HAIGAZIAN UNIVERSITY

THE IMPACT OF HUMOR ON TEST ANXIETY

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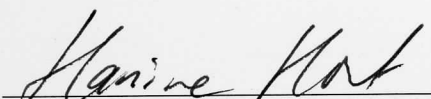

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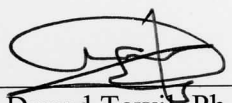

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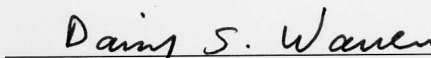

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TABLE OF CONTENTS

ABSTRACT

The present study examined the impact of humor on test anxiety on a sample of Lebanese Middle School students (N= 75) in the 7th grade, between the ages of eleven and twelve, enrolled in a prestigious private school in the French Program. In addition, this study sought to investigate the effect of visual jokes as compared to those of written jokes in a Physics test. The study relied on self-report measures where participants were asked to fill the Westside Test Anxiety Scale before and after having solved their test in Physics. Results were calculated using analyses of variance. The results did not support the expected hypotheses as test anxiety was not specifically reduced by humor with these Middle School students; however, they all perceived humor in testing as favorable.

The Impact of Humor on Test Anxiety

Background of the Study

"In [our] test-conscious culture of the second half of the 20th century, people's lives are greatly influenced by test performance" (Spielberger & Vagg, 1995, p.3)

Zeidner (1998) supports this statement. Results from tests are used for many reasons: promotion to the next grade level, awards, scholarships, entrance into a school, career advancement, etc. "It is almost impossible to grow up in modern society without encountering some type of test, whether a classroom test in language or math or science, a standardized aptitude or achievement test, a military placement or mechanical aptitude test, or a scholastic aptitude test for college application" (Zeidner, p. 4). "Tests shape the lives of each and every person in today's society and if a person is overcome by anxiety, the results could be both devastating" [and threatening] (Arnold, 2002, p. 1).

Although the number of tests administered to people is growing and though this phenomenon has become a significant, disruptive factor and a pervasive contemporary problem in schools and other educational institutions (Birenbaum and Nasser, 1994), test anxiety (TA) is often overlooked in our society that is developing at a very high and fast pace. Yet, one needs to understand the traumatic effects (Arnold, 2002) and the intense emotional reactions that students experience during examinations in order to help them overcome the ill-feelings of TA.

In a testing situation, almost everyone experiences some level of anxiety. Mild test anxiety isn't bad. It can be a motivational factor to help one properly prepare for and focus on an upcoming exam (Nolting, 2002). The present study focused on the impact of humor on high test anxiety experienced by students when they feel strong apprehension and unease about their capacities in testing situations to such an extent that their grades

suffer. Another factor examined by this study is the impact of different types of humor, specifically visual or written, on high TA. The first chapter introduces the background of the study, states the problem of the study, and presents its significance to the field and the methodology used in data gathering and analysis.

Statement of the Problem

Tests are increasingly being administered in schools, universities and vocational institutions. They have become greatly significant as they determine a person's future and career. This issue has generated in some students doubt about their capacities, affecting their self-esteem in their achievement potential and creating test anxiety (Hembree, 1988). TA can cause to students major problems and unwarranted results in both learning and test- taking as it can hurt their preparation for the test as well as in their performance. It also creates in them diverse negative outcomes such as insecurity, fear of academic failure and psychological stress since test scores and grades strongly affect their entrance to several educational or vocational realms in the modern world.

Empirical studies by Sarason in 1984 show that TA is a major debilitating factor that devastates a child's academic success starting from elementary to higher levels in education (Birenbaum & Nasser, 1994). Black (2005, p.4) cited Biedel and Turner who say that "test anxiety has become far more prevalent over the past 30 years affecting up to 40% of third through sixth-graders at levels ranging from moderate to severe". In their article discussing test anxiety, Hill and Wigfield (1984) stated that as many as 10 million students in all levels perform poorly on tests because they experience high levels of anxiety while being tested. Moreover, adolescent students are even more affected by this issue because at their age, they have adjustment problems, emotional instability that renders them even more fragile when confronted by psychological stress.

Over the end of the past century, theoretical concepts on TA have been developed and discussed by researchers and educators. Wigfield and Eccles (1989) related the different causes to this problem: the major one being that the primary influence on students' achievement is family interaction and their environment. Cognitively, many students have the capacity to perform well on exams but become so overwrought and overwhelmed by the thought of an upcoming test, by the struggle for achievement, and the increasingly strict evaluative practices that they may not be able to function and are unable to reach the best of their potentials because of anxiety. While being tested, students may not be concentrating solely on the test itself but may be primarily concerned with their parents' blaming reaction in the instance they perform poorly in a test and get low grades. In addition, students' biological development is tied to their developing capacity to interpret present school performance in relation to their previous performance and to that of their peers and siblings (Wigfield & Eccles, 1989). Another reason for TA could be that anxious students often lack good study habits and possess poor organizational skills so that they become unable to adequately assimilate and process the material or information tackled in class (Wigfield & Eccles, 1989). Timing can also contribute to test anxiety when the anxious or slow student feels pressure to finish the test on time.

Much research has been dedicated towards investigating the links between the influences of parents' expectations, the child's study skills and TA. Consequently, these concerns have stimulated the development of diverse methods to treat TA. One method of helping reduce TA may be the use of humor. From a physiological aspect, researchers have supported the concept that humor generates a more positive orientation towards life and thus one enjoys greater physical health (Kuiper, Martin and Dance, 1992). The Bible endorses the benefits of humor in the book of Proverbs chapter 17 verse 22 where it says:

"A merry heart doeth good like a medicine". The insurance company Blue Cross reports that laughter acts as a powerful "emotional" medicine, reduces stress and instantly relaxes a person. It supplies six times more oxygen to body tissue than a deep breath. The American Medical Association declares that in terms of health and illness, laughter has a preventive as well as a curative value. Other studies have shown that laughter aids digestion and stimulates the endocrinology system (Dewane, 1978).

Ventis, Higbee, and Murdock (2001) stated that the therapeutic value of humor has become increasingly popular. An early study by Abel found that humor and laughter are therapeutic for the relief of tension and anxiety. In his research on Humor, Stress and Coping Strategies, Abel (2008) has supported the theory of researchers from the 1980s and 90s including Spielberger, Martin and Dobbin, and Martin and Lefcourt who linked the therapeutic value of humor and its beneficial potential to relieve anxiety in humans.

Martin (2004) reported that humor buffers negative moods and helps individuals cope with stress in an efficient manner as well as enjoy healthy, positive relationships with others. Vereen, Butler, Williams, Darg and Downing (2006) advocated that humor is a powerful method to enhance the counseling process because it can build an intimate relationship that is essential for a functioning rapport between people. They cited psychiatrists such as Freud who believed that humor had a comforting, liberating effect from pain and misfortune and acknowledged its therapeutic value to ease feelings of stress and anxiety. McMorris, Urbach and Connor (1985) cited Freud saying that humor is the "highest of [the] defensive processes." Abel (2008) considered humor to act as a buffer against the negative effects of stressful life event.

Taking all these benefits in mind, by today's pedagogical standards, the educational system should seriously adopt the decision to incorporate humor across all academic levels because it has a substantial place in classroom lectures and testing. As a

recommendation that teacher education programs incorporate a humor component, Torok, McMorris, and Lin (2004) looking at the research of several others found out that "in post-secondary education, humor is viewed as an important teaching tool in areas such as statistics, law and other courses that are judged by students to be difficult. They hypothesized that in higher education settings, the use of content-relevant humor would facilitate learning and the retention of novel information, increase learning speed, improve problem-solving, relieve stress, reduce test anxiety and increase perceptions of teacher credibility. McMorris, Urbach, and Connor (1985) supported the incorporation of a humorous component in instruction and testing to obtain better understanding and positive results in tests.

While so many people advocate the numerous benefits of humor and that one of them is likely to be its psychological effects, the attempt to demonstrate the truth of this statement is relatively recent and there are few empirical studies before 1970 to demonstrate its specific psychological therapeutic benefits (Capps, 2006).

Berk and Nanda (2006) found that students' perception of the use of humor in instruction was significantly positive and encouraging. However, not all studies found that the use of humor resulted in a significant reduction of TA. In his study "Exploring the Use of Humor in Enhancing Physics Education and Assessment", Bryant A. Meyers (2007) found out that the results of using humor showed no statistically significant increase in the testing scores.

Therefore, the current study hypothesized that TA could be reduced by incorporating humor in testing. This issue deserves our attention and needs to be explored in depth.

