enable students to understand, manage, and express the social and emotional aspects of their lives in order to allow the successful management of life tasks, including learning, forming relationships, solving everyday problems, and adapting to the complex demands of growth and development. The emotional competencies, generally related to feelings, include "identifying and labeling feelings, expressing feelings, assessing the intensity of feelings, managing feelings, delaying gratification, controlling impulses, reducing stress, and knowing the difference between feelings and actions" (Marlow el al., 2000, p. 670). The cognitive skills, relating to thoughts and understanding, include "include self-talk (inner dialogue), reading and interpreting social cues, using steps for problem solving and decision making, understanding the perspective of others, understanding behavioral norms, a positive attitude toward life, and self awareness" (Marlow el al., 2000, p. 670). Finally, the behavioral skills include "nonverbal and verbal communication and acting on or using one's affective and cognitive skills" (Marlow el al., 2000, p. 670).

The researchers surveyed 500 school counselors and teachers for grades 1-8. They received responses from 49% of teachers, 88% of which were females. Their ages varied from 21 to 51, with 45% of teachers being in the 41-49 age range. The majority of teachers were Bachelor's degree holders. Years of experience ranged from 1 to 20 years (Marlow et al., 2000).

While the researchers did not detail the instrumentation or data collection processes, the results are as follows: All the responding teachers were in agreement that, with the support of the school counselors, teaching of social and emotional competency occurred in

the areas of problem solving, decision making, understanding the perspectives of others, developing positive attitudes toward life and acquiring verbal communication skills. Conversely, they all agreed that there was no joint effort aimed at teaching the socio-emotional skill of assessing the intensity of feelings (Marlow et al., 2000).

To break these results down, what the researchers referred to as "competency skill education" varied with school level. Teachers and counselors of Elementary level students (i.e. grades 1-5) agreed that 53% of specific SEC domains: problem solving, decision making, understanding the perspectives of others, developing positive attitudes toward life, developing self-awareness, and using effective verbal communication were addressed by teachers. On the other hand, it was agreed that 18% of the areas: delaying gratification, reading/ interpreting social cues, and effective nonverbal communication skills were not attempted to be taught to students. There was disagreement, however, as to the teaching of 29% of specific SEC skills: Assessing the intensity of feelings, reducing stress, engaging in self-talk, developing self-awareness, and knowing the differences between feelings and actions (Marlow et al., 2000).

Teachers of Middle School students (i.e. grades 6-8), agreed that 29% of the SEC domains were taught (albeit with the assistance of the counselor): problem solving and decision making, understanding the perspectives of others, developing positive attitudes toward life, acquiring self-awareness, and developing effective verbal communication skills. As for the areas where it was agreed that there was a lack of organized teaching efforts, 12% of the areas were identified: reducing stress and developing effective nonverbal communication skills. There was disagreement with regards to the existence of

organized efforts to teach social and emotional competencies in 59% of specific SEC areas: identifying feelings, expressing feelings, assessing the intensity of feelings, managing feelings, delaying gratification, controlling impulses, engaging in self-talk, reading/interpreting social cues, understanding behavioral norms, and knowing the difference between feelings and actions (Marlow et al., 2000).

Teaching Test-taking Skills

In addition to teaching personal competencies, Conderman and Pederson (2010) and Salend (2011) emphasize the importance of teaching general test-taking skills to reduce test anxiety, including how to prepare for examinations, as well as how to sit for them. These primarily include simulating test conditions, practicing plentifully, and tips to follow when taking the test.

Conderman and Pederson encourage teachers to prepare students for high-stakes exams, thereby reducing student anxiety towards such exams. Educators may do so by familiarizing students with the test format, providing them with sample questions, and teaching them to do research to this end as part of their exam preparation. According to Conderman and Pederson, studies have proven that this supports student automaticity and generalization, and promotes an increased degree of comfort with testing situations (Elliott & Thurlow, 2006, Cizek & Burg, 2006, as cited in Conderman & Pederson, 2010). Teachers are also encouraged to teach students to do uninterrupted work for prolonged block of time, in preparation for exams which require them to do so as well. This is also

believed, by the researchers, to relieve the anxiety of sitting for examinations, particularly standardized or governmental ones.

Role of Teachers in Dealing with Student Issues

In its vision of counseling and guidance, the Iowa Comprehensive Counseling and Guidance Program Development Guide's first postulate states "A comprehensive counseling and guidance program is achieved through a collaborative partnership of counselors, administrators, teachers, school psychologists and social workers, students, families, and community members" (ICCGPDG, 2001, p. 11). The counselor does not constitute the entire program. He is merely meant to facilitate and coordinate the roles of all concerned parties in aims of attaining the betterment of student lives (Iowa Department of Education [IDE], 2001). Similarly, the ASCA national model for counseling calls for teacher-counselor collaboration as a necessary condition for proactive counseling, where most student issues are dealt with inside the classroom. This approach entails "a shift away from a menu of services and activities to a well thought-out program where counselors work with teachers, administrators, and others in the educational environment to promote student success which they define as academic (educational) development, career development, and personal/ social development. As opposed to the traditional program, a comprehensive program promotes the concept of a team approach" (ICCGPDG, 2001, p. 19).

In short, all these national models which detail procedures for providing students with counsel to help them overcome their academic issues necessitate that teachers are

factored into the guidance process. By the standards of modern day counseling and teaching models, teachers have a professional obligation towards students, which requires them to play an active part in aiding students to rise above their academic difficulties. As test anxiety is a student issue that impacts academic performance, it falls within teacher jurisdiction. Educational legislative measures taken in the Unites States like The Transforming School Counseling Initiative movement (established through the Education Trust movement of 1997) place increased emphasis on the role of teachers as part of the counseling process through consultation and collaboration among teachers and important stakeholders like students' parents and the school counselor as a foundational component of student success. Counselors and teachers work in parallel and participate equally in utilizing a proactive approach towards prevention, as opposed to solely working reactively towards crisis counseling, wherein responsive services like pulling a child out of his classroom environment for individual counseling is regarded as an absolute last resort (ASCA, 2012).

By virtue of their extensive exposure to students, teachers have resources available to them, like time and control over educational content and classroom setting, which they may manipulate for the purpose of helping students overcome test anxiety. The need for this teacher participation in the counseling process is highlighted by the fact that teachers have become increasingly reluctant to let students out of their classrooms for individual counseling, as this robs them of academic time. Fearing that the students will fall behind academically, teachers prefer that counselors pull students out of non-instructional time like recess or nonacademic courses like art, music, physical education, theater, etc;

unknowingly risking students' wellbeing, as these times are usually a healthy and necessary outlet for student energy and tension, particularly students suffering from anxieties. Furthermore, when it comes to academic issues like test anxiety, it is arguably more effective to carry out the treatment process at the place where the problem is manifested, namely the classroom. More to the point, with regards to prevention, it is absolutely necessary for any proactive services or approaches to be implemented inside the classroom, as that is the primary setting in which students develop and manifest test anxiety. This allows for the implementation of preventive measures, as well as various treatment protocols that utilize exposure as a treatment tool. (Clark & Crandall Breman, 2009). Proactive "inside the classroom" counseling requires teachers to play an active role in helping students overcome their issues, and thereby necessitates that they have the required knowledge, skills, and motivation to do so (ASCA, 2012; ICCGPDG, 2001).

Teacher Perceptions of Test Anxiety Identification and Prevention as Integral Component of Developing Proactive Approach to Dealing with Test Anxiety

In line with this notion of inside the classroom counseling, teachers must be researchers of sorts. If they hypothesize that a particular student may be suffering from test anxiety, they must track the student's behavior in order to accumulate sufficient evidence to either confirm or deny the hypothesis. In order to do so, however, teachers must have the necessary knowledge base regarding the identifiers of test anxiety, or the behaviors that are indicative of this condition; without which, they cannot formulate the hypothesis in the first place. This is an important postulate of proactive counseling services which rely primarily on referrals from classroom teachers, as the counselor cannot possibly be as in-tuned to a

student's behavior, or get nearly as full rounded a picture, as the student's teacher who is in contact with the student much more regularly than the counselor (Clark & Crandall Breman, 2009).

As for test anxiety prevention, the proactive approach requires the designated party (teacher and/or counselor) to suggest preventive measures to be implemented by teachers in their classrooms, in order to minimize the incidence of poor academic performance due to test anxiety. They are required to develop action plans to be carried out inside the classroom, possibly involving the manipulation of environmental variables, adopting a reinforcement strategy, etc. Providing these services requires a great deal of consistency and motivation on part of the teacher (Ergene, 2003).

