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Test Anxiety and Age: As We Grow Older Do We
Become More Test Anxious?

by
Sharon Arnold

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts in School Psychology Degree
of
The Graduate School
at
Rowan University
May 1, 2002

Approved by _____
Professor

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ABSTRACT

Sharon Arnold

TEST ANXIETY AND AGE: AS WE GROW OLDER DO WE BECOME MORE TEST ANXIOUS?

2002

Dr. John Klanderman

Master of Arts in School Psychology

The purposes of this investigation were to (a) establish the test anxiety level of students in the second grade, fourth grade, and sixth grade (n=92); and (b) determine the difference in the levels of test anxiety between the three grade levels. Students demonstrated surprising results on the test anxiety measure (TASC). The average score for the second grade was the highest and the average score for the sixth grade was the lowest. A multiple comparisons analysis revealed a significant difference in test anxiety levels between the second and sixth grade. However, the difference was not an increase in test anxiety, but a decrease in test anxiety. The reasons for the decrease in test anxiety are discussed. After an independent samples test, comparing test anxiety level in males and females, it was discovered that females have higher levels of test anxiety. Implications for future research are discussed.

For my husband, Mark.
Without your love and support, I would not have the courage
and strength to achieve my dreams.

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Chapter I: The Problem

Test anxiety is an often overlooked anxiety in our fast paced society. However, the number of tests given to people are growing. In the test-conscious culture of the second half of the 20th century, people's lives are greatly influenced by test performance (Spielberger, 3). The 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, a scholastic aptitude test for college application, or an industrial occupational placement test (Zeidner, 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 devastating. Even children are not immune to the effects of test anxiety. Children can become so overwhelmed by the thought of an upcoming test they may not be able to function. Many children have the ability to do well but become so overwrought with anxiety, they are unable to perform to their ability. The consequences a child suffering from test anxiety may encounter could alter his life forever.

Purpose

Children have long been overlooked in many domains of study, mainly because of the difficulty of finding subjects. However, children need to be looked at in the case of test anxiety because of the traumatic effects this anxiety can have on a child's life. Test

anxiety may limit educational or vocational development, as test scores and grades influence entrance to many educational or vocational training programs in modern society (Zeidner, 4).

Is there a particular time in a student's career when test anxiety levels begin to grow? Some researchers believe the anxiety level increases around the time the schoolwork begins to increase in difficulty. In the fourth grade, children are required to begin work on a number of difficult tasks: multiplication, geography, science, division, and writing essays. Perhaps, the fourth grade is the point when test anxiety levels grow.

Hypothesis

Data presented by Hill and Sarason in 1966, indicate that the effects of anxiety upon performance increase with grade level during elementary school years (Zeidner, 234). Research has shown the increase in test anxiety as a student moves through his educational career. So, students in the early elementary grades should have low test anxiety. However, students in the fourth grade should have a higher level of test anxiety. Furthermore, the students in the sixth grade should have even higher levels of test anxiety.

Theory

Test anxiety has had many theoretical concepts developed to explain the phenomena associated with it over the past century. Conceptualizations of test anxiety underlying these models have swayed from drive-oriented and arousal perspectives to cognitive-attentional formulations and to those emphasizing skill deficits (Zeidner, 61). More recently, self-regulation, self-worth, and transactional perspectives have been applied to test anxiety research and have gained considerable currency (Zeidner, 61).

One of the earliest models of test anxiety was the drive model. The drive model explained test anxiety as a result of emotional reactivity and heightened arousal. The aversive stimuli associated with the test situation which heightens drive states are emphasized in this theoretical concept. With respect to the consequences of anxiety, the drive model explicates both the facilitating and debilitating effects of anxiety through the mechanism of response competition, with the effect of anxiety claimed to be dependent on both the stage of learning and task complexity (Zeidner, 88).

The cognitive- attentional model suggests that cognitive interference and self-related depreciative thoughts capture the outstanding differences between high- and low-test-anxious individuals in the face of an evaluative stressor (although acknowledging the importance of arousal and emotionality in stressful exam situations) (Zeidner, 88). In this model, test anxiety is seen as a learned behavior that is conditioned over time. A person learns to be test anxious through repeated negative experiences in testing situations. The cognitive interferences affect performance and bring about the physiological reactions associated with test anxiety.

The skills deficit model claims that test anxiety is based on the knowledge that one is unprepared for the examination or is not competent enough to complete the task. According to the skills deficit model, the outstanding feature of the test anxiety experience is metacognitive awareness on the part of the test-anxious subjects of being unprepared for the task and the resultant feelings of low academic competency and emotional arousal (Zeidner, 89).

The self-regulation model emphasizes the reaction to the testing situation and the

person's physiological responses in testing situations. Thus, low-test-anxious persons retain confidence of being able to perform well despite anxiety, whereas high-test-anxious persons are doubtful of being able to perform well (Zeidner, 89). Optimism and outcome expectancies in concert with self-focus are predicted to moderate the anxiety-performance relationship (Zeidner, 89).

The self-merit model suggests that high- and low-test-anxious subjects are distinguished by feelings of incompetency combined with attributions of failure to low ability, rather than effort (Zeidner, 89). This model claims that test anxiety is due to devaluing experiences early in life at either school or home. If the person's self worth is threatened it can have a dramatic effect on the person's ability to perform in a testing situation.