Purpose of the Study

The purpose of the present study was to investigate the impact of using humor within tests and analyze its impact on TA amongst Middle School students in a private school. It also aimed to investigate the effect of visual humor as compared to written humor in a Physics test among that same sample.

Hypotheses

Research on the subject of humor as a variable to reduce test anxiety indicated that most results were insignificant (Meyers, 2007); however, the researcher wanted to explore the use of humor on Lebanese students who are experiencing high test anxiety, especially that laughter and humor are an asset in the Lebanese culture and society. Based on the purpose of the study which is to examine the impact of humor on highly anxious students, and considering both the factor of age level - Middle school students in a private school – and the factors of visual jokes vs. written jokes, the following hypotheses were tested:

1. Students exposed to a visual joke on the cover page of their physics test will exhibit significantly lower TA than those exposed to a test with no humor.
2. Students exposed to a visual joke on the cover page of their physics test will exhibit significantly lower TA than those exposed to a test with a written joke.

Professional Significance of the Study

Today's world has become increasingly dependent on science and technology. Never have the subjects of science and math received such directed focus from study and

research. "Of all the sciences, physics is perhaps the most fundamentally important as well as the most feared and generally accepted as the most difficult" (Meyers 2007, p.1). Meyers supports his statement by citing Williams' 2000 study who reasoned students' fear of physics is that this discipline deals, more than other subjects, with quantitative skills and the ability to see connections and relationships between various concepts. Meyers also found that the high anxiety levels students faced with physics classes is linked to peer reports relating to the high degree of difficulty associated with understanding and doing well in the class (Meyers, 2007).

Moreover, previous studies have tested the effects of humor on test anxiety among university students; whereas the current study tested the effects of humor on test anxiety among students of the Middle School.

Therefore, this study tested the effects of humor on test anxiety for a test in Physics among students of the Middle School level.

Nature of the Study

The present research employed the quantitative method of statistical analysis to measure variables by using analyses of variance to test differences in means. It relied on self-report measures where participants were asked to fill the Westside Test Anxiety Scale before taking a physics test and after having taken the test. The participants were divided into three experimental conditions: no joke (control), visual joke, and written joke (intervention groups). Seventy five students from the Middle School participated in the experiment. Analyses of variance were used to test the hypotheses.

Definition of Terms

Anxiety is a basic human emotion consisting of fear and uncertainty that typically appears when an individual perceives an event as being a threat to the ego or self-esteem (Sarason as cited by Harris and Coy, 2003).

State anxiety "refers to emotions experienced during examinations such as feelings of tension, apprehension, nervousness, and worry and associated physiological arousal resulting from activation of the autonomic nervous system" (Arnold, 2002, p.5).

Trait anxiety "refers to relatively stable individual differences in anxiety proneness that is, to differences in the disposition to perceive a wide range of situations with more or less intense elevations of state anxiety" (Arnold, 2002, p.5).

Test Anxiety is "a set of phenomelogical, physiological and behavioral responses, the negative effect, worry, physiological arousal and behavioral responses that accompany concerns about failure or lack of ability on an exam or any evaluative situation" (Arnold, 2002, p.5).

Humor is the "mental faculty of discovering, expressing, or appreciating something that is or is designed to be comical or amusing" (Dewane, 1978, p.508).

Adolescence is the period of life when a child is changing into an adult beginning around the age of 11. The child is changing both physically and emotionally and the period is marked with drastic mood swings. (The New Lexicon Webster's Dictionary, p. 11).

Physiological pertains to the physical characteristics of a person. At the younger age, this is a rapidly changing state because of the influences of adolescent development. (The New Lexicon Webster's Dictionary, p. 758).

Physics is the science of matter or energy and their interactions. It is essentially based on measurement and mathematical processes (The New Lexicon Webster's Dictionary, p. 758).

Psychological pertains to the mental and behavioral characteristics of a person. (The New Lexicon Webster's Dictionary, p. 806).

Delimitations

There were some boundaries which may prevent generalization of the researcher's results.

First, the experiment was conducted in only one grade level in a prestigious private school.

Second, the experiment was conducted for the three sections at different times of the day.

Third, and possibly most important, the same students did not take a test first with humor and then without humor.

CHAPTER 2

Review of Literature

An Overview of Theoretical and Empirical Studies about Test Anxiety

A. General Theory about Test Anxiety

When a person is trying to avoid dangerous situations, anxiety is a natural phenomenon and can be helpful as it keeps one physically and mentally alert (Lewis, 1997). However when taken to extremes, it may produce unwarranted results.

TA becomes an issue when it interferes with learning and test-taking abilities which can negatively affect the students' grades. John Zbornik (2001), a psychologist with Ohio's Lakewood City Schools, says students with true test anxiety tend to be consumed with worries, such as fear of failure, worthlessness, and dread. In turn, they experience psychological symptoms, such as sweating, dizziness, and racing heartbeats. Some exhibit more traumatic symptoms including crying and bedwetting the night before a big test; on the day of the test, some children may vomit or pass out. The more tests the highly anxious student experiences, the more problems he faces.

In the educational realm, as students move to higher levels, they are more frequently tested in different disciplines (Arnold, 2002). As the amount of testing in schools increases, anxious students try to rush through a test in order to avoid the unpleasant physical experiences of distress, emotional upset and concentration difficulties (Coy, 2002). This "invisible disability" of achievement stress can extend throughout a student's academic years (Hill & Wigfield as cited by Coy, 2002, p.1). To support this concept, Coy refers to Rubenzer's statement, The "flight or fight" response experienced as a part of TA can lead to major changes in attitude and effort that include withdrawal, outbursts, overactive behaviors, fatigue, avoidance of school, and other depressive

symptoms (Rubenzer as cited by Coy, 2002, p. 1.) Arnold (2002) felt that TA has an almost exclusively debilitating effect on test performance (p.7). Therefore, it is of paramount importance to determine the link between the levels of TA and how they develop and to understand how this phenomenon affects a student's performance.

Coy, (2002) looking at various researchers in the field including Hancock, Hedl, Sarason, Spielberger and Vagg, and Trent and Maxwell, found that TA is a stable trait in students, that generates feelings of intimidation and unbearable psychological, physiological and behavioral responses when the person finds himself in a threatening situation.

Nemours physicians from the Nemours Foundation define TA as a type of performance anxiety that results from the fear of being judged by teachers, parents, and classmates. Nemours' D'Arcy Lyness states that to worry about upcoming tests creates a vicious circle (Black, 2005). The more students fuss, worry and dwell on the bad things they imagine will happen if they fail the tests, the more anxious they're likely to become. Students' concentration is disrupted when students experience high TA and this leads them to obtain low test scores and results. The KidsHealth website of the Nemours Foundation and founded by Neil Izenberg (2010) supports research in the pediatric field states that it is normal for most students to have a "touch of nervous apprehension" before a test. Some feel butterflies, while others complain of tummy aches and tension headaches. But the question is where should one draw the line between normal trepidation and genuine TA? (Black, 2005)

B. Dimensions of Test Anxiety:

For more than 30 years, TA research has concentrated on two psychological dimensions: emotionality and worry. Emotionality refers to a person's awareness of

tension. It is manifested in the state of physiological symptoms, such as rapid heart rate, nausea, dizziness, sweating, and fatigue. Worry "refers to cognitive [concerns] about test taking and performance [manifesting itself in] negative expectations, preoccupation with performance, and potential consequences", which include the symptoms of self-criticism, fear of failing, feeling overwhelmed, and "going blank". The distinction between these dimensions and their impact on performance has been documented in that "worry is related to performance decrements in an evaluative stressing situation whereas emotionality is not" (Sarason, 1984, p. 931).

C. Types of Test Anxiety

There are different types of test anxiety; however, this study deals with the types of anxiety that interfere with a student's success in school - anticipatory anxiety and situational anxiety. A person with anticipatory anxiety experiences distress while studying and when thinking about what might happen when taking a test. Situational anxiety occurs while one is taking a test (Lewis, 1997). "Physiological reactions may include rapid heartbeat, muscle tension, queasiness, dry mouth, or perspiration. Behavioral reactions may include an inability to act, make decisions, to express oneself, or to deal with everyday situations". (Lewis, S., 1997, p.1)

As a result, one might have difficulty reading and understanding questions, organizing thoughts or retrieving key words and concepts. A person might also experience a mental block that results in giving wrong or blank question answers on the test but possibly remembering the correct answers as soon as the exam is over. Psychological reactions may include feelings of apprehension, uneasiness, distress and self-doubt (University Counseling Center, George Washington University, n.d.).