Effectiveness and Feasibility of Proactive Approaches for Preventing the Development of Student Issues in Lebanese Schools

At the current time, many factors impede proactive approaches, based on the concept of prevention, from dealing with student issues in the Lebanese setting. For one thing, in most schools there is a major disconnect between social workers and/or counselors (if they are present at all), and teachers. Most teachers see their role as restricted to academics. As a matter of fact, this restriction is sometimes imposed by the administrators (Saad, 2012). Furthermore, independent counseling programs in Lebanon are limited to a select number of private schools, while counselors in public schools serve a joint counselor-teacher role, dedicating only part of their professional time to counseling duties (Saad, 2012). This places increased pressure on teachers to take on the responsibility of helping students overcome the negative effects of test anxiety on their academic performance

(Landry, 2006). Unlike the American context in which Marlow et al. (2000) conducted their study, not all Lebanese schools employ counselors. As such, due to the lack of counselors in some Lebanese schools, teacher may need to take on the responsibility of helping students overcome their issues.

Conclusion to Literature Review

Various local, national, and international models, like the Iowa comprehensive developmental guidance and counseling program (2001, as cited in Hamzeh, 2008), the Texas developmental guidance and counseling program (2004, as cited in Hamzeh, 2008), or the American School Counselor Association national model (2012) provide counselors with explicit domain and age-specific benchmarks to guide them in dealing with varying student issues like test anxiety. Furthermore, these models call on counselors to draw from research as to best counseling practices in dealing with these student issues (ASCA, 2012). Given the dearth of counselors in many, if not most, Lebanese schools; as well as the absence of models detailing the treatment of student issues, and consequently the absence of specific benchmarks to guide teacher initiatives to treat those issues, teachers must adopt a research driven, data collection approach to helping students overcome their learning difficulties. Herein lays the purpose of this study.

All human beings need to effectively utilize social and emotional competence in different aspects of their lives in order to succeed and become competent, functioning members of society. As the school is the grounds for nurturing and molding the citizens of tomorrow, students must be taught realistic ways to apply certain skills. These skills include, amongst other things, measures to minimize the negative effects of anxiety on

performance. To this end, and given the nature of these skills, teachers must construct a learning environment which promotes the use and practice of social and emotional competences, in the context of existing school curricula. An existing study documents a collaborative effort between teachers and counselors to teach such skills in elementary school, but rather little effort to do so in middle school. No studies look into such attempts by teachers in high school (Marlow et al., 2000).

Furthermore, while researchers have confirmed that classroom environment is a determinant of learning outcomes and the psychological wellbeing of students, they have yet to document the degree of teacher awareness of this empirically-proven fact (Freiberg, 1998; Johnson & Johnson, 1993, 1997; Kuperminc et al., 1997; Kuperminc, Leadbeater & Blatt, 2001; Manning & Saddlemire, 1996, as cited in Ogundukun, 2011).

A thorough consideration of teachers' knowledge regarding the connection between an unhealthy testing environment and test anxiety, as well as their attitudes and actions taken towards reducing the negative effects of this connection, constitute the first step towards actually assisting teachers. A teacher's duties towards students depends majorly upon a healthy and accurate knowledge of student issues as well as student populations based on their age groups, and the idiosyncrasies of each, so that they may effectively integrate certain preventive and corrective measures into students' lives, particularly their classroom environments, in order to overcome any learning or performance difficulties, like test anxiety (Marlow et al., 2000).

CHAPTER III

METHODOLOGY

Research Questions

This study attempted to find answers to the following questions:

- What observable behaviors and utterances do teachers recognize as identifiers of test anxiety in each of elementary, middle school, and high school?
- What preventive measures do teachers undertake to avoid the arousal of students' test anxiety in elementary, middle school, and high school classrooms, including:
  - Manipulating the environmental factors in the classroom during testing situations?
  - Teaching students cognitive, behavioral, and emotional competencies pertaining to test anxiety?

Research Design

The research questions proposed for this study called for a descriptive research design utilizing a quantitative methodology. The instruments used assess teachers' perceptions of the proper identification of test anxiety through the recognition of observable identifiers as a preliminary measure to testing, and teachers' initiative to help prevent the arousal of test anxiety in students –either by arranging the test environment so that it is not conducive to test anxiety, or by teaching students appropriate coping mechanisms and cognitive, behavioral, and emotional skills to avoid test anxiety.

Population and Sample of the Study

The population addressed in this study is teachers in Lebanese schools. Due to the likely variance in teaching requirements, as well as hiring requirements for teachers in public vs. private schools, including teachers from both sectors in the study would allow for unfocused and inconclusive analyses. Therefore, the study focused on one sector alone. In order for the sample to be representative of all teachers in the selected area, the study needed to include as wide a range as possible of teaching philosophies, given that different schools in Lebanon have varying educational and teaching philosophies. Since most public schools in Lebanon tend to have a unified teaching philosophy under the Ministry of Education and Higher Education (MEHE), private schools are more likely to present varying philosophies. As such, the sample was restricted to private schools. Due to ease of access, the Greater Beirut Area was chosen as the site for the study.

A list of names of all private schools in the Greater Beirut Area was obtained from the Ministry of Education and Higher Education (MEHE). Random sampling was used to select seven different schools. Letters were sent to the principles of those seven schools, explaining the purpose of the study, and requesting permission to administer the questionnaire to some of their teachers. Flyers inviting interested teachers to participate were placed in designated teacher areas at the selected schools. The flyer included the criteria used to determine the eligibility for participation in the study, which was: 1. Any grade level teacher employed in a Lebanese school, 2. Professional duties restricted to teaching only (i.e. not also serving as an administrator or counselor), and 3. Only teachers of subjects where tests are administered to students. This was naturally taken into

consideration as the study is concerned with testing, which is often avoided in non-academic subjects like arts, theater, music, and physical education, and to account for any teachers who may choose to adopt a testing-free approach to teaching.

The flyer also included benefits to participating in the study, the location and topic of the research, and the contact information of the investigators for any teachers who may be interested in taking part in the study. The first three respondent teachers of the academic subjects from each school cycle (elementary, middle school, and high school) were chosen to participate, and given the questionnaire.

Instrumentation

The data for this study was collected using a questionnaire composed of three different instruments, addressing the research questions detailed above. The questionnaire is not a reproduction of any previous questionnaire. However, all of the items employed in the questionnaire were collected from previous studies. All three instruments were either adapted from tools used (Conderman & Pederson, 2010; Marlow et al., 2000) or research findings (Landry, 2006; Marlow et al., 2000) of the studies presented in the literature review.

Student Behavior during Testing Situations (SBTS)

The Student Behavior during Testing Situations checklist was constructed for the purpose of this study. The items of this checklist were generated from previous literature (Landry, 2006; Salend, 2011). It consists of 25 items of behaviors and utterances previously identified by teachers, in a study conducted by Landry in 2006, as recognizable indicators

of test anxious behavior. These items were corroborated and verified by research conducted by Salend in 2011. The respondent teachers needed to select from these items based on their own perceptions of physical, behavioral and affective symptoms of test anxiety in Lebanese students of different ages. Content validity for this checklist was obtained. The data collected using this checklist was used to answer question 1: "What observable behaviors and utterances do teachers recognize as identifiers of test anxiety in each of elementary, middle school, and high school?"

Teacher Preparation of Testing Environment (TPTE)

The Teacher Preparation of Testing Environment Checklist was previously constructed by Conderman and Pederson based on extensive research they conducted in 2010 to propose recommendation for setting up the testing environment, which were placed in the form of a Teacher Checklist aimed at determining what measures teachers take to set up a testing environment that eliminates distractions and stressors which may be conducive to test anxiety (Conderman & Pederson, 2010). The data collected using this checklist was used to answer question 2a: "What preventive measures do teachers undertake to avoid the arousal of students' test anxiety in elementary, middle school, and high school classrooms, including manipulating the environmental factors in the classroom to reduce the incidence of test anxiety?"

Psychoeducation to Reduce Test Anxiety (PRTA)

The third part of the questionnaire was also constructed for the purposes of this study. The instrument was developed using previous studies that also looked into treatment procedures for test anxiety. Since one of the objectives of the study is to identify whether or

not teachers employ any intervention strategies to help students overcome test anxiety through coaching students on skills to reduce it, a meta-analysis was obtained in which the authors compile and categorize all the effective protocols for dealing with test anxiety in children and adolescents that have been researched and documented between the years 2000 and 2010. These protocols, which could be used either preventively or correctively, have been referred to in the literature on test anxiety as "psychoeducation" (Weems et al., 2009, as cited in Von Der Embse et al., 2012). In their tabulated compilation, Von Der Embse, Barterian, and Segool (2012) present the intervention name, followed by its focus and methodology. This list of protocols to deal with test anxiety was adopted for the study. These protocols were more or less all replicated in more than one study. The effectiveness of these items as measures taken to combat the development and maintenance of test anxiety was empirically identified (Von Der Embse et al., 2012), and theoretically validated using psychological resources including *Social Learning Theory* (Bandura, 1990), *Current Psychotherapies* (Corsini & Wedding, 2011), and *Applied Behavior Analysis for Teachers* (Alberto & Troutman, 2010), before their inclusion in the questionnaire.

