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# Associations of Test Anxiety and Selected Variables on the Performance of Adult and Technical Education and Psychology Students

Claudia Coleman

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**Associations of Test Anxiety and Selected Variables on the Performance of  
Adult and Technical Education and Psychology Students**

**By**

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Requirements for the degree of  
Masters of Science  
Adult and Technical Education**

**Marshall University  
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## **ABSTRACT**

### **Associations of Test Anxiety and Selected Variables on the Performance of Adult and Technical Education and Psychology Students**

**By Claudia Coleman**

The ADIQ was used to explore what, if any, attachment and clinical issues might be related to test anxiety. Furthermore, these variables were compared with age and size of city in which one was raised. The participants were 41 college students from a university located in Appalachia. It was found that a.) Ambivalent attachment patterns with the father had a significant negative effect on test anxiety b.) Age or gender was not significantly related to test anxiety. c.) Size of city in which a student was raised in resulted in no significant effect. d.) Negative attachment with a significant other or partner demonstrated some significance on influencing test anxiety. f.) Secure attachment with the father demonstrated a negative correlation with test anxiety, and g.) Mistrust and control variables also demonstrated a relationship to test anxiety.

The Test Anxiety Inventory (TAI) was used to determine the levels of test anxiety in each of the 41 student participants, determining their level of test anxiety, thus reinforcing results from the ADIQ, where those students with high levels of anxiety found on the TAI also fell into the negative attachment categories of the ADIQ.

## **DEDICATION**

This author wishes to dedicate this study in memory of my father, Kelly Davidson, a graduate of Marshall College.

## **ACKNOWLEDGMENTS**

The author wishes to acknowledge the many people who made this study possible. First, I want to acknowledge all the educators in the Adult and Technical Education Department, and most specifically Dr. Howard Gordon, my advisor, for his continued support throughout this study. A special thanks to Dr. Leonard Deutsch, Dean of the Graduate College, for his encouragement in the tough times of my college career. Lastly, I would like to acknowledge the many people who made the conclusion of my Graduate career possible including Dr. Stuart Thomas, Dr. Marc Lindberg, Dr. Marianna Footo-Linz, Dr. Helen Linkey, Dr. John Vielkind, and Dr. Grace Davis.

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## **CHAPTER I**

### **Introduction**

Education can be impeded by a student's inability to demonstrate proficiency through testing in the classroom. A student may know the material; however, the potential to prove this understanding or knowledge through testing may be limited because of test anxiety. Test anxiety amongst students is demonstrated empirically with research that correlates with competency (Musch & Bröder, 1999). Although some anxiety before test taking is normal, and even necessary to do well, test anxious student's experience crippling anxiety that can limit their ability to perform to their real level of proficiency (see reviews and meta-analysis in Hembree, 1988; Seipp, 1991).

Performance on tests is greatly influenced by levels of anxiety during test taking situations (Austin, Partridge, Bitner, & Wadlington, 1995). Methods to reduce test anxiety have correlated with reduced anxiety by interventions easily carried out in the classroom (Institute of Heartmath, 2003; Enright & Algozzine, 1992). These interventions have demonstrated significant benefits on test anxious students (Enright, Beattie, & Algozzine, 1992).

Early intervention of test anxiety would enable students experiencing test anxiety the ability to demonstrate proficiency through test taking situations (Spielberger & P.R. Vagg (Eds.). Whereas before the interventions, test anxious students were unable to demonstrate their proficiency in some test taking situations, after interventions students were better able to demonstrate proficiency through test taking situations ( Austin, Bitner,

& Wadlington, 1995). The main quandary encountered by many students in their academic careers is the dilemma of test anxiety (Zbornik, 2003), interfering with educational potential by limiting the results in some test taking situations. That is, even though students may have proficiency in a subject, they are unable to demonstrate their knowledge in a testing situation because of crippling anxiety (King & Bennie, 2000).

Attachment is the ability to bond, and the feeling of safety and security learned from one's primary caregiver early in life (Ainsworth, 1969, 2003). Psychopathology developed later in life is determined empirically linked to a disruption of the attachment relationship, or a negative attachment relationship with the primary caregiver in the early formative years (Bowlby & Ainsworth, 1969). Attachment research started decades ago, and is empirically linked to many psychopathologies and other roadblocks to success in an individual's life (Crowell, Treboux, 1995).

Many theorists have hypothesized that these early attachment relationships affect a person's overall ability to reach competency and/or proficiency (Gini, 2002; Fass & Tubman, 2002). A correlation has been empirically determined to exist between test anxiety and attachment. Attachment to the primary caregiver, as an infant, through adulthood, sets up the groundwork for/against success in social and emotional functioning in many areas in one's life. (Bowlby & Ainsworth, 1969; Ainsworth, 2003).

### Statement of the Problem

Students in Adult and Technical Education and other areas of study in college may not reach potential competency levels due to increased anxiety before, and during, testing situations. Test anxious students who know the information necessary for a test, but who

“freeze up” during test taking situations, will not be able to recall knowledge required to successfully complete an examination (Musch & Bröder 1999).

Educators have found that test anxiety affects a student’s ability to reach potential proficiency (Lee, 1999). Although test anxious students may have the ability, and are able to demonstrate this outside the testing environment, they are not able to prove this through normal testing situations (ChuMin & Maters, 2002). As high stakes testing determine future life goals, it is important that career and technical educators are enabling their students to reach full potentials by ensuring roadblocks, such as test anxiety, are not causing their students to stumble on the path to success (Dunne, 2000).

With the enactment of the “No Child Left Behind Act, (2002)” the realization that spending more money does not necessarily mean a higher level of proficiency for students, teachers and educators across the spectrum are searching for new ways to enable students to prove proficiency through testing situations. Test anxiety is correlated to lower scores (and GPA), as students encountering this problem may be unable to represent their competency through normal test situations (Chu & Maters, 2002).

### Purpose and Objectives

The primary objective of this study was to determine if a correlation between attachment and test anxiety exists. A secondary objective was to establish if younger students experience higher levels of test anxiety than older students and if there is a significant relationship between age and test anxiety. Academic levels ranged from freshman to graduate student, and ages ranged from 17 yrs to 60 yrs of age (see table 4.1)

This study concentrated on negative insecure attachment styles and age along with size of city in which an individual was raised, and how these variables may affect test anxiety, determining if some variability in test anxiety can be related to attachment levels/styles and/or age.