D. Causes of Test Anxiety

Several causes underlie test anxiety and increase the "potential negative results [that make students] feel helpless when in testing situations. (Zeidner, 1998) These causes include parental/ familial pressure, poor study habits and fear of failure resulting from past experiences.

A major reason for TA could be fear of isolation and alienation from parents, other family members and friends as well as embarrassment in front of the teacher as a result of poor academic performance. According to Black (2005), increased testing generates parental pressure and increased expectations for their children to perform well in school. These expectations may become internalized by the student and can affect up to 40% of elementary children with levels of anxiety reaching from moderate to severe. Beidel and Turner, as cited by Black, attribute the increase of test anxiety to several factors that include increased pressure from parents and teachers to succeed, more testing in the higher grade levels and an increase in the number of standardized tests.

Students with poor study habits that include time management problems and lack of organization cram the night before the exam and thus fail to be properly prepared. Such students have genuine reasons to feel extremely anxious about their performance. However, students who have prepared for their exam sufficiently and properly may still feel anxious due to negative thinking and worries. Accumulated experiences of failure resulting from blanking out on tests and the inability to remember answers make students feel out of control and further raises anxiety levels. As a result, students may feel embarrassed and disgraced (Wigfield & Eccles, 1989). One way to recognize that the student's thoughts are negative is when they are extreme (I'm so dumb) or in all-or-nothing terms (if I don't pass, I'm finished).

Also students who have previously experienced unsuccessful test performances as compared to their peers focus on the negative side of that comparison. Test anxiety arises when they continue to concentrate on the terrible consequences that may derive from such failures. Students' anxiety most likely develops among those who, in evaluative settings, view their own abilities as constant and unchangeable, resulting in low self-esteem and poor test results. Children thus acquire a learned behavior of failure that diminishes their insights in their own abilities. Wigfield and Eccles (1989, p.176) quote Dweck who stated that "training students to attribute failure more to lack of effort than lack of ability leads to improved performance and would reduce their anxiety".

Time pressure is another major factor to TA. Timed tests and the panic of not finishing the entire test on time, even if one knows all the answers, can create TA and strongly influence an anxious student's performance. When school achievement exams are performed with time limitations and pressure, high-anxious children perform poorly, less accurately and more slowly than low-anxious children. When students take tests with reduced time pressure, the performance of high-anxious students improves considerably in speed and competence in a similar manner as that of low-anxious children. As an illustration to this finding K.T. Hill and Eaton, as cited by Wigfield and Eccles, discovered that when high- and low-anxious fifth- and sixth-grade students solved basic arithmetic problems under time limits, the high-anxious children committed three times as many errors and took twice as long to finish the problems as the low-anxious students did. When children were allowed all the time they needed to solve the problems, the high-anxious students performed as well and as quickly as the low-anxious children. The conclusion behind Hill and Eaton's findings was that by modifying examinations conditions, the performance of anxious students can be enhanced. (Wigfield & Eccles, 1989).

Another cause of TA could be the instructional practices adopted by the teachers in the classroom. These have been shown to have an influence on students' anxiety and performance. Wigfield and Eccles (1989) cited research from Cronbach and Snow as well as Tobias who looked into the effects of instructional strategies. Teaching in an organized manner, making sure the material is not too hard, and using mild humor can facilitate the performance of anxious students.

Another reason for increasing TA and pressure could be the changes in the classroom environment. These changes include "moving from a smaller to a larger school, having different teachers (and classmates) for each subject that can disrupt children's social networks", experiencing ability grouping and differentiation, "being graded more strictly, and having fewer decision–making opportunities and less autonomy"(Wigfield and Eccles, 1989, p. 170). All these changes can render the school environment unfriendly, hostile, and aggressive for many students.

E. Adolescents and Test Anxiety

Adolescence was expressed in critical terms by Anna Freud, who was amongst the first psychoanalysts to focus on adolescent behavior. In her words, which continue to exert a strong influence on psychoanalytical theory:

> "Adolescence constitutes by definition an interruption of peaceful growth which resembles in appearance a variety of other emotional upsets and structural upheavals" (Weiner, 1982, p. 22).

The age of adolescence constitutes a period of abnormal and unpredictable development in behavior, personality and emotions. The adolescent has difficulties in adjustment which is the ability to handle life experiences effectively. It interferes with the

adolescents' ability to enjoy their successes and reach their goals. The adolescent behavior is unpredictable with emotional turmoil being a common state (Weiner, 1982).

Adolescents are individuals who are in search of their identity. It is a transitional stage between childhood and adulthood with two stages, puberty (12 to 18) and after puberty (18 to 21years old).

Looking at the development of the child during the adolescent stage, Eccles, et al. (1993) described adolescents as having several different social and psychological developmental tasks to accomplish. They have to deal with multiple life adjustments. Those changes include increased parental /familial conflict as they struggle for more autonomy, to ascertain their own set of values, consider their future and career, and establish peer relationships. From a dependent child, the adolescent is growing into an independent person. In this complex transitional stage, he is burdened and preoccupied with bodily, emotional and social changes. His attention is all focused on himself as he searches for his identity and his position in his society. At the same time, the adolescent has other demands like the need for love, security, new experiences, and independence. The conflict and imbalance between needs and demands cause tension in the adolescent's psychology creating a feeling of nervousness which results in lack of concentration and the inability to sleep. And unless familial, personal and financial resources are sufficient and these developmental challenges are met easily, the child experiences disorders and problematic behaviors. At this age, the adolescent faces an increase in social comparison (peer pressure), competitiveness, and an increased concern about evaluation. At the Middle School level, teachers seem to be less caring and more concerned with grade results than those at the elementary level which may increase anxiety levels for the adolescent, especially in exam situations. (Eccles, et al., 1993)

There are substantial differences in the experience of TA, based on the age factor. TA will become visible in the elementary levels, will increase persistently with age, and will reach its climax during the college years. Children's anxiety increases over time and correlates negatively to the students' school performance. Failures at an early age do not seem to greatly affect students' expectancies for achievement. Test anxiety is a concept associated mostly with teenagers, adolescents and high school students. As children grow older, failure experiences seem to have a stronger effect on their perceptions of themselves. These later failures will make students more anxious about testing and perhaps will lead them to avoid situations in which failure might arise. (Hill & Wigfield, 1984)

Students react to test fear through excessive worry and negative thoughts that make them doubt their own abilities to succeed. Also they are overwhelmed by physiological components such as muscle tension, rapid heart rate, and uncontrollable shaking. The combination of these reactions negatively affects the students' test performance; creating more test fear based upon previous unsuccessful experiences. As a result, students with test anxiety will then do anything they can to avoid the situation that creates this fear. (Zbornik, 2001, Hill & Wigfield, 1984)

In short, several causes underlie TA affecting students in different degrees. However, because of individual differences, some students experience TA more than others. The present study measured TA among Middle School students and investigated the causes that underlie this issue.

An Overview of Theoretical and Empirical Studies About Humor

A. Theories of why we laugh

There has been a considerable increase in the quantity of research on humor and its physiological, psychological and sociological benefits over the past three decades. The concept of humor is elusive and multifaceted and only recently has it been taken seriously as a subject worthy of scientific investigation. Humor functions as an indirect form of communication since it transmits messages, mostly of an emotional nature, that might be undesirable if conveyed or conceded directly.

Before looking at the benefits of humor, it is useful to investigate why it is we laugh. There are usually three accepted theories of why it is we laugh; the "Superiority" theory, the Freudian Theory and the Incongruity theory with the latter being the most accepted (Meyers, 2007).

Meyers refers to Plato as the first to advance the "Superiority" theory where we laugh because of others' misfortunes as we feel superior to them. This applies to ethnic groups, occupations, and gender; however, this kind of humor is very inadequate in classrooms.

Freud looked at humor as "a socially acceptable way to release unacceptable thoughts". It is a sort of relief that allows one to escape from the social norms and limitations and provides a "freedom of expression with ideas that are normally not socially proper to express"(Meyers, 2007, p.8).