In the most recent and most widely used theoretical concept, the transactional process model (sometimes referred to as the transitional process model), worry and emotionality are the key components in test anxiety. The transactional process model is intended as a heuristic framework for representing the antecedent conditions that influence students' reactions to tests, the mediating emotional and cognitive processes involved in responding to evaluative situations, and the correlates and consequences of test anxiety (Spielberger, 11). In this model, test anxiety is seen as a situation-specific dynamic process. The affective/emotional components interact to affect test performance.

There are a number of theoretical concepts that attempt to explain test anxiety. However, not one single theory is able to explain the complexity of the phenomena of test anxiety. Given the multivariate nature of test anxiety, its various channels of expression,

and its myriad causes and consequences, it is reasonable to assume that not one, but several mechanisms are needed to account for test anxiety (Zeidner, 91).

Definitions

Test anxiety refers to the set of phenomenological, physiological, and behavioral responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative situation.

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.

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.

Transactional Process Model refers to test anxiety as the result of the dynamic interaction between a propensity to high evaluative trait anxiety and exposure to a stressful evaluative situation, which elicits perceived threat and resultant high levels of state anxiety.

Assumptions

Self-report scales will be used in an attempt to retain relevant and useful information about test anxiety. Children in second grade, fourth grade, and sixth grade classrooms will report their feelings of test anxiety using the self report scales in an honest manner and with integrity.

Limitations

When working with a self-report scale it is important to keep in mind the simple fact that people like to make themselves look good. As honest as the person is trying to be, there is always the possibility of slight embellishment on the part of the subject.

Another limitation to remember is the applicability of the results when a particular population is being studied. I am looking at second, fourth, and sixth grade students and their levels of anxiety. The results of the study will not be applicable to the entire population. Along with applicability is generalizability, the results are not generalizable to the entire population for the same reason as listed above. The population I am working with is a small focus population of second, fourth, and sixth grade children and is not representative of the general population.

Overview

In Chapter 2, research on test anxiety will be reviewed. The number of studies available for review is astronomical. The review will be focused on children and the effects of test anxiety on performance, as well as, the time levels of test anxiety increase and possibly develop. In Chapter 3, the design of the study will be discussed. The sample used in the study, the measures used, and the type of research design are main topics in Chapter 3. Test anxiety is an important topic in our society and the relevant research is important to take a look at to see where we have been and where we are going.

Chapter II: Review of Literature

As children move through the educational system they typically experience a greater frequency of testing (McDonald, 91). As the amount of testing in schools increases, the knowledge of test anxiety and how it affects a student's performance is extremely important to understand. Test anxiety has been conceptualized almost exclusively as having debilitating effects on performance (McDonald, 95). Therefore, society must determine the link between test anxiety and performance. We must also understand when test anxiety levels increase and how they develop. With this (amount of testing increases) comes greater expectations and pressure from parents and schools to perform well, expectations that may become internalized by the child (McDonald, 91). Since, the child is greatly affected by his parents and teachers it is important for adults to understand when and how test anxiety develops and increases. With this knowledge, parents and teachers can help to alleviate some of the debilitating affects test anxiety can have on a child. The present review will focus on two main themes: when the increase in test anxiety may begin and the link between test anxiety and test performance.

Origin and Development of Test Anxiety

Test anxiety is a concept associated mostly with high school students, undergraduate students, and graduate students. Most research on test anxiety refers to this age group. Participants for the experiment were 26 graduate students from several non-math disciplines enrolled in an intermediate-level educational statistics course at a large university in the southeast United States (Onwuegbuzie, 116). The sample consisted

of 431 tenth graders from 15 classes of two Arab high schools in the central district of Israel (Birenbaum, 294). Seventeen convenience samples of students enrolled in six undergraduate and eleven graduate introductory statistics courses at the Johns Hopkins University's School of Nursing were selected for this study (Berk, 152). Some research does attempt to use children at the elementary level. A total of 47 students from Grade 3 and 48 students from Grade 6 (Gierl, 141). However, this is an extremely small number of students and generalizability is tough with such a small sample of children.

So, how do we know when test anxiety levels begin to increase? That is a tricky question. As children develop, the link between self-reports of test anxiety and test performance or achievement appear to become stronger (McDonald, 96). For example, Sarason et al. (1958, 1964) found this association to increase from grade two to six in American school children. Based on a 5 year longitudinal study of about 700 elementary school children, Hill and Sarason found that the negative relationship between test anxiety and scholastic achievement increased steadily across elementary school years (Zeidner, 234). The most likely explanation for this link is the observed increase of test anxiety with age, with increased experience of testing leading some children to show more adverse reactions to tests (e.g. Hembree, 1988; King et al, 1989) (McDonald, 96). Another explanation for the increase of test anxiety with age is the fact that children become better able to provide reliable self-report information and increase the significant correlations observed in this type of research.

The etiology and development of test anxiety are uncertain, however there are a number of theories. Taking both symbolic and conscious meanings of evaluative situations

into consideration, Sarason and his coworkers put forth an intriguing psychodynamic theory of test anxiety development in children (Zeidner, 148). According to this psychodynamic perspective, a child's anxiety is evoked in test situations because of the symbolic significance of such contexts in reflecting similar situations prior evaluative experiences in the home environment and the similarity of roles between teachers and parents (Sarason et al, 1960).

Another model of test anxiety developed by Hill states the same ideas as Sarason with an added layer to the foundation. Hill's Dynamic-Motivational Model explains the development of test anxiety as a function of a dynamic system with a person's own motivations influencing the anxiety as well. Following Sarason's conceptualization, test anxiety is viewed as developing during the preschool years in response to unrealistically high parental standards, coupled with parents' critical reactions to the child's performance in problem-solving situations (Zeidner, 151). Once the development of test anxiety begins to develop, it seems to become stronger as the child moves through school. As test-anxious children progress through the educational system they become even more strongly motivated to avoid failure than to achieve success (Zeidner,151). There are two main differences between Sarason's Psychodynamic Model and Hill's Dynamic-Motivational Model.