The PRTA instrument is composed of twenty general cognitive, behavioral, emotive items scored as 1 for "Yes" and 0 for "No". Teachers were asked to answer whether or not they have employed or taught each of these strategies or skills to their students. The items were mixed rather than grouped according to category, so as to avoid influencing participants' responses. The data collected from this instrument was used to answer question 2b: "What preventive measures do teachers undertake to avoid the arousal of

students' test anxiety, including teaching students cognitive, behavioral, emotional skills pertaining to test anxiety?"

Piloting

The questionnaire items were reviewed, modified, and validated by three professionals in education and school counseling at the American University of Beirut. Many modifications suggested with regards to the items of the questionnaire were made, particularly in terms of the arrangement and grouping of the items in the Psychoeducation to Reduce Test Anxiety instrument. Furthermore, a glossary was added to explain in Laymen terms the technical words used in the questionnaire, which professionals outside the specialized field may not be familiar with.

Then the questionnaire was given to a number of teachers for piloting. Four teachers from each school cycle of a private school in the Greater Beirut Area participated in the piloting procedure. This amounted to approximately 20% of the sample size. The sample chosen for the piloting was from a school other than those chosen for the data analysis of the study. The sampling and recruitment procedures were the same as those of the study, but with a smaller sample size, including only one school. In other words, the school administration of a private school in the Greater Beirut Area chosen at random was contacted, once approval was granted flyers were distributed to the school, and respondent teachers were approached. Upon consenting to participate in the study, the teachers were asked to provide feedback, to be communicated either verbally or in writing. The feedback requested was regarding any concept that was not clear, any terms they needed to look up

the definitions of, or any items they thought did not fit into the Lebanese school setting. Those who agreed to provide the feedback verbally were asked to read the questions and paraphrase them orally to the researcher. Based on the participating teachers' feedback, changes were made to the instruments, and the data collection procedure intended for the study was carried out.

Table 1 presents the modifications made to the questionnaire, based on the piloting procedure.

Table 1

Questionnaire Modifications Post Piloting

Item Location	Item	Modification
Demographic Data Collection Sheet	School cycle	School level
Student Behavior During Testing Situations	Using a checkmark, indicate which of the following behaviors are indicators of test anxiety.	Using a checkmark, indicate which of the following behaviors observed during a testing situation are indicators of test anxiety.
Student Behavior During Testing Situations	Students play with their pencil	Students play with their stationary
Student Behavior During Testing Situations	Students are fidgety	Students are fidgety or can't sit still
Teacher Checklist for Preparing the Testing Environment	I turn off intercom, phone, and bell systems during testing	I mute or reduce the volume of intercom, phone, and bell systems during testing

Teacher Checklist for Preparing the Testing Environment	I make sure that students have ample desk space for manipulating testing materials	I make sure that students have plenty of desk space for manipulating testing materials
Psychoeducation to Reduce Test Anxiety	Using a circle, indicate the most appropriate answer to the following questions: Which of the following cognitive, behavioral, or emotional competencies do you teach to students as skills that can help them battle test anxiety	By Drawing a circle, choose either "Yes" or "No" to indicate whether or not you teach the following cognitive, behavioral, or emotional skills to students to help them battle test anxiety:
Psychoeducation to Reduce Test Anxiety	Relaxation techniques	Relaxation techniques to apply during testing

Data Collection Procedure

First and foremost, a list of private schools in the Greater Beirut Area was requested from the MEHE. Emails were sent to the principles of each school, explaining the purpose of the study and requesting permission to administer questionnaires to the teachers. Once approval was granted, flyers were sent to the accepting schools, inviting teachers to participate in the study. The researcher met with the responsive teachers privately and separately to explain the study and provide them with a consent form for participation. The consent form detailed the benefits and risks associated with participating in the study, explained that their participation will in no way affect their relationship with either their place of employment or the institution conducting the research, and ensured their privacy.

The researcher's name and contact information were also provided in the consent form, in case of any questions or concerns on part of the respondents. If interested to participate in the study, teachers were asked to sign the consent form declaring their full understanding of all of the above. After being given a 48 hour waiting period, the consent forms were collected from the teachers willing to participate in the study, and the questionnaire was delivered in a sealed envelope to each teacher. Once the questionnaires were filled out, the participants were requested to place them in provided sealed envelopes, and drop them off at a designated spot in the selected school so that they may be picked up. To ensure confidentiality and protect the individual's privacy, all meetings were held in a private setting, and all forms were collected in sealed envelopes, and no names or personal identifiers were recorded, documented, or discussed either verbally or in writing during any part of the investigation process.

Data Analysis

For all of the questions of the study, descriptive analyses were conducted for the data collected to determine frequencies of the observable behaviors and utterances indicative of test anxiety, as well as the preventive measures undertaken by teachers.

The content validity of the questionnaire was due to its development from previous literature and research findings, and validated by professionals in the field. The three instruments were piloted to ensure their content validity. Finally, the reliability of the instruments was determined by calculating the Cronbach's alpha values.

Assumptions

This study was based on the following assumptions:

- The selected sample was representative of private school teachers in the Greater Beirut Area.
- Teachers were truthful and objective about what they know and do.

Limitations

There are three primary limitations to this study. Firstly, the external validity of the study may be limited by the size, nature, and geographic location of the sample to be studied, as the sample is restricted to private schools, and the site of the study is restricted to the Greater Beirut Area only. Reports by teachers from private schools may differ from, and therefore not necessarily be representative of, teachers in public schools. Similarly, teachers from schools in the Greater Beirut Area may employ different teaching styles and strategies and have different perceptions than those in other regions in Lebanon.

Secondly, the sampling process which selected teacher respondents on a volunteer basis may have had a biasing effect on the results, as the teachers that volunteered are all likely to have had preconceived notions and interests regarding test anxiety.

Finally, since the results of this study are based on self-reported data regarding perceptions of test anxiety manifestations, no definitive statements can be made regarding the association between test anxiety and any of the behaviors or utterances perceived by the participating teachers to be physiological, behavioral, or emotive symptoms of test anxiety.

The study only looks into what teachers base their initial nomination/ diagnosis on, not into what the actual symptoms are of students suffering from test anxiety in Lebanese schools.

CHAPTER IV

RESULTS

The purpose of this study was to explore teachers' perceptions regarding the identification and prevention of test anxiety in children and adolescents, by answering the following questions:

- What observable behaviors and utterances do teachers recognize as identifiers of test anxiety in each of elementary, middle school, and high school?
- What preventive measures do teachers undertake to avoid the arousal of students' test anxiety in elementary, middle school, and high school classrooms, including:
  - Manipulating the environmental factors in the classroom during testing situations?
  - Teaching students cognitive, behavioral, and emotional competencies pertaining to test anxiety?

Participants

A total of 63 teachers participated in this study, 21 from each of Elementary, Middle School, and High School. The participants came from seven private schools in the Greater Beirut Area. The sample comprised 8 males and 55 females, ranging in age from 22 to 64 years (M= 35.65, SD= 9.54). The specialization (subject taught by teacher) varied across 7 different subjects, including mathematics, sciences, languages, humanities, and homeroom. The years of teaching experience ranged from 1 to 36 years (M= 11.35, SD= 7.59). Table 2 summarizes the demographic data of the sample.

Table 2

Demographic Characteristics of Sample Studied

Number of schools	7
Number of participants	63
Elementary	21
Middle School	21
High School	21
Gender	
Male	8
Female	55
Age range	22 - 64
Number of specializations (subjects taught)	7
Years of experience range	1 – 36

Reliability of Instrument

The reliability of the questionnaire was determined by calculating the Cronbach's alpha value for each of the three instruments that comprised the questionnaire. For the first instrument, Student Behavior during Testing Situations, the Cronbach's alpha value was determined to be 0.80 indicating good internal consistency for the SBTS instrument. For the second instrument, Teacher Preparation of Testing Environment, the Cronbach's alpha value was 0.61, indicating moderate internal consistency. As for the last instrument, the Psychoeducation to Reduce Test Anxiety, the Cronbach's alpha value was 0.79, also indicating good internal consistency for the third instrument.

Teacher- recognized Identifiers of Test Anxiety

The data collected from the teachers was coded and analyzed using SPSS Statistics 21. Descriptive statistics were used to answer the research questions for each of the three subgroups, elementary, middle school, and high school, and where applicable, to compare how the different subgroups responded to the items provided in the questionnaire.

Tables 3, 4, and 5 present teachers' perceptions of behaviors and utterances exhibited by students during testing situations that are indicative of test anxiety, for elementary, middle school, and high school respectively. Each table ranks, in descending order, the behaviors identified by the greatest number of teachers as being indicative of test anxiety.