The Incongruity theory first proposed by the famous German philosopher, Immanuel Kant, is the last and most accepted form of humor. Humans laugh because the joke surprises them and seems out of place. For example, we find clowns funny because they are wearing ridiculously large shoes and have faces painted to emphasize specific facial features and expressions. (Meyers, 2007)

According to Meyers, Raskin's description of the basic structure of incongruous humor, also called "contrast resolution"- is as consisting of mainly two parts – "an expected content followed by an unexpected twist. The expected content is familiar information that one can relate to; the unexpected content, or punch-line as it is often called, consists of a ridiculous and much unexpected outcome". This basic composition of humor is analogous to problem-solving. This is the reason why problem–solving based courses, such as physics, seem better suited to humor treatment than classes that emphasize memorization and rote learning. (Meyers, 2007, p.10)

B. The physiological benefits of humor

In his research on the benefits of humor, Meyers (2007) looked carefully at the research of Norman Cousins. Cousins found that humor and laughter can reduce pain and even reverse sickness. This idea was made popular in a research paper published in the *New England Journal* (later to become a best-selling book) by Norman Cousins entitled *Anatomy of an Illness (As Perceived by the Patient)* published in 1981.

Cousins surrounded himself with jokes and humor and was known to watch popular comic television programs such as “The Marx Brothers", and "Candid Camera". He even recounted (Cousins, 1981, p 39) that "10 minutes of genuine belly laughter had an aesthetic effect and would give me at least 2 hours of pain free sleep.” He even claims to have recovered from his degenerative tissue disease using this method. A good laugh is very beneficial to a person. It can relax muscles; help to relieve pain and discomfort; increase immunity; and benefit respiration and oxygen intake (Meyers, 2007).

C. The psychological and social benefits of humor

When related to learning and educational experience, there is much overlap between the sociological and psychological benefits of humor especially when related to brain chemistry since the two are unavoidably connected.

Berk (2000) looking at the psychological benefits of humor found that humor detaches us from the world of good and evil, of loss and gain, and enables us to see it in proper perspective. Humor helps us to rise above our current problems and circumstances and offers us a new perspective. The use of humor allows one to develop adaptive coping strategies to meet stressful situations.

In his research on humor, Capps (2006) found that the most extensively researched issue over the past several decades of the role of humor in moderating life stress was originally done by two collaborating psychology professors in Ontario, Canada, Herbert M. Lefcourt, from the University of Waterloo, and Rod A. Martin, from the University of Western Ontario in London. They produced a doctoral dissertation on the subject of humor, *Humor and Life Stress: Antidote to Adversity* (1986), and developed the Situational Humor Response Questionnaire (SHRQ) to measure the propensity to laugh and smile in a variety of daily life situations. They also created a Coping Humor Scale of seven statements where they used two instruments to assess the sense of humor as a moderator of life stress.

Several studies have reported positive evidence that humor reduces anxiety and stress in a testing situation. But the most thorough and convincing study was one by Berk (2000) who designed a study to test students' "perceptions" of humor for reducing anxiety and stress and helping them to perform their best. The results Berk obtained are consistent with Smith's and Hedl's research that humor reduces anxiety and stress. Based on the responses of 695 students enrolled in six undergraduate introductory statistics

courses and eleven graduate courses, Berk found that the majority of students rated humor as extremely effective in reducing test anxiety and in helping to perform one's best.

McMorris, Boothroyd and Pietrangelo (1997) thoroughly researched the effects of humor in a testing situation. This was experimented in a psychology class for undergraduates. It consisted of multiple choice questions, with humorous choices and cartoons. It was found that there was no significant evidence to support the idea that humor improves test scores, but the students' perception was in favor of humor.

In other words, one may conclude that there is no real evidence that humor has any positive impact on test scores, but it definitely helps to reduce anxiety from the student's point of view. The present study looks at the use of humor with adolescents to help reduce test anxiety in young Middle School students.

Theoretical Overview of Visuals vs. Written Texts

Stokes (2002) researching the use of visuals in teaching and learning concluded that visuals are extremely important for learning at any age since they enhance thinking. It is easier for a student to access and understand a large amount of information quickly when it is presented in visual rather than in written mode. In our technological world, one's proficiency with words and numbers is being enhanced by the use of visual information which is provided to us through television, the cinema and computer graphics. The contemporary learner is more attuned to this visual world than learners of a generation ago. As a result, teaching methods are relying more and more on visuals to enhance the learning of students with strong right brain hemisphere learning tendencies as well as those students with perception problems that hinder their ability to learn solely through written or oral presentations. In addition, a child learns to recognize the object or

symbol/ picture of that object before he learns to recognize its name in written form. To support the concept, Stokes cites Berger when she writes, "Seeing comes before words" (13).

Very little research has been conducted on the difference between using visual humor as opposed to the use of written humor or on its relation to test anxiety. Oliveri (2007) supports the findings of Stokes when she reports that a cartoon can convey a concept faster than the written version of the same comical situation. The cartoon's message gives one insight into the world around us, therefore giving us perspective. When used in the classroom to reduce stress or to enhance learning, the visual can help students become detached from the threat of the situation, whether taking a test or struggling with a difficult concept (Morrison, 2010). Therefore, students who are exposed to humor during a stressful event such as a test, whether in visual or written form, may perceive a lowering of anxiety.

Prevalence of Test Anxiety and Humor

Numerous studies have reported different findings as to the percentage of adolescents who experience TA, complain about it and whose performance is affected because of it. The literature seems to be mixed with different percentages reported by different researchers; however all of them agree that TA is a problem that is experienced, though in different degrees, by students of different ages and genders.

Wigfield and Eccles (1989) reported on the empirical studies conducted by Hill in 1972 and Sarason in 1966 who assessed (using the Test Anxiety Scale for Children and Lie Scale for Children) the development of test anxiety across the elementary school years in a sample of 700 mostly white, lower middle-class children. The negative correlations between anxiety and achievement test scores increased from essentially 0 at

grades 1 and 2, and became more pronounced as students progressed from grades 3 to 6. Fyans (1979), in a statewide study of 4th, 8th, and 11th grade students in Illinois, found that the negative correlations between anxiety and test performance increased across the grade levels. (Wigfield & Eccles, pg. 165)

In a study to reduce TA among third grade students through the implementation of relaxation techniques by Larson, Ramahi, Conn, Estes, and Ghibellini (2010), significant differences between the pre-test and post-test means were found. These results indicated that the relaxation intervention had a significant effect in reducing test anxiety.

The researcher was unable to locate sufficient literature reviews or empirical studies pertaining to the use of visual and textual humor as related to test anxiety. However, the researcher felt that there may be a differentiation with the ease of comprehension between visual and textual humor. Adolescents are better able to discern the idea behind a pictorial presentation as compared to a textual version of the same humor, especially when the adolescent is viewing the humor in a language that is not his/her mother tongue. In such a case, the language difficulties may interfere with the comprehension of the written joke as well as cultural ambiguities in the joke. In pictorial humor, cultural ambiguities may be more easily understood since the adolescent is more readily able to figure out the symbolic concepts of the picture.

In short, TA is a prevalent concern that affects students. Its cognitive aspect (fear of evaluation and worry about one's performance) weakens the quality of their performance in addition to increasing somatic symptoms. In the present study, in light of the literature above, this thesis investigated the impact of humor on TA. The following hypotheses were tested:

1. Students exposed to a visual joke on the cover page of their physics test will exhibit significantly lower TA than those exposed to a test with no humor.

2. Students exposed to a visual joke on the cover page of their physics test will exhibit significantly lower TA than those exposed to a test with a written joke.

CHAPTER 3

Method

Setting

The experiment for the study took place in the students' classroom during a regular scheduled physics test.

The test packages, including the scales, the joke and the teacher-made test, were distributed by the subject teacher who also proctored the test and gave students instructions for the scale. The researcher did not attend the class during the time of the test so as not to increase students' anxiety by having a stranger in class.

Participants

Students were selected using Judgment Sampling based upon advice from the school counselor who considered the recommended classes to experience high levels of anxiety. Another factor in the selection of these students was the instructional methodology of their physics teacher who is very systematic and organized in her instruction and testing.

The sample of the present study was comprised of 75 male and female students from a prestigious, private Lebanese school. The age range was between 12 and 13 years. The study targeted three sections of the 5ème students in the French Program (2nd Intermediate). The sections contained equal numbers of students – 25 in each. The gender distribution was fairly equal with 13 boys and 11 girls in section A, 15 boys and 11 girls in section B, and 16 boys and 9 girls in section C. All the participants were Lebanese, from well-to-do families, and from different religions and political backgrounds.

Materials

Participants were handed a testing packet which included, on the cover page, the Westside Test Anxiety scale of 10 items, the joke in either cartoon or written form (used only with the intervention groups), the teacher-made Physics test, and a second copy of the Westside Test Anxiety scale with only 8 items. Two of the items from the first scale were related to anxiety levels before the test and therefore inapplicable. This scale, which was originally written in English, was translated by the researcher into French for use with these French speaking students. A back translation was executed as the scale was retranslated from French to English to compare the two English versions and be sure that no misinterpretation occurred in the original translation.