This research examined if the variables attachment and age could potentially create test anxiety levels to increase or decrease. One possible variable that could cause variance in the variable test anxiety is the early attachment relationships experienced in an individual's life with their primary caregiver(s) (Gini, 2002; Mikulincer, & Florian, (1998). Primary caregivers are crucial entities in an individual's life, which sets the foundation for many relationships and methods of interaction in one's life for an indefinite period, and even possibly for the rest of an individual's life (Bowlby, 1969). Other variables accounted for in this study was the size of city in which test anxious students grew up in; many of the students in this study are from the Appalachian area, which could prove to have a significant effect. Although other variables were accounted for, and presented through the ADIQ, this study focused on the variables of attachment, age, and size of city. Other variables were included in the result sections for descriptive purposes.

### Significance of Study

High stakes testing is becoming most predominant in the twenty-first century (Dunne, 2000), which is putting more pressure than ever on the test taker. With the enactment of the President's "No Child Left Behind Act" in 2002, it is more important than ever to establish not only the potential for test taking competence, but also to ensure competence by recognizing issues that may hinder demonstration of a student's competence such as

through test anxiety in testing situations. (Schutz, Davis, & Schwanenflugel, 2002). At a time when society demands high stakes test scores to evaluate the selection of students, shouldn't it be time to evaluate if test takers are able to successfully prove competency through test taking?

It is necessary for educators to identify the level of test anxiety in students, thereby enabling them to provide interventions that will lead the student to competency and success in their college career and beyond. If we could better understand the precursors of test anxiety, then we might be better able to deal with that obstacle, thereby helping more students achieve their academic goals.

#### Assumptions

This study assumes that adults develop anxiety-relief-strategies as they age. In addition, negative attachment (i.e.: avoidant or ambivalent) patterns assumed to have a significant relationship with test anxiety. That is, those who are found to have negative attachment classifications (ambivalent or avoidant) will have the strongest relationship with test anxiety.

#### Limitations of Study

As with any correlational study, this study will not be able to determine cause and effect relationships. Furthermore, this study will not be able to say that if the variables relating to test anxiety were dealt with in an intervention program, test anxiety would be eliminated. This would have to be dealt with in further studies.

Attachment research is limited by the inability to have subjects randomly selected (Waters, Elliott, Corcoran, & Treboux, 2002). However, researchers use both content and context to measure this complex variable and related subscales.

Cronbach described the high merits of the experimental method is to bring variables into control. The correlational method of experimental testing needs to incorporate as many variables as possible to determine “truer out-come variables” (Waters, Elliott, Corcoran, & Treboux, 2002). In simpler terms, as variables are added to a matrix of dependent variables relating to any independent variable, outcomes on variance will change determinant on the added variables and their relationships to other variables in the matrix of inter-related dependent variables. This study includes measures of variables that will not be discussed in the scope of this study (see Table 4.3), and provides accountability and description for those variables. However, this study’s main focus is attachment subscales, age, and size of city in which and individual grew up in and their relationships with test anxiety. Disseminating differences in subject test anxiety is not proposed in this study. In other words, although many theorists claim differing test anxiety levels, for different subject areas (i.e.: Statistics, Math, English, etc...), and variances in anxiety itself (State vs. Trait anxiety etc.); these differences will not be examined. This paper will also not include those students that are test anxious because of lack of preparation.

Because of the limited size of participants in this study, results should only be generalized to the students in this study. Although there were some interesting statistical results within this study, further research, with larger samples of participants are needed to generalize empirically to a larger population.

#### Definition of Terms

1. **Test Anxiety** – A sometimes-debilitating experience a student may get before or during a test. Although test anxiety can be separated into specific groups such

math anxiety or reading anxiety, for the benefit of time, this study focused on test anxiety inclusive of all subgroups of test anxiety.

2. **Adult and Technical Education** – “The Master of Science (M.S.), the Education Specialist (Ed.S.), and the Community and Technical Studies (CTCS) degrees in Adult and Technical Education are field-based programs intended to serve persons who are employed on a full-time basis and who are geographically dispersed. The program is designed for persons who serve in an instructional, training, leadership, or professional role in human service areas of business, industry, government, community agencies, and education.” – (taken from <http://www.marshall.edu/coes/ate>)
3. **Primary Care Giver**- This is an individual, usually mother or father, that provides basic needs for the individual at birth that meets the physical and emotional needs of the infant. The relationship with the primary care giver(s) is simple, but a biologically type goal to attach and have a close proximity to this individual. These set up primary behaviors which include approach behavior (e.g., reaching, clinging, following, and signaling behaviors (e.g., crying, babbling, calling). These behaviors predominate and supersede any other behavioral systems, making this relationship the most important foundation for future relationships with any other person in one’s life. (Bowlby, 1969, 1988; Ainsworth & Bowlby, 1969; Ainsworth 2003).
4. **Attachment Relationship** - A relationship between an individual and their primary caretaker. These relationships start early in life with a primary caregiver, but innovative empirical studies reveal attachment relationships correlate with

student's level of competency as indicated by GPA and other inventories. (Gini, 2002).

5. **No Child Left Behind Act** – A 2002 act passed in the House of Representatives that redefines the federal role in K-12 education and attempts to close the achievement gap amongst children (Schutz, Davis, & Schwanenflugel, 2002). This act calls for stronger accountability, results, increased continuity, and stronger community controls in education. This act gives expanded options for parents, and stresses teaching techniques that have been demonstrated to succeed. Accountability is demonstrated by relating differing states GPA and other inventory scores of students in that state and comparing these representations of scholastic success with a predetermined scale.

## CHAPTER II

### Review of Literature

#### Test Anxiety

Test anxiety can cause debilitating reactions to simple test experiences (Anderson, 1993). Test anxious students find difficulties can arise either by less thorough acquisition of knowledge and/or a lack of basic domain-specific skills, or by obstruction in the retrieval of prior learning, or by some mixture of these factors (Musch & Bröder, 1999). Several factors are known to “load” high on test anxiety: worry, emotionality, and lack of self-confidence. Test anxious students are found to perform better under perceived less stressful situations.

Since early research on the concept of text anxiety, researchers have recognized the negative correlation with potential scholastic success. Educators have been aware of test anxiety, and the subsequent debilitating effects, for at least three decades; however, methods to eliminate test anxiety are not used in the average classroom.