Elementary

Table 3

Frequency and Percentage of Elementary Teachers' Perceptions of the Items

Rank	Behavior	N	%
1	Students ask if answer is correct	18	85.7
2	Students look around the room	16	76.2
2	Students try to look at a neighbor's paper	16	76.2
3	Students play with their stationary	15	71.4
3	Students ask to go to the bathroom	15	71.4
4	Students wonder if they are going to pass	14	66.7
4	Students complain of stomachache	14	66.7
5	Students worry about how hard the test is	13	61.9
6	Students cry	12	57.1
6	Students complain of a headache	12	57.1

7	Students ask if test will go in grade book or on report card	11	52.4
8	Students are fidgety or can't sit still	10	47.6
8	Students try to hurry through test	10	47.6
9	Students check the time	9	42.9
10	Students waste time	8	38.1
10	Students chew on their nails	8	38.1
10	Students stare out the window	8	38.1
11	Students tap their feet	7	33.3
11	Students' hands tremble or shake	7	33.3
12	Students ask if they will get in trouble if they don't finish	6	28.6
13	Students lay their head down on the desk	5	23.8
14	Students say they are nervous	4	19.0
14	Students grind their teeth	4	19.0
15	Students audibly sigh or moan	3	14.3
16	Students ask if they can go home yet	2	9.5

As perceived by elementary teachers, the top reported indicators of test anxiety exhibited by students during testing situations, with a percentage of over 60% are 1. Students ask if answer is correct, 2. Students look around the room, 3. Students try to look at a neighbor's paper, 4. Students play with their stationary, 5. Students ask to go to the bathroom, tied for 6 are students wonder if they are going to pass and students complain of a stomachache, and 7. Students worry about how hard the test is.

Middle School

Table 4

Frequency and Percentage of Middle School Teachers' Perceptions of the Items

Rank	Behavior	N	%
1	Students check the time	15	71.4
1	Students worry about how hard the test is	15	71.4
1	Students chew on their nails	15	71.4
2	Students complain of stomachache	14	66.7
2	Students tap their feet	14	66.7
3	Students wonder if they are going to pass	13	61.9
3	Students ask if test will go in grade book or on report card	13	61.9
3	Students try to hurry through test	13	61.9
3	Students' hands tremble or shake	13	61.9
4	Students look around the room	12	57.1
4	Students cry	12	57.1
4	Students ask if answer is correct	12	57.1
4	Students are fidgety or can't sit still	12	57.1
4	Students complain of a headache	12	57.1
4	Students ask to go to the bathroom	12	57.1
4	Students grind their teeth	12	57.1
5	Students try to look at a neighbor's paper	11	52.4
6	Students play with their stationary	10	47.6
6	Students ask if they will get in trouble if they don't finish	10	47.6
7	Students say they are nervous	9	42.9
8	Students waste time	7	33.3
9	Students stare out the window	6	28.6

9	Students audibly sigh or moan	6	28.6
10	Students lay their head down on the desk	4	19
11	Students ask if they can go home yet	1	4.8

As for middle school, the highest rated indicators of test anxiety (with a percentage of over 60%) according to teachers' perceptions are 1. Students check the time, 2. Students worry about how hard the test is, 3. Students chew on their nails, 4. Students complain of stomachache, 5. Students tap their feet, tied for 6 are students wonder if they are going to pass, students ask if test will go in grade book or on report card, students try to hurry through test, and students' hands tremble or shake.

High School

Table 5

Frequency and Percentage of High School Teachers' Perceptions of the Items

Rank	Behavior	N	%
1	Students wonder if they are going to pass	17	81.0
1	Students worry about how hard the test is	17	81.0
2	Students check the time	16	76.2
3	Students try to hurry through test	15	71.4
4	Students ask if answer is correct	14	66.7
4	Students tap their feet	14	66.7
4	Students ask to go to the bathroom	14	66.7
5	Students ask if test will go in grade book or on report card	13	61.9
5	Students chew on their nails	13	61.9
5	Students say they are nervous	13	61.9
6	Students are fidgety or can't sit still	12	57.1

6	Students try to look at a neighbor's paper	12	57.1
6	Students lay their head down on the desk	12	57.1
7	Students complain of stomachache	11	52.4
7	Students complain of a headache	11	52.4
7	Students' hands tremble or shake	11	52.4
8	Students look around the room	9	42.9
8	Students cry	9	42.9
8	Students stare out the window	9	42.9
9	Students play with their stationary	8	38.1
9	Students waste time	8	38.1
9	Students audibly sigh or moan	8	38.1
10	Students ask if they will get in trouble if they don't finish	7	33.3
11	Students grind their teeth	5	23.8
12	Students ask if they can go home yet	4	19.0

Finally, for high school, the highest perceived indicators of test anxiety, receiving at least 60% positive teacher responces are 1. Students wonder if they are going to pass, 2. Students worry about how hard the test is, 3. Students check the time, 4. Students try to hurry through test, tied for 5 are students ask if answer is correct, students tap their feet, students ask to go to the bathroom, and tied for 6 are students ask if test will go in grade book or on report card, students chew on their nails, and students say they are nervous.

Across School Levels

Table 6 juxtaposes elementary, middle school, and high school teachers' perceptions as to what behaviors and utterances they believe to be manifestations of test anxiety in Lebanese children and adolescents.

Table 6

Frequency of Elementary, Middle School, and High School Teachers' Perceptions of the Items

	Behavior During Testing Situation	School Level			Total	
		Elementary	Middle	High	N	%
1.	Students wonder if they are going to pass	14	13	17	44	69.8%
2.	Students look around the room	16	12	9	37	58.7%
3.	Students play with their stationary	15	10	8	33	52.4%
4.	Students ask if test will go in grade book or on report card	11	13	13	37	58.7%
5.	Students complain of stomachache	14	14	11	39	61.9%
6.	Students cry	12	12	9	33	52.4%
7.	Students ask if answer is correct	18	12	14	44	69.8%
8.	Students check the time	9	15	16	40	63.5%
9.	Students are fidgety or can't sit still	10	12	12	34	54.0%
10.	Students tap their feet	7	14	14	35	55.6%
11.	Students try to hurry through test	10	13	15	38	60.3%
12.	Students complain of a headache	12	12	11	35	55.6%
13.	Students ask to go to the bathroom	15	12	14	41	65.1%
14.	Students ask if they can go home yet	2	1	4	7	11.1%
15.	Students worry about how hard the test is	13	15	17	45	71.4%
16.	Students waste time	8	7	8	23	36.5%

17. Students chew on their nails	8	15	13	36	57.1%
18. Students stare out the window	8	6	9	23	36.5%
19. Students try to look at a neighbor's paper	16	11	12	39	61.9%
20. Students' hands tremble or shake	7	13	11	31	49.2%
21. Students say they are nervous	4	9	13	26	41.3%
22. Students ask if they will get in trouble if they don't finish	6	10	7	23	36.5%
23. Students audibly sigh or moan	3	6	8	17	27.0%
24. Students grind their teeth	4	12	5	21	33.3%
25. Students lay their head down on the desk	5	4	12	21	33.3%
	21	21	21	63	100%

The frequencies of perceptions reported in table 5 for the different subgroups demonstrate differences and similarities, to varying extents, regarding how students express their anxiety during testing at different school levels. In taking each item separately, the most notable and frequent differences are observed between elementary and high school, with middle school leaning towards one or the other, or floating in the middle. Item twenty-one –students say they are nervous, shows the greatest difference with a frequency variance of 9/21, where a notably higher percentage of high school teachers (61.9%) reported observing it as an indicator of anxiety during testing situations than did elementary teachers (19.0%). Other considerable differences between elementary and high school were reported for items three –students play with their stationary, eight –students check the time, ten –students tap their feet, and twenty-five –students lay their head down on the desk, with

individual frequency variances of 7/21 for each. While item three reported a higher frequency of perceptions regarding indicative behavior displayed by elementary students, items eight, ten, and twenty-five reported a higher frequency for high school students.

For items seventeen –students chew on their nails, twenty –students' hands tremble or shake, twenty-two –students ask if they will get into trouble if they don't finish, and twenty-four –students grind their teeth, there was a marked increase in the frequencies of responses between elementary and middle school, associated with a marked (yet smaller) decrease in the frequencies between middle school and high school. For item twenty-four, for instance, 19.0% of elementary and 23.8% of high school teachers reported observing children grinding their teeth as a sign of test anxiety, in comparison to 57.1% of middle school teachers.

The greatest number of similarities was observed between middle school and either elementary or high school. For elementary and middle school for instance, students wonder if they are going to pass, students complain of a stomachache, students cry, students complain of a headache, students waste time, and students lay their heads down on the desk were either off by one, or received the same number of responses. For middle school and high school, the same can be said for the following items: students ask if the test will go in grade book or on report card, students check the time, students are fidgety or can't sit still, students tap their feet, students complain of a headache, students waste time, and students try to look at a neighbor's paper.

As for the remaining items, the reported differences across school levels were not very noteworthy, mostly ranging between 1/21 and 4/21.