Documentation used in the study:

The materials in the experiments included a teacher-made test in physics and a joke in both written and visual form supplied by the researcher.

1. **Physics test**: a test given to students after the completion of a study unit. The teacher-made test was designed to take one class hour – 30 minutes; students completed the test with no difficulty in terms of time allotment.
2. **The Joke** in both visual and written form: The researcher took great care to choose a joke the students of this age can understand. The same joke was used in the visual and written form so as to control this variable.

Westside Test Anxiety Scale

The Westside Test Anxiety Scale, a free-of-charge test, was developed in 2004 by Dr. Richard Driscoll, program director of the American Test Anxiety Association, Westside Psychology, Knoxville, Tennessee. This brief screening instrument, taking 5 – 8 minutes to administer, consists of 10 five point–items that measure anxiety impairments of the test

subject. The various questions relate to the anxiety levels that the participant feels at the time of completing the questions. On the test, six items assess the subject's perception of impairment (memory loss and poor cognitive processing) and four items assess worry and dread. No items include physiological over-arousal factors which are considered of marginal relevance in such a test. Subjects respond using the Likert Scale with (1) being "not at all or never true" and (5) being "extremely or always true". The maximum score is 50 with higher scores indicating greater anxiety and psychological distress.

Reliability of the Scale

Past studies administered this test to students and asserted the reliability of this instrument. The Cronbach's Alpha for the current study was calculated and found to be .86 before the Physics test and .87 after it which proves its high internal reliability during both administrations.

Procedure

The study was conducted in cooperation with the administration of a prestigious private school. The researcher met with the Middle School principal, apprising her of the project and asking for her approval in collecting data by administering the chosen scales to students.

An interview with the school counselor indicated that this particular level of students, grade 5ème level of the French program, tends to be anxious, especially during test situations. Interviews with their instructors confirmed this information. For this reason, these three classes of that level were chosen for this study. In addition, it was the first Physics test given in the school year and the students had not studied with this particular teacher before. The students were unfamiliar with both the way the subject was tested and how this particular teacher developed her tests.

In a meeting with the Physics teacher, an overall plan was developed to properly assess the effects of humor in a testing situation for these students. The teacher provided both the lesson plans for the unit of study as well as the test used in this experiment. The documentation showed that students' test anxiety was not connected to her instructional methods or the material covered by the test. Every item on the test was covered in class instruction. The purpose of the scale was explained to the students and they were reassured that the questions on the scale were not graded and that their responses would be totally confidential. In fact, students welcomed the idea that teachers want to relieve their anxiety during testing. It was agreed that students would be asked to indicate their name on the tests and the scales so that the exam grades and the scale scores could be compared.

The test packages were distributed by the subject teacher who also proctored the test and gave students instructions for the scale. The researcher did not attend the class during the time of the test so as not to increase students' anxiety by having a stranger in class.

The control group received a package that had on its front page the French translation of the Westside Test Anxiety Scale followed by the Physics test; at the back there was the modified Westside Test Anxiety Scale, also translated into French.

Intervention group A received a package that had on its front page the same French version of the Westside Test Anxiety Scale followed by a cartoon/ joke in visual form, followed by the same Physics test questions and at the back there was the modified Westside Test Anxiety Scale, also translated into French.

Intervention group B received a package that had on its front page the same French version of the Westside Test Anxiety Scale followed by the same joke but in a

written form, followed by the same Physics test questions; at the back there was the modified Westside Test Anxiety Scale, also translated into French.

All students had plenty of time to finish the test. While watching the students as they were reading the joke, the teacher observed that the students smiled indicating that they had understood it.

At the end of the testing period, the subject teacher collected the test packages and submitted the scales to the researcher who scored them. The test itself was corrected by the subject teacher; test grades were given to the researcher for comparison and scoring.

The researcher took the students' responses to the Westside Test Anxiety Scale and tabulated the raw scores in a chart "Before" and "After". The mean of each student was calculated as well as the mean of the class, taking in account that there were 10 questions before the test and 8 questions after.

Data were entered into the SPSS software in order to analyze the differences between the means of the different variables among the three groups.

This study examined the independent variable of different types of humor among Middle School students and the dependent variables of test anxiety through administering different types of jokes before their Physics test.

CHAPTER 4

Results

This study made use of the Westside Test Anxiety Scale (WTAS). The scale was administered twice to the participants; before and after their physics test. For the second administration of the scale, two questions pertaining to the student's perception of his/her anxiety while preparing for a test were removed because they did not apply to the context at the end of the test session. The internal reliability of the scales was determined by calculating the Cronbach alpha. Results showed that the WTAS had high internal reliability during both administrations. Before the physics test, the Cronbach alpha of WTAS was .87; after the physics test, it was .86.

To test for the difference in test anxiety after the physics test between the three groups – those who saw no joke, those who saw a visual joke, and those who saw a written joke – an analysis of variance was conducted. Results showed no significant difference on WTAS scores between students who were exposed to the visual joke (M = 16.08), students who were exposed to no joke (M = 18.33), and students who were exposed to the written joke (M = 18.40) (see Table 1). Results of the ANOVA were coherent with the hypotheses which stated that students who were exposed to the visual joke will have less test anxiety than those exposed to the written joke as well as those exposed to no joke. There was a difference in the means of the three groups, but that difference did not reach significance (see Table 1). In other words, hypothesis 1 and 2 were not confirmed.

Table 1: Comparison of the mean for the three groups after the Physics test

Group Statistics and ANOVA

	Groups	N	Mean	Std. Deviation
WTAS after	Visual	26	16.08	5.329
	Written	25	18.40	5.909
	No joke	24	18.33	7.614

ANOVA

apres

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	89.167	2	44.584	1.114	.334
Within Groups	2881.179	72	40.016		
Total	2970.347	74			

The difference between WTAS scores before the physics test and WTAS scores after the physics test was computed by subtracting the WTAS after from WTAS before. Later, an analysis of variance was computed using the differences between the WTAS scores between the three groups. The mean difference between the three groups did not reach significance. However, results were in the expected direction as shown in Table 2.

Table 2: The mean difference between the three groups

Group Statistics and ANOVA

	Groups	N	Mean	Std. Deviation
difference	Visual	26	.86	.778
	Written	25	.48	.740
	No joke	24	.75	.736

ANOVA

differences

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.889	2	.944	1.669	.196
Within Groups	40.739	72	.566		
Total	42.627	74			

This result shows that students who were exposed to the visual joke had the most decrease from test anxiety before the test to test anxiety after the test.

Students were asked to indicate their perception of how much the joke affected their test anxiety: they could choose between 1=never; 2=very little; 3=a little bit; 4=a lot. An independent samples t-test was conducted to see the difference of perception between the group exposed to the visual joke and the group exposed to the written joke. Results showed no significant difference in perception between the two groups, although the mean of the visual group was slightly higher; t (df=49) =.340

Upon observing the test anxiety scores individually, it was found that every single student who was exposed to a joke had lower scores on the Westside Test Anxiety Scale after the joke. This means that the test anxiety level for all students decreased after being exposed to a joke whether visual or written joke.

CHAPTER 5

Discussion

The first purpose of this study was to investigate the impact of humor on test anxiety on Lebanese students of the lower Middle School level (5ème, 7th grade) of a prestigious, private school in Beirut. The second purpose of the study was to analyze the impact of a visual joke vs. a written joke on reducing test anxiety in students. For this reason, students who are enrolled in the three French sections of that level were asked to complete the West Side Test Anxiety Scale both before and after a teacher-made physics test.

Humor and Test Anxiety

Students' stress and tension levels rise highest in testing situations because their future depends to a great extent on how well they perform. The Lebanese system of testing puts a great deal of stress upon the students to do well and there is a lot of competition to get the best results so that one can have access to the best positions. This phenomenon is creating a lot of test anxiety in Lebanese students. Even though this is a major issue, there has been little research done in the field on how to reduce this kind of anxiety in Lebanese students, particularly in Middle and Secondary students who show stress in testing situations; hence the reason for this study.

Some items in the Westside Test Anxiety Scale evaluate incapacity (memory loss and poor cognition processing). Other items on the scale measure worry. A preliminary analysis of responses from a randomized sampling of students from each section reinforced the idea that using mild humor on the cover page of a test could be one of the factors to help lower anxiety levels in students. Comparing the raw scores from the anxiety scale before and after the test of these selected students showed a significant drop

in their perception of anxiety, whether relating to cognition or to worry – some showing a drop of up to 50%. In low-anxious students the difference in raw score responses before and after taking the test was generally negligible.