Test anxiety can reduce the efficiency of performance resulting in lowered scores on test by blocking information that is known to the student before the testing situation. Theorists (Lee, 1999; Eysenck, 1985) have empirically proven that working memory is affected negatively, resulting in a lessened ability to use working memory. Research suggests test anxiety can interfere with concentration and lead to procrastination during preparations for testing, thus making potential testing success more difficult. A student

who suffers from test anxiety can exhibit a variety of symptoms that result from the inhibition of their intellectual curiosity, aggression, or autonomy. According to Schutz, Davis, & Schwanenflugel (2002), there are great differences in emotion regulation between those individuals that rate low, medium, and high-on test anxiety; and how these individuals “map emotions” during stressful situations. This mapping may hinder the use of working memory under stress and anxiety as the body and mind go into automatic protective mode when anxiety levels rise, limiting the mind’s ability to use other functions (Schutz, Davis, & Schwanenflugel, 2002). The focus of the test anxious individual changes when stress levels rise; create difficulties staying on task or even focusing in a testing situation.

As stress and anxiety levels rise for test anxious students, the focus has a tendency to be on self, instead of the task at hand-the test. According to Schutz, Davis, & Schwanenflugel, (2002), an over awareness can result in a viscous cycle in the anxious testing situation, limiting the individual’s ability to focus or to use the necessary energy needed for the test. An over awareness of test anxious student’s progress in the test situation, subsequently causes decreased performance on the test itself.

As test anxiety increases, resources necessary to focus on the test come into competition, making distractions that could make test taking much more difficult by increasing test anxiety. Some social scientists are questioning if this problem is to be found at the information processing level (Cassedy, 2001). Research is currently being presented that there are no great differences in significance between if a student takes the test in the classroom or the take-home-type test (Cassedy, 2001) This suggests that text

anxiety could result from the process of evaluation itself, no matter where or how the testing situation is implemented.

Although there may be differing theories of how test anxiety is developed, maintained, and treated, the major flaw is that methods to eliminate test anxiety in the classroom are not currently being implemented in the typical classroom.

### Attachment

Attachment is found to be associated to many areas in an individual's life, including test anxiety, and many behaviors may be linked significantly to the conduct of the attachment history of the individual. Attachment patterns have been labeled either secure or insecure attachment patterns. (Bowlby, 1969; Ainsworth, Blehar, Waters, & Wall, 1978; Ainsworth, 2003). These attachment patterns are developed as the relationship with the primary care-giver develops over the early childhood years. The primary caregiver is innately a "secure base" for the infant through early adulthood (Ainsworth, 1969) allowing the child to feel safe even when the child ventures out and investigates the world around them. If a child's secure base is disturbed, non-existent, or dysfunctional, psychopathology could occur (Ainsworth, 2000, Bowlby, 1968, 1999, 2003), which could include test anxiety (Miller & Beinstein, 1999). According to attachment theory, a child uses his or her internal working models to interpret the world around them or to predict events and to understand certain outcomes to challenging situations, and in learning how to effectively deal with emotions such as stress (Cassidy & Shaver, 1999). Children learn to deal with their emotions by interacting with their primary caregiver and developing an attachment relationship with that primary caregiver.

Many theorists have hypothesized, and empirically proven, that these earliest attachment relationships have the greatest impact on future mental health and possible psychopathology of children up to adulthood. These relationships first became known and researched when John Bowlby (1969, 1988, 2003) started his research on these attachment relationships, and the effects of these relationships on future relationships and other behavioral modes (Greenberg, 1990). Theorists consider these attachment relationships to set up developmental “pathways” that set the foundations for future relationships. That is, there are three main levels of attachment: secure, ambivalent and avoidant, with the latter two being the focus of this paper. Mikulincer, & Florian, (1998) demonstrated that these two negative attachment manifestations, ambivalent and avoidant, both are in reality “behavior problems” which are manifested in distinctly different but expected ways. That is, avoidant rather than ambivalent attached individuals would demonstrate behaviors that are more disruptive, whereas the ambivalent individual would have a tendency to internalizing difficulties (Rubin, Hyumel, Mills, & Rose-Krasnor, 1991). These specific pathways, set up at the earliest times in one’s life, could lead to behavioral interactions and emotional control (or lack of) in many areas of one’s life, including test-taking situations.

Although proving attachment effects empirically has been difficult, social scientists have demonstrated empirically that attachment correlates with scholastic success and eventual psychosocial competency (Fass & Tubman, 2002), and that controlling emotion is imperative to success. According to attachment theory (Ainsworth & Bowlby, 1969, Bowlby, 1973, 1988), attachment orientations can often change as one reaches adulthood, however, residuals in behavior patterns last longer into adulthood.

The types of attachment relationship one experiences in early childhood is said to set the precedence of many relationships for an individual in the future (Ainsworth, 2003). Some theorists promote the view that attachment will create a type of inner-working model that one refers to in stress (Bowlby, 1969, 1988; Ainsworth & Bowlby, 1969, 2003). These working models are categorized into attachment manifestations or schemas, delineated as secure or insecure attachments. If one's relationship with a primary caregiver is avoidant, that is, if the developing child avoids contact during stress with his/her primary caregiver, because of patterns the primary care-giver has established, this individual could demonstrate this type of behavior with other relationships and emotions that are encountered in the future. (Ainsworth, 1968; Ainsworth & Bowlby, 1969). An avoidantly attached individual's coping mechanism for stress is to avoid the situation, at extreme costs, during situations of stress. Avoidant, rather than ambivalently attached individuals, have been demonstrated to exhibit a more aggressive manifestation of behavior and will act out inappropriately during times of stress.

Similarly, if a person were to have an ambivalent relationship with the primary caregiver, an individual may develop an "inner working model" that is ambivalent, therefore repeating this intrinsic ambivalence coping style in other areas of their lives (Ainsworth, 2003). Researchers have been aware of the influences of attachment for approximately three decades, however attachment is recently been found to have broad influence over many major life situations than once thought. These attachment schemas are empirically linked to negative behaviors in stressful situations.

Lindberg and Thomas (1998) created an extensive research platform that incorporated approximately 2,000 participants, accounting for a multitude of variables that influence attachment and created a scale to research these variables. Negative attachment appears to correlate with many negative outcomes in an individual's life. According to Keily & Sceery (nd), sufficient emotional nurturance in development could generate unconscious "rules" that allow highly secure attached individuals to become and sustain awareness of their feelings when distressed and to develop the ability to cope by actively seeking support from others. Sustained rejection and hostility, in contrast, could also create *rules* that motivate highly avoidant persons to remain essentially unaware of distress and to withdraw from potential support providers in order to avoid further perceived distress. These attachment styles could be carried forth through childhood and into adulthood, in many areas of one's life (Ainsworth, 1968; Bowlby, 1999).