First, Hill's mode emphasizes social interactions and achievements, and places considerably greater emphasis on the crucial role played by the child's social interactions and achievement histories in the development of test anxiety. Second, Hill's model downplays the

dynamic role of children's internal reactions to demanding parental expectations (e.g. hostility or guilt), heavily emphasized in Sarason's Model (Zeidner,152).

Another model used to explain the development and origin of test anxiety is Krohne's Social Learning Model of Anxiety Development. According to this model, a number of socialization and parental child-rearing factors (negative reinforcement and punishment, feedback consistency and parental support vs. restriction) put children at risk for the development of test anxiety (Zeidner, 153). Krohne's Model is a two-process model in which child rearing behavior is claimed to determine the construction of two types of cognitive structures in the child (competence expectancies vs. consequence expectancies) via the operation of two different processes (support and restriction via feedback). Please see Figure 2.1.

Test Anxiety and Test Performance

Test anxiety and performance have been shown in many research studies to be negatively correlated. As test anxiety level increases the level of performance decreases. The relationship between test anxiety and performance is an extremely complicated one. There are two important models that depict the complexity of the relationship between test anxiety and performance. One refers to test anxiety as an interfering agent whereas the other relates test anxiety to a deficit in study skills (Birenbaum, 293). According to the interference model, under evaluative stress students with high levels of test anxiety tend to divide their attention between task demands and negative self-preoccupation, material and from their awareness that they are poorly prepared for the test (Birenbaum, 294).

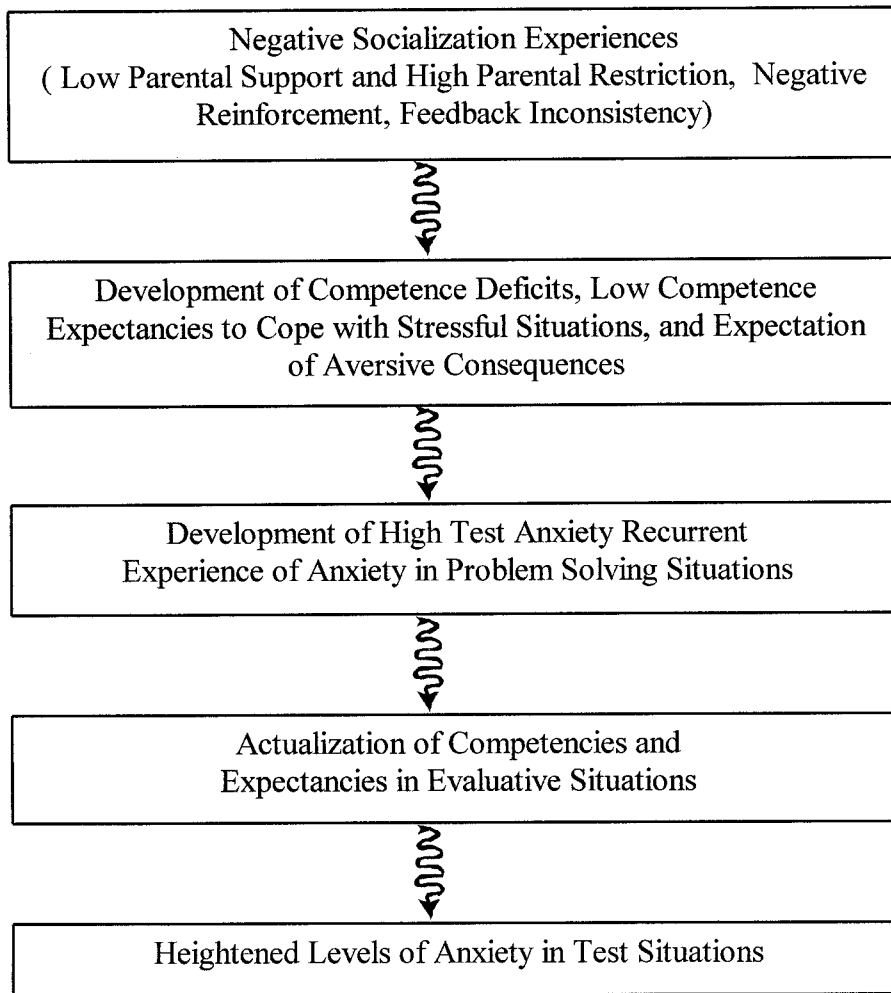


Figure 2.1. Schematic depiction of Krohne’s two-process development model of test anxiety.

whereas those with low levels of test anxiety tend to devote a greater proportion of their attention to task demands (Birenbaum, 293). According to the deficit model, the low performance of high test anxious students results from their deficient knowledge of the material and from their awareness that they are poorly prepared for the test (Birenbaum, 294). With the awareness of poor preparedness comes an anxiety level that negatively

effects test taking ability. Whether the student is affected by interference or a deficit in the knowledge needed to take the test, the anxiety is debilitating and affects test performance.

The relationship between test anxiety and test performance is important because of the implications of test performance for an individual. An important study on test anxiety and test performance was done in a college setting, where results on tests can be extremely important. In order to further the understanding of test anxiety phenomenon underlying an entire testing period, the current study examined anxiety of students immediately before and after an examination (Hong, 432). Test anxiety can occur while studying for a test, right before a test, or even after a test. The anxiety that occurs at any time can affect performance.