In looking at the most frequently reported items for each of elementary, middle school, and high school, certain behavioral trends commonly observed in all three levels arise. The most evident of these (each accumulating over 60% of the total responses as well), are 1. Students worry about how hard the test is, 2. Students wonder if they are going to pass, 3. Students ask if answer is correct, and 4. Students ask to go to the bathroom.

Preparing the Testing Environment

The "Teacher Checklist for Preparing the Testing Environment" which constitutes the second part of the questionnaire investigates the procedures that teachers carry out during testing situations, if any, to help set up an environment that is not conducive to test anxiety. Table 7 breaks down the reported teacher responses by school level.

Table 7

Frequency and Percentage of Elementary, Middle School, and High School Teachers that Manipulate the Classroom Environment during Testing

Environmental Manipulations	School Level							
	Elementary		Middle School		High School		Total	
	N	%	N	%	N	%	N	%
I reduce glare by correcting the effect of sunlight or fluorescent lights	6	28.6%	5	23.8%	7	33.3%	18	28.6%
I adjust the room temperature to maximize student concentration	6	28.6%	4	19.0%	4	19.0%	14	22.2%
I place a "do not disturb" note on the classroom door	1	4.8%	0	0.0%	0	0.0%	1	1.2%
I mute or reduce the volume of intercom,	7	33.3%	5	23.8%	10	47.6%	22	34.9%

phone, and bell systems during testing								
I check to make sure there are no nearby noisy city construction projects	7	33.3%	4	19.0%	3	14.3%	14	22.2%
I read test directions accurately and calmly	17	81.0%	14	66.7%	10	47.6%	41	65.1%
I calmly notify students when their time is almost up	18	85.7%	20	95.2%	19	90.5%	57	90.5%
I wear non-distracting clothing on test days	5	23.8%	5	23.8%	5	23.8%	15	23.8%
I make sure that students have plenty of desk space for manipulating testing materials	13	61.9%	9	42.9%	9	42.9%	31	49.2%
I encourage students to wear comfortable clothing on test days	1	4.8%	0	0.0%	1	4.8%	2	3.2%
I have test materials prepared and in an orderly fashion	9	42.9%	15	71.4%	13	61.9%	37	58.7%
I have extra erasers and sharpened pencils on hand	15	71.4%	5	23.8%	6	28.6%	26	41.2%
I remind students of what they can do if they finish early	16	76.2%	13	61.9%	10	47.6%	39	61.9%

Elementary

The responses of elementary teachers reported in table 6 show that out of thirteen possible manipulations that teachers can implement to prepare the testing environment so that it is not conducive to test anxiety, only four are carried out by over 60% of the respondent teachers. These are: I calmly notify students when their time is almost up (85.7%), I read test directions accurately and calmly (81.0%), I remind students of what they can do if they finish early (76.2%), I have extra erasers and sharpened pencils on hand (71.4%), and I make sure that students have plenty of desk space for manipulating testing

materials (61.9%). The remaining nine items received lower frequencies of responses, ranging from 1/21 (4.8%) to 9/21 (42.9%). Two of these nine items were only reported by one of the respondent teachers (4.8%) each as things they do to prepare the testing environment: I place a “do not disturb” sign on the door, and I encourage students to wear comfortable clothing on test day.

Middle School

As for middle school teachers, two items received percentages of over 60%: I calmly notify students when their time is almost up (95.2%), and I read test directions accurately and calmly (66.7%). These items were also the two with the highest frequencies in elementary. Also similar to elementary, the two items: I place a “do not disturb” sign on the door, and I encourage students to wear comfortable clothing on test day were not reported by any teachers as environmental factors that they attempt to manipulate during the testing environment.

High School

At the high school level, only two items out of thirteen are identified in table 8 as being implemented by at least 60% of respondent teachers, as well. The most frequently reported: I calmly notify students when their time is almost up (90.5%), coincides with the most frequently reported for elementary and middle school, and I have test material prepared and in an orderly fashion (61.9%). Conversely, two items received zero and one responses, respectively: I place a “do not disturb” sign on the door, and I encourage

students to wear comfortable clothing on test day. The remaining nine responses received 14.3% to 47.6% of the accounts of teacher implementation.

Psychoeducation to Reduce Test Anxiety

The final section of the questionnaire looked into whether or not teachers of elementary, middle school, and high school taught their students behavioral, cognitive, or emotional competencies that can aid them in battling test anxiety. Table eight summarizes and juxtaposes the frequencies and corresponding percentages of teacher responses per item (where each item represents a different skill belonging to one of the three categories).

Table 8

Frequency and Percentage of Elementary, Middle School, and High School Teachers that Teach Skills to Reduce Test Anxiety

Behavioral, Cognitive, or Emotional Competency	School Level						Total	
	Elementary		Middle School		High School			
	N	%	N	%	N	%	N	%
Teaching/implementing biofeedback techniques	1	4.8%	6	28.6%	5	23.8%	12	19.0%
Teaching test-taking skills and strategies	12	57.1%	19	90.5%	18	85.7%	49	77.8%
Systematic desensitization	4	19.0%	3	14.3%	6	28.6%	13	20.6%
Test anxiety hierarchy exposure	2	9.5%	0	0.0%	1	4.8%	3	4.8%
Relaxation techniques to apply during testing	13	61.9%	12	57.1%	14	66.7%	39	61.9%
Positively addressing anxiety feelings	16	76.2%	11	52.4%	12	57.1%	39	61.9%
Awareness of body and breathing	6	28.6%	5	23.8%	8	38.1%	19	30.2%
Identifying the feelings of stress	9	42.9%	14	66.7%	8	38.1%	31	49.2%
Relaxation skills to reduce stress	10	47.6%	9	42.9%	10	47.6%	29	46.0%
Diaphragmatic breathing	5	23.8%	4	19.0%	4	19.0%	13	20.6%

Visualization	6	28.6%	5	23.8%	5	23.8%	16	25.4%
Progressive muscle relaxation	5	23.8%	2	9.5%	1	4.8%	8	12.7%
Deep breathing	12	57.1%	13	61.9%	11	52.4%	36	57.1%
Instruction on the relationship between thoughts and emotions	4	19.0%	3	14.3%	6	28.6%	13	20.6%
Addressing negative cognitions surrounding test taking	5	23.8%	7	33.3%	9	42.9%	21	33.3%
Replacing negative thoughts with positive and useful cognitions and actions	13	61.9%	12	57.1%	16	76.2%	41	65.1%
Guidance and encouragement to eliminate feelings of helplessness	14	66.7%	19	90.5%	15	71.4%	48	76.2%
Increasing perceptions of self-competence before taking an exam	11	52.4%	14	66.7%	15	71.4%	40	63.4%
Promoting self-efficacy	16	76.2%	17	81.0%	16	76.2%	49	77.8%
Identifying stressors and using adaptive thoughts	5	23.8%	6	28.6%	10	47.6%	21	33.3%

Elementary

Out of twenty possible competencies suggested, four items received over 60% (each) of "yes" responses from the participating teachers: positively addressing anxiety feelings (76.2%), promoting self-efficacy (76.2%), guidance and encouragement to eliminate feelings of helplessness (66.7%), relaxation techniques to apply during testing (61.9%), and replacing negative thoughts with positive and useful cognitions and actions (61.9%). Two items received only 1 and 2 "yes" responses respectively (4.8% and 9.5%): teaching/ implementing biofeedback techniques, and test anxiety hierarchy exposure. The other items ranged between 19.0% and 57.1%.

Middle School

For middle school teachers, six items had over 60% of the respondent teachers answer "yes" to each: teaching test-taking skills and strategies (90.5%), guidance and encouragement to eliminate feelings of helplessness (90.5%), promoting self-efficacy (81.0%), identifying the feelings of stress (66.7%), increasing perceptions of self-competence before taking an exam (66.7%), deep breathing (61.9%). As for the items that received less that 15% of teachers reporting positive responses, test anxiety hierarchy exposure (0.0%) received zero, progressive muscle relaxation (9.5%) received 2, and systematic desensitization (14.3%) and instruction on the relationship between thoughts and emotions (14.3%) received 3 positive responses each.

High School

Finally, for high school teachers, the results were similar to middle school teachers. Six items were reported to have received over 60% or teacher positive responses: teaching test-taking skills and strategies (85.7%), replacing negative thoughts with positive and useful cognitions and actions (76.2%), promoting self-efficacy (76.2%), relaxation techniques to apply during testing (66.7%), guidance and encouragement to eliminate feelings of helplessness (71.4%), increasing perceptions of self-competence before taking an exam (71.4%). Conversely, test anxiety hierarchy exposure (4.8%) and progressive muscle relaxation (4.8%) received only 1 positive response each.