Ambivalent/anxious and avoidant attachments are negative attachment schemas that were specifically addressed in this study to determine the potential relationship with test anxiety. An avoidant attachment style represents the degree to which individuals desire limited intimacy with those around them, and usually strive to remain psychologically and emotionally independent from relationships. This type of attachment residualizes into anxiety if these intimacy boundaries are crossed, interrupting the comfort zone. Avoidant persons have negative and cynical expectations (Waters, 1987), resulting in the possibility of avoiding situations of stress such as test situations, and events surrounding the test (Miller & Beinstein, 1999).

Ambivalent attachment styles promote an attitude of wariness to potential support contributors (Waters, 1987). Ambivalently attached individuals are associated with

higher incidence of hyper-vigilance and overly aware sense of self. This is one of the reported emotions of an anxious test taker. These ambivalent people have a tendency to obsessively focus on the source of stress situations (such as testing), overloading resources, making it difficult to recall already-learned information.

These negative attachment styles have empirically proven to promote negative relationships in many areas of an individual's life. Anxious and ambivalent attachment relationships may limit social flexibility by interfering with information processing in complex social and stressful situations, (Miller, Beinstein, 1999; Oberlin, & Coll, 1996), this inflexibility could translate to some of the variance in test anxiety. This interference could relate to information retrieval during test taking situations, when anxiety levels increase, making recuperation of known information difficult, as competition for resources increase (Miller & Beinstein, 1999).

#### Age versus Test Anxiety

Age is related to better knowledge as information is assimilated, and one's knowledge base increases, enabling salience of better coping strategies during high stress moments such as high stakes testing. Research defining at what age test anxiety would be most prominent, Neber & Shommer-Aikins (2002), found that test anxiety was more predominant in high school students, than in their elementary school counterparts. This may indicate that increased age does not necessarily mean better coping mechanisms for test anxiety

## CHAPTER III

### Methods

This study presents correlational research and data directly included from previous research on attachment. Participants completed instruments on both test anxiety and attachment.

#### Population and Sample

A judgment sampling technique was used to select participants from Marshall University students ( $N = 41$ ). Judgment sampling is a procedure in which a researcher makes a judgment that a convenience sample (e.g., volunteers) might be similar enough to a random sample that it could make sense to use statistical procedures designed for use on random samples. Selecting a sample according to the researcher's judgment of its representativeness is recommended only when a probability sample is impossible or highly impractical (Vogt, 1999). Since students experience test anxiety in the classroom, this study used students as participants attending classes at Marshall University.

Participants ranged from freshman to graduate class level students enrolled in Adult and Technical Education and Psychology programs.

There were more Adult and Technical Education participants, however, since some data had to be thrown out for ineligibility under data standards for the regression model., the exact number of Adult and Technical Education Students versus Psychology students is not known. Their ages and other demographic information can be seen in Table 4.1.

## Procedures

Participants were administered both the Attachment and Clinical Issues Questionnaire (ADIQ) and the Test Anxiety Inventory (TAI) (Appendix I & II) in the same testing situation. (ADIQ) was given together with the TAI, which was added to the last page of the questionnaire. The participants were asked to completely answer all questions by using a computer bubble sheet and a supplied number two pencil. The participants took approximately a half hour to complete the questionnaire.

## Instrumentation

The inventory this study used to determine student's test anxiety levels was the *Test Anxiety Inventory* (TAI) written and composed by Dr. Charles D. Spielberger (1980). The Test Anxiety Inventory (TAI) is a self-report inventory designed to measure test anxiety (TA) as a situation-specific personality trait. The TAI is recommended for use in research and clinical settings. The Test Anxiety Inventory was designed to measure the worry and emotionality components of test anxiety. Students used a 4-point Likert-type scale in responding to the eight items used to assess each component. Spielberger, 1980; Spielberger, Anton, & Bendell, 1976) presented average Cronbach alpha reliability coefficients for five normative samples of .88 for the worry component and .90 for the emotionality component. Test-retest coefficients for a high school student sample varied from .81 (a 1-month delay) to .62 (a 6-month delay). Correlations with five other anxiety measures (ranging from .51 to .82) were cited as evidence of validity.

The ADIQ, used to measure attachment levels, had previously incorporated 2,000 participants in earlier studies. The average Cronbach's Coefficient alpha level across the

29 scales was .79. This demonstrates the ADIQ is a highly valid and reliable instrument in measuring attachment levels, and this measurement is a conservative judgment of reliability (Thomas & Lindberg, 1998).

The ADIQ is proven to be better-quality to other instruments in that it has outstanding test-retest reliability and is exceptional at predicting if someone would be faking good or bad, and for those individuals that engage in malingering, which is variables not accounted for in previous instruments (i.e.: Q-set; Waters, 1987) (Thomas & Lindberg, 1998). Cronbach's alpha will more often than not, produce a lower reliability, than the standard split-half reliability and therefore represents a conservative minimum estimate of the actual inter-rater reliability (Thomas, Lindberg, 1998).

#### Data Collection and Analysis

Collection of data started in the spring semester 2003, and continued into the summer semester 2003, with completion of data collection in first summer session. Subjects were Adult and Technical Education and Psychology students enrolled in the spring and summer of 2003.

Data analysis was conducted to determine what portion (if any) of the variance of the independent variable; test anxiety influenced the performance of participants. Subsequent analyses were also conducted to determine if the influence of selected variables attachment, age, and size of city an individual was raised in contributed to the variability in test anxiety.

## CHAPTER IV

### Results

#### Demographic Data

Student participants ranged from freshman to graduate students, with the largest percentage (52.5%) of students ranging from 22-35 years of age. A larger percentage of respondents were women (62.5%) with men accounting for 37.5%. There were 25 female and 15 male responders, with one participant not answering the gender question. The largest income bracket for respondents was those falling into the \$21,000-50,000 bracket, with income ranges from 2.5% making \$1,000-10,000 and 10.3% making over \$100,000. The rural influences or size of city a student was raised ranged from 5,000 to over 200,000 in population, with 32.4% coming from both the population categories of 10,000 or fewer and the 10,000-50,000-size population. The remaining categories 50,000-100,000 contained 21.6%, 100,000-200,000 = 8.1% and >200,000 = 5.1%, with 5 respondents not answering this category. See demographic data is listed in Table 4.I.