Test anxiety can be of importance at any age because performance on exams is utilized starting as early as kindergarten. In kindergarten, children are given standardized tests to determine placement. In a study of stress behaviors in kindergarten children during a standardized test, it was observed that children demonstrated an increase in stress behaviors during the test. Qualitative observations indicated that children's behaviors during testing were not typical of their behaviors before and after testing (Fleege, 20). Therefore, the children did become anxious while taking the test and this anxiety could affect performance. The major problem with the effect on performance is when placed the child's academic path may be altered in such a way that it will be detrimental to the child's overall development.

When looking at test anxiety, it is extremely important to gauge the level of anxiety a student may demonstrate. The level of test anxiety may severely impair his

performance. A teacher may want to administer a self-report scale in test anxiety at the beginning of the year to determine how many students in class may be affected by test anxiety. In a recent study, a self-report scale called the Friedben Test Anxiety Scale (FTA) was viewed. The reason the FTA was developed is to help students alleviate the effects of test anxiety. In their efforts to develop an intervention program for high school students that would serve to mitigate test anxiety, the authors recognized the need for a more elaborate and detailed measure of test anxiety, a measure that would identify the specific worries related to anticipated failure in an examination (Friedman, 1036). Once the FTA is tested for reliability, the FTA will be a wonderful measure for teachers to use to determine test anxiety. Then, the teacher can develop alternate forms of performance evaluation. The whole purpose of studying test anxiety is to help children deal with this anxiety and perform well on performance evaluations.

Summary

In conclusion, test anxiety has been a highly researched area with a lot of information on the development of test anxiety and the effects of test anxiety on performance. Hopefully, the previous review gives you a better understanding of how test anxiety developed. For better understanding of the development of test anxiety and the different models of this theory please refer to Figure 2.2. Another important point in the test anxiety and performance relationship is the idea of self evaluation. In order to determine the level of test anxiety in each student, he must tell you himself. Once the level is determined, it is important for teachers to use this information to alter evaluation procedures.

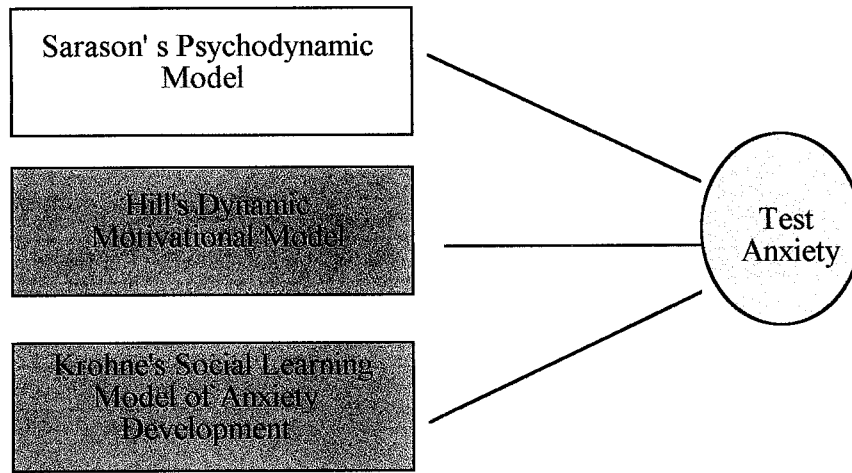


Figure 2.2. The three models of the development of test anxiety.

Chapter III: Design of Research

Sample

Children between the ages of 7 and 12 from an elementary school in a suburban Southern New Jersey town participated in this study. The children were either in second grade, fourth grade, or sixth grade. Data was collected over a one week period.

Appropriate informed consent was obtained from the children's parents, and children were assured anonymity. No extra credit was provided. The total sample consisted of 92 students. There were 47 males and 45 females. In the second grade, there were 15 students ranging in age from 7 through 9. In the fourth grade, there were 47 students, ranging in age from 9 through 11. In the sixth grade, there were 30 students ranging in age from 11 through 12.

Measures

The Test Anxiety Scale for Children was employed to measure the amount of anxiety the student associated with any type of examination. The questionnaires were designed to address anxiety in a testing situation. The measure consisted of 30 "yes" or "no" questions. According to Sarason et al, a "yes" answer to a question should, on the face of it, be an admission of behavior which is experienced as unpleasant. Furthermore, there should be a sample of reactions to a variety of test-like situations. The Test Anxiety Scale for Children was given orally to each grade level. Approximate time of administration in each classroom was twenty minutes. Participants responded by either circling a yes or no for each question.

Initially the Test Anxiety Scale for Children was appraised for promise or reliability as a measure by the test makers themselves. As a preliminary attempt to appraise the promise of the TASC, teachers were asked to rate pupils on 17 items derived from the same *a priori* considerations as were the TASC items (Sarason, 1966). Correlations were then computed between the TASC and the teacher's ratings (TR) (Sarason, 1966). The correlations were as follows: $r = .20$ and $p < .001$. Sarason felt that the small size of the correlation was due to the lack of training of the teachers on the TR. Sarason has also reported a split-half reliability coefficient for the TASC of .88, and an alpha coefficient of .88 for their validation sample. In 1966, Philips reported a convergent validity coefficient of .82 between the TASC and a questionnaire measure of school anxiety for a sample of elementary school students. In 1991, Ludlow reported an alpha of .89 on the TASC.