Across School Levels

In looking at the sample as a whole, the most frequently reported items, receiving respectively 49, 49, and 48 out of 63 total votes, are teaching test-taking skills and

strategies, promoting self-efficacy, and increasing perceptions of self-competence before taking an exam. While teaching test-taking skills and increasing perceptions of self-competence before and exam were more prominent in middle school and high school than in elementary, promoting self-efficacy was evenly reported across all three levels. Other skills that a fair amount of teachers reported teaching to their students include replacing negative thoughts with positive and useful cognitions and actions (65.1%), relaxation techniques to apply during testing (61.9%), positively addressing anxiety feelings (61.9%), and deep breathing (57.1%). On the other hand, some items received a considerably low amount of teacher accounts that they teach these skills. These include: test anxiety hierarchy exposure (4.8%), progressive muscle relaxation (12.7%), teaching/ implementing biofeedback techniques (19.4%), systematic desensitization (20.6%), diaphragmatic breathing (20.6%), instruction on the relationship between thoughts and emotions (20.6%), and visualization (25.4%).

CHAPTER V

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

This chapter is meant to analyze the results summarized in the previous chapter, as well as formulate associations between the results of this study and previous literature pertaining to the subject at hand, so as to draw implications grounded in the empirical results obtained from teacher reports, as well as make recommendations for future research and practice.

Discussion

The study investigated teachers' perceptions regarding the identification and prevention of test anxiety in Lebanese schools in the Greater Beirut Area. Data was collected from a sample of 63 teachers, using a questionnaire devised for this study composed of three parts, which looked into what behaviors, exhibited by Lebanese student populations of different ages, teachers recognize as indicators of test anxiety, whether or not teachers manipulate environmental factors during testing situations to make testing scenarios seem more comfortable and less threatening, and lastly, whether or not teachers help Lebanese students develop behavioral, cognitive, and emotional competencies to help them escape or overcome test anxiety.

Test Anxiety Identification

The sample for this study contained teachers from all three school levels: elementary, middle school, and high school. Cross tabulation of the results allowed the

analysis at each school level of student behavior indicative of test anxiety (as perceived by teachers). There were differences in the results of teacher reports of indicative behavior across the school levels, primarily between elementary and high school, and to a lesser extent between elementary and middle school, or middle school and high school. Some items, such as students say they are nervous and students check the time, were reported to be observed by middle school and high school teachers much more than by elementary teachers. This may be attributed to the fact that younger elementary-aged students may not be as adept as older students at vocalizing their feelings, or reading clocks and telling time.

As for the results showing that middle school responses tended to land in between those of elementary and high school, this makes sense as middle school is a transitory phase between elementary and high school. An interesting finding shows that for some items, there is a distinctly higher rate of reported observances of behaviors indicating test anxiety by middle school teachers than by either elementary or high school teachers. These items include students chew their nails and students grind their teeth. This finding can possibly be explained by the fact that adolescents are reportedly more likely to develop certain habits like chewing their nails or grinding their teeth than children; habits which they often drop as they near adulthood. An epidemiological study on oral habits conducted upon 4,590 school children to find the prevalence of oral habits in relation to age found that lip/cheek biting, nail biting, and habits of a similar nature were most common in the age bracket 13-16 years old (Shetty and Munshi, 1998).

While there were indeed differences noted across the school levels, there were also similarities. Some behaviors were reported frequently at all three levels. The most

prominent of these are 1. Students worry about how hard the test is, 2. Students wonder if they are going to pass, 3. Students ask if answer is correct, and 4. Students ask to go to the bathroom. Therefore, it seems that some behaviors which are believed to be indicative of test anxiety cross age boundaries and are common to all students. In a nutshell, while the results of this study verify that different age groups exhibit different behavioral indicators of test anxiety, they also highlight some behavioral trends mutual to all age brackets of students.

Previous literature makes the claim that test anxiety is manifested differently across heterogeneous groups, by factor of population dynamics, social and cultural idiosyncrasies and age (Oktedalen and Hagtvet, 2011), and calls for breaking down student populations by these pertinent factors when looking into their incidence of test anxiety, identification or treatment protocols, or any related issue. Taking this into account, this study aimed to identify behaviors and utterances believed by teachers (since they are the party with the most insight into student classroom behavior) to be indicative of test anxiety, as particular to their students: students in Lebanese private schools in the Greater Beirut Area. In a similar study conducted in the United States where elementary school teachers were asked to identify behaviors and utterances believed by them to be indicators of test anxiety exhibited by their students (from which the questionnaire for this study was devised), the top five behaviors most frequently reported by teachers were 1. Students look around the room, 2. Students are fidgety, 3. Students worry about how hard the test is, 4. Students try to hurry through the test, and 5. Students tap their feet (Landry, 2006). For the Lebanese student population in this study, the top five behaviors reportedly observed by elementary

teachers as being indicative of test anxiety are 1. Students ask if answer is correct, 2. Students look around the room, 3. Students try to look at a neighbor's paper, 4. Students play with their stationary, 5. Students ask to go to the bathroom. Only the item students look around the room was common between the top five behaviors reportedly observed by teachers from the Western sample and teachers from the Lebanese sample. The discrepancy in results between the two studies may be attributed to Oktedalen and Hagtvet's (2011) claim that reports related to test anxiety cannot be generalized across varying student demographics.

Test Anxiety Prevention

Manipulation of testing environment. Based on the results of this study, teachers in Lebanese private schools in the Greater Beirut Area do not greatly manipulate the classroom environmental factors during testing situations. Taking 60% of teachers as a cutoff point, out of thirteen possible manipulations targeting lighting, noise level, temperature, distracters, etc., elementary teachers only reported implementing five, and middle school and high school teachers only reported implementing two each. For elementary, they were I calmly notify students when their time is almost up, I read test directions accurately and calmly, I remind students of what they can do if they finish early, I have extra erasers and sharpened pencils on hand, and I make sure that students have plenty of desk space for manipulating testing materials. Similarly for middle school, they were I calmly notify students when their time is almost up, and I read test directions accurately and calmly. Finally, for high school they were I calmly notify students when their time is almost up, and I have test material prepared and in an orderly fashion.

The fact that the item I read test directions accurately and calmly was implemented in elementary and middle school but not in high school may be due to the notion amongst high school teachers that high school students are adept at reading and following test instructions. Though this may be true, it does not eliminate the positive and beneficial effect of reading the test directions accurately and calmly, as test anxious students tend to face attention difficulties and mental blocks during testing, particularly at the beginning of the allocated test time, or when the test is distributed (Salend, 2011). Students, regardless of their age, may have difficulty focusing on the questions, and may even misunderstand simple instructions. Furthermore, a soothing calming tone employed by the teacher while reading the instructions can reassure students and set them at ease, so that they may have a steady start to the testing process. Consequently, reading test instructions to students accurately and calmly before they begin an exam is sure to help reduce their anxiety, even at a high school level (Conderman & Pederson, 2010).

As for the frequency and number of situational manipulations put into effect by teachers, in addition to the fact that the scarcity of reported implementations across all three school levels is alarming in its own right, it is also worrisome that the results show a drop in teacher action after elementary. This drop may be interpreted in two ways. On the one hand, it may imply that teachers assume only young children could benefit from assistance during testing situations, and that adolescents don't need this kind of help. If so, their notion is misinformed as studies have actually associated the highest levels of test anxiety with educational levels in which students are subjected to high stakes testing like governmental or standardized examinations (Bodas et al., 2008); which in the Lebanese

system is the middle school and high school levels. On the other hand, these results may insinuate that middle school and high school teachers attempt to mimic the conditions and environments of governmental and standardized examinations during regular testing situations in their classrooms, in order to prepare students to effectively function under those conditions when the time comes.

While the results of this study indicate that teachers in Lebanese private schools in the Greater Beirut Area do not greatly manipulate the environment to prevent the arousal of anxiety during testing, literature on test anxiety prevention has unanimously called for teachers to partake in the prevention process (Conderman & Pederson, 2010). Treating student issues like test anxiety is no longer accepted as a task for counselors and school psychologists to undertake independently. As dictated by the American School Counselor Association (ASCA, 2012) a comprehensive guidance program, devised to deal with student issues, necessitates the cooperation of many parties, including teachers. The counselor does not constitute the entire program. He is merely meant to facilitate and coordinate the roles of all concerned parties in aims of attaining the betterment of student lives (Iowa Department of Education [IDE], 2001). ASCA (2012) claims that the treatment of student issues like test anxiety must be a collaborative effort, wherein teachers' thorough knowledge of student behavior complements the efforts of counselors or school psychologists, in order to ensure accuracy and success in the processes of test anxiety identification and prevention. In brief, teachers constitute an indispensible part of the process of dealing with test anxiety.

Previous studies have proposed various means by which teachers can fulfill their duties in this regard. Some experts believe that teachers' main responsibility towards their students in relation to test anxiety is to establish a testing environment that supports student performance, and limits students' negative arousal. By virtue of their role and authority in the classroom, teachers control most classroom environmental variables and can plan ahead, so students are physically comfortable and in a nondistracting settings where they can perform their best (Biggie & Stump, 1999, as cited in Conderman & Pederson, 2010).