**Table 4.1** Demographic Distributions of Respondents

<b>Demographic</b>				
<b>Age</b>		17-21	9	22.5
		22-35	21	52.5
		36-49	7	17.5
		50-65	3	7.5
		<b>TOTAL</b>	<b>40</b>	<b>100 %</b>
<b>Gender</b>		Female	25	62.5
		Male	15	37.5
		Non-responder	1	
		<b>TOTAL</b>	<b>41</b>	<b>100 %</b>
<b>Income</b>		\$1,000-10,000	1	2.6
		\$11,000-20,000	12	30.8
		\$21,000-50,000	17	43.6
		\$51,000-100,000	5	12.8
		\$100,000+	4	10.3
		<b>TOTAL</b>	<b>39</b>	<b>100 %</b>
<b>Population</b>	10,000 or less	12	32.4	
		10,000-50,000	12	32.4
		50,000-100,000	8	21.6
		100,000-200,000	3	8.1
		> 200,000	2	5.4
		<b>TOTAL</b>	<b>37</b>	<b>99.9 %</b>

Note Demographic Data Missing in above categories < 6.

## Coefficient Alpha Determinants

Cronbach coefficient alphas were calculated to determine if the Test Anxiety Inventory (TAI) was a coherent and reliable measure. **Table 4.2** demonstrates that the test had an acceptable coefficient alpha of .73. Cronbach alpha coefficient is the average of split-half correlation (Hays, 1998), which obtains the correlation between scores for the different variables that examine the same construct.

**Table 4.2** Cronbach Coefficient Alphas for TAI

Correlational Analysis – Cronbach Coefficient Alpha for TAI (Test Anxiety Inventory)		
For Raw Variables	.711	
For Standardized variables	.725	

**p < .05 significance level.**

## Correlational Analyses

Significant correlations between test anxiety and subscales of the ADIQ anxiety scales and are shown in **Table 3**. Those variables that proved significant in the model were ambivalent father ( $r = .51, p < .05$ ), control ( $r = .46, p < .05$ ), secure father ( $r = .51, p < .05$ ), insecure partner ( $r = .60, p < .05$ ), and mistrust ( $r = .42, p < .05$ ).

When calculating the effect of the variable of the size of city an individual grew up this study contrasted the scores of rural versus non-rural communities and these variables were inserted into the stepwise regression. The results indicated the size of city an individual came from had no relationship to test anxiety (see Table 4.3).

Although other variables are included in the table for description purposes attempting to account for as much variance in test anxiety as possible, however, these variables are not in the scope of this study.

**Table 4.3** Stepwise Regression Results.

<b>Var Code</b>	<b>Variable</b>	<b>N</b>	<b>Mean</b>	<b>SD Dev</b>	<b>r</b>	<b>p value</b>
SC1	Abuser scale	36	1.77	0.41	-0.05	0.80
<b>SC2</b>	<b>Ambivalent father</b>	<b>35</b>	<b>1.90</b>	<b>0.52</b>	<b>0.51 *</b>	<b>0.01</b>
SC3	Ambivalent mother	34	1.84	0.50	0.16	0.48
SC4	Ambivalent partner	33	1.98	0.47	0.16	0.46
SC5	Anger	38	1.99	0.42	0.06	0.77
SC6	Anxiety	39	2.03	0.11	0.11	0.57
SC7	Avoidant father	35	1.94	0.60	-0.09	0.70
SC8	Avoidant mother	35	1.98	0.44	0.08	0.72
SC9	Avoidant partner	34	1.90	0.40	-0.06	0.78
SC10	Codependent mother	34	2.16	0.43	0.30	0.17
SC11	Codependent father	35	2.00	0.39	-0.30	0.16
SC12	Codependent partner	34	2.48	0.37	-0.17	0.17
<b>SC13</b>	<b>Control</b>	<b>35</b>	<b>2.08</b>	<b>0.29</b>	<b>0.46*</b>	<b>0.03</b>
SC14	Denial	36	2.20	0.44	-0.16	0.45
SC15	Family rigidity vs. chaos	37	2.41	0.55	0.35	0.87
SC16	Family suppression feelings	38	2.14	0.44	0.19	0.35
SC17	Jealousy scale	34	2.25	0.56	-0.24	0.28
SC18	Obsessive compulsive	36	2.40	0.41	-0.21	0.33
SC19	Peer relations	36	2.69	0.62	-0.35	0.10
SC20	Perfectionism	36	2.86	0.41	0.21	0.31
SC21	Religion	35	3.03	0.79	-0.28	0.19
SC22	Sexual arousal	35	2.21	0.54	0.01	0.98
<b>SC23</b>	<b>Secure father</b>	<b>35</b>	<b>2.56</b>	<b>0.91</b>	<b>-0.50*</b>	<b>0.015</b>
SC24	Secure mother	35	2.84	0.76	-0.20	0.34
<b>SC25</b>	<b>Insecure partner</b>	<b>33</b>	<b>2.84</b>	<b>0.67</b>	<b>0.60*</b>	<b>0.0032</b>
SC26	Shame	26	1.77	0.47	0.17	0.41
SC27	Sexual relationship	33	3.01	0.59	-0.38	0.08
<b>SC28</b>	<b>Mistrust</b>	<b>38</b>	<b>2.32</b>	<b>0.55</b>	<b>0.42*</b>	<b>0.03</b>
SC29	Withdrawal engagement	36	2.24	0.36	0.03	0.89
ANX	Test anxiety	28	17.04	3.64	1.00	0.00
Age	Age	28			0.04	0.85
Pop	Population	28			0.042	0.20

Note **r** with \* asterisk represent significance at \*  $p < .05$  using the Stepwise regression model.

### Regression Analysis

A stepwise multiple regression was used to determine if a model could more efficiently describe results obtained from Table 4.3. . Stepwise regression is a technique for calculating a regression equation that instructs a computer to find the “best” equation by entering independent variables in various combinations and orders. Variables are selected and eliminated until there are none left that meet the criteria for removal (Vogt, 1999). It was found that two variables, insecure partner, and ambivalent father explained 44% of the variability in test anxiety. The results are presented in Table 4.4. With a larger study, which includes more participants, the 56% of variance not accounted for in test anxiety could be further evaluated and deciphered.

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**Table 4.4** Stepwise Regression Model Summaries

<b>Variable</b>	<b>Variable noted</b>	<b>Partial R<sup>2</sup></b>	<b>Model R<sup>2</sup></b>	<b>(p)</b>	<b>F</b>	<b>Prob&gt;F</b>
SC2	Insecure Partner	0.362	.3621	.012	10.78	.0039
SC25	Ambivalent Father	.0823	.4444	.003	2.666	.1199

---

This study of attachment and its relations to test anxiety pathways is a relatively new idea (Miller &Beinstein, 1999). The results of this model are limited to the number of participants in the study. Nonetheless, the results are interesting, in that even with the limited amount of participants, some results indicate a need for further empirical studies.