This particular study, the sample will be grouped by grade level and the TASC will be administered to each grade level in their classroom setting. The 30 question TASC is included in the Appendix of the study. There is a questionnaire for each grade level as well as instructions for administration.

Design

This was a study designed to compare test anxiety level and age. The dependent variable was the Test Anxiety Scale for Children and the independent variable was the group in each grade level. See Figure 3.1. The data was collected over a one week period. Each classroom in the grade level was administered the TASC in a twenty minute session. The data was then collected and the scores were calculated. The data is

considered predictive in nature because the data gives us a better understanding of when the increase of test anxiety occurs.

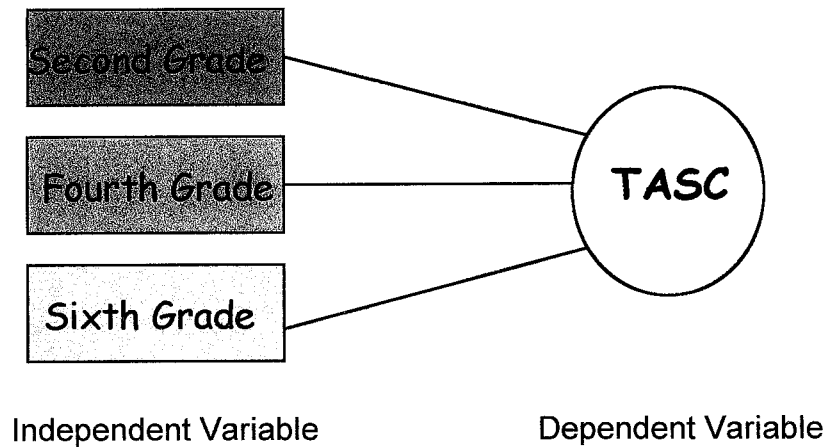


Figure 3.1 A model of the design of the study with the independent variables and dependent variable.

Hypotheses

The current study hypothesized that there will be a difference in the levels of test anxiety as students increase in age. Furthermore the difference will be an increase in test anxiety as students increase in age. The null hypothesis is that there will be no difference in the levels of test anxiety as students increase in age. See Figure 3.2.

H1	There is a difference between anxiety level and age
H0	There is no difference between anxiety level and age.

Figure 3.2 The alternate hypothesis and the null hypothesis.

Analysis

Once the data was collected an analysis of variance was administered . The

analysis of variance is used when there are two or more groups. In this particular study, there are three groups to compare on the TASC. The scores on the TASC from each group are compared using this type of statistical analysis. The one-way ANOVA shows how each grade level compares with the other. It determines if there is a significant difference between age and levels of test anxiety.

Summary

The research in this study was carried out using a design that was explained above. The students were separated into groups according to grade level. The students were then given the Test Anxiety Scale for Children. After administration the data was analyzed using a one way analysis of variance. The next chapter is a detailed analysis of the results from this study.

Chapter IV: Analysis of Results

In the following chapter an attempt is made to analyze the data collected using the Test Anxiety Scale for Children (TASC). The sample consisted of 92 students from an elementary school. Several post hoc tests were used to compare the data, as well as an analysis of variance.

As stated throughout, the hypothesis for this study is there will be a difference in the levels of test anxiety as students increase in age. Furthermore, the difference will be an increase in test anxiety as students increase in age. The null hypothesis is that there will be no difference in the levels of test anxiety as students increase in age. After the analysis of the 92 scores on the TASC, the null hypothesis is rejected. However, the alternate hypothesis is contrary to prediction. Students level of test anxiety did not increase with age; the level of test anxiety decreased with age.

Interpretation of Results

A number of analyses were administered to the data collected using the TASC. The first statistical analysis was a one-way ANOVA. The analysis of variance revealed there is a significant difference in the level of test anxiety between the grade levels. See Table 4.1 The other comparison was the Tukey HSD in which the dependent variable was the score on the TASC and the independent variables were the grade levels. The results from the Tukey indicated that there is a significant difference in the mean score on the TASC. See Table 4.2. The significant difference is between the second and sixth grade. The difference is a decrease in test anxiety as the student increases in age. Please see

ANOVA

SCORE

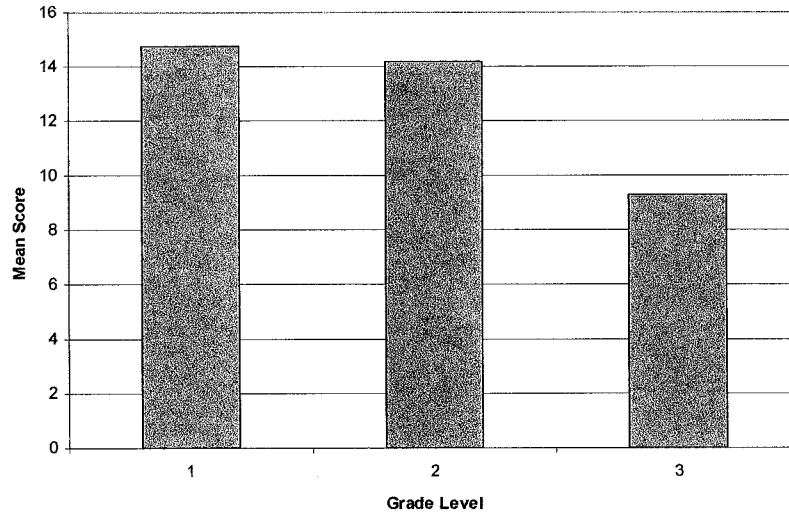
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	507.364	2	253.682	4.346	.016
Within Groups	5195.191	89	58.373		
Total	5702.554	91			

Table 4.1 The results from the one-way ANOVA.