Teaching psychoeducation. Another way that teachers can partake in the prevention of test anxiety is by teaching students behavioral, cognitive, and emotional competencies related to test anxiety. This is looked into in the third part of the questionnaire, where Lebanese teachers from private schools in the Greater Beirut Area are asked what skills they teach to help students overcome test anxiety. The results here were also rather discouraging, with only four, six, and six, items being taught by teachers in elementary, middle school, and high school respectively.

Certain implications can be made from these results. Self-efficacy and perceptions of self-competence have been quite hot topics in educational psychology for the past three decades, and continue to receive a fair amount of attention by educational researchers, policy makers, educators/trainers, and practitioners (Zimmerman, 2000). The study revealed that the items guidance and encouragement to eliminate feelings of helplessness, increasing perceptions of self-competence before taking as exam, and promoting self-efficacy were amongst the most highly reported by teachers as methods employed to help students overcome test anxiety. Therefore, the implication that can be made about teacher

efforts to treat and prevent the issue of test anxiety is that teachers will help their students develop skills to overcome test anxiety inasmuch as they are informed about the effectiveness of the strategy.

A closer look at the items selected by teachers as skills they teach to students reveals that the methods employed by teachers are not very coherent, indicating that the respondent teachers have not received any official educating or training about these competencies, or their potential effectiveness at preventing test anxiety. In looking at some of the behavioral methodologies for instance, while the items relaxation techniques to apply during testing situations and relaxation skills to reduce stress (before exam) were reportedly taught to students by 61.9% and 46.0% respondent teachers respectively, progressive muscle relaxation was taught by only 12.7%. This is peculiar given that progressive muscle relaxation goes hand in hand with most relaxation techniques aimed at reducing test anxiety. More to the point, any training or informative study regarding one of these behavioral strategies to reduce test anxiety would most likely include mention of the other, or recommend the implementation of these techniques together. Similarly, while the item Deep breathing received 57.1% positive teacher responses, Diaphragmatic breathing received only 20.6%. Here as well, any proper teachings or research would have regarded these two techniques as a package, wherein the effectiveness and implementation of one of these behavioral strategies would have been associated with teaching regarding the effectiveness and implementation of the next (Corsini & Wedding, 2011; Ergene, 2003; Von Der Embse et al., 2012).

Conclusion

To conclude, teachers have reported feeling helpless when it comes to their students experiencing test anxiety during testing situations (Landry, 2006). The fact is, however, that they are not helpless. Identifying students who experience heightened and detrimental levels of anxiety when taking tests is one of the first steps taken towards helping students overcome test anxiety (Peleg, 2009, as cited in Salend, 2011). Students may demonstrate physical, behavioral, and affective symptoms that serve as warning signs that a student may be experiencing test anxiety. Teachers can assess the presence of the physical, behavioral, and affective warning signs of test anxiety in their students by observing them during testing situations (Landry, 2006; Salend, 2011). These conditions may then be used as a springboard for further assessment and treatment (Salend, 2011). Knowing what warning signs to look for may better enable teachers to fulfill the task of identifying students potentially suffering from test anxiety. A task which, according to many educational policies around the world, including those set by the ASCA (2012) national model for counseling is a teacher's professional duty. This study attempted to aid in this by contributing to the literature on the idiosyncratic behavior of Lebanese students at different age levels experiencing feelings of anxiousness during testing situations.

Furthermore, there are measures they can take to help prevent the arousal of anxiety in students during testing. These measures can be situational, wherein teachers manipulate environmental factors and eliminate context-dependent stressors to help relieve the tension for test anxious students, or they can be preparatory wherein teachers equip their students with skills to help them overcome feelings of anxiousness. One of the implications of this

study was to inform school administrators, counselors, and educational trainers of the status of teacher participation in preventing test anxiety. Based on the results obtained in this study, two conclusions can be drawn. First, teacher prevention of test anxiety in Lebanese private schools in the Greater Beirut Area is lacking. Second, proper teacher training on test anxiety prevention is lacking as well.

Recommendations

For Practice

As previously established, teacher judgment is integral to the initial screening process involved in test anxiety identification (ASCA, 20012; Salend 2011). It is recommended that school counselors and psychologists inform teachers about test anxiety and its physical, behavioral, and affective symptoms, particularly those specific to the Lebanese population at its different age levels (as identified through the results of this study, for instance) so teachers can more actively partake in the identification process of test anxiety, and more easily know what to look for in doing so. This can be accomplished during professional development workshops, which are a necessary component of the professional development of teachers, and whose participation is usually made a requirement by most school administrations. In addition, it can be accomplished by making leaflets, brochures, or posters and placing them in teacher designated areas around the school, like the teachers' lounge. An example of a leaflet that can be distributed to teachers is a document entitled "Test Anxiety: Recommendations for Teachers", developed by the University of Delaware College of Education and Human Development as part of an

inventory of research-based support tools available to teachers. This document presents teachers with a clearly structured and detailed list of tips on how to identify and prevent test anxiety. These tips include being proactive and looking for warning signs in student behavior during testing situations, encouraging students to use positive self-talk, teaching students relaxation techniques, implementing cognitive and behavioral interventions, and structuring the classroom arrangement (Blake & Shutt, 2013).

Given that administrators, school psychologists, and counselors have limited access to students, particularly in Lebanon where counseling is still a relatively new profession in many Lebanese schools, whereas teachers have constant access to students, teachers should be regarded as vessels by which to provide practical and timely assistance to students. Consequently, school teachers must be empowered to actively participate in helping students deal with test anxiety. Since the results of this study indicate that teacher perceptions regarding what skills to teach students to help them combat test anxiety are fragmented and lacking, teachers need to be educated further on test anxiety identification and prevention. School administrators, counselors, and educational trainers (i.e. all those who are responsible for providing teachers with the necessary knowledge base and practice for proper fulfillment of their professional duties) should focus their efforts on informing and training teachers on best teaching practices for the prevention of test anxiety, including the evidence-based techniques and strategies presented in this study. Just as special education/ academic support teachers are trained in making Individualized Education Plans (IEPs), so should general education teachers be trained to make testing comfortable for all

students; particularly when they have no control over the test material itself, such as in high stakes examinations (Conderman & Pederson, 2010; Landry, 2006).

As previously mentioned, this can be effectively done through teacher trainings and workshops as part of teacher professional development. It would be the responsibility of school administrators and educational trainers to properly plan and execute these workshops. Furthermore, counselors and school psychologists can provide teachers with guidance lesson plans to administer to students, or means by which to integrate psychoeducational learning objectives into predetermined academic curricula and lesson plans. This will be the responsibility of counselors and school psychologists, as it is their duty to implement proactive measures to deal with student issues (ASCA, 2012).

Finally, teachers should be encouraged to keep up with educational research that advances their knowledge and expertise in the treatment of student issues like test anxiety (Von Der Embse et al., 2012).

For Further Research

For future studies, it is recommended that the research regarding teacher perceptions of test anxiety identification and prevention be expanded to public schools as well as geographic locations outside the Greater Beirut Area. It is also recommended that the study be taken a step further by looking into school administrator and counselor expectations of the teacher's role in dealing with test anxiety, in order to check whether or not these expectations are realistic, and aligned with teacher perceptions regarding test anxiety identification and prevention. This is necessary inasmuch as it defines teacher

responsibilities towards identification and referral of students suspected to be suffering from test anxiety, as well as teaching students skills to prevent the development of test anxiety. The implications of this suggested study would complement the implications of the present study, wherein one study informs school administrators and counselors of the teachers' perceptions with regards to preventing and dealing with test anxiety, while the other informs teachers of what is expected of them in this regard. The combination of the two would possibly contribute even further to establishing clearer guidelines regarding the proper procedures for dealing with test anxiety.

Appendix I

Script for Email Message to Administration

Subject Title: Invitation to Participate in a Research Study About Teachers' Perceptions of Test Anxiety Identification and Prevention in Lebanese Schools in the Greater Beirut Area

Message Script:

Dear [school name] administration,

This is not an official message from AUB.

I am a graduate student at the American University of Beirut, writing to request permission to deliver flyers to your school, asking teachers to participate in a research study on teachers' perceptions of test anxiety identification and prevention in Lebanese school. The study is being conducted for the purposes of a Master's dissertation. The conduct of this study will adhere to the Institutional Review Board approved conditions and terms.

This study will explore teachers' knowledge of their roles in helping students in Lebanese schools from the Greater Beirut Area overcome test anxiety. The participating teachers will be requested to fill out a questionnaire which will require around 20 minutes to complete. The participants will not be reimbursed for taking part in the study.