Attachment has long been empirically determined to influence an individuals’ life up to adulthood (Cassidy & Shaver, 1999). It is theorized through secure attachments individuals learn to deal with feelings and emotions by recognizing and sharing them

with others, starting in life with the primary caregiver (Bowlby & Ainsworth, 1998, 2003). Those that are insecurely and negatively attached, have difficulty dealing with feelings and emotions appropriately, finding it problematic in accepting help from others to deal effectively with feelings and emotions such as test anxiety (Bowlby, 1969, 1988; Bowlby & Ainsworth, 1978).

## CHAPTER V

### Summary and Conclusion

Although the sample was small ( $N=41$ ), the strength of the relationships between subscales of attachment and test anxiety found in this model are worth noting. Insecure partner and ambivalent father appear to have the strongest relationship with test anxiety with the students in the model. In addition, relationships also emerged with the variables *control*, *mistrust*, and *secure father*.

Test anxiety has been found in the past to correlate with negative levels of attachment (Gini, 2002; Mikulincer & Florian, 1998). The regression model used in this study, although having limited observations, supports these findings. With further empirical studies, these results could be validated - how attachment levels may affect test anxiety - thus allowing a generalization into a larger population.

The variable *age* did not prove to have a significant relationship with test anxiety. Furthermore, the size of city in which an individual was raised, had no relationship with test anxiety in the model.

### Conclusions

The regression analysis was interesting, however, because of the smaller sample size, it would be unwise to form conclusions from this model to fit in any population except the students involved in this study. The best predictor for test anxiety in this regression model was the variable *insecure partner*. This appears to be appropriate considering the participants in this study were college students and college students are less dependent on attachment to parents during this period in their lives. College students tend to turn to significant others

for security during times of stress than younger students (high school or younger) (Lindberg & Thomas, 2003). Attachment focus shifts from parents to persons outside the family after leaving one's parents for college. Primary attachment is replaced with other significant persons. As children leave home and forge a life of their own, they also form relationships, which substitute on many levels for parental attachments (Cassidy & Shaver, 1999). It was also interesting that insecure father attachment also entered the model of variables for best predicting test anxiety.

Significant effects are demonstrated in the regression model, finding a relationship with test anxiety and the variable of *ambivalent father*. The model demonstrates that an ambivalent attachment relationship with the father may have long definitive effects for the student into adulthood. Oppositely, a secure attachment relationship with the father proved to have significant negative correlation in the regression model. That was expected, considering a negative ambivalent attachment relationship with the father, produced significant positive relationship in the regression model, a secure attachment relationship with the father could be predicted to have a negative relationship with test anxiety in the regression model. This could be reinforcing the results for both ambivalent and secure father variables.

Adult and Technical Education and Psychology students demonstrated in this study it is imperative to realize test anxiety to intervene for scholastic success and academic proficiency/competency demonstration.

#### Recommendations

Other variables associated with test anxiety will need to be researched in other studies to determine their associations with test anxiety. Students in Adult and Technical

Education will benefit if test anxiety are affecting the potentials for proving competencies are realized and dealt with in a positive manner. If attachment levels play a role in test anxiety, remediation of negative attachment levels can be handled and dealt with anytime in an individual's life, making for a more successful academic career (Institute of Heart Math, 2003). In a time where high stakes testing is increasingly the foundation for success in every student's life, ensuring that every student is capable to successfully participate in a testing situation is mandatory. The ability to determine test anxiety has long been established and educators must use these tools to ensure all students are free of test anxiety, enabling every student to demonstrate their competency in testing situations. If students with test anxiety are not targeted, it is likely these students will suffer less than optimal academic successes.

With the "No Child Left Behind Act", methods to increase proficiency are being called into action. Test anxiety can easily be reduced, if not eliminated, through proven methods, already empirically proven to work. Implementation of test anxiety assessment in the classroom should begin immediately in all educational programs and college coursework to insure all students will be able to demonstrate proficiency, leading all students to a more successful academic career.

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## Appendix A

### ADIQ

Thank you for agreeing to fill out this survey for Marshall University. Do not put your name on this, as all responses will be confidential. (We are interested in averaging your responses with others at this point in time).

The word "partner" refers to your most important spouse, fiancé, steady date, or a significant romantic interest in your life. If you are not currently involved in such a relationship, think about your most significant past partner and answer the questions with that relationship in mind. If you never had a steady or meaningful relationship in your life, leave the questions on partners blank.

Questions about your family, mother, and father refer to the family you grew up in. When answering questions about members of your family, think about who or what was true, typical, or most important while you were growing up (during the school age years). If you did not have a mother or father figure, leave those questions blank. Although it may seem as if you are answering the same questions over and over, you are not. It is just that the same question is asked about different people.

Write your answers on the scoring sheets by filling in the appropriate circle. When you get to item 201, please start on the next answer sheet with # 1. Please use the following scale to estimate how often these statements apply to you. Answer questions using the following key:

**A = never B = sometimes C = often D = always**

1. When my mother felt sad for days, I did too.
2. When it comes to anger, those close to me have a short fuse.
3. If I don't trust other people then I will not be disappointed.
4. I like to withdraw from people when I am stressed.
5. I satisfy my partner's sexual needs.
6. I feel scared.
7. I felt bad when I did not include my father in things.
8. I need a close relationship with my partner.
9. When I had an argument with my mother, I got very angry.
10. Some people deserve to be hit.
11. The same thoughts run through my head for days.
12. I am worthless.
13. When I have an argument with my partner, I get very angry.
14. My father had hostile feelings towards me.
15. Family rules were unclear.
16. I liked being taken care of by my mother.
17. I go to great lengths to prevent my partner from being angry with me.
18. My family followed rules.
19. I worry that my partner will find somebody else.
20. It was good to keep your feelings to yourself in our family.
21. I had a safe secure relationship with my father.
22. I like to be the best at things.
23. I change my feelings to make my partner happy.
24. I feel better about myself when I win.
25. A higher power/God is important to me.
26. My partner and I have a special sexual connection.
27. I was more committed than my mother was in our relationship.
28. My family did things the same way each time.
29. I had a good relationship with my father.
30. I tried to please my mother.
31. I feel good when I change my partner for his/her own good.
32. I feel fearful.
33. I do not amount to much as a person.
34. My father tried to change me for my own good.
35. I can usually depend on other people when I need them.
36. I like to get away from everyone when there is too much confusion.
37. My mother got angry with me.
38. I try to figure out what my partner wants.
39. I created an image of who I thought I was supposed to be in my own family.
40. It is important for me to be right.
41. I tried to like the same things that my mother did.
42. My father and I were close in every way.
43. I feel like a punching bag for other people.
44. My family made decisions the same way every time.
45. I feel uncomfortable with my friends.