The analytical results of the correlation between the scores from the Westside Test Anxiety Scale before and after the Physics test showed a somewhat positive relationship between humor and test anxiety in the experiment subjects such that individuals who displayed levels of anxiety experienced slightly lower test anxiety after reading the joke.

The results showed a slight difference in test anxiety between those who were exposed to the visual joke compared to those who were not exposed to a joke before the test. Those exposed to a joke showed slightly lower anxiety in the follow-up scale after the test. These results are consistent with some findings in the literature. In most researches, it was found that humor did not reduce test anxiety in significant levels, but students who were exposed to humor either before or in the test items reported a perception of reduced test anxiety. The study by Berk and Nanda, "A Randomized Trial of Humor Effects on Test Anxiety," on 98 graduate students tested the hypothesis of humor effects on test anxiety to improve test performance; it showed mixed results. The humor in test items had no or little effect on anxiety; the humor in test directions also resulted in no or little effect on anxiety. However, reading a visual or written joke just before taking a test had a slight impact on test anxiety and a positive effect on mental processing; humor might spike students' level of attention, interest, alertness and memory as they begin to answer test questions (Berk & Nanda, 2006). In another study on the effects of incorporating humor in test items by Robert McMorris, Sandra L. Urbach, and Michael C. Connor (1985), students favored the inclusion of humor on tests. They perceived humor to be helpful in reducing anxiety and performing better as they felt

themselves less stressed out. The researchers felt that the inclusion of humor in tests posed "no harm," and students prefer it (Berk & Nanda, 2006). In our days, where learning is often a stressful activity, a good laugh, either in pictorial or verbal form, promotes a positive learning and healthy environment; "laughter is the best medicine". According to researchers at the University of California Irvine, having a good laugh will also boost the immune system and reduce stress. (Bing & Tam, 2003)

Several factors can justify these low-significance results in the current study. Originally, students may not have been exceptionally anxious since the mean of their test anxiety level before the test was already low according to the Westside Test Anxiety scale criteria. The students' reported low level of anxiety on the scale before testing occurred had a great impact on the data used to analyze the results. The difference between the before and after levels of anxiety as reported on the scale is so little that a definitive significance would not show on the analysis results. Another reason may be that the students who were taking a test from this instructor for the first time did not find the test as difficult as they feared.

The researcher reflected on the sample of students that are enrolled in this particular school. In this school, testing is not overly emphasized especially at the Elementary or lower Middle School levels. Students do not experience over testing as in other schools.

Moreover, these students are in family environments and backgrounds where parents have a close relationship with their children and are keen to provide the proper learning facilities for their children's success. This could be a double-edged sword where students could develop test anxiety as a result of the stressful attitude of their parents. However, it might be the reason for the low level of test anxiety that these intervention students felt from the beginning, when they filled the Westside Test Anxiety Scale before

solving their Physics test. It is possible that parents of this school follow up closely on their children and prepare them very well for their studies. Being well prepared for exams can greatly reduce test anxiety. Lack of preparedness can cause anxiety in just about any situation.. The more practice and preparation students work out on their own, the more comfortable students will be during class and during exams (Woods workshop, n.d.).

Moreover, most students in that school are not punished by their parents if they do not do well. Students are not afraid to be confronted with the strict and punitive evaluative measures resulting from failure. Parents and teachers in that school adopt an attitude of constant encouragement with their children and students to keep on trying in spite of their failures.

Another factor could be the teaching methodology practiced in this school; the teachers use a variety of strategies to reach all students according to their needs and type of comprehension. Most of their teachers have well organized lesson plans and work to be sure their students are well prepared for any test. No learning situation is perfect for all students; however these teachers attempt to meet the learning needs of their students which will affect the anxiety level of students in class and before a test.

The low significance in results before and after the Physics test could be the class size. Teachers, who teach for comparatively small groups, have the ability to reach every single student and help him /her reach success. There is no room for a failing student. Every single strategy is tried to reach to a complete success with all students at the end of the year.

Teachers in that school encourage students to work to the best of their abilities. The pressure is not put on them in such a way as to measure their abilities against those of their classmates. Learning is not a competition. Teachers emphasize the fact that learning success is accessible to all students and work to be sure this happens.

Time pressure, which can raise test anxiety in many students, was not a factor during this experiment. The students had plenty of time to complete both scales as well as the test itself.

The research report from McMorris, Boothroyd and Pietrangelo confirm that these limitations may be instrumental in producing positive results from the test anxiety scale when they advance the following idea:

> Our own personal view at this juncture is to encourage the use of humor in tests, especially if instruction has included use of humor, the test has either no time limit or a very generous one, the humor is positive and constructive, the humor is appropriate for the group, test takers come from the same culture as the item writer, and the test developer feels comfortable in using humor (McMorris, et al. 1997, p. 295).

Berk (2000) supports their opinion and stresses the fact that there are no actual guidelines on how humor can be used appropriately in testing which may have a negative effect on the tester's original purpose.

Visual Jokes vs. Written Joke

A preliminary analysis of the raw scores from the random sampling of students who were exposed to humor on the cover page of the exam shows a difference in the perceived anxiety level between those exposed to the visual joke and those exposed to the written joke. The raw scores preliminary analysis and the ANOVA analysis showed that the visual joke had a greater impact on lowering test anxiety than the written joke. The raw score responses of students who were exposed to the visual joke showed a perceived lowering of anxiety of up to 50%. Only one student from the random sampling did not show any significant difference in the before and after responses; this student remained extremely anxious. The raw score responses of students who were exposed to the written

joke showed a lower correlation for reduced test anxiety after the test than before. The student response scores showed around 35% of perceived reduction in anxiety levels.

The analytical results of the correlation between the scores from the Westside Test anxiety Scale before and after the physics test showed that the students who were exposed to the visual joke had lower test anxiety than those who were exposed to the written joke. Results of the ANOVA were coherent with the hypotheses which stated that students who were exposed to the visual joke will have less test anxiety than those exposed to the written joke. However, both were not significant.

The researcher located few significant literature reviews or empirical studies pertaining to the use of visual and textual humor as related to test anxiety. More research has been done on the use of humor and visuals than on humor in the written language. The researcher felt that there may be a differentiation with the ease of comprehension between visual and textual humor. Visual humor is a versatile medium. Adolescents are better able to discern the idea behind a pictorial presentation as compared to a textual version of the same humor, especially when the adolescent is viewing the humor in a language that is not his/her mother tongue. In such a case, the language difficulties may interfere with the comprehension of the written joke as well as cultural ambiguities in the joke. In pictorial humor, cultural ambiguities may be more easily understood since the adolescent is more readily able to figure out the symbolic concepts of the picture. (Stokes, 2002)

At the beginning of the test, the proctoring teacher stated that one of the students mentioned he did not feel the written joke was very funny. Adolescent students at the Middle School level are going through a lot of biological and social changes. They are fast changing physically and their mental capacities are changing as well. Certain notions and concepts are assimilated by the students only in connection with their own level of

maturity. Thus, written humor may challenge the student's capacity for comprehension. One uses different sides of the brain when interpreting a visual joke as compared to a written text of that same joke. In their research on the use of cartoons in math instruction, Khuan Wai Bing and Chua Hong Tam, (2003), advanced the idea that "Visual information in the form of cartoons is usually processed by the right brain which is the holistic, creative, artistic side. On the other hand, the spoken word engages the left side of the listeners' brain. The left brain is analytical, recognizes and interprets words, performs calculations and so on. No matter how interesting and persuasive a lecture is, after awhile, the learners will feel the monotony of the same manner of instruction. By using cartoons, we appeal to the visual, as well as the auditory, sense giving the additional effectiveness through variety and creativity". (Bing & Tam, 2003, p.5)

The use of visuals has a positive impact upon the adolescent's ability to perceive concepts and can enhance learning. During an interview, Burmark (n.d.) stated that visuals are an international universal language that transcends verbal expression especially for students who are learning in a language that is not their mother tongue. The visuals become an important and powerful teaching and learning tool. According to research from 3M Corporation, we process visuals 60,000 times faster than text! (This is because the visual channel in the brain manipulates image elements simultaneously, while the linguistic channel functions in a linear, sequential manner.) Osborne, (1999) feels that visual representations are effective substitutes for the written word. We live in a highly visual world. Students find it easier to "read" a picture since they are attracted to cartoons from an early age and have had experience figuring out the image. Some students may not be attentive to written humor or understand the humorous message due to a lack of language proficiency, especially those who are learning it as a second

language. This can be observed from puzzling facial expressions, gestures or requests for further explanation of the meaning in the written joke.