(I) GRADE	(J) GRADE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Second Grade	Fourth Grade	.5844	2.2657	.964	-4.8161	5.9849
	Sixth Grade	5.4333	2.4160	.069	-.3255	11.1921
Fourth Grade	Second Grade	-.5844	2.2657	.964	-5.9849	4.8161
	Sixth Grade	4.8489*	1.7854	.021	.5933	9.1046
Sixth Grade	Second Grade	-5.4333	2.4160	.069	-11.1921	.3255
	Fourth Grade	-4.8489*	1.7854	.021	-9.1046	-.5933

*. The mean difference is significant at the .05 level.

Table 4.2 The results from the Tukey HSD multiple comparisons.



1= Second Grade 2= Fourth Grade 3= Sixth Grade

Figure 4.1 A depiction of the mean scores for each grade level. Shows the decrease in test anxiety as a student moves through school.

Figure 4.1. The decrease in the mean score on the TASC does not support my hypothesis.

However, it does reject the null hypothesis.

In conducting further statistical analyses, the researcher was able to determine a significant finding. A t-test was used to determine the average score for boys and for girls. In doing the t-test and then later doing the independent samples test, it was discovered that there was a significant difference in the test anxiety levels of boys and girls. Girls are more test anxious than boys. Please refer to Figure 4.2.

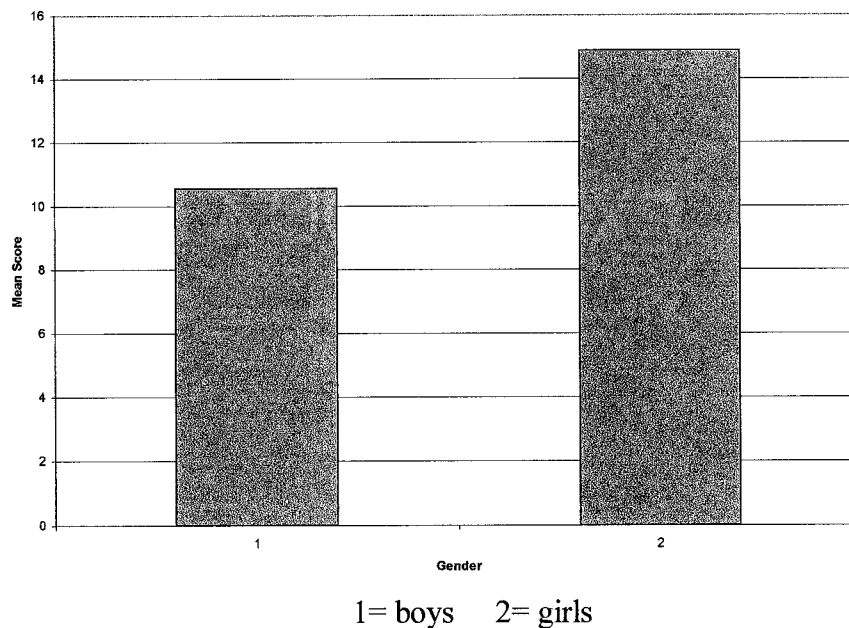


Figure 4.2 A depiction of the mean scores of boys and girls throughout the entire group studied. N=92

Statements of Significance

As stated above, the significance in the research was found between the groups with an alpha level of .016. The study did find a significant difference in test anxiety levels between groups with a decrease in anxiety. Another significant finding was the difference in test anxiety levels between boys and girls. The alpha coefficient was .003.

Summary

The results of the statistical tests gave a clear picture of the levels of test anxiety in children of a suburban elementary school in Southern New Jersey. The results showed a decrease in the levels of test anxiety from second grade to sixth grade. The results of the statistical analysis also indicated a significant difference in the test anxiety levels between boys and girls.

Chapter V: Summary and Conclusions

The purpose of the preceding study was to determine if test anxiety levels increase with age. If test anxiety level does increase with age, when do the levels begin to increase? In this particular study, test anxiety levels seemed to decrease with age so the latter question was not answered. However, the results from this study should not discourage others from attempting to answer the question. Children need to be looked at in the case of test anxiety because of the traumatic effects this anxiety can have on a child's life. Test anxiety seriously affects children in today's society and is important to look at. It is essential to remember, the consequences a child suffering from test anxiety may encounter could alter his life forever. Test anxiety may limit educational or vocational development, as test scores and grades influence entrance to many educational or vocational training programs in modern society (Zeidner, 4).

The methodology employed in the preceding study was designed to compare test anxiety and age. The dependent variable was the Test Anxiety Scale for Children and the independent variable was the grade level. The data was collected over a one week period. Each classroom in its respective grade level was administered the TASC in a twenty minute session. The data was collected and the scores were calculated. The data was predictive in nature because it gave us a better understanding of when the rise, or fall, in test anxiety levels occurs. After the scores were calculated, there was an interesting discovery about the data.

Conclusions

The statistical analysis of the data collected told a story that was contrary to what the researcher predicted. The analysis revealed that the levels of test anxiety does not increase with age, but actually decreases with age. The data analysis also revealed an interesting finding. The levels of test anxiety are greater in females than in males.