46. I am distracted in conversations with others because I am thinking about something else that is important.
47. I feel like hitting those people who are close to me.
48. When I was stressed, I liked to stay away from my father.
49. It was good to keep feelings from my family.
50. It is important for me to know what my partner is doing.
51. I feel resentful because I cannot pursue my own interests.
52. I needed a close relationship with my father.
53. My partner makes me angry.
54. I went to great lengths to get my mother to like me.
55. A disagreement with my partner ends in a shouting match.
56. I like to be alone when I am troubled.
57. I had a safe secure relationship with my mother.
58. I feel guilty for not taking care of my family's duties.
59. My partner gets hostile feelings towards me.
60. I say I am fine when I am not.
61. Being by myself without my father was painful.
62. When my partner feels sad for days, I do too.
63. After an argument with my father, I tried to avoid him.
64. I try harder in our relationship than my partner.
65. I feel tense.
66. I miss what others say because I am working on something else in my head.
67. I went to great lengths to prevent my mother from being angry with me.
68. I had the greatest father in the world.
69. I like to do things right or not do them at all.
70. I am turned on if I see a pornographic movie.
71. People in my family had firm expectations for how we were supposed to feel.
72. It is important for me to achieve.
73. I wish others would not call or talk to me when I am upset.
74. When it comes to anger I am patient.
75. When someone is mean to me I feel like hitting them.
76. I liked being taken care of by my father.
77. Other people should work hard.
78. I worry about what my partner is doing during the day.
79. I am turned on sexually when I see someone in a magazine half undressed.
80. It is good to trust other people.
81. Being by myself without my partner is painful.
82. My anger is a good cover-up for other feelings that I have.
83. If I am really upset, my partner is not good at helping me deal with it.
84. I trust other people.
85. My mother did not fully understand me.
86. I have a hard time getting my mind off of problems.
87. I say I am happy when I really am not.
88. Other people feel better about themselves when they win.
89. I tried to please my father.
90. After an argument with my partner, I try to avoid him/her.

91. It was important to look good in my family.
92. I worry about being left alone without my partner.
93. I was more committed than my father was in our relationship.
94. When it comes to anger, I have a short fuse.
95. I tried harder in our relationship than my mother.
96. My family believed that family rules should not change.
97. My partner is there when I need to talk about a problem.
98. When I got angry with my father, I liked to get away from him for a while.
99. I do not want others to know what is going on in my life.
100. My feelings for my father were confusing.
101. A higher power/God is not important to me.
102. When I was stressed, I liked to stay away from my mother.
103. My church/place of worship is important to me in my life.
104. When I had an argument with my father, I got very angry.
105. My partner and I are close in every way.
106. I am afraid of losing control.
107. I tried to like the same things my father did.
108. Some people deserve to be put in their place.
109. I say I am not angry when I really am.
110. My partner is sexually appealing to others.
111. When I was really upset, my mother was not good at helping me deal with it.
112. Some people deserve to be criticized.
113. A higher power/God guides my life.
114. I try to like the same things that my partner does.
115. I changed my feelings to make my mother happy.
116. Emotional extremes were frowned upon in my family.
117. I go to great lengths to get my partner to like me.
118. I have fun with friends.
119. When I was upset, my father helped me deal with it.
120. It is good to be suspicious about the motives of others.
121. I am easily turned on sexually.
122. My mother had hostile feelings towards me.
123. I wish others would leave me alone.
124. My partner does not fully appreciate me.
125. Sex is best when it is accompanied by warm feelings.
126. I had the greatest mother in the world.
127. I should work hard.
128. I worried about being left alone without my mother.
129. When I got really mad at my father, I felt cold and rejecting towards him.
130. Arguments with my mother involved a shouting match.
131. I hate it when my partner is around people who might flirt.
132. My friends know how I feel.
133. It is good to keep a stiff upper lip even when I hurt inside.
134. Once I start thinking about a problem, I think about it over and over again.
135. Basically I am good.

136. I have pressed for and gotten sex even though my partner wasn't interested at the time.
137. Being by myself without my mother was painful.
138. I am very concerned about details.
139. I went to great lengths to get my father to like me.
140. I am more strongly committed in our relationship than my partner.
141. I feel afraid, but do not know why.
142. I went to great lengths to prevent my father from being angry with me.
143. I tried to figure out what my mother wanted.
144. My partner does not understand me fully.
145. Others are turned on sexually when they see someone in a magazine half undressed.
146. I use a lot of energy trying to get people to do what I want them to do.
147. After an argument with my mother, I tried to avoid her.
148. I feel ashamed when I feel sad, rejected, fearful, lonely, dependent or hurt.
149. I feel comfortable with my friends.
150. I try to change my partner for his/her own good.
151. I needed a close relationship with my mother.
152. Other people like me.
153. If I have an argument with my partner, I want to run away from them for awhile.
154. It is hard to get some things out of my mind.
155. Keeping busy helps me ignore my feelings.
156. When I had an argument with my mother, I wanted to run away from her for awhile.
157. I changed my feelings to make my father happy.
158. I avoid people who do not do what I expect them to do.
159. My feelings for my partner are confusing.
160. My mother was there when I needed to talk about a problem.
161. When my father felt sad for days, I did too.
162. I enjoy playing or going out with my friends.
163. Sex with my current partner is good.
164. When I am upset, my partner helps me deal with it.
165. I think about every little detail of a problem, and then think about it again and again.
166. My mother and I were close in every way.
167. When bad feelings come to me, I want to be by myself.
168. It is hard to know what my partner wants.
169. Arguments with my mother were like a love-hate kind of thing where feelings went back and forth.
170. I feel better about myself when I lose.
171. I tried harder in our relationship than my father.
172. I get angry when others flirt with my partner.
173. My father was there when I needed to talk about a problem.
174. I go from one thing to another trying to be satisfied.
175. I am concerned with being moral.
176. I like sex.