Mental interactivity with both television and computers also reinforce this ability to interpret visuals. To the child, "a picture speaks louder than words and has more impact than just reading the text" (Bing & Tam 2003). This is why teachers use visuals to overcome certain teaching/learning problems for their students. Using a cartoon is one way of introducing a concept in a non-threatening manner.

Bing and Tam (2003) concluded that the use of visuals in a classroom situation benefits learning since they help to attract attention and interest, promote understanding, motivate learning and enhance creativity.

The results from the present study, although insignificant, show that the use of visual humor has an impact to reduce anxiety because of the adolescent's previous experience with visuals. They are more readily able to interpret visual humor as compared to written humor and are more familiar, thus comfortable with learning from a visual source as compared to a purely textual one.

Conclusion

The present study investigated the impact of humor on test anxiety in Middle School students in a prestigious, private school in Beirut, Lebanon, taking into consideration the age level of the students, the kind of joke (i.e. visual cartoon or written joke), and the type of exam (i.e. Physics test) as well as the environment of these students (i.e. a private school). Previous studies have investigated the methods to alleviate test anxiety such as relaxation methods, visual imagery, humor in test items, humor in directions, but all of the subjects used in these experiments were mainly graduate students. The present study examined the impact of humor on test anxiety on a sample of

Middle School students in a prestigious, private school enrolled in the French Program. The study also aimed to investigate the effect of visual humor as compared to written humor in a Physics test among that same sample.

Several researchers have explored the assumption that humor could help reduce test anxiety with mixed results. The incorporation of humor in a testing situation may have both positive and negative effects depending on how inclined the student is towards test anxiety. If a child is very prone towards anxiety, no matter how much humor is used to help reduce his stress levels, it will not have much of an impact. It may even backfire and make the child more anxious, especially if he does not "get" the joke (Hedl, 1978). The use of humor might help the student to detach himself from the stressful test situation, thus reducing the feelings of anxiety. Torok, McMorris and Lin (2004) reported that using visuals in tests could change the students' perception of test anxiety but they have no significant effect upon the test scores.

Looking at the use of visuals vs. only text in the teaching/learning situations, Bing and Tam (2003) stated that teachers use visuals to overcome certain teaching/learning problems for their students. Using a cartoon is one way of introducing a concept in a non-threatening manner. They also concluded that using humor on the cover of the test booklet or in the test itself may depress anxiety levels and help to reduce blanking out and retrieval processing failure, thus slightly reducing the stress that affects test performance.

The results of this study showed that humor does not significantly reduce test anxiety; however, all students declared having their anxiety reduced after the Physics test and completing the scale. Moreover, the present study reached the conclusion that a visual joke has more of an impact on test anxiety than when students read the textual

joke. This may be due to the fact that "reading" a visual is more attractive to the students than attempting to decipher the linear phrasing of a joke written only in words.

The time of day when the test was administered may have played a role in the results of the experiment. There are times of the day when the students are more tired and are more anxious and stressed.

Another delimitation is that this experiment was carried out with a particular population of Middle School students attending a private school. The results can be neither applied nor generalized since this class or grade level is not representative of the whole population of Lebanese students.

Since the students were asked to write their names on the test papers and the scales, the concept of anonymity was compromised and may have affected the results. Students at this age like to make themselves look good to authority figures (the physics teacher and the researcher whom they knew). It is possible that the student did not respond in a completely honest manner concerning his/her level of test anxiety.

For future studies, the researcher suggests conducting the experiment in a school where test anxiety and the amount of stress exerted on students to perform well are very prevalent as well as where students may not receive support from parents, teachers or their learning environment.

Also another suggestion would be to experiment with the same sampling of students several times; once with no joke included in the test packet, once with a written joke included in the test packet and once with the visual version of the same joke included in the test packet. The joke used should be tested on a group of similar age and class level to determine how funny it is perceived by this group of adolescents. There may be differences in the test subjects' sense of humor or ability to comprehend a written text. The data gathered from several testing experiments with the same subjects may

better inform the experiment results leading to more reliability and increased differences in the results of the scale.

A major suggestion is to experiment with another age level where test anxiety is more prevalent. This level may be at the Grade 9, Brevet class where students are asked to present official government exams and the pressure to do well is increased.

For an educator, if the learning process can be made more fun and less stressful, then a valuable service has been performed to our students who are the future of this country and the world. It is the hope and desire of the author that all teachers and educators explore the use of humor in the classroom and on assessment for no other reason than to make learning enjoyable and less stressful for their students.

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APPENDIX A

Westside Test Anxiety Scale

Rate how true each of the following is of you, from extremely or always true, to not at all or never true. Use the following 5 point scale. Circle your answers:

5	4	3	2	1
extremely always true	highly usually true	moderately sometimes true	slightly seldom true	not at all never true

__ 1) The closer I am to a major exam, the harder it is for me to concentrate on the material.
5 4 3 2 1

__ 2) When I study for my exams, I worry that I will not remember the material on the exam.
5 4 3 2 1

__ 3) During important exams, I think that I am doing awful or that I may fail.
5 4 3 2 1

__ 4) I lose focus on important exams, and I cannot remember material that I knew before the exam.
5 4 3 2 1

__ 5) I finally remember the answer to exam questions after the exam is already over.
5 4 3 2 1

__ 6) I worry so much before a major exam that I am too worn out to do my best on the exam.
5 4 3 2 1

__ 7) I feel out of sorts or not really myself when I take important exams.
5 4 3 2 1

__ 8) I find that my mind sometimes wanders when I am taking important exams.
5 4 3 2 1

__ 9) After an exam, I worry about whether I did well enough.
5 4 3 2 1

__ 10) I struggle with written assignments, or avoid doing them, because I feel that whatever I do will not be good enough. I want it to be perfect.
5 4 3 2 1

_____ Sum of the 10 questions

< _____ > Divide the sum by 10. This is your Test Anxiety score.

Name _____ phone _____ email _____

School _____

What does your score mean?

< _____ > Test Anxiety score (from 10 item scale).

Interpreting your test anxiety scores:

1.0—1.9 Comfortably low test anxiety

2.0—2.5 Normal or average test anxiety

2.5—2.9 High normal test anxiety

3.0—3.4 Moderately high (some items rated 4=high)

3.5—3.9 High test anxiety (half or more of the items rated 4=high)

4.0—5.0 Extremely high anxiety (items rated 4=high and 5=extreme)

Rationale.

The scale is constructed to measure anxiety impairments, with most items asking directly about performance impairment or about worrying, which interferes with concentration. Simple indications of physiological stress are found to be relatively weak indicators of performance impairments.

Incapacity (memory loss and poor cognitive processing) — 6 Items #1, 4, 5, 6, 8 & 10

Worry (catastrophizing) — 4 Items #2, 3, 7, 9

Physiological symptoms — no items.

Recommendations.

We have found that students who score at least 3.0 or more on our scale (moderately high anxiety) tend to benefit from anxiety reduction training, experiencing lower anxiety on tests and achieving higher grades.

See: www.peacewithmyself.com for our test anxiety reduction information and CD.

www.peacewithmyself.com/
www@amtaa.org/westsidescale.html
865 690-0962 x104

Accessed June 11, 2010 at
http://clcpages.clcillinois.edu/home/cou052/TAMaterials/Westside%20Test%20Anxiety%20Scale.doc

APPENDIX B

The Westside Test Anxiety Scale translated into French

Version 1: Administered to all three sections at the beginning of the test session.

Classe/Section : ----------

Indique combien chaque phrase représente ce que tu ressens de **TOUJOURS VRAI (5) jusqu'à PAS DU TOUT VRAI (1)**.Entoure la réponse correcte.