At this point, it is important to mention this data has caused the researcher to conclude that test anxiety can be affected by many different factors. Age may be important in some cases, however, it is not necessarily true that an increase in age results in an increase in test anxiety. As a matter of fact, according to the findings in this study, the levels of test anxiety may decrease with age. The discovery of the difference in test anxiety levels between boys and girls aided my conclusion that there are many different factors that can affect test anxiety.

Discussion

There are many different factors that could have affected the levels of test anxiety. The researcher believed there would be an increase in the level of test anxiety, however it was a decrease in the levels of test anxiety. One factor that could have influenced the levels of test anxiety is the teacher. The teacher in the second grade classroom could have been more strict or more anxiety provoking. The teacher could also hold a high emphasis in performance on tests. The focus on testing could transfer on to the students and cause a fear or anxiety when it comes to testing. The teacher in the sixth grade could be more laid back with less emphasis on the performance on tests.

Another factor that could account for the decrease in test anxiety, rather than an

increase, is the experience of the child. As a child moves through school, he becomes more experienced with the testing situation and the meaning of tests. A second grade student may think the test is so important and nothing else counts toward his grade. In sixth grade, a teacher would explain that homework, seatwork, and tests all account for grades on the report card. A second grade student might be more nervous if the test has a time limit because he is not used to taking a test in this situation. By sixth grade, a student has taken many standardized tests that are timed and is possibly used to this condition.

Another factor that could have affected the levels of test anxiety is the presence of the researcher. The researcher is not the student's teacher. When a person administers a questionnaire that is not the normal person administering something the student may become more nervous or anxious than usual. The higher level of anxiety due to the researcher could have affected the answers on the questionnaire resulting in a higher level of test anxiety.

Implications for Future Research

In the future there are many different studies that can be drawn from this research. The most important finding in this research study was the difference between boys and girls in the levels of test anxiety. A future study could be focused on the differences in levels of test anxiety between the genders. If there is a significant difference in a number of trials, programs and interventions can be focused on reducing test anxiety in the female population. The impossibility of causation would make it difficult to prevent the levels of test anxiety to be higher in females but the programs and interventions could help to reduce the debilitating effects of test anxiety.

Another implication for future research is to remember to try to keep the groups sizes as even as possible. In the preceding study, the groups were uneven in size. The second grade sample size was only 15, whereas the fourth grade sample size was 47. If the groups were more even the results could have been drastically different. Also, if the second grade group would have had more students, the mean score on the TASC could have been affected or perhaps leveled off.

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Appendix

Test Anxiety Scale for Children: Instructions for Administration

My name is _____, I'm going to be asking you some questions...questions different from the usual school questions for these are about how you feel and so have no right or wrong answers. First I'll hand out the answer sheets and then I'll tell you more about the questions...

Write your age at the top of the first page. Also, next to gender, write a B if you are a boy and a G if you are a girl.

As I said before, I am going to ask you some questions . These questions are different from other questions that you are asked in school. These questions are different because there are no right or wrong answers. You are to listen to each question and then put a circle around either "yes" or "no." These questions are about how you think and feel and, therefore, they have no right or wrong answers. People think and feel differently. The person sitting next to you might put a circle around "yes" and you may put a circle around "no." For example, if I asked you this question: "Do you like to play ball?" some of you would put a circle around "yes" and some of you would put it around "no." Your answer depends on how *you* think and feel. These questions are about how you think and feel about school. Remember, listen carefully to each question and answer it "yes" or "no" by deciding how you think and feel. If you don't understand a question, ask me about it.

Now let's start by everybody putting their finger on number 1. Here is the first question. Number 1. "Do you worry when ...?" (Repeat this procedure of introducing the questions for several of them and continue throughout to say the number of the question before reading it.)

*****After question number 18 additional instructions are given*****

In the following questions the word "test" is used. What I mean by "test" is any time the teacher asks you to do something to find out how much you know or how much you have learned. It could be by your writing on paper, or by you speaking aloud, or by you writing on the blackboard. Do you understand what I mean by "test".... it is any time the teacher asks you to do something to find out how much you know.

Please circle Yes or No to answer each question.

Age _____ Gender _____

1. Do you worry when the teacher says that she is going to ask you questions to find out how much you know? Yes No
2. Do you worry about being promoted, that is, passing from the second grade to the third grade at the end of the year? Yes No
3. When the teacher asks you to get up in front of the class and read aloud, are you afraid that you are going to make some bad mistakes? Yes No
4. When the teacher says that she is going to call upon some boys and girls in the class to do arithmetic problems, do you hope that she will call upon someone else and not on you? Yes No
5. Do you sometimes dream at night that you are in school and cannot answer the teacher's questions? Yes No
6. When the teacher says that she is going to find out how much you have learned, does your heart begin to beat faster? Yes No
7. When the teacher is teaching you about arithmetic, do you feel that other children in the class understand her better than you? Yes No
8. When you are in bed at night, do you sometimes worry about how you are going to do in class the next day? Yes No
9. When the teacher asks you to write on the blackboard in front of the class, does the hand you write with sometimes shake a little? Yes No
10. When the teacher is teaching you about reading, do you feel that other children in class understand her better than you? Yes No
11. Do you think you worry more about school than other children? Yes No
12. When you are at home and you are thinking about your arithmetic lesson for the next day, do you become afraid that you will get the answers wrong when the teacher calls upon you? Yes No
13. If you are sick and miss school, do you worry that you will do more poorly in your schoolwork than other children when you return to school? Yes No
14. Do you sometimes dream at night that other boys and girls in your class can do things that you cannot do? Yes No

Please circle Yes or No to answer each question.