177. I want to be alone.
178. My partner and I are equally committed in our relationship.
179. My mother tried to change me for my own good.
180. I think about sex with others.
181. It is easy to ask my friends for help.
182. I can think about the same person or thing for days.
183. When I got angry with my mother, I liked to get away from her for awhile.
184. I worry about little things.
185. My father did not fully understand me.
186. Sometimes I fear getting too close to my partner.
187. It was hard to know what my mother wanted.
188. I worried about being left alone without my father.
189. My mother was supportive when I had a problem.
190. My partner gets angry with me.
191. It is best to avoid situations that I can not control.
192. I attend a place of worship/church.
193. Family rules were clear.
194. When I am sick or upset, I like to be with my partner.
195. I had a good relationship with my mother.
196. My partner satisfies my sexual needs.
197. I repeat the same habits over and over.
198. I am a bad person.
199. My friends will always be there when I need them.
200. A disagreement with my mother ended in a shouting match.
201. When I had an argument with my father, I wanted to run away from him for awhile.
202. I feel bad when I do not include my partner in things.
203. When I was upset, my mother helped me deal with it.
204. If I get angry with my partner, I like to get away from him/her for awhile.
205. I felt good when I changed my father for his own good.
206. I feel ashamed when I have to stand up for myself.
207. I need to know where my partner is.
208. I wish others would come over and visit when I am upset.
209. When I got really mad at my mother, I felt cold and rejecting towards her.
210. I have a lot to be ashamed of.
211. My father was supportive when I had a problem.
212. When I get angry, I explode.
213. Arguments with my partner are like a love-hate kind of thing where feelings go back and forth.
214. I felt bad when I did not include my mother in things.
215. A disagreement with my father ended in a shouting match.
216. I use a lot of energy worrying about my problems.
217. My partner is supportive when I have a problem.
218. I talk about what turns me on sexually with my partner.
219. Arguments with my partner involve a shouting match.
220. My feelings for my mother were confusing.

221. I make my partner angry.
222. I feel that something bad is about to happen.
223. When I get really mad at my partner, I feel cold and rejecting towards him/her.
224. If people would just change a little bit then most of my problems would go away.
225. I try to please my partner.
226. I tried to figure out what my father wanted.
227. I avoid situations that I can not control.
228. When I was really upset, my father was not good at helping me deal with it.
229. It is important for me to know what my partner is doing.
230. When I am angry, I take it out on others.
231. My partner has a bad temper.
232. I have a lot of good friends.
233. When I was sick or upset, I liked to be with my mother.
234. I like being taken care of by my partner.
235. I hate it when someone does something the wrong way.
236. If someone treats you too well, it is wise to be suspicious of them.
237. If I was answering the above questions about my relationship with my mother, based on our present relationship, I would still respond the same way.
238. If I was answering the above questions about my relationship with my father, based on our present relationship, I would still respond the same way.
239. If I was answering the above questions about my relationship with my family, based on our present relationship, I would still respond the same way.
240. Your sex: a) Male b) Female
241. Your age: a) 17-21 b) 22-35 c) 36-49 d) 50-65 e) 66+
242. Did either of your parents die while you were growing up?  
a) Mother b) father c) both d) neither
243. Were your parents divorced? a) Yes b) No
244. If yes on parental death or divorce, how long ago was it? a) 0-2yrs b) 3-5 c) 8-12  
d) 13-20 e) 21+
245. If yes on parental death or divorce, who did you live with? a) Mother b) father  
c) Relative d) friends e) others
246. How long did you live in a single parent home? a) 0 b) 1-2 yrs c) 2-5 yrs d) 6-10  
yrs e) 11+ yrs
247. How many brothers and/or sisters do you have?  
a) 0 b) 1 c) 2 d) 3 e) 4 or more
248. Were you the:  
a) Oldest b) middle c) youngest
249. Your father's education a) 3-11 grade b) high school graduate. c) Some college d)  
college graduate e) graduate school.
250. Your mother's education a) 3-11 grade b) high school graduate. c) Some college  
d) college graduate e) graduate school.
251. Your race: a) Hispanic b) Black c) Native American d) White e) other
252. Are you married? a) Yes b) No c) Divorced d) widowed
253. If not married, are you currently in a relationship? a) Yes b) No
254. If yes, to above questions (#253 or #253) how long? a) 0-6mo b) 7mo-1yr c) 1-  
2yrs d) 2-4 yrs e) 5+ yrs

255. Your religion a) Christian b) Jewish c) Muslim d) other religion not listed e) no religion
256. Family income growing up a) \$1,000 - \$10,000 b) \$11,000 - \$20,000 c) \$21,000 - \$50,000 d) \$51,000 - \$100,000 e) \$100,000+
257. Family income now a) \$1,000 - \$10,000 b) \$11,000 - \$20,000 c) \$21,000 - \$50,000 d) \$51,000 - \$100,000 e) \$100,000+
258. Your education a) 3-11 grade b) high school graduate) some college d) college Graduate e) Graduate school.
258. The size of the city you are from is: a.) 10,000 – 30,000 b.) 30,000 – 50,000 c.) 50,000-75,000 d.) 75, 000 – plus).

## Appendix B

### Test Anxiety Inventory

The TAI is a brief instrument occupying one side of a page on which the 20 items are printed. The total TAI score (TAI-T) is based on all 20 items. Percentile ranks are calculated from the raw scores.

Test-retest reliabilities for TAI-T are reported for groups of high school, college, and graduate students over stretch of time from two weeks to six months. Reliability was in the range of .80 to .81 for two-week to one-month periods with all groups. Within six months, reliability was .62 for a group of high school students. The alpha coefficients for TAI-T ranged from .92 to .96; for the subscales, alphas ranged from .83 to .91 for TAI-W, and from .85 to .91 for TAI-E.

The relationship between the TAI and its subscales with other anxiety measures (e.g., Sarason's Test Anxiety Scale (TAS), Liebert & Morris' Worry and Emotionality Questionnaire (WEQ), the STAI State and Trait Anxiety scales, and the STAI State Anxiety scale administered under examination stress conditions) all provide evidence of convergent validity. The correlation between the TAI-T score and the TAS was sufficiently high (.82 to .83) to suggest that the two scales measure essentially the same construct. The normative sample consisted of high school and college students.

Test Anxiety Inventory:

Please answer the following questions using selected responses:

A= Not at all B= Somewhat C= Moderately D= Very much

1. I feel calm
2. I am tense
3. I am upset
4. I feel frightened
5. I feel nervous
6. I am relaxed
7. I am worried
8. I am confused

These non-anxiety items were included to make the scale sensitive in measuring low levels of anxiety. This table shows how responses on each item are scored - indicates how each statement contributes to the overall anxiety score.

An individual's score is calculated by adding together their score for each scale item.

	Item	Not at all	Somewhat	Moderately	Very Much
1	I feel calm	4	3	2	1
2	I am tense	1	2	3	4
3	I feel upset	1	2	3	4
4	I feel frightened	1	2	3	4
5	I feel nervous	1	2	3	4
6	I am relaxed	4	3	2	1
7	I am worried	1	2	3	4
8	I feel confused	1	2	3	4