TOUJOURS VRAI	LA PLUPART DU TEMPS VRAI	PLUS OU MOINS VRAI	RAREMENT VRAI	JAMAIS / PAS DU TOUT VRAI
5	4	3	2	1

- Le plus je me rapproche d'un test important, le plus je trouve qu'il m'est difficile de me concentrer sur ce que j'ai à étudier.
5 4 3 2 1

- En étudiant pour mes examens, je m'inquiète que je ne pourrais me rappeler ce que j'ai étudié pour l'examen.
5 4 3 2 1

- En faisant des tests importants, je pense que je réponds terriblement mal ou que je pourrais échouer.
5 4 3 2 1

- En faisant des tests importants, je perds toute concentration et je ne peux me rappeler ce que j'avais étudié avant l'examen.
5 4 3 2 1

- Quand le test est terminé, je me souviens alors des réponses aux questions de l'examen.
5 4 3 2 1

- Je m'inquiète tellement avant un examen important que je suis déjà très fatigué(e) et je ne peux faire de mon mieux à mon test.
5 4 3 2 1

- Je ne me sens pas bien à l'aise quand je fais des examens importants.
5 4 3 2 1

- Je trouve que je suis distrait(e) en faisant un test important.
5 4 3 2 1

- Après un examen, je m'inquiète si j'ai assez bien fait.
5 4 3 2 1

- J'ai beaucoup de difficultés (je lutte) avec mes devoirs écrits ou j'évite de les faire car je sens que tout ce que je fais n'est pas assez bon. Je veux que tout soit parfait.
5 4 3 2 1

Version 2: Administered to the groups who received the visual and the written joke after the physics test was completed.

Nom : ----------

Classe/Section : ----------

Indique combien chaque phrase représente ce que tu ressens de **TOUJOURS VRAI (5) jusqu'à PAS DU TOUT VRAI (1)**.Entoure la réponse correcte.

TOUJOURS VRAI	**LA PLUPART DU TEMPS** VRAI	**PLUS OU MOINS** VRAI	**RAREMENT** VRAI	**JAMAIS / PAS DU TOUT** VRAI
5	4	3	2	1

- En faisant ce test important, je pense que j'ai terriblement mal répondu et que je pourrais échouer.
5 4 3 2 1

- En faisant ce test important, j'ai perdu toute concentration et je n'ai pu me rappeler ce que j'avais étudié avant l'examen.
5 4 3 2 1

- Quand le test fut terminé, je me suis souvenu alors des réponses aux questions de l'examen.
5 4 3 2 1

- Je me suis tellement inquiété(e)avant cet examen important que j'étais déjà très fatigué(e) et je n'ai pas pu faire de mon mieux à mon test.
5 4 3 2 1

- Je ne me suis pas senti(e) bien à l'aise en faisant cet examen important.
5 4 3 2 1

- Je trouve que j'étais distrait(e) en faisant ce test important.
5 4 3 2 1

- Après cet examen, je m'inquiète si j'ai assez bien fait.
5 4 3 2 1

- Je sens que tout ce que je fais n'est pas assez bon. Je veux que tout soit parfait.
5 4 3 2 1

Est-ce que le fait d'avoir lu cette blague sur la page-couverture de ton examen t'a relaxé(e) avant de commencer ton examen?

BEAUCOUP UN PEU TRES PEU PAS DU TOUT

Version 3 : Administered after the physics test was completed to the test group who did not receive a joke with their test packet.

Nom : ----------

Classe/Section : ----------

Indique combien chaque phrase représente ce que tu ressens de **TOUJOURS VRAI (5) jusqu'à PAS DU TOUT VRAI (1)**.Entoure la réponse correcte.

TOUJOURS VRAI	**LA PLUPART DU TEMPS** VRAI	**PLUS OU MOINS** VRAI	**RAREMENT** VRAI	**JAMAIS / PAS DU TOUT** VRAI
5	4	3	2	1

- En faisant ce test important, je pense que j'ai terriblement mal répondu et que je pourrais échouer.
5 4 3 2 1

- En faisant ce test important, j'ai perdu toute concentration et je n'ai pu me rappeler ce que j'avais étudié avant l'examen.
5 4 3 2 1

- Quand le test fut terminé, je me suis souvenu alors des réponses aux questions de l'examen.
5 4 3 2 1

- Je me suis tellement inquiété(e)avant cet examen important que j'étais déjà très fatigué(e) et je n'ai pas pu faire de mon mieux à mon test.
5 4 3 2 1

- Je ne me suis pas senti(e) bien à l'aise en faisant cet examen important.
5 4 3 2 1

- Je trouve que j'étais distrait(e) en faisant ce test important.
5 4 3 2 1

- Après cet examen, je m'inquiète si j'ai assez bien fait.
5 4 3 2 1

- Je sens que tout ce que je fais n'est pas assez bon. Je veux que tout soit parfait.
5 4 3 2 1

APPENDIX C

The teacher-made physics test.

Nom : _____
Classe : 5ème _____

Lundi 18 janvier 2009
Durée : 30 minutes

Examen de physique
Les techniques de séparation des mélanges homogènes et hétérogènes

---

1. Indiquez si les phrases suivantes sont vraies ou fausses. Corrigez celles qui sont fausses. (10pts)

- Quand on filtre l'eau salée : le sel reste dans le papier filtre et l'eau descend.

- Deux liquides formant un mélange homogène ne peuvent pas être séparé par décantation.

- Pour séparer deux liquides miscibles entre eux (mélange homogène) on peut utiliser la distillation,

- Dans un montage de distillation, la vapeur d'eau se forme par évaporation.

- Le substrat est le reste de la distillation.

2. Indiquez dans chaque cas de quelle technique de séparation s'agit-il : décantation, distillation ou filtration? (Sans justifier votre choix) (10pts)

- L'eau de pluie s'infiltre dans le sous-sol pour former l'eau souterraine.

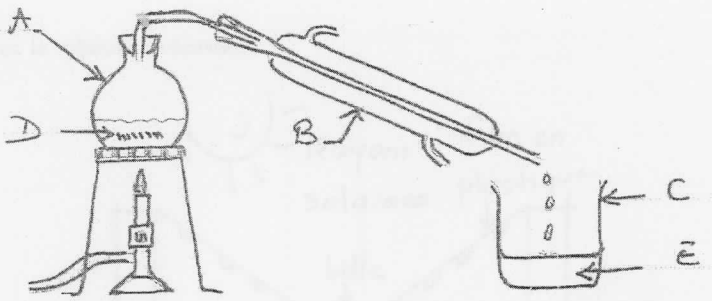
- Dans les usines d'épuration de l'eau usée, l'eau boueuse est mise dans de grands bassins, au repos, ce qui permet d'obtenir à la fin deux phases.

- Pour rendre l'eau des rivières potable, on la fait passer par des grilles pour éliminer les gros déchets.

- On fait bouillir un mélange pour récupérer l'un d'eux après condensation.

- En chauffant un mélange d'eau et de fleur on peut récupérer l'essence du parfum.

3. Observez le schéma ci-dessous :



(a) Annotez le schéma ci-dessus. (5pts)

(b) Le liquide dans le bécher est-il nécessairement pur ? Expliquez. (2pts)

(c) Quel est le rôle de l'élément B du montage ? (2pts)

(d) Donnez un titre à ce schéma. (2pts)

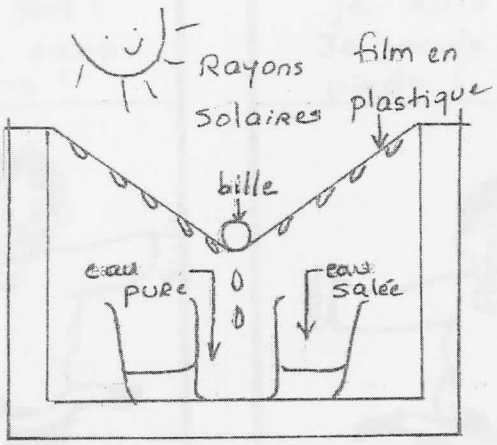
(e) Cette technique de séparation permet de séparer les constituants d'un mélange _____ (2pts)

4. Travail de laboratoire :

- Au laboratoire vous avez séparé les constituants d'un mélange formé de sel, d'eau et de beaucoup de sable. Pourquoi est-il préférable de faire une décantation avant de filtrer le mélange ? Expliquez. (4pts)

- Proposez une mesure de sécurité à adopter en travaillant les techniques de séparation au laboratoire. (2pts)

5. Observez le schéma ci-dessous :



(a) L'eau salée est-elle un mélange homogène ou hétérogène ? Justifiez. (3pts)

(b) Deux changements d'état ont lieu dans ce schéma. Nommez chacun des changements d'état et justifiez en relevant l'exemple du schéma. (6pts)

(c) Quel est le rôle de la bille ? (2pts)

BON TRAVAIL !

APPENDIX D

The joke in visual and written form.

Ecoutez celle-ci

La maman de Toto lui a acheté une belle bicyclette toute neuve. Il passe et repasse devant elle sur son vélo.

– Regarde comme je suis fort, maman ! Je roule sans les mains....

Puis au bout d'un moment :

– Regarde maman ! Sans les pieds !

Puis enfin d'une voix bizarre :

– Regarde maman ! Sans les dents !!