15. When you are home and you are thinking about your reading lesson for the next day, do you worry that you will do poorly on the lesson? Yes No
16. When the teacher says that she is going to find out how much you have learned, do you get a funny feeling in your stomach? Yes No
17. If you did very poorly when the teacher called on you, would you probably feel like crying even though you would try not to cry? Yes No
18. Do you sometimes dream at night that the teacher is angry because you do not know your lessons? Yes No
19. Are you afraid of school tests? Yes No
20. Do you worry a lot before you take a test? Yes No
21. Do you worry a lot while you are taking a test? Yes No
22. After you have taken a test do you worry about how well you did on the test? Yes No
23. Do you sometimes dream at night that you did poorly on a test you had in school that day? Yes No
24. When you are taking a test, does the hand you write with shake a little? Yes No
25. When the teacher says that she is going to give the class a test, do you become afraid that you will do poorly? Yes No
26. When you are taking a hard test, do you forget some things you knew very well before you started taking the test? Yes No
27. Do you wish a lot of times that you didn't worry so much about tests? Yes No
28. When the teacher says that she is going to give the class a test do you get a nervous or funny feeling? Yes No
29. While you are taking a test do you usually think you are doing poorly? Yes No
30. While you are on your way to school, do you sometimes worry that the teacher may give the class a test? Yes No

Please circle Yes or No to answer each question.

Age _____ Gender _____

1. Do you worry when the teacher says that she is going to ask you questions to find out how much you know? Yes No
2. Do you worry about being promoted, that is, passing from the fourth grade to the fifth grade at the end of the year? Yes No
3. When the teacher asks you to get up in front of the class and read aloud, are you afraid that you are going to make some bad mistakes? Yes No
4. When the teacher says that she is going to call upon some boys and girls in the class to do arithmetic problems, do you hope that she will call upon someone else and not on you? Yes No
5. Do you sometimes dream at night that you are in school and cannot answer the teacher's questions? Yes No
6. When the teacher says that she is going to find out how much you have learned, does your heart begin to beat faster? Yes No
7. When the teacher is teaching you about arithmetic, do you feel that other children in the class understand her better than you? Yes No
8. When you are in bed at night, do you sometimes worry about how you are going to do in class the next day? Yes No
9. When the teacher asks you to write on the blackboard in front of the class, does the hand you write with sometimes shake a little? Yes No
10. When the teacher is teaching you about reading, do you feel that other children in class understand her better than you? Yes No
11. Do you think you worry more about school than other children? Yes No
12. When you are at home and you are thinking about your arithmetic lesson for the next day, do you become afraid that you will get the answers wrong when the teacher calls upon you? Yes No
13. If you are sick and miss school, do you worry that you will do more poorly in your schoolwork than other children when you return to school? Yes No
14. Do you sometimes dream at night that other boys and girls in your class can do things that you cannot do? Yes No

Please circle Yes or No to answer each question.

15. When you are home and you are thinking about your reading lesson for the next day, do you worry that you will do poorly on the lesson? Yes No
16. When the teacher says that she is going to find out how much you have learned, do you get a funny feeling in your stomach? Yes No
17. If you did very poorly when the teacher called on you, would you probably feel like crying even though you would try not to cry? Yes No
18. Do you sometimes dream at night that the teacher is angry because you do not know your lessons? Yes No
19. Are you afraid of school tests? Yes No
20. Do you worry a lot before you take a test? Yes No
21. Do you worry a lot while you are taking a test? Yes No
22. After you have taken a test do you worry about how well you did on the test? Yes No
23. Do you sometimes dream at night that you did poorly on a test you had in school that day? Yes No
24. When you are taking a test, does the hand you write with shake a little? Yes No
25. When the teacher says that she is going to give the class a test, do you become afraid that you will do poorly? Yes No
26. When you are taking a hard test, do you forget some things you knew very well before you started taking the test? Yes No
27. Do you wish a lot of times that you didn't worry so much about tests? Yes No
28. When the teacher says that she is going to give the class a test do you get a nervous or funny feeling? Yes No
29. While you are taking a test do you usually think you are doing poorly? Yes No
30. While you are on your way to school, do you sometimes worry that the teacher may give the class a test? Yes No

Please circle Yes or No to answer each question.

Age _____ Gender _____

1. Do you worry when the teacher says that she is going to ask you questions to find out how much you know? Yes No
2. Do you worry about being promoted, that is, passing from the sixth grade to the seventh grade at the end of the year? Yes No
3. When the teacher asks you to get up in front of the class and read aloud, are you afraid that you are going to make some bad mistakes? Yes No
4. When the teacher says that she is going to call upon some boys and girls in the class to do arithmetic problems, do you hope that she will call upon someone else and not on you? Yes No
5. Do you sometimes dream at night that you are in school and cannot answer the teacher's questions? Yes No
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10. When the teacher is teaching you about reading, do you feel that other children in class understand her better than you? Yes No
11. Do you think you worry more about school than other children? Yes No
12. When you are at home and you are thinking about your arithmetic lesson for the next day, do you become afraid that you will get the answers wrong when the teacher calls upon you? Yes No
13. If you are sick and miss school, do you worry that you will do more poorly in your schoolwork than other children when you return to school? Yes No
14. Do you sometimes dream at night that other boys and girls in your class can do things that you cannot do? Yes No

Please circle Yes or No to answer each question.

15. When you are home and you are thinking about your reading lesson for the next day, do you worry that you will do poorly on the lesson? Yes No
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17. If you did very poorly when the teacher called on you, would you probably feel like crying even though you would try not to cry? Yes No
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