There are no expected risks to participating in this study. However, if any of the questions illicit feelings of discomfort, the participating teacher may choose not to answer them. Although no direct benefits to the participant are expected as a result of participating in the survey, the information acquired through this research may be used to develop a better understanding of what teachers know about test anxiety, as well as what measures they take to help students overcome it.

Any information provided will be kept private and confidential. The personal information of the participating teachers will not be made available to anyone not connected with the study. The collected data will only be used for research purposes. The results will be published in the form of a thesis report, and will be made available by the AUB library in printed and electronic form. Finally, neither their personal identity, nor the name of their employing school will be revealed at any time during the analysis and distribution of the results.

There is no obligation to participate in this study. Refusal to participate will not affect your relationship with AUB.

Thank you for your cooperation, and kindly contact us for any further information or clarification,

Nada Kreidieh

Nkk03@mail.aub.edu

70/948075

Dr. Vivian Khamis

Vk07@aub.edu.lb

70/990783

Appendix II

Flyer Inviting Teachers to Participate in Research Study

Inviting all Elementary, Middle School, and High School Teachers

To fill out a 20-minute questionnaire

Exploring teachers' knowledge of their roles in helping students in Lebanese schools overcome test anxiety

Investigator: Dr. Vivian Khamis

Address: American University of Beirut

Faculty of Arts & Sciences

Department of Education

Bliss Street-P.O.Box 11-0236

Beirut, Lebanon

Criteria for Participation:

1. Any grade level teacher in a Lebanese school.
2. Professional duties restricted to teaching (i.e. not also serving as an administrator or counselor).
3. Only teachers of subjects where tests are administered to students.

If interested, please contact Nada Kreidieh at nkk03@aub.edu.lb or 70/948075

Appendix III

Consent to Participate in a Research Study

Title: Teachers' Perceptions of Test Anxiety Identification and Prevention in Lebanese Schools in the Greater Beirut Area

Investigator: Dr. Vivian Khamis

Address: American University of Beirut

Faculty of Arts & Sciences

Department of Education

Bliss Street- P.O.Box 11-0236

Beirut, Lebanon

Co-Investigator: Nada Kreidieh

Phone: 70-948075

Site where the study will be conducted: Greater Beirut Area

The informed consent provided in this document is applicable to this site only.

Methodology for recruiting subjects: Flyers

Dear Participant,

You are invited to participate in an exploratory study on teachers' perceptions of test anxiety identification and prevention in Lebanese school. The study is conducted by a graduate student at the American University of Beirut, for the purposes of a Master's dissertation. The study will include approximately 63 subjects. The conduct of this study will adhere to the IRB approved conditions and terms.

Before you agree to participate in this study, which will explore teachers' knowledge of their roles in helping students in Lebanese schools from the Greater Beirut Area overcome test anxiety, it is important that the following explanation of the proposed procedure be read and understood. It describes the purpose, benefits, risks, and precautions of the study. It also describes the right to withdraw from the study at any time.

There are no expected risks to participating in this study. However, if any of the questions illicit feelings of discomfort, you may choose not to answer them. Although no direct benefits to the participant are expected as a result of participating in the survey, the

information acquired through this research may be used to develop a better understanding of what teachers know about test anxiety, as well as what measures they take to help students overcome it. You will not be reimbursed for taking part in this study. The questionnaire will require about 20 minutes to complete.

Any information you will provide through your responses will be kept private and confidential. This personal information will not be made available to anyone not connected with the study. The collected data will only be used for research purposes. The results will be published in the form of a thesis report, and will be made available by the AUB library in printed and electronic form. Finally, your personal identity will not be revealed at any time during the analysis and distribution of the results.

There is no obligation to participate in this study. Refusal to participate will not affect your relationship with AUB. Refusal to participate will also NOT affect in any way, or at any time, your relationship with your school of employment. Furthermore, if you wish to withdraw from the study, you may do so at any time.

If, after reading the consent document and having all your questions satisfactorily answered, you wish to participate in this study, kindly fill out the questionnaire, place it in the provided sealed envelope, and drop it off at the box placed at the school so that the investigator may pick it up from your place of employment.

If you have any questions related to the study you may contact Nada Kreidieh at nkk03@mail.aub.edu or 70/948075.

If you have questions about your rights you may call:

Institutional Review Board on 01-350000 Ext. 5454 or 5445

Statement of Consent

- ❑ I have read the above information, and give my consent to participate in this study.

Name:_____

Date: _____

Participant's Signature: _____

Researcher's Signature: _____

Appendix IV

Questionnaire

Demographic Data Collection Sheet

School Name:

School level:

Academic Subject Taught:

Years of Experience:

Age:

Gender:

Student Behavior during Testing Situations

Using a checkmark, indicate which of the following behaviors observed during testing situations are indicators of test anxiety.

1. Students wonder if they are going to pass	
2. Students look around the room	
3. Students play with their stationary	
4. Students ask if test will go in grade book or on report card	
5. Students complain of stomachache	
6. Students cry	
7. Students ask if answer is correct	
8. Students check the time	

9. Students are fidgety or can't sit still	
10. Students tap their feet	
11. Students try to hurry through test	
12. Students complain of a headache	
13. Students ask to go to the bathroom	
14. Students ask if they can go home yet	
15. Students worry about how hard the test is	
16. Students waste time	
17. Students chew on their nails	
18. Students stare out the window	
19. Students try to look at a neighbor's paper	
20. Students' hands tremble or shake	
21. Students say they are nervous	
22. Students ask if they will get in trouble if they don't finish	
23. Students audibly sigh or moan	
24. Students grind their teeth	
25. Students lay their head down on the desk	

Teacher Checklist for Preparing the Testing Environment

Using a check mark, indicate which of the following procedures you carry out during testing situations.

	1. I reduce glare by correcting the effect of sunlight or fluorescent lights
	2. I adjust the room temperature to maximize student concentration
	3. I place a "do not disturb" note on the classroom door
	4. I mute or reduce the volume of intercom, phone, and bell systems during testing
	5. I check to make sure there are no nearby noisy city construction projects
	6. I read test directions accurately and calmly
	7. I calmly notify students when their time is almost up
	8. I wear non-distracting clothing on test days
	9. I make sure that students have plenty of desk space for manipulating testing materials
	10. I encourage students to wear comfortable clothing on test days
	11. I have test materials prepared and in an orderly fashion
	12. I have extra erasers and sharpened pencils on hand
	13. I remind students of what they can do if they finish early

Psychoeducation to Reduce Test Anxiety

By drawing a circle, choose either "Yes" or "No" to indicate whether or not you teach the following cognitive, behavioral, or emotional skills to students to help them battle test anxiety:

1. Teaching/implementing biofeedback techniques	Yes	No
2. Teaching test-taking skills and strategies	Yes	No
3. Systematic desensitization	Yes	No
4. Test anxiety hierarchy exposure	Yes	No
5. Relaxation techniques to apply during testing	Yes	No
6. Positively addressing anxiety feelings	Yes	No
7. Awareness of body and breathing	Yes	No
8. Identifying the feelings of stress	Yes	No
9. Relaxation skills to reduce stress	Yes	No
10. Diaphragmatic breathing	Yes	No
11. Visualization	Yes	No
12. Progressive muscle relaxation	Yes	No
13. Deep breathing	Yes	No
14. Instruction on the relationship between thoughts and emotions	Yes	No
15. Addressing negative cognitions surrounding test taking	Yes	No
16. Replacing negative thoughts with positive and useful	Yes	No

cognitions and actions	
17. Guidance and encouragement to eliminate feelings of helplessness	Yes No
18. Increasing perceptions of self-competence before taking an exam	Yes No
19. Promoting self-efficacy	Yes No
20. Identifying stressors and using adaptive thoughts	Yes No

Glossary

Biofeedback techniques: A self-regulatory technique by which an individual acquires voluntary control over non-conscious biological processes such as breathing, heart rate, and blood pressure.

Systematic desensitization: A therapy technique in which a client is taught to prevent the arousal of anxiety by confronting the feared stimulus while relaxed.

Hierarchy exposure: a process by which an individual is exposed to a series of graduated (least to most) anxiety- arousing stimuli or situations, focusing on a specific source of anxiety for an individual. Exposure happens by way of the earlier items first in the hierarchy, and then progress toward the most threatening situation.

Diaphragmatic breathing: Deep breathing involving the muscles beneath the lungs.

Visualization: the process of making mental images.

Progressive muscle relaxation: a process that includes deep breathing exercises and requires the contraction and relaxation of various muscle groups.

Cognition: Processes of knowing, including remembering, and reasoning; also the content of the processes, such as concepts and memories.

Perception: The processes that organize information in the mind, in terms of the senses.

Self-competence: Perceptions of ability in broad academic areas, such as how good of a student one is in general. Self-competence may also refer to perceived ability in subject areas as a whole.

Self-efficacy: The set of beliefs that one can perform adequately in a particular situation.

Stressors: An internal or external event or stimulus that induces stress.

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